project report

A STUDY OF THE MARKET FOR PUBLIC ADDRESS EQUIPMENT

STEVENSON & KELLOGG, LTD.

management consultants

project report

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I

INTRODUCTION AND SUMMARY

A. INTRODUCTION

This report represents the conclusion of a study by Stevenson and Kellogg of the market for Public Address equipment. The study also considered the manufacturing opportunity in Canada for this equipment. Public Address equipment as described in this study consists of: installed and portable Public Address systems, amplifiers and loudspeakers used for Public Address purposes and musician's sound equipment.

Discussions were held with senior executives of companies presently involved in the manufacture and distribution of P.A. equipment in Canada. Contact was also established with representatives of Japanese and Western European manufacturers. In addition we reviewed the situation with representatives of Statistics Canada; Department of Industry, Trade and Commerce; U.S. Department of Commerce; Electronic Industries Association in Washington and Ottawa, and other trade associates.

This report reflects information gathered from all these sources.

B. SUMMARY

1. The total Canadian market in current dollars for Electronic Sound Equipment including all microphones, amplifiers, loudspeakers and P.A. systems has grown from $24.1 million in 1969 to an estimated $60.8 million in 1973.

2. The total Canadian market for Public Address equipment has grown from $6.2 million in 1969 to $15.7 million in 1973.

3. Imports amounted to $11.5 million - 73.3 percent of the market. The imports came mainly from the U.S. and Japan. Small volumes come from Europe.

4. The total market consists of a number of distinct product groups; P.A. amplifiers, P.A. cone speakers, P.A. horn speakers, P.A. column speakers, musician's sound equipment and complete P.A. systems. The group with the largest domestic market is musician's sound equipment which is about $5 million. In many instances musicians sound equipment will be used as general purpose P.A. equipment.

5. There are a wide range of product lines offered for sale and demanded by customers within any one of these product groups. The market for any given product line is quite small.

6. The Canadian domestic market for any one of the product groups is not large enough to support new manufacturing capacity. Any new Canadian P.A. manufacturer would need to find a significant Export market.

7. The United States market for P.A. equipment is an estimated $150 million. Most of the equipment is manufactured domestically with only small quantities being imported. The imports come mainly from Japan.

8. The other major importers of Public Address equipment are West Germany, Netherlands, the United Kingdom and France. All of these countries are supplied by established European manufacturers, some of the major U.S. manufacturers, and the Japanese.

9. The purchase of P.A. equipment is made more on the basis of the reliability, reputation and backup services of the manufacturer than on price. The existing major manufacturers have established an excellent reputation both in the U.S. and Canada. It is unlikely that a new manufacturer would be successful in penetrating this market.

10. It would appear that the only viable Canadian venture would be for an existing, well established supplier of

the U.S. and Canadian markets to relocate his manufacturing facilities to Canada. This limits the choice to companies from the United States, Japan, West Germany, or Denmark.

11. U.S. companies have no incentive to relocate facilities in Canada. They already hold a major share of this market. Purchases of P.A. equipment are not made on the basis of price so the saving in duty by manufacturing in Canada, would not increase Canadian sales. Manufacturing in Canada for the U.S. or world market offers no advantage over manufacturing in the U.S.

12. West German and Danish companies have a small share of the U.S. and Canadian markets and are not very well known. They would face similar difficulties to those of a new Canadian manufacturer.

13. A Japanese company establishing a manufacturing facility in Canada is the most likely venture to succeed. Japanese manufacturers of P.A. equipment have already established a foothold in the North American market. They also have a distribution network.

14. Japanese companies are interested in locating manufacturing facilities in North America. Japanese manufacturers are facing possible loss of their existing share of the North American market due to massive increases in their manufacturing costs. Relocation of manufacturing facilities to Canada would help the Japanese maintain and expand their existing market share.

15. Location in a D.R.E.E. Designated Area should not pose any problem for the successful manufacture and sale of P.A. equipment.

The analysis leading to these conclusions is contained in the remaining chapters of this report.

II

CANADIAN DOMESTIC MARKET FOR P.A. EQUIPMENT

P.A. equipment is a segment of the total Electronic Sound Equipment market. In order to specify the market for P.A. equipment it is necessary to examine the total market for Electronic Sound Equipment. These aggregate figures can be broken down further to isolate those products which are designed for P.A. purposes.

A. THE MARKET FOR ELECTRONIC SOUND EQUIPMENT

Electronic Sound Equipment, as described in this chapter, includes all types of microphones, self contained amplifiers for both home and commercial use, loud speakers of all types and P.A. systems.

To conform as closely as possible with the classifications used by Statistics Canada and the U.S. Department of Commerce, P.A. systems as defined in this study includes the following; P.A. systems specially designed for hospitals, hotels, airports, etc. They may incorporate special switching devices, control consoles, etc. Also included in this category are P.A. packages sold as an amplifier with matching speakers. Musicians equipment is not categorized as a complete P.A. system.

1. The Canadian Market for Electronic Sound Equipment is Over $60 million

In 1973 the total apparent domestic market for Electronic Sound Equipment was $60.8 million. This consists of domestic production plus imports minus exports. The values are all F.O.B. works. In the case of imports the values used were F.O.B. works plus 17½% duty.

In Table 1 we show the growth of the market since 1969. In that year, the value was $24.1 million. The largest increase occurred between 1971 and 1972 when the value rose from $34.6 million to $47.4 million, an increase of 37%.

Table 1

MICROPHONES, AMPLIFIERS, SPEAKERS AND PUBLIC ADDRESS SYSTEMS

CANADIAN DOMESTIC MARKET[1]
(million dollars)

Year	Value[2]	Percentage Annual Increase
1969	24.1	---
1970	25.4	5.4
1971	34.6	36.2
1972	47.4	37.0
1973	60.8	28.3

Source: Stevenson & Kellogg Ltd. calculation

(1) Production plus Imports minus Exports

(2) All values F.O.B. Works. In the case of Imports, value used is F.O.B. Works plus 17½% duty

2. Imports Have a Major Share of the Canadian Market

Imports of Electronic Sound Equipment have always accounted for a large share of the Canadian domestic market. In 1973 they were 86.3% of the total market. This was an increase from the 1969 level of 80.5%.

In 1971 imports fell to 78.3% of the Canadian market, mainly as a result of a sizable increase in Canadian domestic production and a decrease in Canadian exports of this equipment.

Table 2 gives details of imports as a percentage of the total market for the five years from 1969 to 1973. The import figures used are F.O.B. works plus 17½% duty. It should be noted that transportation from the point of consignment will not be included in the import value.

Historically, loud speakers have been the largest segment of imported electronic sound equipment. They have also been the fastest growing segment. In 1970 imports of loud speakers were $9,428,000. In 1973 this had grown to $28,948,000.

Amplifiers and P.A. systems were valued at $6,237,000 in 1970, and $12,512,000 in 1973. Finally, imports of microphones only increased from $1,982,000 in 1970 to $3,195,000 in 1973.

Total imports of microphones, amplifiers, speakers and P.A. systems increased in value from $17,647,000 in 1970 to $44,655,000 in 1973. This was a 153% increase over the 1970 total. Details of these imports are shown in Table 3.

3. Most of the Imports Come From United States and Japan

In 1973 the United States and Japan together accounted for over 80% of the total imports in each of the three Statistics Canada classifications; microphones (SIC639-40),

Table 2

MICROPHONES, AMPLIFIERS, SPEAKERS AND PUBLIC ADDRESS SYSTEMS

IMPORTS - HISTORICAL SHARE OF CANADIAN DOMESTIC MARKET

Year	Total Market	Imports as a Percentage of Total
1969	24.1	80.5
1970	25.4	81.5
1971	34.6	78.3
1972	47.4	83.1
1973	60.8	86.3

Source: Stevenson & Kellogg, Ltd. calculation based on Statistics Canada, U.S. Department of Commerce and O.E.C.D. data

Table 3

CANADIAN IMPORTS OF MICROPHONES, AMPLIFIERS, SPEAKERS AND PUBLIC ADDRESS SYSTEMS

(000's dollars)[1]

	1973	1972	1971	1970
Speakers	28,948	20,047	12,911	9,428
Amplifiers and P.A. Systems	12,512	10,542	8,064	6,237
Microphones	3,195	2,913	2,089	1,982
TOTALS -	44,655	33,502	23,064	17,647

[1] F.O.B. point of consignment

Source: Statistics Canada

speakers (SIC639-45), amplifiers and public address systems (SIC634-45).

In 1973, 64.7% of Canada's microphone imports came from the United States and 19.3% came from Japan.

The United States supplied 60% of Canada's loud speaker imports and 23% came from Japan.

In amplifiers and P.A. systems, 56.1% came from the United States and 30% from Japan.

The only other countries from which Canada purchased any significant levels of Electronic Sound Equipment were the United Kingdom, Taiwan, West Germany, Netherlands, Denmark and Austria.

The United Kingdom had 5% of the speaker imports and 7.3% of the amplifier and P.A. system imports.

Taiwan accounted for 5% of speaker imports and 2.4% of the amplifier and P.A. systems imports.

West Germany was the source of 5.7% of the total imports in microphones and of 0.8% of the total amplifier and P.A. system imports.

Tables 4, 5 and 6 give the complete breakdown of Canadian imports of microphones, amplifiers, speakers and P.A. systems for the years 1970 to 1973 inclusive.

4. Canadian Domestic Production is Relatively Small

Canada's production of Electronic Sound Equipment has grown at a much lower rate than imports. In 1973 production was an estimated $13.7 million. The 1969 production was $8.7 million. The increase between 1969 and 1973 was 57.5%. In section 2 we pointed out that imports rose by 153% between 1970 and 1973.

The increase in domestic production from 1971 to 1972 was 12.8% and from 1972 to 1973 was 13.7%. When these

Table 4

CANADA

MAJOR SOURCES OF SPEAKERS (SIC 639-45)
(000's dollars)(1)

Country	1973	%	1972	%	1971	%	1970	%
United States	17,344	60	11,139	55.6	7,537	58.4	5,264	55.8
Japan	6,718	23	5,686	28.4	3,237	25	2,616	27.8
United Kingdom	1,412	5	1,157	5.8	829	6.4	627	6.7
Taiwan	1,410	5	211	1.0	1	--	28	0.4
Netherlands	425	1.4	404	2.0	255	2.0	290	3.0
Denmark	404	1.4	526	2.6	453	3.5	123	1.3
All Other Countries	1,235	4.2	924	4.6	599	4.7	480	5.0
TOTAL	28,948	100	20,047	100	12,911	100	9,428	100

Source: Statistics Canada #65-203

(1) F.O.B. point of consignment

Table 5

CANADA

MAJOR SUPPLIERS OF MICROPHONES (SIC 639-40)
(000's dollars)(1)

Country	1973	%	1972	%	1971	%	1970	%
United States	2,066	64.7	1,729	59.4	1,382	66.0	1,155	58
Japan	616	19.3	664	22.8	342	16.4	381	19.2
West Germany	181	5.7	194	6.7	114	5.5	144	7.3
Austria	126	3.9	197	6.7	125	6.0	96	5
Netherlands	115	3.6	69	2.4	83	4.0	147	7.5
All Other Countries	91	2.8	60	2.0	43	2.1	59	3
TOTAL	3,195	100	2,913	100	2,089	100	1,982	100

Source: Statistics Canada #65-203

(1) F.O.B. point of consignment

Table 6

CANADA

MAJOR SUPPLIERS OF AMPLIFIERS AND PUBLIC ADDRESS SYSTEMS (SIC 634-45)
(000's dollars)[1]

Country	1973	%	1972	%	1971	%	1970	%
United States	7,034	56.1	6,459	61.2	4,878	60.5	3,924	63
Japan	3,736	30.0	2,790	26.5	2,136	26.5	1,362	22
United Kingdom	912	7.3	639	6.0	371	4.5	212	3.5
Taiwan	301	2.4	142	1.4	27	0.3	138	2
Netherlands	198	1.6	141	2.3	349	4.5	313	5
West Germany	110	0.8	127	1.2	139	1.7	159	2.5
All Other Countries	221	1.8	143	1.4	164	2.0	129	2.0
TOTAL	12,512	100	10,542	100	8,064	100	6,237	100

Source: Statistics Canada #65-203

(1) F.O.B. point of consignment

rates of increase are compared with the rates at which prices have been increasing, the real growth in production is comparatively small. It has been suggested that in 1973 there was a real decrease rather than an increase.

These production figures released by Statistics Canada may be distorted. Some unassembled products imported into Canada and assembled here may be recorded as production at the total shipment value rather than value added. This could cause the production figures to appear larger than in fact occurred. The total effect of recording imports as F.O.B. works at the point of consignment and this distortion upwards of Canada's domestic production figures is to make the imported share of the Canadian market appear smaller than in fact is the case.

Table 7 gives details of the value of Canadian production from 1969 to 1973 inclusive.

5. Canadian Exports of Electronic Sound Equipment are Difficult to Determine

Exports have ranged from $4 million in 1969 to $5.4 million in 1973. In 1973 exports were 39.4% of production. On preliminary analysis, exporting this much of domestic production appears unjustified when one considers that Canada also imports large quantities of Electronic Sound equipment. However, as we shall discuss later, most of the exports were concentrated in a few products. Canadian manufacturers have a competitive advantage in these products.

Statistics Canada does not have a separate export classification for each of the commodities; microphones, amplifiers, speakers and Public Address systems. Figures are available for the category "Amplifiers and Public Address Systems", but the remaining categories are combined with export figures for other electronic products.

We estimated the value of Canadian exports of Electronic Sound Equipment using a combination of U.S. import figures and statistics from O.E.C.D. The 1970, 1971 and 1972 export figures for Canada were obtained from O.E.C.D.

