

GASOLINE USE
IN
MOTORBOATS AND SNOWMOBILES
IN THE
STATE OF MINNESOTA

A Report to the Legislature
in accordance with
Laws of Minnesota 1982, Chapter 580, Section 4.

Prepared by
DEPARTMENT OF NATURAL RESOURCES
TRAILS & WATERWAYS UNIT

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Summary

The Minnesota Legislature in recent years has chosen to appropriate a portion of the state gasoline tax for the Department of Natural Resources (DNR) to use on water access facilities and snowmobile trails. This was done because part of the gas tax was being derived from gasoline sales used in motorboats and snowmobiles. Without substantial data to determine an accurate amount, the legislature chose to appropriate funds to each program based on a formula of 3/4 of 1% of the total tax revenue (M.S. 296.16, Subd. 1).

The DNR recognizes that no definitive gasoline consumption figures are presently available for motorboats and snowmobiles. However, the best available information has been assembled within this report and utilized in a variety of methods to more accurately estimate gasoline use by motorboats and snowmobiles.

Before determining an accurate percentage of marine fuel use, another important consideration must be discussed. Current tax policy allows motorboat owners to reclaim their gasoline tax through a state income tax credit. This reduces the gas tax fund regardless of the percentage used by motorboats. It is suggested that this tax credit be discontinued, thus enabling the DNR to have more stable funding for state park development, water access sites, lake improvements and the boat and water safety program. M.S. 296.18, Subd. 1 must be amended to effect the necessary change.

Findings show that motorboats use more fuel than the current tax formula indicates. Appropriations based upon a proportion of 1.35% to 1.63% of the total gasoline tax would best represent motorboat use.

The findings show that snowmobiles also use more fuel than the current formula suggest. Appropriations based upon a proportion of 0.81% to 1.44% of the total gasoline tax would best represent snowmobile use.

To effect changes recommend in this report, M.S. 296.16, Subd. 1 would have to be amended. DNR also suggests that because of changes in snowmobile and motorboating participation, periodic updates of this report should be legislatively required. This would also allow enhancements in the reliability of data used to generate this report.

INTRODUCTION

State gasoline excise tax revenues are commonly used for a variety of purposes including highway construction and maintenance. The Minnesota Legislature has chosen to appropriate a portion of revenue generated by motorboats and snowmobiles for DNR development and maintenance of water access facilities and snowmobile trails. The amount of this appropriation is based upon the estimated amount of fuel used by motorboats and snowmobiles. It has been estimated that motorboats and snowmobiles each consume 3/4 of 1% of all gasoline¹ used in Minnesota (M.S. 296.16 Subd. 1). This report examines new data which suggest that the existing formula underestimates the actual annual gasoline usage by motorboats and snowmobiles.

The determination of percentage of fuel use requires that two key figures be established: total gallons used by motorboats and snowmobiles; and total gallons used by all gasoline-powered vehicles in Minnesota. Total gasoline consumption figures for Minnesota are compiled by the Minnesota Department of Revenue. The 1979 net, taxable, non-aviation gasoline useage was 2,166,753,136 gallons; 1980 useage was 1,958,021,995 gallons; and 1982 useage is estimated as 1,849,336,631².

MOTORBOATS

Definitive totals for annual gasoline use by motorboats are not available. Therefore, three different methodologies which use the best available data and a number of assumptions were used to estimate gasoline consumption. The three methods are outlined below with an explanation of data limitations and assumptions.

Method I - Method I multiplies motor fuel efficiency, average motor size, annual hours of use and number of registered boats thus estimating total annual consumption. Table I outlines these determining factors with their 1980 values.

Formula

$$\begin{matrix} \text{Motor} \\ \text{Fuel efficiency} \\ \text{during normal} \\ \text{use} \\ \text{(gal/hp/hr)} \end{matrix} \times \begin{matrix} \text{Average motor} \\ \text{size (hp)} \end{matrix} \times \begin{matrix} \text{Estimated} \\ \text{Average annual} \\ \text{use (hours)} \end{matrix} \times \begin{matrix} \text{No. of registered} \\ \text{boats} \end{matrix} = \begin{matrix} \text{Total} \\ \text{(gal/yr)} \end{matrix}$$

TABLE 1

<u>FACTORS</u>	<u>OUTBOARD BOATS</u>	<u>INBOARD AND INBOARD/OUTDRIVE BOATS</u>
1. No. of registered boats (1980) ³ :	388,348	58,045
2. Estimated motor fuel efficiency ⁴ :	0.100 gal/hp/hr	0.080 gal/hp/hr
3. Estimated throttle when in normal use ⁵ :	1/3	4/10
4. Motor fuel efficiency in normal use (multiply 2 and 3 ₄ above):	0.033 gal/hp/hr	0.032 gal/hp/hr
5. Average motor size ⁴ :	35 hp	165 hp
6. Estimated average annual use ⁴ :	50 hrs.	55 hrs.
Outboard boat gasoline consumption:		22,427,097 gal
Inboard and inboard/outdrive boat gasoline consumption:		<u>16,856,268 gal</u>
		Total: 39,283,365 gal

Comparing this figure to the total gasoline figure of 1,958,021,995 gallons in 1980, motorboats used approximately 2% of the total.

