THE TRACTOR INDUSTRY IN CANADA

- P. Holton
Trade Commissioner Service

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Department of Industry, Trade & Commerce
- Mr. Phil Holton
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This report presents an overview of the agricultural tractor market in North America and then explores avenues by which a tractor manufacturing operation could be established in Canada. It makes no attempt to "prove" the desirability of having such a facility in Canada, but merely says that if such a facility is desirable, here are some possible courses of action.

THE NORTH AMERICAN TRACTOR MARKET

Since there is no tariff on farm tractors moving between Canada and the United States, the North-American market must be considered on a continental basis. This total market can be approximated by the top curve in Graph 1, U.S. shipments.

From the post-war period up to 1966, the market has shown fairly constant growth up to a maximum of about 300 thousand units in 1966. Since 1966, shipments have declined to about 230 thousand units. The curve of U.S. Retail Sales, also shown in Exhibit 1, shows the same levelling off in the past two years.

The remaining two curves on Graph 1 indicate Canadian Tractor Imports. It is felt that since there is an extremely small output of Canadian tractors, imports provide an extremely good approximation of the actual Canadian market.

One significant difference between the U.S. and Canadian curves is apparent. This is the very large drop in Canadian imports forecast for 1969, compared with U.S. shipments forecast. This can be explained by two factors. First, Canadian tractor imports are dependent to a large extent on the financial position of the prairie wheat farmer (See Exhibit 1A), whereas the American sales curve is determined by a much more diverse group, so that problems with one particular agricultural sector don't have such a pronounced effect on the entire agricultural implement industry. Secondly, as shown in Exhibit 2, American manufacturers have been successful in using some of the excess capacity created by the agricultural tractor downturn to produce (and sell) industrial tractors.

Looking at the second figure in Exhibit 1, the drop in imports beginning in 1967 certainly indicates that the boom of the previous four or five years is over. However, this pair of curves indicates another very significant trend in the Canadian, and indeed the North American, tractor market.

The curves representing the number of tractors imported and the value of tractors imported have been drawn together for comparative purposes. The vertical distance between these two curves is a measure of the average cost of a tractor at any time. It can be seen that up to 1965, there was a rapid increase in average cost, a pause for about two years, and a resumption of the increase from 1965 to the present.

One reason for this trend is that the average cost per horsepower is increasing as tractors begin to include a higher "technological content". That is, more automatic features, for example, transmissions, and more power equipment, such as power steering. This, however, is not the most important factor. Much more significant is the steady increase in average horsepower per tractor. Looking at the American Department of Agriculture figures describing "Tractors on Farms" this trend can be clearly seen.

Average HP/Tractor	Date
42.2	January, 1968
37.9	January, 1966
35.5	January, 1964

The average farm wheel tractor sold in the United States in 1968, had 69.1 HP.

This trend is further illustrated by Exhibit 3, showing U.S. tractor production broken into 3 horsepower classifications. This very explicitly

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shows the increased production in the highest range at the expense of the lowest. Exhibit 4 breaks U.S. sales into finer categories according to horespower. Exhibit 5 takes these same figures and shows them as market share. It can be seen that the 35-40, 70-80, 90-100, and over 100 H.P. categories are increasing, while the 50-70 and under 35 H.P. categories are decreasing.

At first glance, it seems rather anomalous that both the high horsepower ranges and the 35-40 range are increasing their market share. However, many farmers involved in feeding operations, with the associated barns and farm-yards, are finding it economical to have at least two tractors. Although more and more tasks can be more efficiently performed with a big tractor, many still can be most conveniently handled with a machine in the medium (35-40 H.P.) range.

Exhibit 6 shows that the same trend is true for Canada as for the United States. The primary difference is simply that the trend to high-horsepower machines has not yet become so pronounced.

There is one other factor that must be mentioned and this is shown in Exhibit 7, which describes market shares in terms of both units and dollars. The previous statistics have been in terms of units only, ignoring the fact that the higher horsepower units cost more money. Thus, although the 80 H.P. and over tractor makes up 29.8% of the number of tractors sold in Canada in 1967, it makes up 44.2% of the value of tractors sold.

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INTERNATIONAL TRADE

Exhibit 8 shows the flow of tractors from the major manufacturers to the consumer. One tendency that emerges is the tendency for trade to be strongly influenced by trading blocks. For example, Italy exports primarily to other EEC countries. Similarly, the U.K. exports more tractors to EFTA countries than to either North American or the EEC countries. This generalization disregards shipments to the developing countries which are, to a large extent, not determined by commercial considerations.