Table 7

MICROPHONES, AMPLIFIERS, SPEAKERS AND PUBLIC ADDRESS SYSTEMS

PRODUCTION, IMPORTS AND EXPORTS - CANADA
(million dollars)

Year	Production	Exports	Imports		Apparent[1] Canadian Market
			F.O.B. Works	F.O.B. +Duty	
1969	8.7	4.0	16.5	19.4	24.1
1970	9.0	4.3	17.6	20.7	25.4
1971	10.9	3.4	23.1	27.1	34.6
1972	12.3	4.3	33.5	39.4	47.4
1973	13.7	5.4	44.7	52.5	60.8

Sources: Production and Import figures: Statistics Canada

Exports: Stevenson & Kellogg, Ltd. estimate based on U.S. Import and O.E.C.D. Statistics

(1) Production plus Imports minus Exports. All values F.O.B. Works. In the case of Imports, value used is F.O.B. Works plus 17½% duty.

statistics, which has a category consisting of microphones, amplifiers, speakers and Public Address systems (S.I.T.C. 724-92). The O.E.C.D. figures for 1973 are not yet available.

Our estimate for the 1973 Canadian exports of Electronic Sound Equipment is based on the fact that 90% and 93% total Canadian exports in 1972 and 1971 were to the United States. In 1973 U.S. imports from Canada were $4.84 million. Assuming that 90% of the total exports were to be United States, then we estimate total Canadian exports at $5.4 million. This figure is on the high side because the U.S. reports Imports at the C.I.F. port of Entry value rather than F.O.B. point of consignment as is the case in Canada.

Details of Canadian exports are shown in Table 7.

This completes our analysis of the overall market for Electronic Sound Equipment in Canada. This sets the scene for an examination of the market for Public Address equipment.

B. PUBLIC ADDRESS EQUIPMENT

In this section we will consider the Canadian market for Public Address equipment as defined by the terms of reference of this study. Included are Public Address amplifiers, Public Address speakers (cone, horn, and column), Musicians sound equipment, and P.A. systems.

1. Total Canadian Market for P.A. Equipment was $15.7 Million in 1973

The estimated size of the Canadian market for Public Address Equipment was $15,717,000 in 1973. This is an F.O.B. works value.

To obtain this estimate it was necessary to further break down the aggregate figures for the production, import and export of Electronic Sound Equipment. These aggregate figures were broken into eleven product groups. Estimates for the value of each of these groups were made on the basis of available Statistics Canada data and interviews with people engaged in the manufacture, import or export of these products.

Tables 8, 9 and 10 contain the detailed breakdown of Canadian production, Imports and Exports respectively.

Duty has been added to the F.O.B. works value of Imports. It is not possible to calculate a Canadian landed cost for imports because they come from many points of origin. However, the impact of this inability to calculate landed cost is not significant. A dealer in Manitoba could purchase a given piece of equipment F.O.B. Toronto or F.O.B. Chicago. The transportation costs might be similar so in fact the F.O.B. works value is a reasonable figure to use for imports from the U.S. In the case of imports from Japan, use of F.O.B. works value will underestimate the size of the imports from Japan. However, most imports come from the U.S. not Japan.

Table 11 summarizes the value of production, exports and imports for each product group.

Table 8

ELECTRONIC SOUND EQUIPMENT

GOODS MANUFACTURED IN CANADA - 1973
($000's)

Major Category	Sub-Category	Value[1] ($000's)
Sound Amplifiers (Self-contained units)	Hi-Fi Amplifiers	750
	Public Address Amplifiers	500
	Musicians equipment	3,700
Loud Speakers	Hi-Fi Speakers in enclosures	2,100
	O.E.M. type speakers	3,200
	P.A. Cone speakers	400
	P.A. Horn speakers	50
	P.A. speaker columns	200
Megaphones		10
Microphones		90
P.A. Systems		2,700
TOTAL -		$ 13,700

(1) F.O.B. Works

Source: Stevenson & Kellogg Ltd. estimate

Table 9

ELECTRONIC SOUND EQUIPMENT

GOODS IMPORTED INTO CANADA - 1973
($000's)

Major Category	Sub-Category	Value[1] ($000's)
Sound Amplifiers (Self-contained units)	Hi-Fi Amplifiers	7,000
	Public Address Amplifiers	2,000
	Musicians equipment	2,500
Loud Speakers	Hi-Fi Speakers in enclosures	17,600
	O.E.M. type speakers	7,000
	P.A. Cone speakers	1,500
	P.A. Horn speakers	1,300
	P.A. speaker columns	1,500
Megaphones		100
Microphones		3,200
P.A. Systems		1,000
TOTAL -		$ 44,700

(1) F.O.B. point of shipment

Source: Stevenson & Kellogg Ltd. estimate

Table 10

ELECTRONIC SOUND EQUIPMENT

GOODS EXPORTED FROM CANADA - 1973
($000's)

Major Category	Sub-Category	Value[1] ($000's)
Sound Amplifiers (Self-contained units)	Hi-Fi Amplifiers	nil
	Public Address Amplifiers	nil
	Musicians equipment	1,600
Loud Speakers	Hi-Fi Speakers in enclosures	600
	O.E.M. type speakers	1,400
	P.A. Cone speakers	50
	P.A. Horn speakers	nil
	P.A. speaker columns	nil
Megaphones		nil
Microphones		50
P.A. Systems		1,700
TOTAL -		$ 5,400

(1) F.O.B. Works

Source: Stevenson & Kellogg Ltd. estimate

Table 11

ELECTRONIC SOUND EQUIPMENT

SUMMARY OF PRODUCTION, EXPORTS, IMPORTS AND APPARENT DOMESTIC MARKET - 1973

($000's)

Sub-Category	Production	Exports	Imports		Apparent Domestic Market(2)
			F.O.B. Works	F.O.B. Works & Duty(1)	
Hi-Fi Amplifiers	750	nil	7,000	8,225	8,975
Public Address Amplifiers	500	nil	2,000	2,350	2,850
Musicians Equipment	3,700	1,600	2,500	2,938	5,038
Hi-Fi Speakers in Enclosures	2,100	600	17,600	20,680	22,180
O.E.M. type Speakers	3,200	1,400	7,000	8,225	10,025
P.A. Cone Speakers	400	50	1,500	1,763	2,113
P.A. Horn Speakers	50	nil	1,300	1,528	1,578
P.A. Speaker Columns	200	nil	1,500	1,763	1,963
Megaphones	10	nil	100	118	128
Microphones	90	50	3,200	3,760	3,800
P.A. Systems	2,700	1,700	1,000	1,175	2,175
TOTALS -	13,700	5,400	44,700	52,525	60,825

Source: Stevenson & Kellogg, Ltd. Estimates.

(1) Duty applied at rate of $17\frac{1}{2}\%$.

(2) Production plus Imports minus Exports.

Table 12

PUBLIC ADDRESS EQUIPMENT

CANADIAN DOMESTIC MARKET - 1973
($000's)

	Value ($000's)
P.A. Amplifiers	2,850
P.A. Cone Speakers	2,113
P.A. Horn Speakers	1,578
P.A. Column Speakers	1,963
P.A. Systems	2,175
Musicians Sound Equipment	5,038
TOTAL MARKET -	$15,717

2. Sub-Dividing the Market

The total market of $15,717,000 is composed of a number of distinct product group markets. These groups are: P.A. amplifiers, P.A. cone speakers, P.A. horn speakers, P.A. column speakers, musician's sound equipment and complete P.A. systems. The value of each of these markets is shown in Table 12.

The product group with the largest domestic market is musician's sound equipment. In 1973 this market represented $5,038,000. Musician's sound equipment includes amplifiers of various types and loud speakers. The equipment has the characteristics of being portable, easy to install and designed with the knowledge that the equipment will be constantly in view of the audience. Although musician's sound equipment is the largest single product group, it should be borne in mind that the equipment is not always used solely for musicians. In many instances this type of equipment will be purchased by small auditoriums, assembly halls, schools, etc. for use as general purpose P.A. equipment.

The product group with the next largest market is P.A. amplifiers. In 1973 we estimated the market to be $2,850,000. This includes all types of P.A. amplifiers ranging from the very small five Watt amplifier to a large 600 Watt amplifier. Within that range there are up to 35 different lines of amplifiers. It is estimated that 20 - 25% of the demand is for tube amplifiers although this market is decreasing as Solid State becomes more popular.

Public Address systems are next in order of magnitude. In 1973 the estimated market size was $2,175,000. P.A. systems are one of the most difficult product groups for which to make a market estimate. Within this group are the many specially designed systems for airports, hotels, hospitals, etc. These systems feature not only Public Address facilities but they also include talk-back facilities, dictation monitoring facilities, intrusion alarms and fire alarm systems. We have attempted to isolate only those systems which are truly P.A. in function or in the case of the multi-purpose systems, that portion of the system which is attributable to P.A. As is the case with all of the estimates for market size the P.A. system estimate includes only the equipment and not installation costs.

P.A. cone speakers had an estimated $2,113,000 market in 1973. This figure includes all forms of speakers which are sold for P.A. purposes. It does not include such accessories as baffles or mounting fixtures unless they are sold as a unit with the speaker.

The market for P.A. column speakers was $1,963,000 in 1973. These speakers are distinct from those used as musician's equipment. This later group were included in the musician's sound equipment category.

Finally, the P.A. horn speaker market was an estimated $1,578,000 in 1973. As was the case with amplifiers, horn speakers and the other types of speakers are available in a wide variety of sizes, both as regards physical dimensions and power rating.

In the following section we will provide a further breakdown of the speaker and amplifier groups by product size.

3. Breakdown of the Market by Speaker Size

As mentioned above, within each product group there is a wide variety of products offered. In the case of loud speakers the size is determined by the R.M.S. Watts rating. We have estimated the market by speaker size for each of the three product groups: cone, horn and column.

(a) Cone Speakers

The total market for cone speakers was $2,113,000. It is estimated that 60% of the market is for 5-20 Watts R.M.S. speaker size. The value of this market is $1,268,000.

An estimated 15% of the market is for the 21-50 Watts R.M.S. speaker size with a market value of $317,000.

Another 15% of the market is comprised of the 51-100 Watts R.M.S. speakers. This market is estimated at $317,000. Finally, 10% of the market is for speakers of greater than 100 Watts R.M.S. The value of this segment of the market is $211,000.

(b) Horn Speakers

The total market for horn speakers was estimated to be $1,578,000 in 1973. The 1-10 Watts R.M.S. size group accounted for $552,000 - about 35% of the market.

The 11-15 Watts R.M.S. market was 45% of the total, with a value of $710,000.

Table 13

PUBLIC ADDRESS SPEAKERS

CANADIAN MARKET BY SPEAKER SIZE

Type of Speaker	Watts R.M.S.	Market Size ($000's)	Percentage
Cone	5 - 20	1,268	60
	21 - 50	317	15
	51 - 100	317	15
	greater than 100	211	10
	TOTAL -	2,113	100
Horn	1 - 10	552	35
	11 - 15	710	45
	16 - 50	237	15
	greater than 50	79	5
	TOTAL -	1,578	100
Column	20 - 50	589	30
	51 - 100	1,374	70
	TOTAL -	1,963	100

Source: Stevenson & Kellogg Ltd. estimates

An estimated 15% of the horn speaker market was in the 16-50 Watts R.M.S. range with a total value of $237,000.

Finally, 5% of the market was for horn speakers greater than 50 Watts R.M.S. The total value was $79,000.

(c) Column Speakers

The total market for column speakers was an estimated $1,963,000 in 1973.

An estimated 30% of this market was for the 20-50 Watts R.M.S. speaker size valued at $589,000.

The remaining 70% of the market was for the 51-100 Watts R.M.S. speaker size valued at $1,374,000 in 1973.

Details of this breakdown are contained in Table 13.

4. Breakdown of Amplifier Market by Size

The total Canadian market for P.A. amplifiers was $2,850,000 in 1973. Details of the breakdown of this market by amplifier size are shown in Table 14 below.

Table 14

PUBLIC ADDRESS AMPLIFIERS

CANADIAN MARKET BY AMPLIFIER SIZE

Watts RMS	Market Size ($000's)	Percent
5 - 25	427.5	15
26 - 50	997.5	35
51 - 100	712.5	25
101 - 300	698.25	24.5
301 - 600	14.25	0.5
	2,850.	100.

The largest segment of the market is the 26 - 50 Watts R.M.S. amplifier size which accounts for 35% of the total. The 51-100 Watts R.M.S. range accounts for 25% of the market and 15% of the market is in the 5-25 Watts R.M.S. category.

In all, 75% of the total amplifier market is for amplifiers with less than 100 Watts R.M.S. of power.

5. The Other Product Groups Cannot be Broken Down Further

It was not possible to break down further the markets for musicians sound equipment or P.A. systems.

In the case of Musicians Sound Equipment there are no clearly defined categories such as power rating. Instead features like the external appearance of the equipment, number of input channels, quality of output, etc. become the distinguishing characteristics.

With P.A. systems there is a high volume of individual custom building. With the exception of the cabinet amplifier-speaker packages there are no definable product groups. One possibility might be the end use of the system such as school, hospital, etc., but it is possible for the same piece of equipment to be used in, say, hospitals and school applications.

6. Location of Demand

The demand for Public Address equipment tends to be concentrated in the major centers of population. Some of the major users of Public Address equipment are industries and large offices.

It has been estimated that up to 60% of the total Canadian market is in Ontario with Toronto accounting for the largest share of this market. Another source estimated that Ontario and Quebec together account for four-fifths of the total Canadian market for P.A. equipment.

If we accept the industry estimates then the Ontario and Quebec market together provide a $12.5 million market. A large portion of this would be in the cities of Toronto and Montreal.

7. Future Size of the P.A. Market

Unlike other electronic industries, the P.A. business is not subject to rapid technological change. This is with the possible exception of Musicians Sound Equipment. The technology for the manufacture of Public Address amplifiers and loud speakers has been fairly constant over the past few years. The major change has been the trend away from tube amplifiers to solid state. The factors which are most likely to influence the growth of Public Address business are the changes in the applications to which P.A. equipment is applied.