Data Limitations

- The number of registered boats was provided by the DNR License Center.
- The fuel efficiency figure represents an industry "rule of thumb"⁴ provided by the National Marine Manufacturers Association (NMMA) studies.

- Although a 2/3 throttle figure has been reported in NMMA Congressional testimony, the 1/3 figure was utilized to reflect the degree of uncertainty that exists.
- The average motor size is the national average based on 1980 sales. The average motor size sold over the last 20 years is 37 hp, so the 35 hp figure appears conservative and dependable⁴. Incidentally, the national outboard motor size sold in 1982 was 43.3¹⁸.
- The average hours of use was also supplied by the NMMA and is based upon marine industry professional judgement. A Wisconsin DNR⁶ study, however, suggests that this figure is reasonable.

Method II - Method II uses boat fishing and powerboating occasions, number of people per boat, length of occasions, and motor fuel efficiency, thus estimating annual consumption. Table 2 outlines these determining factors with their 1980 values.

Formula

Step 1

$$\begin{array}{l} \text{No. of summer} \\ \text{fishing/boating} \\ \text{occasions} \end{array} \times \begin{array}{l} \% \text{ fishing occasions} \\ \text{using a motorboat} \\ \text{(not applicable to} \\ \text{the SCORP boating} \\ \text{occasions category)} \end{array} + \begin{array}{l} \text{No. of} \\ \text{people} \\ \text{in} \\ \text{boat} \end{array} \times \begin{array}{l} \text{Average length} \\ \text{of occasion} \\ \text{(hours)} \end{array} = \text{Boating} \\ \text{hours} \end{array}$$

Step 2

$$\begin{array}{l} \text{Boating hours} \\ \times \end{array} \begin{array}{l} \% \text{ of use by} \\ \text{outboard or} \\ \text{inboard-} \\ \text{inboard/out-} \\ \text{drive} \end{array} \times \begin{array}{l} \text{motor efficiency} \\ \text{gals/hp/hr} \end{array} = \text{gallons/year}$$

TABLE 2

<u>FACTORS</u>	<u>FISHING BOAT USE</u>	<u>POWERBOAT USE</u>
1. Summer fishing/boating occasions:		
Originating within MN ⁷ :	13,546,097	7,691,539
Originating outside MN ¹⁶ :	1,993,642	853,022
1a. % of fishing occasions utilizing a motorboat ⁸ :	65%	Not applicable
2. Average persons per boat ⁷ :	2.6	2.5
3. Average length of boating occasion:	1.5 hrs (total fishing = 4.5 hrs)	3.3 hrs
4. % of boat use by -		
Outboard boat:	95%	80%
Inboard-Inboard/Outdrive boat:	5%	20%
5. Fuel consumption -		
Outboard boat:	1.155 gal/hr	1.155 gal/hr
Inboard-Inboard/Outdrive boat:	5.28 gal/hr	5.28 gal/hr
Fishing boat gasoline consumption:	7,932,548 gal	
Power boat gasoline consumption:	<u>22,332,062 gal</u>	
Total:	30,264,610 gal	

Comparing this figure to the total gasoline figure of 1,958,021,995 gallons in 1980, motorboats used approximately 1.55% of the total.

Data Limitations

- The number of occasions (instate), persons per boat and length of occasion were derived from the State Comprehensive Outdoor Recreation Plan (SCORP) Report #2326⁷. This report is the result of a statistically sound telephone survey conducted in 1978. The 1980 figures are projections from 1978 data.
- The number of boating occasions originating out-of-state were provided by an as yet unpublished document by Bill Fleishman¹⁶.
- One uncertain SCORP factor was length of occasion. This factor is defined as the "total time in the boat". This factor assumes that the motor is running the entire time the boat is on the water. While that is the situation for powerboating occasions, many fishing occasions consist of motoring to one or two spots, still-fishing, and then returning to the point of origin. In order to overcome this ambiguity, it was estimated that, within DNR, the typical fishing experience includes running the motor one third of the time (thus reducing the 4.5 hour average fishing experience to motoring only, or 1.5 hours). A Wisconsin survey⁶ indicates a motor-running time per experience of 2.6 hours.
- The percentage of fishing occasions utilizing a motorboat is supported by a SCORP fishing study⁸ and DNR Section of Fisheries creel census studies⁸. The percentage of boat use by outboard and inboard-inboard/outdrive is taken directly from 1980 boat registrations and adjusted to reflect the nature of the two categories.
- The fuel efficiency figures are from NMMA studies and are the result of multiplying the fuel efficiency and average horsepower figures from Method I⁹.