This parochialism can be partially explained by tariff barriers. For example, the EEC industry operates behind an 18% tariff on agricultural tractors and 20% on other tractors. Sweden has a tariff of 9.2% although it is due to be reduced to 8% by 1972.

In addition to this, and perhaps more significant because it may be manipulated, is the fact that the farmer often feels a degree of identification with a local manufacturer if his reputation is of sufficient stature. This "brand preference" has traditionally been (or thought to have been) very strong. This tack has long been taken by the major manufacturers, e.g. "He's a Massey-Ferguson kind of man". It has been thought that this brand loyalty is strong enough to over-come a considerable price differential between locally manufactured and foreign built tractors. There is however, some evidence that as the farmer becomes more of a businessman, he is becoming more concerned with price and is becoming more willing to buy a lesser known machine on the basis of its own specifications and performance. This trend is illustrated by Exhibit 9. This exhibit derives "Foreign" tractor imports by subtracting U.K. and U.S. imports from total Canadian import statistics. The remainder are tractors which do not have enough market penetration in North America to have established any brand preference. It is apparent

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that these "Foreign" tractors have more than doubled their market share in the past 5 years. A comparison of the shares by value and by units also indicates that these machines are not in the higher horsepower, more expensive categories.

This same trend toward larger farm units is beginning to have some effect on marketing channels. Larger farms are able to negotiate purchases direct from the manufacturer, thus reducing the importance of the dealer.

CHOOSING A MANUFACTURER

Continuing on the assumption that a new tractor manufacturing facility is desirable in Canada, several alternatives present themselves:

1. The formation of a new company. This is not a likely possibility for several reasons. First, some manufacturing and management expertise is a prerequisite. There is simply no pool of such talent available in Canada on a demand basis. A second requisite is a marketing organization of some kind. It is not reasonable to expect a new manufacturer to establish a new dealer network, neither is there any reason to assume that existing dealers would drop their present lines in favour of a new brand.

2. The expansion of a short-line manufacturer. This is an improvement in that there is some distribution organization and some pre-existing manufacturing facility. However, there is a considerable leap involved in moving from short-line to tractor manufacture. There is a higher skill requirement as well as a substantial difference in technology, both qualitatively and quantitatively. It must be borne in mind, however, that this is exactly the course followed by Versatile. Although there may have been some special circumstances involved, it cannot be denied that it was a successful course.

3. An exisiting tractor manufacturer with a dealer organization.

(a) A Canadian manufacturer: An initial approach would be to simply present a specific proposal to the company offering a grant through the mechanism of the Regional Development Incentives Act. This money would be used to finance the expansion of production facilities. Unfortunately, it is a reasonable presumption that such an offer would not be accepted, since

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it is no more than is presently available. Direct negotiation with the company would have to take place to determine what additional incentives would be necessary.

(b) An American manufacturer: It is unlikely that an American manufacturer could be persuaded to expand in Canada. Looking at the situation realistically, he stands to gain virtually nothing by manufacturing in Canada rather than expanding his U.S. operation since he already has free access to the market. At the present time, any such expansion would probably lead to excess capacity in his U.S. facilities.

(c) An offshore manufacturer: There are several foreign manufacturers who have Canadian marketing affiliations. Fiat of Italy has a marketing arrangement with White Motor Corporation. Deutz of Germany and Volvo of Sweden sell through Canadian Cooperative Implements Limited. David Brown and Nuffeld, both of the U.K. have dealers of their own, particularly in Eastern Canada. In addition, David Brown is quite well established throughout the U.S.

The task is to persuade one of these firms to build facilities in North America, and further, to sell him on Canada rather than in the United States.

WHAT CAN CANADA OFFER A FOREIGN MANUFACTURER?

Looking at other countries which have tractor industries, a pattern emerges. Historically, their industries grew up behind high tariff (or non-tariff) barriers. The greatest motivation for a company to expand into another country has been to move inside the barriers to reach the local market. Since Canada has no tariff on agricultural tractors, and the imposition of one appears unacceptable, a case will have to be built on other grounds.

Finance

The most obvious sweeteners that Canada can offer new industry are cash grants under the Regional Development Incentives Act. The relevant "Designated Area" currently extends along the American border in a strip from Sault Ste. Marie to Trail, B. C. The size of the grant available depends upon the capitalization of the project and the number of jobs created. The amount could be approximated as 25% of capital costs plus $5,000 per job created, within certain maximums. Canada also offers tax incentives in the form of Special Depreciation Allowances within the Designated Areas. This enables the firm to write off machinery at an annual rate of up to 50% and buildings at an annual rate of up to 20%, both on a straight-line basis.