We have not discovered any published projections of the future size of the market for Public Address equipment. However, we can make some comments about the factors which are likely to influence the future growth. Before doing that, it is useful to examine the recent history of the Canadian Public Address equipment market.

(a) Recent Growth

In the absence of evidence to the contrary, we have assumed that the market for Public Address equipment grew at the same rate as the total electronic sound equipment market. Starting with our 1973 figure of $15,717,000 for Public Address equipment and applying the same rate of increase as occurred in the total electronic sound equipment market (Table 1) we obtained estimates for the market in 1969 to 1973 inclusive. This is shown graphically in Figure 1. It should be remembered that some of this increase, particularly in 1972 - 1973, is price inflation. However, there is still a sizable real increase in the market for Public Address equipment in Canada. In 1973 the

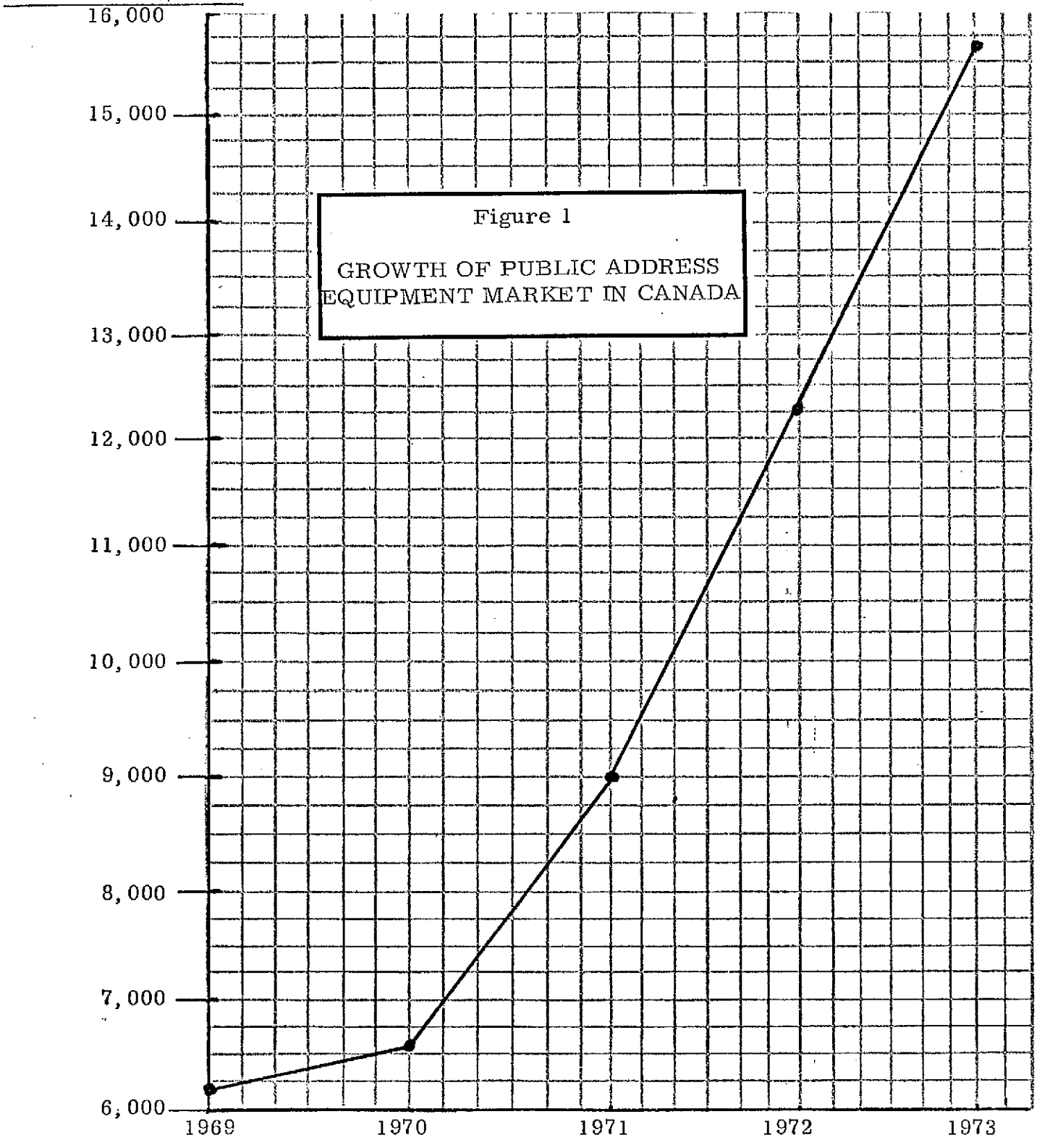

Figure 1

GROWTH OF PUBLIC ADDRESS EQUIPMENT MARKET IN CANADA

1. Production plus Imports minus exports.

2. All values F.O.B. Works. In the case of Imports, value used was F.O.B. Works plus 17-1/2% duty.

Source: Stevenson & Kellogg, Ltd. estimate based on growth of total market for microphones, amplifiers, speakers and P.A. systems. (See Table 1)

market was $15.72 million. This was an increase of 153% over the 1969 level of $6.23 million.

The Canadian market was not subjected to the same level of marketing as the U.S. until the last few years. It might be expected that the Canadian sales would rise fairly rapidly and then level off as the initial thrust wears off. Some exports suggest that the leveling off process is now in progress.

(b) Factors likely to Influence Future Growth

Two factors could have a significant impact on the future growth of the Public Address equipment market in Canada. These are the "Interconnect" concept and the "Life-Safety systems".

Interconnect is the concept by which industries can buy their telephone equipment from a supplier other than the telephone company and have it installed in their premises. They can then connect this equipment to the telephone company lines. This concept has become very popular in the United States but as yet it is not acceptable to the Canadian telephone companies. It is expected, however, that the practice will be in general use here within the next few years. At present, the telephone companies in Canada have a great advantage over other commercial suppliers of public address equipment. Whenever a company installs a new telephone system they are also likely to be in the market for a public address or paging system. The telephone company will have first access to this market and in many cases will be successful in their sales effort. One of the principal reasons why a company will not install a telephone company public address system is that this equipment cannot be purchased. Instead the telephone company will lease the equipment on a monthly basis. Many customers would prefer to buy the equipment outright. If the interconnect concept becomes widely used then the telephone companies will lose their special ad-

vantage in selling Public Address Equipment.

The other major area in which industry experts predict a major growth is the Life-Safety Systems field. In the United States and to a lesser extent in Canada, there is a growing awareness of the need to provide instructions to the inhabitants of large office and apartment buildings in the event of emergencies. Public Address Systems have been developed by which every person in such a building can be informed by voice in the event of an emergency and be instructed as to the exit to use, etc. Legislation is being drafted in many communities to make this equipment mandatory. Existing manufacturers of Public Address Equipment regard life-safety systems as the best opportunity to have appeared for quite some time for expanding their business.

Other minor factors could influence the growth of the Public Address business. At present in Canada most sales of Public Address equipment are to newly constructed buildings. The normal life span of a Public Address system is about ten years. A replacement market has not yet been developed. Schools and Churches have been major customers for Public Address Equipment in Canada. Over the last two or three years there has been a decrease in the construction of churches and school construction has slowed. However, new schools presently being constructed are installing much more sophisticated and costly P.A. systems. Even though total school construction may be lower than in the recent past the value of Public Address Equipment has increased.

Large institutions such as hospitals and airports are also major customers for Public Address Equipment. The equipment being installed in these places is becoming

increasingly complex with facilities for priority calling, talkback, status monitoring and alarm facilities being incorporated into the complete system. In fact, it is becoming increasingly difficult to separate the manufacturers of P.A. equipment from the manufacturers of intercom systems. It is predicted that there will be a growing tendency towards the combined manufacture of P.A. systems - Intercom - Paging systems.

Overall then the indications are for continued growth of Public Address equipment market in Canada at rates below those of the last two years.

This concludes our statistical analysis of the Canadian market for Public Address equipment.

C. SUPPLY OF PUBLIC ADDRESS EQUIPMENT IN CANADA

We have estimated the Canadian market for Public Address Equipment at $15.7 million. In this section we will examine the sources of supply of this equipment, which is either produced in Canada or imported.

1. Most Equipment is Imported

As we might expect from our earlier analysis of the total market for Electronic Sound Equipment, imports form a very large portion of the total supply of Public Address Equipment in Canada. In the total domestic market for Electronic Sound Equipment, imports accounted for 86.3% of the total market in 1973 This despite a 17½% tariff. In order to determine the share of the Public Address Market held by imports it is necessary to analyze further the imports of Electronic Sound Equipment.

Imports of Electronic Sound Equipment amounted to $44.7 million in 1973. During our discussions with industry experts we attempted to breakdown this cumulative

figure into various sub-categories. Table 9 gives details of the estimated value of imports for the various product groups.

For P.A. amplifiers, P.A. loud speakers, P.A. systems and musicians sound equipment, the percentage of the total Canadian market represented by imports was 73.3%. Public Address horn speakers with imports at 96.8% of the total market represent the product group with the greatest level of imports. This is followed by P.A. column speakers at 89.8%, P.A. cone speakers with 83.4%, P.A. amplifiers with 82.5%, musicians sound equipment with 58.3% and P.A. systems for which imports represent 54%. Details of these are given in Table 15 below.

Table 15

PUBLIC ADDRESS EQUIPMENT

IMPORTS - SHARE OF CANADIAN DOMESTIC MARKET IN 1973

	Imports as Percentage of Total Market
P.A. Amplifiers	82.5
P.A. Cone Speakers	83.4
P.A. Horn Speakers	96.8
P.A. Column Speakers	89.8
P.A. Systems	54.0
Musicians Sound Equipment	58.3
TOTAL -	73.3

Source: Stevenson & Kellogg, Ltd. estimates

In order to calculate the importance of imports to the total supply, we added duty at the rate of $17\frac{1}{2}\%$ to the F.O.B. value of the imports. This figure for imports plus duty was then expressed as a percentage of the total Canadian market for that product.

2. Most of the Imports are from the U.S.

From our analysis of the imports of Public Address Equipment we would expect that the United States and Japan would account for the major share of the imported Public Address Equipment. Because there are no statistical data available for imports of the specific Public Address products with which we are concerned it was necessary to estimate the volume of imports from the various countries.

In the case of imports of Public Address amplifiers the majority of the imports come from the United States. It has been estimated that up to 95% of the total P.A. amplifier imports originate from this source. The remainder come from Japan with very small quantities being imported from various other countries.

In the case of Public Address speakers we again find that the United States in the major supplier. In the subcategory of P.A. horn speakers it is estimated that Japanese horn speakers account for 30% of the total imports into Canada, with the United States accounting for most of the remainder of the imports. There are some very small imports of driving units from other countries, Italy and Czechoslovakia being mentioned by one or two importers. Most of the P.A. cone and speaker columns originate in the United States.

The imports of Musician's Sound Equipment originate almost exclusively from the United States. It is interesting to note that while Canada imports substantial volumes of this type of equipment a substantial volume of equipment is exported from Canada.

A similar situation exists with Public Address systems. In this instance, Canada exports more of this type of equipment than she imports. Public Address systems are imported mainly from the United States, but with sizable quantities coming from countries like Norway, West Germany and the United Kingdom. Particular companies located in these countries have acquired a reputation for their expertise in a special type of P.A. system.

3. A small number of large Companies supply most of the market

There are a small number of manufacturers of P.A. equipment who supply most of the North American market, including Canada. The five or six largest companies supply all types of Public Address equipment including amplifiers, loud speakers and accessories.

Bogen is the largest supplier of Public Address amplifiers to the Canadian market. The other major suppliers of amplifiers to the Canada market are Dukane, Fanon, Toa, Altec-University, Raymar, Webster and Electro-Voice.

The major suppliers of P.A. speakers are Atlas, Altec-University, Fanon and Electro-Voice.

There are only about seven major manufacturers of Musicians Sound Equipment in North America. Six of these are in the U.S. They are Fender, Peavey, Ampeg, Kustom, Sunn and Acoustic.

P.A. Systems, being largely custom built, are manufactured by a wide variety of companies. Large contracts tend to be awarded to the more renowned manufacturers such as Bogen and Altec.

4. Canadian Manufacturers Supply a Small Portion of the Canadian Market

Canadian manufacturers have a small share of the Canadian market for P.A. equipment. The only exceptions are P.A. systems where 46% is held by Canadian manufacturers and musicians sound equipment which is 41.7% Canadian manufactured.

These estimates for Canadian market share were made by taking the value of Canadian production, deducting the value of exports and expressing the remainder as a percentage of the total Canadian Market. Table 16 below shows the detailed results.

Table 16

SHARE OF THE MARKET
HELD BY CANADIAN MANUFACTURERS

	Percentage of Market
P.A. Amplifiers	17.5
P.A. Cone Speakers	16.6
P.A. Horn Speakers	3.2
P.A. Speaker Columns	10.2
P.A. Systems	46.0
Musicians Sound Equipment	41.7

Source: Stevenson & Kellogg estimate

Despite the comparatively large share of the market held by the Canadian Manufacturers of P.A. systems and musicians sound equipment, a large portion of Canadian production in these product groups is exported. The value of musician's sound equipment manufactured in Canada was estimated at $3.7 million. Exports amounted to $1.6 million and yet the total Canadian market was only $5.038 million.

It appears that Canadian customers are more attracted to imported musicians equipment while Canadian manufacturers have managed to establish a market abroad for similar equipment.

It is interesting to note that almost all the imported musicians sound equipment comes from the U.S. while about 80% of the Canadian exports of musicians sound equipment also goes to the U.S.

Canadian manufacturers of P.A. systems shipped about $3 million in 1973 of which $2 million was exported. The total Canadian market was $2,175,000. In this case the Canadian market was not large enough to absorb all the production and export markets had to be established. A lot of the exports go to contract jobs in countries outside North America. Some of these contracts are obtained because the end use is a hospital or school being paid for by Canadian Government funds.

The imports of P.A. systems are often for large installations. Some U.S. companies enjoy well established reputations for this type of job. They may be awarded the contract despite the availability of a similar Canadian product.

5. Canadian Manufacturing Companies

There are a small number of Canadian companies involved in the manufacture of P.A. equipment. The situation is complicated by the fact that some of these companies are also Importers and/or distributors for foreign manufacturers.

There are two major manufacturers of loudspeakers in Canada; Marsland Engineering Ltd., Waterloo, Ontario, and Radio Speakers of Canada, Toronto, Ontario. Both of these companies produce a wide variety of speakers including speaker columns. Neither manufactures horn speakers. The only manufacture of horn speakers in

Canada is an assembly of imported components. Fanon Electronics, Atlas, and J.R. Tilton, all of Toronto, are the major assemblers. Occasionally the bell is manufactured locally. Yorkville Sound, Toronto assembles small quantities of horn speakers using driving units from Italy and a fibreglass bell from a Toronto manufacturer. Electro-Voice, Gananoque, Ontario, assembles some speaker columns.

Some of the principal manufacturers or assemblers of P.A. amplifiers are Marsland Engineering, Waterloo, Ontario, Multi-Vox Ltd., Montreal, Quebec, and Fanon, Toronto, Ontario.

Musicians sound equipment is manufactured mainly by Yorkville Sound, Toronto, Ontario. The only other manufacturer of note is Garnet, Winnipeg.

P.A. systems are manufactured by a variety of companies including companies whose principal business is design and installations. Some of the more notable companies are Multi-Vox, Montreal; Electro-Vox, Montreal, and Engineered Sound Systems, Toronto.

We obtained some estimates of the share of the market held by each company. There were only disclosed on the understanding that they would neither be published nor disclosed to DREE. These figures were used in compiling the estimates of market size.

D. DISTRIBUTION CHANNELS, PRODUCT CHARACTERISTICS AND PRICES

One of the areas of concern to a new manufacturer would be the workings of the distribution channel, what customers are looking for and the price structure.

1. Distribution Channels

For a market which is fairly small the Canadian distribution channels for P.A. equipment are fairly complex.

There are essentially five steps in the distribution system: Manufacturers, Importers, Distributors, Retailers and Installers. The complexity arises from the fact that some of the Importers also manufacture, some Importers are also distributors and some manufacturers are also distributors.

Despite this complexity, we can provide some examples of the distribution presently in use. Most of the P.A. equipment used in Canada is imported. For that reason there has to be an Importer or Distributor in Canada.

Bogen, a division of Lear Siegler, has one distributor in Canada: J.R. Tilton, Toronto, Ontario. J.R. Tilton is in theory the Canadian Importer for Bogen. The equipment is purchased from Bogen and then resold by J.R. Tilton to both distributors and retailers. Tilton carries a full range of spares. In the U.S. Bogen's own company representatives obtain a lot of the sales. There are also distributors across the U.S. who simply order items from Bogen as requested by customers. Bogen will carry out repairs and warranty service.

University Sound, a division of Altec of California, have two agents in Canada, J.R. Tilton, Toronto, and Chas. W. Thompson, North Vancouver. J.R. Tilton are also the sole Importer for Bogen. These agents do some assembly work on University Horn Speakers.

Another type of distribution system is maintained by DuKane. They have a Regional Sales Manager located in Canada. The equipment is either supplied directly to the customer or through a network of distributors across Canada who

handle University equipment. Their distributors don't stock the equipment but order from DuKane as required by their customers.

The Japanese company Fanon is represented in Canada by Fanon Electronics of Canada Ltd. Fanon Electronics of Canada is an importer who sells to distributors and installers. They also manufacture and assemble some product lines from components imported from Japan.

Secondary distributors buy from these large primary distributors. The secondary distributors will be either designers and installers of P.A. equipment or operators of distribution centers catering to the small installer and do-it-yourself trade.

The distribution channel for Musician's Sound Equipment is quite different from that of other P.A. equipment. Almost all the musicians equipment is sold through music stores. The end user usually knowledgeable about this equipment will make the selection himself.

The most important point about the Canadian distribution channel for P.A. equipment is that most of the imports, hence, most of the sales, are channelled through a small number of people. These people, who are the most knowledgeable people in Canada on the market for P.A. equipment, make their money by importing this equipment. A new venture in Canada to manufacture Public Address Equipment would have to establish close ties with some of these people and ensure that the rewards were as good as those obtained through importing.

2. What Customers look for in P.A. Equipment

Purchasers and specifiers of Public Address do not regard price as the most important factor in the selection of P.A. equipment. Quality of equipment, service availability, reputation of the manufacturer and features offered are more important than price.

(a) Quality

With the possible exception of the "do-it-yourself" purchaser, most people selecting P.A. equipment will have a contract to install a P.A. system. A large amount of money may be involved. The installer may have a contract to maintain the equipment for an agreed annual payment. Whatever the arrangement the end user will expect his installation to perform satisfactorily almost indefinitely.

The specifier or installer will thus look for a piece of equipment which not only meets his technical specifications but also has an established reputation for quality.

(b) Warranty and Service

In the event that the equipment does break down, the specifier will want assurance that maintenance will be easy to perform and that spare parts will be easily available. One of the negative factors mentioned about some Japanese amplifiers is that they use non-standard parts making service difficult and time consuming. Allied to the service requirement is the Warranty requirement. If a warranty is offered it must be easy to have equipment serviced under the warranty. One U.S. manufacturer of P.A. equipment - Webster - required the amplifier to be returned intact to the U.S. for service. Not only is this time consuming but the paper work required to comply with customs requirements is a major deterrent.

(c) Reputation of Manufacturer

The reputation of the manufacturer is of major importance in the purchase decision. The major U.S. manufacturers have established excellent reputations mainly through provision of good products over a long period. Their name is also well known because of the technical articles they write for various Trade

publications. A purchaser wants assurance that the manufacturer of his equipment will be in business five or ten years from now.

The technical advice, catalogues and brochures which the manufacturer provides also add to his reputation. A number of Canadian manufacturers cited instances where they lost contracts to U.S. companies. This loss was not because their equipment or price were not competitive, but because the Canadian customer was influenced by the technical assistance and literature provided by the U.S. manufacturer.

(d) Choice of Features

A choice of features is important in the purchase decision. Bogen's catalogue lists approximately 35 different types of P.A. amplifier and preamplifiers. This allows the purchaser not only choice of power output but also options such as solid state or tube, built in compressors, anti-feedback equalizer and facilities for mobile use.

There is some difference of opinion in the industry as to whether it is necessary for a manufacturer to provide such a wide choice. The companies who manufacture the wide range claim that their sales are spread fairly uniformly across the complete line. We also understand that University tried to rationalize production into four or five amplifier choices ranging from 20 to 100 Watts. This experiment is believed to have been unsuccessful. There was some agreement that a range of about ten or fifteen amplifiers is the ideal covering about five power sizes with a choice of two or three features for each size.

P.A. Loudspeakers are offered in a large variety of shapes and sizes. Fanon Electronics of Canada lists fourteen different horn speakers in their catalogue. University lists eleven trumpets which can be matched

to any of eight Driving units. They also list a wide variety of special purpose horn speakers such as underwater, explosion proof and weather proof.

There is a much smaller range of column speakers offered. They tend to fall into standard power sizes - each of the major P.A. equipment manufacturers offering a choice of about five speakers.

We understand that purchasers of speakers are less selective in their choice than is the case with P.A. amplifiers. Less money is involved and the choice will often be made from the selection offered by the same manufacturer whose amplifiers were selected.

P.A. systems are usually custom built. This places the smaller manufacturer in an equal or better position to compete for this business. He can capitalize on the better quality work which comes out of small volume manufacturers on one-off jobs. The manufacturer can also discuss with the customer the exact features he requires. However, for very large systems, such as Olympic facilities, the large, well known U.S. manufacturers are in a better position to have their product selected, again for reasons of reputation in this field and the reluctance of the purchaser to take a chance on a lesser known manufacturer.

Musicians Sound equipment manufacturers have discovered that the main requirement for their equipment is that it be up to date and competitive in price. There is a fairly rapid change in the technological features which are offered by manufacturers. Even a well established manufacturer of Musicians sound equipment will be in difficulties unless he is continuously changing his product while also remaining competitive in price.

3. Prices and Markups

One of the requirements of this study was to provide details

of the prices of P.A. equipment and the markups in the distribution channels. It became apparent as the study progressed that, due to the wide range of product variations, price comparisons were not very meaningful. The fact that the Canadian market is dominated by a number of large U.S. companies operating through a small number of Importers/Distributors makes markup data difficult to obtain and verify.

(a) Prices

There are so many product offerings and special features available in the P.A. equipment market that price details are not very meaningful. We believe that it would be most useful to simply list the prices at which two major Importers sell to the secondary distributor - dealer level. These prices are all F.O.B. Toronto. Federal Sales Tax included. Table 17 provides details of Amplifier prices.

Table 17

AMPLIFIERS

Power Out-Put (RMS)	Features	$	Power Out-Put (RMS)	Features	$
100 Watt	Solid State	160	100 Watt	Tube	170
60 Watt	Solid State	130	50 Watt	Tube	130
35 Watt	Solid State	110	35 Watt	Tube	110
20 Watt	Solid State	90	20 Watt	Tube	90
			10 Watt	Tube	60
100 Watt	Built-in Compressor	280	100 Watt	Compressor and Anti-Feedback Equalizer	280
60 Watt	Built-in Compressor	170			
35 Watt	Built-in Compressor	145	60 Watt	Compressor and Anti-Feedback Equalizer	232
20 Watt	Built-in Compressor	130			
			35 Watt	Compressor and Anti-Feedback Equalizer	208

A number of current price lists for other amplifiers, loudspeakers and accessories are contained in the Appendix. It should be remembered that P.A. equipment is purchased much more on quality and reputation than price.

(b) Markups

The distribution channels are not clearly defined. Some equipment goes through three or four stages before reaching the installer while other equipment only goes through one or two stages. This makes it difficult to specify with any degree of certainty the markups at the various levels.

The usual markup would appear to be about 50 to 60% on cost by both distributor and dealer. So an item which costs the distributor $100 will be sold to the dealer at say $150. The dealer in turn will retail the item for about $225. Both of these people aim to make about 30% profit on their selling price.

Markups at the importer level are varied depending on the arrangement for service and warranty. However, one item which we believe is typical is landed at the Importers premises in Toronto for $11.24. This includes freight, duty and Federal tax. This item is sold to the distributor for approximately $22.00, a markup of about 95% on cost. The importer of this item claimed he makes 18% on the selling cost of this item.

The exact markup at each level in the channel will depend on the number of stages through which an item passes, the demand for that item and the arrangements for repair and service.

The total Canadian market for Public Address equipment is $15.7 million. A large variety of products are offered and the market for each product is small. Most of the Canadian market is held by the U.S. and Japanese manufacturers who enjoy good reputations. P.A. equipment is selected on the basis of quality and on the reputation of the manufacturer rather than on price. Canadian manufacturers of P.A. equipment have not been very successful at competing with imports.

III

FOREIGN MARKETS FOR P.A. EQUIPMENT

A manufacturer establishing a plant in Canada would be interested in an export market to supplement the limited potential domestic market for his product. In this chapter we will examine the world market for P.A. equipment and pinpoint those areas which might be potential markets.

A. WORLD MARKETS

In examining the supply and demand situation for P.A. equipment we again face the problem of lack of published data in the specific area of P.A. equipment. The O.E.C.D. publishes data for Electronic Sound Equipment. This comprises microphones, amplifiers, speakers and Public Address systems.

The countries who import this type of equipment were ranked according to the value of imports. Total imports in 1972 amounted to about $378.6 million U.S. dollars. The U.S. was the largest importer at $124.7 million. This was 33% of total world imports.

West Germany, Netherlands, Canada, United Kingdom and France were next in order of magnitude with imports ranging from $37.6 million to $28.4 million.

Details of these imports for the years 1970, 1971 and 1972 are shown in Table 18. The figures for each country as compiled by O.E.C.D. may not correspond exactly with those published by the individual countries. The classification used by O.E.C.D. in some instances differs from that used by individual countries. The figures are good enough for the purposes of identifying the major importers.

It is interesting to examine the source countries for the $378.6 million worth of Imports. Japan is the largest exporter with a total of $143.8 million which is 38% of the total. The U.S. accounts for $45.6 million,

Table 18

MICROPHONES, AMPLIFIERS, SPEAKERS AND PUBLIC ADDRESS SYSTEMS*

MAJOR WORLD IMPORTERS
(000's U.S. dollars)

Country	1972	%	1971	%	1970	%
United States	124,726	33	80,429	31.0	64,445	30
West Germany	37,602	10	25,460	10	19,946	9
Netherlands	35,127	9	24,020	9	22,104	10
Canada	31,776	8.5	21,694	8	16,629	8
United Kingdom	29,094	8	16,961	6.5	12,616	6
France	28,370	7.5	20,331	8	13,717	6.5
Belgium - Luxembourg	18,475	5	12,878	5	9,789	4.5
Italy	12,450	3	7,729	3	6,522	3
Denmark	10,787	3	8,570	3	7,796	4
Sweden	10,642	3	10,503	4	10,059	5
All Other Countries	39,615	10	32,860	12.5	29,270	14
TOTAL	378,624	100	261,435	100	212,893	100

* SITC Commodity classification #724-92

Source: OECD Foreign Trade Series "C"
Commodity Imports 1972, 1971 and 1970

12% of the total, and West Germany exported 11.5% of the total, valued at $43.5 million. Belgium-Luxembourg, Netherlands, United Kingdom and Denmark are major exporters (Table 19).

Japan is unusual in that it is a major exporter but has little imports. The U.S., West Germany, Belgium-Luxembourg, Netherlands, United Kingdom, France and Denmark all have substantial volumes of imports and exports.