The foregoing is only an outline of these incentives. Current details should be obtained from the Area Development Agency.

In addition to federal incentives, there are both Provincial and Municipal programs for the benefit of new industry.

Production

The Barber Royal Commission on Farm Machinery should be consulted for an analysis of costs of production and economics of scale. Generally speaking, it is expected that a new manufacturer would begin with an assembly

operation, importing components from his present suppliers. It would follow that he would begin to do some sourcing within Canada, drawing on the well developed Canadian Automotive Parts Industry. This course should ultimately lead to a degree of international rationalization of production and subsequent reduction of costs in the manufacturer's home market as well as in Canada.

Mention is often made of the rising cost of labour in North America. It is certainly true that wage rates have been moving up over the last decade; however, Exhibit 10 shows that concurrent increases in productivity in the Agricultural Implement Industry have been great enough to so reduce the ratio of Man Hours/Value-Added that the ratio of Wages to Value-Added has actually shown a decrease.

Marketing

It is difficult to imagine any disadvantages from a marketing point of view, to having manufacturing facilities in a market of almost 220 thousand units per year. It is certainly the case that, since there is no U.S. tariff on Canadian agricultural tractors, it is a single huge market that is being considered.

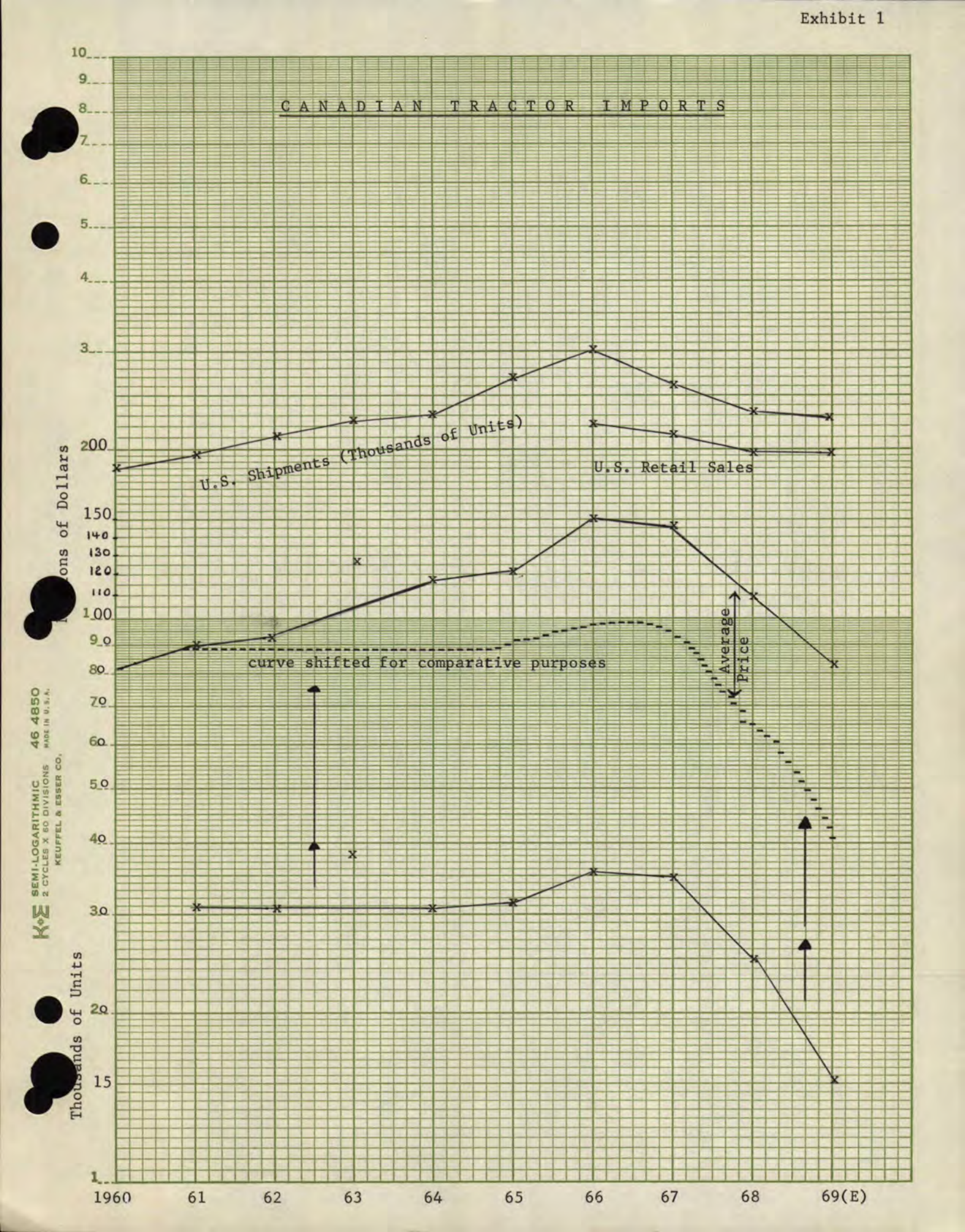
One marketing expense that would be reduced is the shipping cost from the European factory to the North American customer. The time spent in transit would naturally be lessened, reducing the magnitude of North American buffer stocks and their associated costs.