The U.S. is the largest net importer of Electronic Sound Equipment- $124.7 million of imports and $45.6 million exports.

France is a major net importer. Her imports in 1972 were $28.4 million while exports amounted to $9 million.

Netherlands imported $35.1 million and only exported $26.2 million. The United Kingdom imported $29.1 million and exported $20.9 million.

On the basis of these figures the best potential markets for Electronic Sound Equipment are the U.S., France, Netherlands and the United Kingdom. West Germany and Belgium-Luxembourg, although net exporters, might also be considered on account of the volume of their imports.

B. THE PRESENT SUPPLIERS OF THESE POTENTIAL MARKETS

We must remember that the statistics available are for all Electronic Sound Equipment not solely P.A. equipment. Bearing this in mind we can take a closer look at where the major importers get their supplies.

1. The United States

The United States in 1973 got 76% of her imports from Japan. The Far East, Canada and Mexico accounted for another 13%. Denmark, West Germany and the United Kingdom supplied 2%, 2% and 1% respectively.

2. France

France got most of her imports from neighbouring European countries. West Germany supplied her with 36%,

Table 19

MICROPHONES, AMPLIFIERS, SPEAKERS AND PUBLIC ADDRESS SYSTEMS*

MAJOR WORLD EXPORTERS
(000's U.S. dollars)

Country	1972	%	1971	%	1970	%
Japan	143,770	38	88,779	34	67,313	31.5
United States	45,597	12	31,712	12	26,604	12.5
West Germany	43,533	11.5	34,141	13	29,662	14
Belgium - Luxembourg	26,822	7	14,802	5.5	11,566	5.5
Netherlands	26,238	7	21,613	8	19,594	9
United Kingdom	20,906	5.5	16,797	6.5	13,252	6
Denmark	19,508	5	14,646	5.5	10,550	5
Italy	14,677	4	9,596	4	8,028	4
France	9,002	2	6,733	3	5,423	2.5
Far East	7,692	2	3,028	1	2,037	1
All Other Countries	22,717	6	19,608	7.5	18,864	9
TOTAL	378,624	100	261,435	100	212,893	100

*S.I.T.C. Commodity Classification #724-92

Source: OECD Foreign Trade Series "C"
Commodity Exports 1972, 1971, 1970

Belgium-Luxembourg with 16.5%, Italy with 9% and the Netherlands with 9%. The United Kingdom supplied 6.5% of the imports. The United States and Japan had 8% and 7% respectively.

3. Netherlands

A similar situation prevailed in the Netherlands with 44.5% of the imports coming from Belgium-Luxembourg and 21% from West Germany.

4. United Kingdom

The United Kingdom was unusual among the European countries in that most of her imports came from Japan and the United States with 31% and 17% respectively. The remainder came from European suppliers.

5. West Germany, Belgium and Luxembourg

Japan also supplied the largest share of West Germany's imports at 24%. Belgium-Luxembourg was supplied mainly by European countries.

Tables 20-25 give complete details for each country.

On the basis of this analysis, the most likely markets for Canadian exports would be: the United States because of the large volume of her imports and the proximity to Canada; the United Kingdom on the basis that if the United States can maintain a sizable share of the market - Canada could; West Germany because she imports from Japan which is becoming less competitive in world markets and also because the United States supplied over $3.6 million in 1973; and the Netherlands for the same reasons.

In the next section we will examine each of these markets in more detail. There are some other countries in the Caribbean, Africa, and South America to which Canadian companies have exported sound equipment in the past. These countries could be useful in the future as occasional sources of orders. It is generally believed that the markets in these countries are small and unpredictable. They are available only when the U.S. companies are not interested. One area which could be

Table 20

MICROPHONES, AMPLIFIERS, SPEAKERS AND PUBLIC ADDRESS SYSTEMS

MAJOR SUPPLIERS TO THE U.S.A.
(000's U.S. dollars)

Country	1973[2]	%	1972[1]	%	1971[1]	%	1970[1]	%
Japan	107,581	76	98,255	79	62,911	78	49,517	77
Far East	9,661	7	5,135	4	1,864	2	1,717	2.5
Canada	4,839	3.5	3,869	3	3,205	4	3,021	4.5
Mexico	3,786	2.5	3,595	3	871	1	342	0.5
Ireland	2,763	2	2,729	2	2,873	3.5	2,249	3.5
Denmark	2,592	2	2,713	2	2,264	3	1,349	2
West Germany	2,933	2	2,680	2	2,149	3	1,900	3
United Kingdom	2,011	1	2,205	2	1,798	2.5	1,558	2.5
All Other Countries	5,699	4	3,545	3	2,494	3	2,792	4.5
TOTAL	141,865	100	124,726	100	80,429	100	64,445	100

Source: (1) OECD Foreign Trade Series "C"
Commodity Imports 1972, 1971, 1970

(2) U.S. Department of Commerce Foreign Trade Imports F. T. 135-73-12

Table 21

MICROPHONES, AMPLIFIERS, SPEAKERS AND PUBLIC ADDRESS SYSTEMS

MAJOR SUPPLIERS TO FRANCE
(000's U.S. dollars)

Country	1972	%	1971	%	1970	%
West Germany	10,325	36	7,149	35	4,314	32
Belgium - Luxembourg	4,678	16.5	1,992	10	1,480	11
Italy	2,582	9	1,866	9	1,678	12
Netherlands	2,482	9	3,678	18	2,852	21
United States	2,344	8	1,694	8	1,272	9
Japan	1,912	7	1,145	6	588	4
United Kingdom	1,854	6.5	1,311	6.5	709	5
All Other Countries	2,193	8	1,496	7.5	824	6
TOTAL	28,370	100	20,331	100	13,717	100

Source: O.E.C.D. Foreign Trade Series "C"
Commodity Imports 1972, 1971, 1970

Table 22

MICROPHONES, AMPLIFIERS, SPEAKERS AND PUBLIC ADDRESS SYSTEMS

MAJOR SUPPLIERS TO THE NETHERLANDS
(000's U.S. dollars)

Country	1972	%	1971	%	1970	%
Belgium -Luxembourg	15,675	44.5	9,259	38.5	7,766	35
West Germany	7,315	21	6,153	25.5	5,631	25.5
Japan	2,779	8	1,771	7.5	1,451	6.5
United States	2,596	7.5	1,431	6	1,369	6
United Kingdom	2,054	6	1,664	7	1,349	6
Italy	1,117	3	774	3	857	4
All Other Countries	3,591	10	2,968	12.5	3,681	17
TOTAL	35,127	100	24,020	100	22,104	100

Source: O.E.C.D. Foreign Trade Series "C" commodity Imports 1972, 1971 & 1970

Table 23

MICROPHONES, AMPLIFIERS, SPEAKERS AND PUBLIC ADDRESS SYSTEMS

MAJOR SUPPLIERS TO THE UNITED KINGDOM
(000's U.S. dollars)

Country	1972	%	1971	%	1970	%
Japan	9,039	31	3,339	19.5	1,820	15
United States	4,956	17	3,331	19.5	2,933	23
Denmark	3,623	13	2,436	14	1,180	9
Germany	3,130	11	2,569	15	2,314	18
Netherlands	2,022	7	1,622	10	1,614	13
Belgium - Luxembourg	1,518	5	734	4	160	1
Sweden	930	3	485	3	222	2
Italy	893	3	302	2	143	1
All Other Countries	2,983	10	2,143	13	2,222	18
TOTAL	29,094	100	16,961	100	12,616	100

Source: O.E.C.D. Foreign Trade Series "C"
Commodity Imports 1972, 1971, 1970

Table 24

MICROPHONES, AMPLIFIERS, SPEAKERS AND PUBLIC ADDRESS SYSTEMS

MAJOR SUPPLIERS TO WEST GERMANY
(000's U.S. dollars)

Country	1972	%	1971	%	1970	%
Japan	8,700	24	5,135	20	3,264	16
Italy	5,367	14	3,647	14	2,761	14
France	5,318	14	3,410	13	1,810	9
Netherlands	4,242	11	2,547	10	3,241	16
United States	3,611	9.5	2,751	11	2,277	12
Denmark	3,166	8.5	2,021	8	1,325	7
United Kingdom	2,711	7	2,580	10	1,841	9
Belgium-Luxembourg	1,743	5	1,413	6	1,048	5
All Other Countries	2,744	7	1,956	8	2,379	12
TOTAL	37,602	100	25,460	100	19,946	100

Source: OECD Foreign Trade Series "C"
Commodity Imports 1972, 1971, 1970

Table 25

MICROPHONES, AMPLIFIERS, SPEAKERS AND PUBLIC ADDRESS SYSTEMS

MAJOR SUPPLIERS TO BELGIUM-LUXEMBOURG
(000's U.S. dollars)

Country	1972	%	1971	%	1970	%
Netherlands	6,449	35	4,463	35	3,552	36.5
Germany	3,968	21.5	2,924	22	2,179	22
Japan	2,550	14	1,797	14	1,359	14
Italy	1,320	7	702	5.5	550	5.5
United States	1,147	6	839	6.5	900	9
United Kingdom	920	5	605	5	494	5
All Other Countries	2,121	11.5	1,548	12	755	8
TOTAL	18,475	100	12,878	100	9,789	100

Source: O.E.C.D. Foreign Trade Series "C"
Commodity Imports 1972, 1971, 1970

further investigated is the Middle East. Iran and the other oil kingdoms have been purchasing increasing quantities of electronic equipment.

C. A CLOSER LOOK AT THE POTENTIAL MARKETS

We have been examining the markets for Electronic Sound Equipment. In this section we will try to pinpoint the potential for P.A. equipment in these markets.

1. Western Europe

Although the Netherlands purchased $2.8 million of Electronic Sound Equipment from Japan and $2.6 million from the United States we believe that most of the imports were not P.A. equipment. We also understand that a similar situation exists in West Germany, where the imports from Japan and the U.S. are more in the field of home entertainment than P.A. equipment.

There is a well developed electronics industry in the Western European countries especially Germany, Netherlands, Belgium and Luxembourg. North American manufacturers of P.A. equipment have no advantage either as regards price or technology in these markets.

The United Kingdom in the past has been a customer for Canadian Electronic Equipment. The United States supplies the U.K. with sizable quantities of Electronic Sound Equipment as does Japan. The U.K. with a population of over 55 million people and much industry needs P.A. equipment.

The United Kingdom is unusual among the Western European countries in that the largest share of her imports of Electronic Sound Equipment come from Japan not Europe. With the entry of the U.K. to the E.E.C., the European manufacturers will find themselves in a more competitive position. If a Canadian manufacturer of P.A. equipment

were to market his product, he would face competition not only from these European manufacturers but also the major U.S. manufacturers. After July 1st, 1977 Canadian exporters will no longer enjoy any advantage from the Commonwealth Preference Tariff.

Overall, the indications are that West Germany and Netherlands are not likely to be useful markets for Canadian manufacturers of P.A. equipment. The U.K. market has some potential but would be very competitive. A number of the major U.S. manufacturers of P.A. equipment are presently negotiating with European manufacturers to establish Joint Ventures or licensing arrangements in Europe. They are doing this in order to be competitive on the European market.

2. The U.S. Market

The total U.S. market for Public Address equipment is estimated to be nine to ten times that of Canada - about $150 million in 1973. The breakdown into the product groups is similar to the Canadian market. This is shown in Table 26 below:

Table 26

PUBLIC ADDRESS EQUIPMENT

UNITED STATES DOMESTIC MARKET - 1973
(million dollars)

	Value
P.A. Amplifiers	27
P.A. Cone Speakers	20
P.A. Horn Speakers	15
P.A. Column Speakers	19
P.A. Systems	21
Musicians Sound Equipment	48
TOTAL MARKET-	150

(a) Best Market Areas

According to the President of one of the largest U.S. manufacturers of P.A. equipment, the best market area, at present, is the South East. This includes Florida, North Carolina, South Carolina, Georgia and Mississippi. The West Coast is the next best followed by the South, especially Texas.

The North East and Mid-West have been very slow markets of late with little growth or expansion.

(b) Suppliers of the U.S. Market

Like the Canadian Market, most of the U.S. market is supplied by U.S. manufacturers. These are the same large manufacturers who hold the Canadian market. The Japanese have not had a major impact on the U.S. market. U.S. manufacturers attribute this to the wide range of product-line required which does not lend itself to the Japanese mass production techniques. More importantly the Japanese have failed to build a reputation for quality and reliability. Availability of spare parts and service has been a major deterrent to potential purchasers of Japanese equipment. It is believed that the Japanese share of the U.S. market is considerably less than their share of the Canadian market.

Denmark and West Germany have shipped very small quantities of P.A. equipment to the U.S. They face the same problem of being unable to compete with the U.S. companies as far as reputation for quality and reliability is concerned.

(c) Canadian Sales to the U.S.

The only areas where Canadian companies have had any success in the U.S. market place is in musicians

sound equipment and P.A. systems. Yorkville Sound of Toronto are about number seven in the ranking of North American musicians sound equipment manufacturers. Yorkville export a sizeable share of their annual production and most of this goes to the U.S. market. They have established a small manufacturing plant in New York State which does some assembly on products for sale in the U.S. Despite this limited success in the U.S., Canada's total exports of musicians sound equipment to the U.S. in 1973 was only about $1.25 million.

Some Canadian manufacturers have exported small quantities of P.A. systems to the United States. These systems were highly customized with each item produced almost to order. Under these circumstances, when economies of scale do not apply, the Canadian firm is not at a competitive disadvantage. It is still necessary for the Canadian manufacturer to convince the potential customer that the quality of product will be as good or better than that manufactured by the large U.S. companies.

We can conclude this analysis of the potential export market for Canadian manufactured P.A. equipment by saying that there are no obvious openings in any of the major market places. A company without a well established reputation would have little hope of success on any of the export markets.

IV

THE MANUFACTURING OPPORTUNITY IN CANADA

In this chapter we will examine the potential for a successful P. A. equipment manufacturing operation in Canada. Additionally, we will identify potential manufacturers.

A. MANUFACTURING FOR THE CANADIAN MARKET

The Canadian market for P. A. equipment is an estimated $15.7 million. Over 73% of this market is supplied by imports. At first sight this would appear to offer a good opportunity to establish a successful manufacturing operation in Canada.

1. Technology is no problem

The technological expertise required to manufacture P. A. equipment would pose no great problem to a Canadian manufacturer. The manufacture of P. A. amplifiers is very similar to that of any audio amplifier. Except for musicians' equipment, the technology does not change very rapidly. Canadian manufacturers of loudspeakers are successfully manufacturing all types of speakers with the exception of horn speakers.

All the components are readily available in Canada to manufacture any kind of P. A. equipment. Some components such as magnets would be imported but it is predicted that these may soon be manufactured in Canada.

Engineers, technicians and assembly workers are available, certainly in metropolitan areas. One interviewee claimed that Canadian universities are not educating sound systems engineers. He claimed that it is necessary for a Canadian designer of P. A. systems to hire engineers who have been trained by the large U. S. com-

panies. These engineers tend to specify equipment manufactured by U.S. companies with which they are familiar. This is more a marketing obstacle than a manufacturing obstacle and is not a major problem.

There is no manufacturing obstacle which would prevent the successful establishment of a P.A. equipment manufacturing operation in Canada. The issue thus becomes one of market size.

2. The market for each product group is too small and the competition very severe

When the $15.7 million market is subdivided into the major product groups the available market becomes quite small. The total market for P.A. amplifiers is estimated at $2.85 million. Some of the existing manufacturers offer up to 35 different models of P.A. amplifiers. If we assume say 20 models as being necessary to service the market, then the yearly sales per model would be $142,000. Even assuming some commonality between models and that one company had all the market, the production runs per model would be too small to justify the tooling costs. It is not even conceivable that one company could capture the complete market unless imports were 100% restricted.

A similar situation exists with the manufacture of horn speakers -- the total market per speaker model is small and tooling costs are high. One company was recently quoted a figure of $6,000 for the tooling required for a single part of one model of horn speaker.

Marsland Engineering and Radio Speakers both have the capability to manufacture almost any type of cone speaker or column speaker required. Despite this capability they have not managed to displace the major foreign manufacturers of P.A. speakers from the Canadian market.

The market potential for Musicians Sound equipment is better: the total market at $5 million is larger. However, existing Canadian manufacturers are struggling to survive in the face of heavy competition from U. S. companies both in price and features offered. The recent history in Canada has been for Musicians Sound equipment manufacturers to go out of business until there are now only two or three remaining. An additional manufacturer might so reduce the market share available to each manufacturer that all would go out of business.

The P. A. systems market of $2. 2 million is small, considering the wide variety of systems marketed. A number of manufacturers of P. A. systems in Canada who have the capability and facilities to supply all the market and at a competitive price. The expertise of these companies lies more in manufacturing than in marketing. Even with a great improvement in their marketing, it is unlikely that Canadian manufacturers could greatly increase their share of the market. This is because of the dominance of the large, renowned manufacturers.

The people most knowledgeable about marketing P. A. equipment in Canada are all involved in the import distribution network. These people have a vested interest in preventing a Canadian manufacturer from establishing a foothold in the market.

The Canadian market is too small and spread over too many product lines to offer a viable market opportunity for a new manufacturing venture. In addition, a new Canadian manufacturer could not hope to capture more than a very small share of this already small market in competition with the large foreign companies.

B. MANUFACTURING FOR EXPORT

Even a small Canadian market, if combined with a good export

market might allow a viable Canadian manufacturing operation. However, it does not appear that such an opportunity exists.

The U.S. market is the largest and closest market available. Even 10% of this market would equal the total Canadian market. Unfortunately, the market prospects for a new product in the U.S. are even worse than in Canada. Manufacturers who are not well known have even less chance of selling their product in the U.S. than is the case in Canada. The U.S. customer is very concerned with quality and reputation. A recent survey[1] among specifiers of P.A. and Intercom equipment showed 83.1% regarding Quality of Equipment as the most important factor in their decision. Price was of first concern to only 30.6% of the respondents.

The U.S. companies have established such a record for quality and reliability that even the Japanese manufacturers have not had a major impact on the U.S. market for P.A. equipment.

The other export markets for P.A. equipment such as Europe, Africa, the Caribbean, South America and the Middle East, as discussed earlier, are at best likely to be erratic, unpredictable and insufficient to maintain a viable enterprise. Existing Canadian manufacturers of P.A. equipment can certainly supply any demand which is likely to arise.

In the absence of a market opportunity, either domestic or export, for a new manufacturer of P.A. equipment, is there anything Canada can do to reverse the balance of trade? In the next chapter, we outline one possibility.

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[1] "Audio Systems Study", a research report from Architectural Record.

V

ATTRACTING A FOREIGN MANUFACTURER TO CANADA

Both the Canadian and U.S. markets are dominated by a few large U.S. manufacturers. Japanese manufacturers control a small share of the U.S. and Canadian markets. West German and Dutch manufacturers supply small quantities of P.A. equipment to the U.S. market. Both the U.S. and Japanese companies are also established in the other major markets in Europe.

If one of these established manufacturers were to relocate some or all of his manufacturing facilities in Canada, then the balance of trade could change fairly rapidly. Such a manufacturer would have both the critical established reputation and the distribution network. The tooling and expertise would already be developed. The chances of a successful venture would be very high. A number of existing Canadian electronic manufacturers have expressed interest in a joint venture with an established foreign manufacturer of P.A. equipment.

A. ARE ANY ESTABLISHED MANUFACTURERS INTERESTED IN RELOCATING MANUFACTURING FACILITIES IN CANADA?

During the course of this study, we discussed this topic with senior executives of a number of major P.A. equipment manufacturers.

1. U.S. Manufacturers

There is no economic reason why any established U.S. manufacturer should relocate a manufacturing facility in Canada. He already holds a share of the Canadian market which, because of competition, is unlikely to increase significantly by locating here. Even if he did manage to increase his share considerably, the total

Canadian market is too small to compensate for the disadvantage he would face on the U. S. market. His shipments to the U. S. would be subject to the 7-1/2% tariff. Rebates of duty could be obtained on components previously shipped from the U. S. under the provision of the Tariff Act, paragraphs 806.30 and 807.00. These provisions could be removed or reduced under proposed new trade bills presently being debated in the U.S. Congress.

Labour costs in Canada are not lower than those prevailing in many areas of the U. S. One U. S. manufacturer of electronic products has plants in Michigan, Tennessee and Gananoque, Ontario. His direct labour costs in Tennessee are two-thirds those of the Michigan plant. The labour cost in the Gananoque plant is about midway between the costs in Michigan and Tennessee. However, for most P. A. equipment, labour costs are only about 10-15% of the cost. Cheaper labour would not be a significant factor in a decision to relocate.

With the abolition of the Commonwealth Preference Tariff, Canada no longer has an advantage over the U. S. as far as trade with the U. K. is concerned.

Looking at the possible attractions of a Canadian site, we find that availability of components appears to be better in Canada than in the U. S. One U. S. manufacturer of P. A. equipment has a 60 week backlog of orders due to component shortages.

Under present rules, U. S. companies which ship components abroad for assembly and then re-import the final product, can obtain a rebate on that portion of the value represented by the original U. S. component. This provision could be used by a U. S. manufacturer locating a plant in Canada.

The only other attraction would be financial assistance from the Canadian government. The companies we

talked to felt that short of a complete tax holiday, no financial aid would be significant enough to influence them towards a plant in Canada.

Bogen who have a plant in Paramus, N.J. are facing increasing transportation costs to the West Coast markets. They might find it attractive to locate a plant in British Columbia to serve this market. Another company expressed some interest in a Canadian plant because of problems presently being experienced with unions.

On the basis of limited available data we have concluded that a U.S. manufacturer is most unlikely to find economic advantage through locating a plant in Canada. It is significant that a number of existing Canadian manufacturers have already approached U.S. manufacturers on the possibility of a joint venture or licensing arrangement. To date, the results have all been a negative reaction from the U.S. manufacturer.

2. Japanese Manufacturers

The two dollar devaluations and the revaluation of Japan's currency have increased the U.S. cost of the Yen by 37% since 1971. This makes Japanese products more costly on the North American market. In addition, Japan's inflation rate has been much higher than in the U.S. or Canada. One Japanese manufacturer of P.A. equipment had his direct labour costs rise by almost 40% in 1973. Transportation costs are increasing rapidly from Japan to North America. Japanese manufacturers should be very interested in locating a manufacturing plant in Canada.

Japan has an existing interest in the North American market for P.A. equipment. A distribution network is already in existence. Japanese P.A. products have never established a great reputation particularly in the U.S. However, Japanese manufacturers of all electron-

ics products have been working very hard at getting away from the image of cheap, poor quality products. They have succeeded so well that some Japanese manufacturers like Sony, are leaders in their field for quality products. This reputation could soon be available to Japanese P.A. equipment if they can stay in the North American market.

Japanese manufacturers like Fanon and Toa have the expertise, tooling and sales knowledge already available. Canada could provide the base for marketing not only to the U.S. and Canada but possibly to other offshore markets where Japan already has a market.

A Japanese manufacturer presents the best opportunity for viable Canadian manufacture of P.A. equipment.

3. Manufacturers from Europe

A number of manufacturers in Germany and Denmark have established good reputations in Europe. They have only supplied small quantities to the North American market.

A West German manufacturer has expressed an interest in establishing a manufacturing facility in Canada mainly for the manufacture of P.A. systems. We see such a venture having much the same problems in establishing itself as a Canadian company. Although West German electronics manufacturers generally enjoy a good reputation for quality and reliability, the lack of a specific reputation, in North America, for P.A. equipment could be a major obstacle to successful penetration of the market.

U.S. manufacturers have no major incentive towards locating a manufacturing plant in Canada. Some European manufacturers might be interested but their chances of success in the market are

not much better than a Canadian manufacturer. The establishment of a plant by a Japanese company offers the best chance of a successful venture. Japanese manufacturers are interested in locating here.

B. LOCATING IN A DESIGNATED AREA

Assuming that a foreign company decided to locate a plant in Canada, would he locate in a Designated Area? Many of the existing Canadian manufacturers of Electronic Sound equipment expressed some concern about a location in a Designated Area. Some of their concerns were:

- remoteness from the major Canadian markets in Toronto and Montreal;
- high transportation costs for raw materials, packaging materials and the finished products;
- lack of skilled labour with consequent need to train staff;
- lower levels of productivity;
- reluctance of existing staff to move.

It was interesting that in our discussions with U.S. manufacturers, none of these "obstacles" were regarded as important. The companies believed that these problems could be easily overcome.

There are many places in Designated Areas where transportation companies would welcome backhaul business. The total North American market for P.A. equipment has the major markets located in the South East, South and Western States. A manufacturing plant located in a Designated Area would probably be as convenient to the market as a location in Toronto or Montreal.

Lack of skilled labour can be overcome with the assistance of Federal training grants. Productivity may be lower in Designated

Areas but this can be compensated for by a better attitude towards work which is common in many non-Metropolitan regions. A foreign company locating here would not have the problem of staff reluctance to move. The usual arrangement would be to transfer some key staff from the home location to help during start-up and then turn the plant over to local management.

A Japanese manufacturer of P. A. equipment locating a plant in Canada to serve the North American market appears to offer the best chance of a successful venture. Location in a Designated Area would present no major disadvantages.

APPENDIX A

U.S. IMPORTS OF ELECTRONIC SOUND EQUIPMENT BY CUSTOMS DISTRICT OF ENTRY - 1973

U.S. IMPORTS BY CUSTOMS DISTRICT OF ENTRY - 1973

PUBLIC ADDRESS SYSTEMS AND MUSIC DISTRIBUTION SYSTEMS

District	Value[1] ($000)	District	Value[1] ($000)
New York City, N.Y.	7,124	Philadelphia, Penn.	72
Los Angeles, Calif.	3,942	Honolulu, Hawaii	62
Seattle, Washington	1,741	New Orleans, La.	55
Chicago, Ill.	787	San Diego, Calif.	52
Cleveland, Ohio	785	Bridgeport, Conn.	51
San Francisco, Calif.	614	Tampa, Florida	35
Miami, Florida	465	San Juan, Puerto Rico	29
St. Louis, Miss.	427	Norfolk, Virginia	26
Portland, Oregon	361	El Paso, Texas	19
Boston, Mass.	355	Ogdensburg, N.Y.	5
Houston, Texas	299	Charleston, S. Carolina	5
Savannah, Georgia	273	Laredo, Texas	4
Minneapolis, Minn.	150	Milwaukee, Wisconsin	4
Buffalo, N.Y.	139	Washington, D.C.	2
Baltimore, Maryland	91	St. Albans, Vermont	1.5
Detroit, Michigan	86	Anchorage, Alaska	1
Wilmington, N. Carolina	82	Nogales, Arizona	.5
		TOTAL -	18,145

[1] C.I.F. Port of Entry

Source: U.S. Department of Commerce

U.S. IMPORTS BY CUSTOMS DISTRICT OF ENTRY - 1973

AUDIO AMPLIFIERS

District	Value[1] ($000)	District	Value[1] ($000)
Los Angeles, Calif.	10,400	Ogdensburg, N.Y.	63
New York City, N.Y.	8,100	Miami, Florida	52
Chicago, Ill.	4,405	Wilmington, N.C.	39
Buffalo, N.Y.	1,086	Portland, Oregon	37
Seattle, Washington	683	Savannah, Georgia	35
San Francisco, Calif.	519	St. Albans, Vermont	33
San Diego, Calif.	491	El Paso, Texas	28
Boston, Mass.	362	New Orleans, La.	22
Houston, Texas	260	Bridgeport, Conn.	16
Philadelphia, Penn.	228	Charleston, S.C.	11
Cleveland, Ohio	191	Pembina, N.D.	11
Baltimore, Maryland	144	Milwaukee, Wisc.	8
Honolulu, Hawaii	117	Tampa, Florida	6
Nogales, Arizona	108	Minneapolis, Minn.	5
Detroit, Michigan	93	Washington, D.C.	2
San Juan, Puerto Rico	92	Laredo, Texas	2
St. Louis, Mo.	92	Providence, R.I.	1
Anchorage, Alaska	91	TOTAL -	27,833