In Exhibit 11, Winnipeg has been used as an example of a possible location. The diagonal band indicates points that are approximately equidistant from Winnipeg and the location of the major competitors. Provided that comparable freight rates can be negotiated, the Canadian manufacturer will have a

cost advantage in areas north of this band. The table showing the 1968 sales in this area shows that it makes up over 13% of the North American market.

Regardless of the trend to the contrary, indicated earlier in this paper, there are still vestiges of nationalism remaining. North American manufacturing facilities would overcome this "foreigner stigma". This bias against the foreign manufacturer has often been based on what has been advanced as being an apparent lack of service. Whether or not this is a fact, this perceived difference on the part of the consumer would be overcome by North American manufacturing. From the point of view of the buyer, better service would result; from the point of view of the dealer, better support would result; and from the point of view of the manufacturer, better response to changing market conditions would result.

Exhibit 1


CANADIAN TRACTOR IMPORTS
U.S. Shipments (Thousands of Units)
U.S. Retail Sales
curve shifted for comparative purposes
Average Price
Thousands of Units
1960
61
62
63
64
65
66
67
68
69(E)
SEMI-LOGARITHMIC
2 CYCLES X 60 DIVISIONS
KEUFFEL & ESSER CO.
46 4850
MADE IN U.S.A.

DEPENDENCE ON THE PRAIRIE FARMER

Tractor Sales (Units)

- 1967 -

	Total Sales	Sales Over 50 HP	Sales Over 80 HP
CANADA	29,814	18,906	8,913
PRAIRIE PROVINCES	14,032	12,765	7,901
PRAIRIE/CANADA	47%	67.5%	88.6%

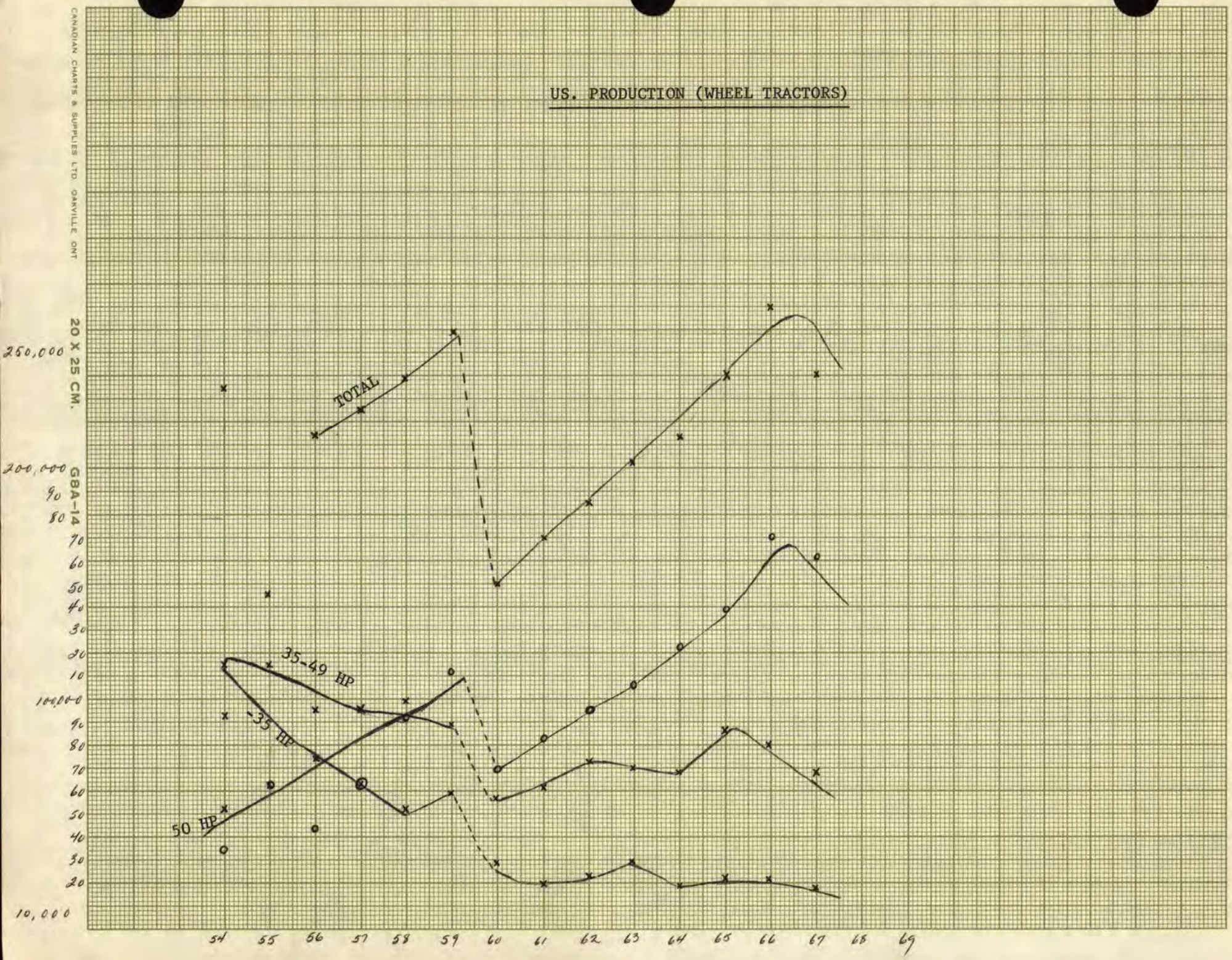
RETAIL SALES OF WHEEL TRACTORS

U.S. - Units

			January - May	
	1967	1968	1968	1969
FARM	176,319	156,813	76,508	71,534
NON-FARM	35,970	38,622	15,501	17,698
TOTAL	212,289	195,435	92,009	89,230

Implement & Tractor
March 7, 1969

EXHIBIT 3


US. PRODUCTION (WHEEL TRACTORS)
CANADIAN CHARTS & SUPPLIES LTD. OAKVILLE ONT.
20 X 25 CM.
G8A-14
250,000
200,000
100,000
10,000
TOTAL
35-49 HP
-35 HP
50 HP
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69