(1) C.I.F. Port of Entry

Source: U.S. Department of Commerce

U.S. IMPORTS BY CUSTOMS DISTRICT OF ENTRY - 1973

MICROPHONES

District	Value[1] ($000)	District	Value[1] ($000)
New York, N.Y.	3,588	Wilmington, N.C.	23
Los Angeles, Calif.	3,174	Bridgeport, Conn.	18
Seattle, Washington	955	San Juan, Puerto Rico	17
Chicago, Ill.	925	Detroit, Michigan	9
San Francisco, Calif.	336	Honolulu, Hawaii	7
Boston, Mass.	305	Milwaukee, Wisc.	6
Savannah, Georgia	106	Minneapolis, Minn.	4
Cleveland, Ohio	101	Anchorage, Alaska	4
Houston, Texas	99	El Paso, Texas	3
Miami, Florida	89	Laredo, Texas	3
Baltimore, Maryland	65	New Orleans, Louisiana	2
Philadelphia, Penn.	58	Pembina, N.D.	2
St. Louis, Mo.	54	Ogdensburg, N.Y.	1
Buffalo, New York	38	Washington, D.C.	.5
Portland, Oregon	36	Nogales, Arizona	.5
Tampa, Florida	35	TOTAL -	10,064

(1) C.I.F. Port of Entry

Source: U.S. Department of Commerce

U.S. IMPORTS BY CUSTOMS DISTRICT OF ENTRY - 1973

LOUDSPEAKERS

District	Value[1] ($000)	District	Value[1] ($000)
Los Angeles, Calif.	24,114	Baltimore, Maryland	519
New York City, N.Y.	21,424	Detroit, Michigan	423
Chicago, Ill.	6,560	Portland, Oregon	420
Seattle, Washington	6,180	Savannah, Georgia	256
Boston, Mass.	3,981	El Paso, Texas	236
Cleveland, Ohio	2,995	Wilmington, N. Carolina	141
Philadelphia, Penn.	2,125	Minneapolis, Miss.	118
Laredo, Texas	1,566	Washington, D.C.	35
Miami, Florida	1,035	Tampa, Florida	32
San Juan, Puerto Rico	1,028	Bridgeport, Conn.	30
San Francisco, Calif.	958	Duluth, Minn.	19
Nogales, Arizona	917	San Diego, California	17
Houston, Texas	777	Milwaukee, Wisc.	15
St. Louis, Mo.	774	Anchorage, Alaska	6
Norfolk, Virginia	716	Ogdensburg, N.Y.	6
Buffalo, New York	687	Pembina, N.D.	3
New Orleans, Louisiana	624	Charleston, S. Carolina	.5
Honolulu, Hawaii	623	Mobile, Alabama	.5
		TOTAL -	79,361

(1) C.I.F. Port of Entry

Source: U.S. Department of Commerce

APPENDIX B

TARIFFS APPLICABLE TO P.A. EQUIPMENT IMPORTED BY SPECIFIED COUNTRIES

TARIFFS APPLICABLE TO P.A. EQUIPMENT IMPORTED BY SPECIFIC COUNTRIES

Importing Country	Tariff Item	Country of Origin	
		Canada	U. S. or Japan
		(C. I. F. ad valorem)	
		%	%
France	85.14	7	7
West Germany	85.14	7	7
Italy	85.14	7	7
Spain	85.14	19.5	19.5
Netherlands	85.14	7	7
Japan	85.14	6	6
Australia	85.14.900	35	35
United States	684.70	7½	7½
Jamaica	85.14	35	45
United Kingdom[1]	85.14	7.0	8.8
Iran	85.14	30% + 70%[2]	30% + 70%[2]
Mexico	See Appendix B3 for details - minimum of 20 percent		

[1] See Appendix B2 for details.

[2] Commercial Benefit tax - exempted when purchase made by Government Agency.

(All Items subject to local sales where applicable.)

TARIFF APPLICABLE TO P.A. EQUIPMENT IMPORTED INTO THE UNITED KINGDOM

Tariff Item 85.14 comprises two sections.
85.14A covers equipment for voice transmission only.
85.14B covers equipment which could be used for music transmission.

Country of Origin	85.14A (C.I.F. ad valorem) %	85.14B (C.I.F. ad valorem) %
All countries other than specified below	8.8	8.8
Commonwealth Preference Countries (includes Canada)	2.8	7.0
Other E.E.C. member countries	6.0	6.0
E.F.T.A. and Ireland	----	Free
E.F.T.A. and lesser developed Commonwealth	Free	----

NOTE: The full C.E.T. (Common External Tariff) to be applied by all E.E.C. to imports from non-members is 7%. In the U.K. this will be fully introduced by July 1st, 1977. Present U.K. rates will adjust in 3 equal stages on January 1st, 1974, 1975 and July 1st, 1977.

Imports from E.E.C. member countries to the U.K. will be free of duty.

Commonwealth Preference Rate: Imports from Canada must conform with the following requirements to qualify for Commonwealth Preferential Rates:

1. Canadian content must be at least 50%;
2. Goods of value F.O.B. works must be manufactured in Canada;
3. Goods must be consigned from a point in Canada.

TARIFFS APPLICABLE TO GOODS IMPORTED
BY MEXICO FROM COUNTRIES OTHER THAN SOUTH AMERICA

85.14A 001 Microphones

0.30 Pesos per Kilogram

plus

40% ad valorem (minimum value of 130 pesos per kilogram)

85.14A 002 Loudspeakers

20% ad valorem (minimum of 5 pesos per kilogram)

85.14 002 Amplifiers and PreAmplifiers

0.35 Pesos per Kilogram

plus

50% ad valorem (minimum of 80 pesos per kilogram)

APPENDIX C

ELECTRONIC SOUND EQUIPMENT

UNITED STATES

PRODUCTION, EXPORTS, IMPORTS AND APPARENT CONSUMPTION

MICROPHONES, AMPLIFIERS, SPEAKERS PUBLIC ADDRESS SYSTEMS AND PARTS

UNITED STATES DOMESTIC PRODUCTION EXPORTS, IMPORTS & APPARENT CONSUMPTION

(000's U.S. dollars)

Year	Domestic[1] Production	Exports[2]	Imports[2]	Apparent* Consumption
1970	168,203	22,806	64,445	209,842
1971	177,996	31,379	80,429	227,046
1972	Not published	46,498	124,726	
1973	Not published	73,397	141,865	

* Apparent Consumption = Domestic Production + Imports - Exports

Source: (1) U.S. Department of Commerce Current Industrial Reports. "Selected Electronic + Associated Products" MA36 Reports for 1969, 1970 and 1971

(2) U.S. Department of Commerce. December FT410 + FT 135, 1970 - 1973

PUBLIC ADDRESS SYSTEMS
MUSIC DISTRIBUTION SYSTEMS

UNITED STATES DOMESTIC PRODUCTION
EXPORTS, IMPORTS & APPARENT CONSUMPTION
(000's U.S. dollars)

Year	No. of Companies with shipments greater than $100,000	Domestic Production	Exports	Imports	Apparent* Consumption
1970	9	12,966	2,074	9,948	20,840
1971	8	13,082	2,626	13,131	23,587
1972	Not published	Not pub.	3,388	19,931	
1973	Not published	Not pub.	3,749	18,145	

* Apparent Consumption = Domestic Production + Imports - Exports

Source: (1) U.S. Department of Commerce Current Industrial Reports. "Selected Electronic + Associated Products" MA36 Reports for 1969, 1970 & 1971

(2) U.S. Department of Commerce Foreign Trade Imports + Exports December FT410+FT 135, 1970 - 1973

SPEAKERS

UNITED STATES DOMESTIC PRODUCTION
EXPORTS & IMPORTS + APPARENT CONSUMPTION
(000's U.S. dollars)

Year	No. of Companies with[1] shipments greater than $100,000	Domestic[1] Production	Exports[2]	Imports[2]	Apparent* Consumption
1970	25	105,684	10,496	32,900	128,088
1971	23	114,735	15,211	40,348	139,872
1972	Not published	Not pub.	23,708	65,055	
1973	Not published	Not pub.	38,668	79,361	

*Apparent Consumption = Domestic Production + Imports - Exports

Source: (1) U.S. Department of Commerce Current Industrial Reports. "Selected Electronic + Associated Products" MA36 Reports for 1969, 1970 & 1971

(2) U.S. Department of Commerce Foreign Trade Imports + Exports December FT410+FT 135, 1970 - 1973

AMPLIFIERS

UNITED STATES DOMESTIC PRODUCTION
EXPORTS & IMPORTS + APPARENT CONSUMPTION
(000's U.S. dollars)

Year	No. of Companies with shipments greater than $100,000	Domestic Production	Exports	Imports	Apparent* Consumption
1970	13	18,157	6,671	13,487	24,973
1971	13	17,503	9,854	16,686	24,335
1972	Not published	Not pub.	14,711	23,430	
1973	Not published	Not pub.	29,212	27,833	

* Apparent Consumption = Domestic Production + Imports - Exports

Source: (1) U.S. Department of Commerce Current Industrial Reports "Selected Electronic + Associated Products" MA 36 Reports for 1969, 1970 and 1971

(2) U.S. Department of Commerce Foreign Trade Imports + Exports December FT410+FT 135, 1970 - 1973

MICROPHONES

UNITED STATES DOMESTIC PRODUCTION
EXPORTS & IMPORTS + APPARENT CONSUMPTION
(000's U.S. dollars)

Year	No. of Companies with shipments greater than $100,000	Domestic Production	Exports	Imports	Apparent* Consumption
1970	10	31,396	3,565	4,927	32,758
1971	9	32,676	3,688	5,813	34,801
1972	Not published	Not pub.	4,691	7,984	
1973	Not published	Not pub.	5,517	10,064	

* Apparent Consumption = Domestic Production + Imports - Exports

Source: (1) U.S. Department of Commerce Current Industrial Reports. "Selected Electronic + Associated Products" MA36 Reports for 1969, 1970 & 1971

(2) U.S. Department of Commerce Foreign Trade Imports + Exports December FT410 +FT 135, 1970 - 1973

UNITED STATES

MAJOR SUPPLIERS OF PUBLIC ADDRESS SYSTEMS
(000's U.S. dollars)

Country	1973	%	1972	%	1971	%	1970	%
Japan	15,470	85	17,866	90	11,588	88	7,646	76.5
West Germany	992	5.5	570	3	503	4	456	4.5
Denmark	634	3.5	477	2	285	2	368	4.0
Taiwan & Hong Kong	362	2	170	1	185	1.5	528	5.5
Canada	163	1	191	1	117	1	450	4.5
All Other Countries	523	3	657	3	453	3.5	499	5
TOTAL	18,144	100	19,931	100	13,131	100	9,947	100

Source: U.S. Dept. of Commerce Foreign Trade Report F.T. 135, 1973, 1972, 1971 and 1970.

UNITED STATES

MAJOR SUPPLIERS OF MICROPHONES
(000's U.S. dollars)

Country	1973	%	1972	%	1971	%	1970	%
Japan	8,016	80	5,747	71	4,304	74	3,602	73
Austria	839	8	539	7	346	6	305	6
West Germany	767	7.5	811	10	610	10.5	520	10.5
United Kingdom	143	1.5	449	5.5	301	5	124	2.5
Netherlands	120	1	281	3.5	134	2.5	239	5.5
Switzerland	50	.5	39	.5	32	.5	31	.5
All Other Countries	129	1.5	118	1.5	86	1.5	106	2
TOTAL	10,063	100	7,984	100	5,813	100	4,927	100

Source: U.S. Dept. of Commerce Foreign Trade Report F.T. 135, 1973, 1972, 1971 and 1970.

UNITED STATES

MAJOR SUPPLIERS OF SPEAKERS
(000's U.S. dollars)

Country	1973	%	1972	%	1971	%	1970	%
Japan	61,413	77	53,904	83	33,439	83	28,141	85
Hong Kong & Taiwan	8,586	11	3,660	5	1,178	3	586	2
Mexico	2,481	3	928	1.5	640	1.5	28	---
Denmark	1,878	2	2,177	3	1,905	4.5	918	3
Canada	1,141	1.5	816	1.5	798	2	594	2
Netherlands	933	1.5	616	1	313	1	420	1
United Kingdom	836	1	837	1.5	717	2	790	2.5
West Germany	675	1	938	1.5	670	1.5	508	1.5
All Other Countries	1,417	2	1,179	2	688	1.5	915	3
TOTAL	79,361	100	65,055	100	40,348	100	32,900	100

Source: U.S. Department of Commerce Foreign Trade Report FT 135, 1973, 1972, 1971 and 1970

UNITED STATES

MAJOR SUPPLIERS OF AMPLIFIERS
(000's U.S. dollars)

Country	1973	%	1972	%	1971	%	1970	%
Japan	19,645	71	17,411	74	11,012	66	8,607	64
Ireland	2,763	10	2,565	11	2,871	17	2,166	16
Canada	1,294	4.5	1,212	5	1,278	7.5	1,463	11
Korean Republic	1,411	5	148	.5	147	1	4	--
United Kingdom	814	3	662	3	558	3	347	2.5
Mexico	599	2	96	.5	121	1	28	.2
France	330	1	18	--	25	--	10	.1
Taiwan & Hong Kong	317	1	683	3	176	1.5	26	.2
All Other Countries	660	2.5	634	3	497	3	835	6
TOTAL	27,833	100	23,429	100	16,685	100	13,486	100

Source: U.S. Department of Commerce Foreign Trade Report FT 135; 1973, 1972, 1971, and 1970

APPENDIX D

CANADIAN PRICE LISTS FOR P.A. EQUIPMENT

EFFECTIVE AUGUST 1, 1973

TERMS: 1% 10, Net 30 days.
MINIMUM BILLING: $3.00
DELIVERY: F.O.B. Factory, Toronto-Ontario

All prices subject to change without notice.