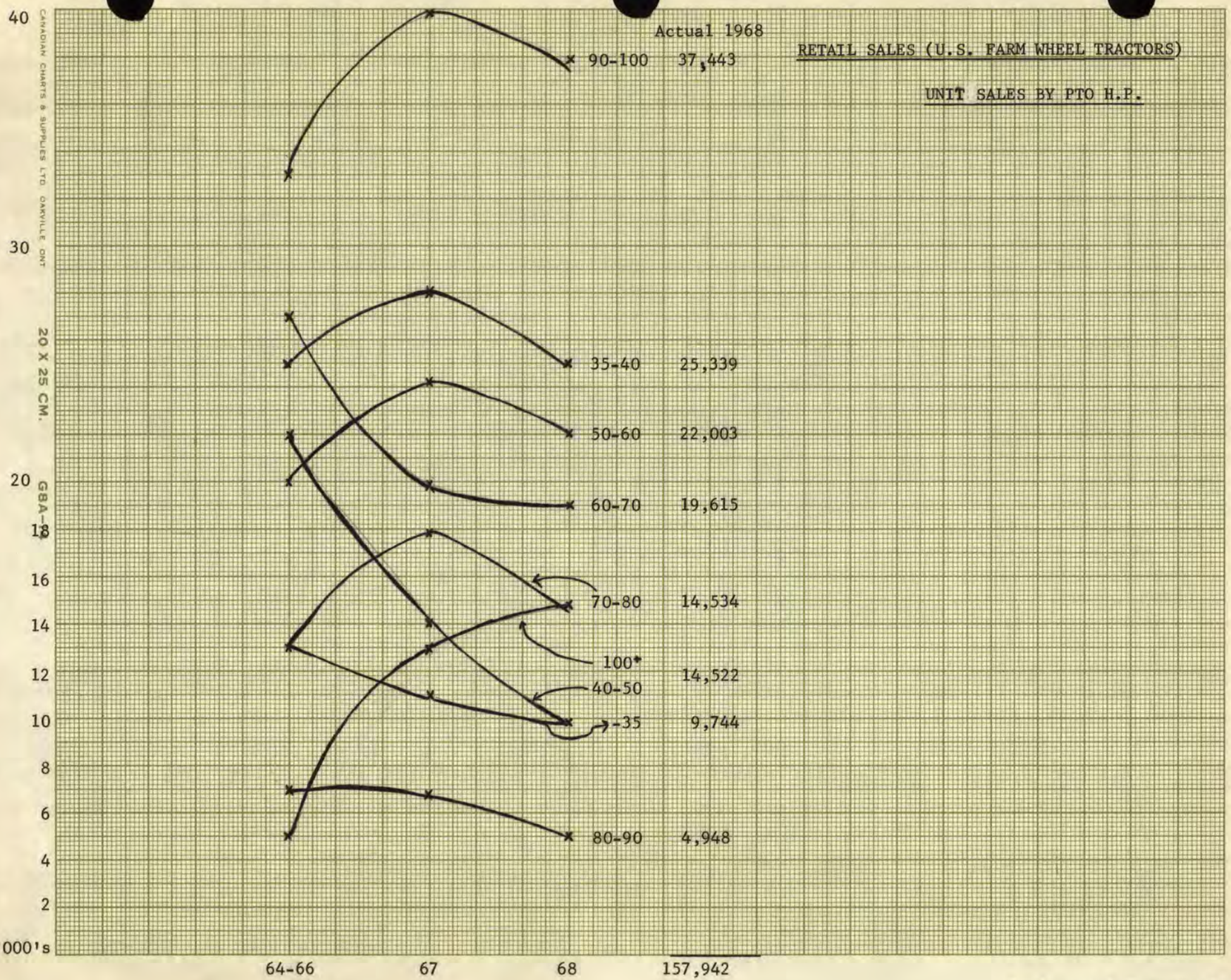
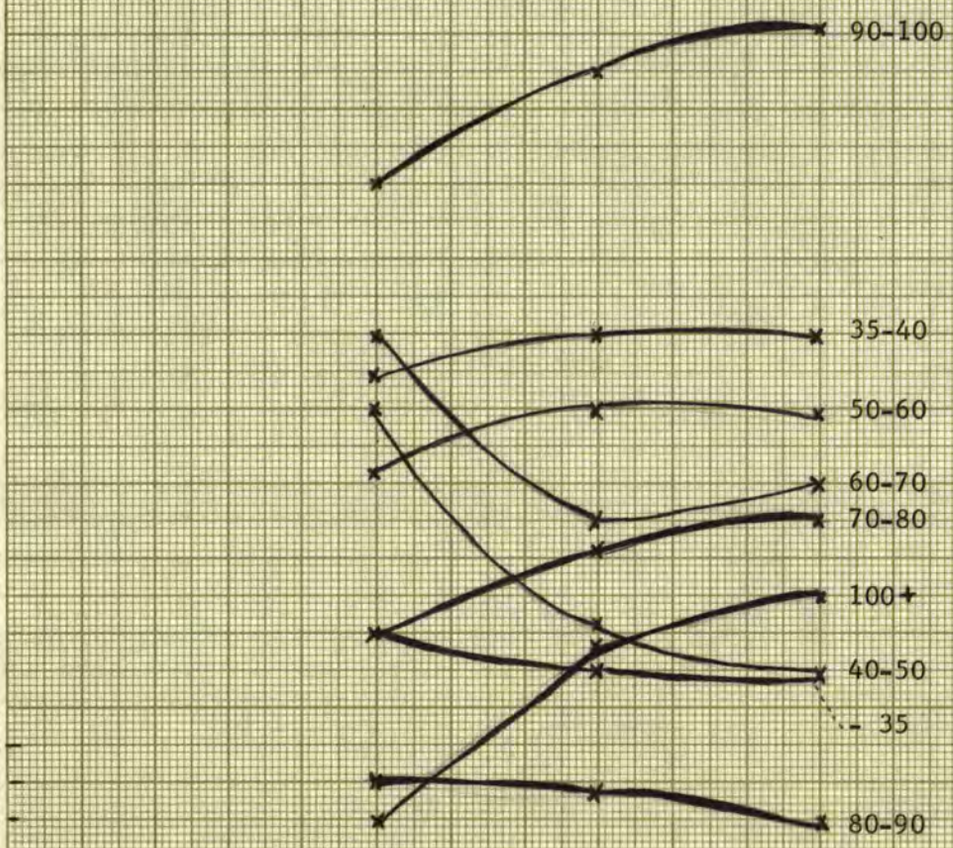

RETAIL SALES (U.S. FARM WHEEL TRACTORS)
UNIT SALES BY PTO H.P.
Actual 1968
90-100 37,443
35-40 25,339
50-60 22,003
60-70 19,615
70-80 14,534
100* 14,522
40-50
-35 9,744
80-90 4,948
157,942
40
30
20
18
16
14
12
10
8
6
4
2
'000's
64-66
67
68
CANADIAN CHARTS & SUPPLIES LTD. OAKVILLE ONT.
20 X 25 CM.
GBA-8

EXHIBIT 5

RETAIL SALES

U.S. Farm Wheel Tractors

% of Sales by Pto. H.P.
(Units)



Increasing Market Share

100+
90-100
70-80
35-40

Decreasing Market Share

80-90
40-50

Indefinite

50-60
60-70
-35

April 21/69

Implement & Tractor - Jan.31/69

FARM TRACTOR SALES BY HP GROUP

(as a per-cent of annual sales)

	69 HP & UNDER		70-99 HP		100 HP & OVER	
	1968	1969 (E)	1968	1969 (E)	1968	1969 (E)
UNITED STATES	54.8%	52.2%	36.0%	33.6%	9.2%	14.2%
CANADA	71.4%	67.0%	21.3%	22.0%	6.4%	10.0%