ASSORTING PRIVILEGE

All items marked with an astrick (*) may be assorted to obtain best quantity price.

MODEL NO:	DESCRIPTION	LIST	DEALER	DISTRIBUTOR COST 1-5	DISTRIBUTOR COST 6 Up
PUBLIC ADDRESS AMPLIFIERS:					
	100 watt P.A. amplifier	376.65	229.95	146.65	139.35
	65 watt P.A. amplifier	299.95	179.95	119.95	113.95
	35 watt P.A. amplifier	249.95	149.95	99.95	94.95
	20 watt P.A. amplifier	199.95	119.95	79.95	75.95
SOLID STATE PUBLIC ADDRESS AMPLIFIERS:					
	15 watt P.A. amplifier	149.95	89.95	59.95	56.95
	50 watt P.A. amplifier	316.65	189.95	126.65	120.35
	OPTIONAL ADD-ON ACCESORIES				
	Standard 19' rack for any amplifier	44.95	26.95	19.75	17.95
	Speaker area selector control	44.95	29.95	21.95	19.95
	Phono turntable 117v AC	74.95	44.95	32.95	29.95
	Low-Z microphone adaptor	24.95	14.95	10.95	9.95
	Priority paging control	19.95	11.95	8.75	7.95
	2 channel Hi-Z microphone pre-amplifier	37.45	22.45	16.45	14.95
	2 channel Low-Z microphone pre-amplifier	62.45	37.45	27.45	24.95
	500/600 ohm balanced line adaptor	19.95	11.95	8.75	7.95
ACCESORIES, PHONO TOPS, SYSTEM CASES:					
	amplifier mounted on standard 19' rack.	37.45	22.45	16.45	14.95
	Speaker area selector control	49.95	29.95	21.95	19.95
	600 ohm balanced line transformer	62.45	37.45	27.45	24.95
	Low impedance microphone transformer	44.95	26.95	19.75	17.95
	2 channel microphone preamplifier	44.95	29.95	21.95	19.95
	Priority paging-control	24.95	14.95	10.95	9.95
	Remote microphone volume-control	19.95	11.95	8.75	7.95
	Phono turntable 117v AC	74.95	44.95	32.95	29.95
	Systems case with two 12' speakers cables, plugs	187.50	112.45	82.45	74.95
	4-channel microphone mixer	49.95	29.95	21.95	19.95

MODEL	DESCRIPTION	SUGGESTED LIST PRICE	SUGGESTED MINIMUM RESALE	DISTRIBUTOR COST 1-11	DISTRIBUTOR COST 12 assorted
HI-FIDELITY AND SPECIAL PURPOSE SPEAKERS					
	3 watt 8 ohms	$18.65	$11.19	$ 7.47	$ 7.09
	5 watt - swivel base - 8" bell, 4 ohms	46.95	28.17	18.78	17.84
	10 watt - co-axial - 12" bell, 8 ohms	97.00	58.20	38.80	36.86
	15 watt - co-axial - 20" bell, 8 ohms	189.95	113.97	75.98	72.18
MULTI-PURPOSE SPEAKERS					
	15 watt - 8½" bell, 8 ohms	74.95	44.97	29.98	28.48
	30 watt - 10" bell, 8 ohms	89.95	53.97	35.98	34.18
REFLEX TRUMPETS					
	2½ ft. air column - 15" bell	57.95	34.77	23.18	22.02
	3½ ft. air column - 20" bell	65.95	39.57	26.38	25.06
	2½ ft. air column - 15x8" wide angle	68.50	41.10	27.40	26.03
	3½ ft. air column -20x10" wide angle	82.95	49.77	33.18	31.52
HIGH POWER DRIVERS					
	25 watt, deluxe weatherproof driver, 16 ohms	39.95	23.97	15.98	15.18
	35 watt, deluxe weatherproof driver, 16 ohms	55.75	33.45	22.30	21.19
	45 watt, deluxe weatherproof driver, 16 ohms	69.95	41.97	27.98	26.58
	60 watt, deluxe weatherproof driver, 16 ohms	89.95	53.97	35.98	34.18
	35 watt with transformer, weatherproof, 16 ohms	87.95	52.77	35.18	33.42
	60 watt with transformer, weatherproof, 16 ohms	116.95	70.17	46.78	44.44

All prices subject to change without notice.

MODEL	DESCRIPTION	SUGGESTED LIST PRICE	SUGGESTED MINIMUM RESALE	DISTRIBUTOR COST 1-11	DISTRIBUTOR COST 12 assorted
PAGING AND TALKBACK SPEAKERS					
	7½ watt - 5¼" bell, 8 ohms	$24.95	$14.97	$ 9.98	$ 9.48
	7½ watt - swivel base - 5¼" bell, 8 ohms	32.95	19.77	13.18	12.52
	7½ watt - swivel base - 5¼" bell, 45 ohms	36.25	21.75	14.50	13.78
	15 watt - swivel base - 6½" bell, 8 ohms	45.50	27.30	18.20	17.29
	15 watt - swivel base - 6½" bell, 45 ohms	49.95	29.97	19.98	18.98
	30 watt - swivel base - 10" bell, 8 ohms	56.95	34.17	22.78	21.64
	30 watt - swivel base - 10" bell, 45 ohms	62.65	37.59	25.06	23.81
	25 watt - wide angle - 8½X5½" bell, 8 ohms	58.95	35.37	23.58	22.40
	25 watt - wide angle - 8½X5½" bell, 45 ohms	64.85	38.91	25.94	24.64
	30 watt - wide angle - 11 X 6½" bell, 8 ohms	76.50	45.90	30.60	29.07
	30 watt - wide angle - 11 X 6½" bell, 45 ohms	84.15	50.49	36.66	31.98

MODEL	DESCRIPTION	SUGGESTED LIST PRICE	SUGGESTED MINIMUM RESALE	DISTRIBUTOR COST 1-11	DISTRIBUTOR COST 12 assorted
MATCHING TRANSFORMERS (NO ASSORTING PRIVILEGE)					
	3 watt line matching transformer	$12.40	$ 7.45	$ 5.45	$ 4.95
	15 watt line matching transformer	13.75	8.25	6.05	5.50
	30 watt line matching transformer	16.25	9.75	7.15	6.50
ACCESSORIES (NO ASSORTING PRIVILEGE)					
	Weatherproof housing	17.95	10.77	7.18	6.82
	Rooftop bracket for two HDB-8 or HDB-12's	59.95	35.97	23.98	22.78
MEGAPHONES (MAY BE ASSORTED FOR QUANTITY PRICE)					
	Electric, battery powered	103.25	64.95	47.65	43.30
	Transistorized, 4 watt, battery powered, with siren	153.25	94.95	69.65	63.39
	Transistorized, 8 watt, battery powered, with siren	166.60	99.95	73.35	66.65
	Transistorized, 16 watt, battery powered, with siren	208.25	124.95	91.65	83.30
	Transistorized, 20 watt, battery powered, with built-in siren and detachable microphone	216.60	129.95	95.35	86.65
	Battery operated portable P.A. Sound System, with separate input for music, powered by 6 watt rated solid state amplifier.	216.60	129.95	95.35	86.65

ASSORTING PRIVILEGE:

Any assortment of speakers, trumpets, and drivers may be combined to obtain the maximum discount applicable.

All prices subject to change without notice.

S O U N D C O L U M N S

MODEL	DESCRIPTION	SUGG LIST	SUGG RESALE	DISTRIBUTOR COST Quantity of each model 1-5	6 Up
	Heavy duty Sound Column with six 8" heavy duty reflex speakers. 75 watts RMS Power. Dimensions 51 3/4"H x 9½"W x 9¼"D	249.95	199.95	133.30	126.65
	Heavy duty Sound Column with six 5" heavy duty reflex speakers. 50 watts RMS Power. Dimensions 35"H x 9"W x 7¼"D	162.50	129.95	86.65	82.30
	Indoor Outdoor Sound Column six 5" speakers with 30 watts RMS Power. Dimensions 47"H x 8"W x 4 3/4"D	413.50	309.95	216.99	206.65
	(as above) with four 6" speakers and 20 watts RMS Power. Dimensions 32"H x 8"W x 4 3/4"D	313.50	234.95	164.48	156.65
	(as above) with eight 4" speakers and 15 watts RMS Power. Dimensions 35¼"H x 5"W x 3¼"D	179.95	134.95	94.45	89.95
	(as above) with six 4" speakers and 15 watts RMS Power. Dimensions 27½"H x 5"W x 3¼"D	146.50	109.95	76.97	73.30

MODEL	DESCRIPTION	SUGG LIST	SUGG RESALE	DISTRIBUTOR COST Quantity of each model 1 - 5	6 UP
	Indoor Outdoor Sound Column with four 4" speakers and 10 watts RMS Power. Dimensions 19 3/4"H x 5"W x 3¼"D	109.95	82.50	57.70	54.95
	(as above) with two 4" speakers and 5 watts RMS Power. Dimensions 11 3/4"H x 5"W x 3¼"D	79.95	59.95	41.95	39.95
P A T I O S P E A K E R S					
	Indoor Outdoor blister packed speaker with quality 5¼" speaker, weather-proof grill, volume control. Up to 10 watts power RMS, Dimensions 7"H x 5"W x 3½"D	18.69	14.95	9.95	9.45
	Indoor Outdoor Patio Speaker with adjustable bracket. Up to 5 watts RMS Power. Dimensions 8½"H x 7 7/8"W x 5"D	37.49	29.95	19.95	18.95

Effective May 1/73
Supersedes all previous
Price Lists

CONFIDENTIAL

DEALER PRICE SCHEDULE

Description	Net Consumer Price	1-2 Units	3 or More
Dispatcher Microphone	61.75	46.30	43.25
FM Tuner (for wireless mikes)	132.50	99.40	92.75
Amplifier - 6 watts Rms	73.75	55.30	51.65
Amplifier - 10 watts Rms	93.00	69.75	65.10
Amplifier - 35 watts Rms	178.50	133.90	124.95
Amplifier - 35 watts Rms	143.25	107.45	100.30
Microphone preamp-mixer	85.00	63.75	59.50
Amplifier - 100 watts Rms	273.00	204.75	191.10
Solid State FM Tuner	92.75	69.60	64.95
FM Receiver (No Paging) - 10 watts Rms	164.75	123.60	115.30
FM Receiver (Paging) - 15 watts RMs	207.25	155.50	145.10
FM Receiver (Paging) - 35 watts Rms	239.50	179.65	167.65
AM-FM Tuner	129.50	97.15	90.65
AM-FM Receiver (No Paging) - 10 watts Rms	198.75	149.10	139.15
AM-FM Receiver (Paging) - 15 watts Rms	239.50	179.65	167.65
AM-FM Receiver (Paging) - 35 watts Rms	273.00	204.75	191.10
Speaker Line Tester	69.25	52.00	48.50
3-Tone Generator	66.00	49.50	46.20
Line Matching Transformer	22.00	16.50	15.40
Rack Panel Kit for Models with one Asterisk	20.00	15.00	14.00
Rack Panel Kit for Models with two Asterisks	25.00	18.75	17.50
Rack Panel Kit	31.25	23.50	21.90
Telephone Matching Adaptor	15.00	11.25	10.50

Prices subject to change without notice.
F.O.B. Toronto, net 30 days.
F.S.T. included, P.S.T. extra, if applicable.

APPENDIX E

INTERVIEW LIST

INTERVIEW LIST

Person	Organization	Location
Mr. J. Breedon	J.R. Tilton, Limited	Toronto, Ontario
Mr. J. Long	Yorkville, Sound	Scarborough, Ont.
Mr. W. Moberg Mr. R.P. Webb	Electrohome, Limited	Kitchener, Ontario
Mr. Rosen	Fanon Electronics of Canada	Toronto, Ontario
Mr. C. Girard	Multi-Vox Limited	Montreal, Quebec
Mr. J. Pollock Mr. L.A. McBride	Marsland Engineering Ltd.	Waterloo, Ontario
Mr. Chaput	Electro-Vox	Montreal, Quebec
Mr. H.E. Marsh	Executone Limited	Toronto, Ontario
Mr. J.R. Bain	Engineered Sound Systems	Toronto, Ontario
Mr. D. Boyle	Acousticon Systems of Can.	Toronto, Ontario
Mr. Pictall	TR Services Limited	Toronto, Ontario
Mr. Dean Bussart	Electro-Voice of Canada	Gananoque, Ont.
Mr. G. Tougas	Payette Radio, Limited	Montreal, Quebec
Mr. Flacks	Cesco Electronics Ltd.	Toronto, Ontario
Mr. D. Rattray	Electronic Marketing Institute	Toronto, Ontario
Mr. E. Welling	"Audio-Scene - Canada"	Toronto, Ontario
Mr. P. Roebuck	"Canadian Electronics Eng."	Toronto, Ontario
Mr. C. Harris Mr. Minee	Electronic Industries Assoc. of Canada	Ottawa, Ontario
Mr. P. Walsh	Electronic Industries Assoc.	Washington, D.C.
Mr. J.E. Morrison	University Sound	Anaheim, Calif.
Mr. Morgan	Bogen Division, Lear Siegler	Paramus, N.J.
Mr. J. Laronis	DuKane Corporation	St. Charles, Ill.
Mr. H. Zimmerman	Canadian German Chamber of Commerce	Toronto, Ontario
Mr. O. Lipholdt Petersen	Royal Danish Consulate	Toronto, Ontario
Mr. Lutz	West German Consulate	Toronto, Ontario
Mr. Carfagno	McGraw-Hill	New York, N.Y.