Implement & Tractor

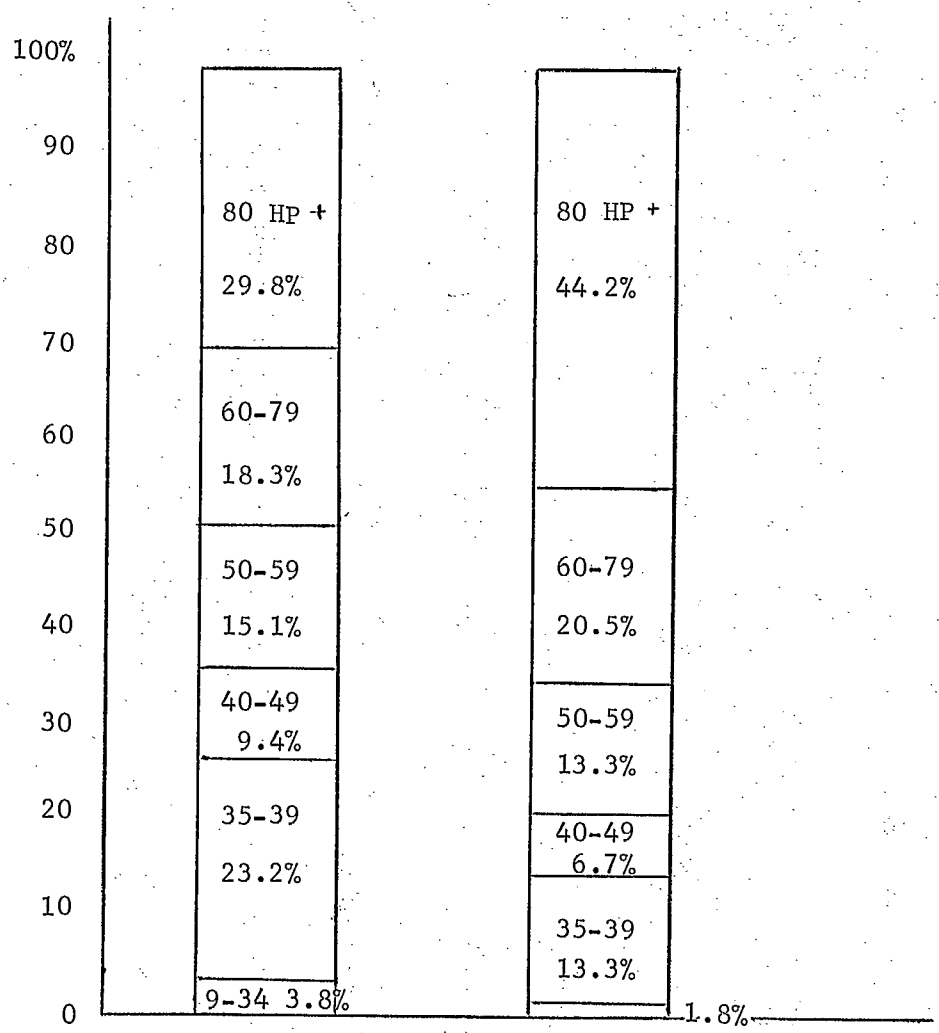
July 21, 1969

1967 CANADIAN SALES

Wholesale, Wheel Type Tractors primarily for farms

PERCENTAGE BY PTO HP RANGE

- According to Number and Value



	UNITS	DOLLARS
TOTAL	29,814	147,612,318

WORLD TRADE IN TRACTORS

(1968) $ millions (US)

FROM ↓ TO →	TOTAL	CANADA	U.S.	EEC	EFTA	Developing Countries
ITALY	97.6	.48	1.15	33.0	6.9	27.2
FRANCE	44.6	.18	.46	22.8	1.9	15.6
U.S.	411.6	120.2	--	27.4	10.0	195.6
GERMANY	97.3	3.2	3.16	47.1	14.9	12.8
JAPAN	38.2	1.14	.50	1.15	1.0	24.3
SWEDEN (includes implements)	55.0	4.33	.44	11.51	19.1	7.4
U. K.	253.5	11.7	14.3	21.05	38.5	77.3

Source: OECD

CANADIAN TRACTOR IMPORTS (WHEELED)

– Imports from countries other than U.S. and U.K. as percentages of total imports.

	VALUE	UNITS
1964	2.9%	4.0%
1967	7.7%	11.0%
1968	8.8%	11.4%
1969 (Jan.-Aug.)	6.0%	9.5%

CANADIAN AGRICULTURAL IMPLEMENT INDUSTRY

MANUFACTURING ACTIVITY

	Man Hours $ millions	Wages $ millions	Value Added $ millions	Man Hours / Value Added	Wages / Value Added
1961	14.309	31.072	61.173	.233	50.7%
1962	15.182	34.879	64.713	.234	53.8%
1963	18.354	44.054	87.276	.210	50.4
1964	20.488	51.496	114.022	.179	45.1
1965	22.310	56.261	126.743	.176	44.3
1966	24.248	64.216	140.615	.172	45.6
1967	24.418	66.587	137.371	.177	48.4

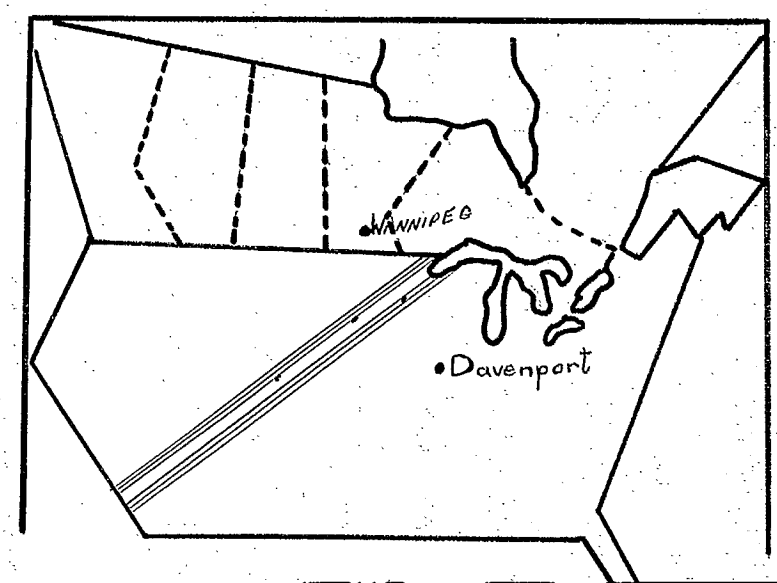
Source: DBS

FREIGHT ADVANTAGE

STATE	1968 Sales (Units)
British Columbia	926
Alberta	3181
Saskatchewan	3485
Manitoba	1778
Washington	2141
Oregon	1590
Montana	1534
Idaho	1778
Nevada	144
Utah	926
Wyoming	578
North Dakota	3517
California	5359
South Dakota 50%	1675
Colorado 50%	890
	29,502

TOTAL - North American 217,271

$29{,}502/217{,}271 = 13.5\%$



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