Method III - Method III utilizes the number of registered motorboats by length and average gasoline consumption, thus estimating annual consumption. These figures were provided in a recent study of Wisconsin boating use⁶ which derived the resident proportion of total consumption. Method III assumes that Minnesota and Wisconsin both experience the same percentage of total motorboat consumption by non-residents and commercial boaters. Table 3 outlines the determining factors and their 1978 values.

Formula

$$\begin{array}{rclclcl} \text{No. registered} & & \text{gas consumption} & & \text{resident contribution} & & \text{74\% of total} \\ \text{boats by} & \times & \text{by} & = & \text{to total} & = & \text{motorboat} \\ \text{length} & & \text{length} & & \text{motorboat use} & & \text{gas consumption} \end{array}$$

TABLE 3

<u>BOAT TYPE BY LENGTH</u>	<u>NUMBER OF REGISTERED BOATS</u> ¹⁵		<u>AVERAGE ANNUAL CONSUMPTION</u> ⁶ (GAL)		<u>TOTAL (GAL)</u>
under 16 feet:	296,969	x	30.62	=	9,099,130
16-27 feet:	145,057	x	64.74	=	9,390,990
28 feet and over:	4,357	x	257.62	=	<u>1,125,026</u>
Resident boater gasoline consumption (74%):					19,615,146 gal
Non-resident boater gasoline consumption and commercial usage (26%):					<u>6,891,808 gal</u>
Total:					26,506,954 gal

Comparing this figure to the total gasoline figure of 1,958,021,995 gallons in 1980, motorboats used approximately 1.35% of the total.

Data Limitations

- This method's central assumption is that Wisconsin gasoline averages represent reasonable statistics for boaters in Minnesota.
- The averages for Wisconsin boaters in these categories are used to derive Minnesota's estimated gasoline consumption, assuming the similarities between the two states. These similarities include:
 1. favorable market availability of boats, motors, and equipment.
 2. high quality of recreational boating facilities.
 3. number of registered boats.
 4. breakdown within length and functional type categories.
- Boats are registered by length category as well as by a motorized/non-motorized category. Both Wisconsin and Minnesota use this reporting format which eases the comparison of gasoline consumption between boaters in the two states. The DNR Licensing Center provided the distribution of registered motorboats in these categories for 1980.

- The Wisconsin study calculated resident motorboat gasoline consumption as 74% of total marine gasoline consumption. Gasoline consumption by commercial boaters was calculated at 4.5% and gasoline usage by non-resident (vacationing) boaters was calculated at 21.5% of Wisconsin's gasoline total consumption.

- For comparison purposes with Method II, Minnesota's resident boater gasoline consumption was assumed to be 74% of the total; commercial boat gasoline usage was assumed to be 4.5%, and non-resident boater usage was assumed to be 21.5%.

Motorboat Summary

Methods I, II, and III all produced somewhat different results. This is not particularly surprising considering the different approaches used to calculate the totals. As mentioned above, no definitive source exists which tracks marine gasoline consumption.

The results of the three methods are as follows:

Method I: 2% of total gasoline consumption.
Method II: 1.55% of total gasoline consumption.
Method III: 1.35% of total gasoline consumption.

Mean: 1.63% of total gasoline consumption.

All three methods appear to point out one thing: the present formula of .75% substantially under-represents the total consumption of gasoline by motorboats.

The DNR recognizes that no better information is now available to more accurately determine motorboat consumption. DNR also recognizes that the gasoline consumption is subject to change for a variety of reasons. Therefore, it is suggested that funding be appropriated to update this document periodically.

The statistics from Method III (Wisconsin) recognize a more complex relationship between number of motorboats and number of owners. For example, in the survey sample, 55% of the registered boat owners have more than one boat, 30% have two boats, and 15% have three or more boats. The Wisconsin survey revealed an average of 1.7 boats per owner. It would appear that Method I assumes that yearly boater activity hours can be converted to yearly motorboat usage hours at a ratio of 1:1. To the extent that this is true, the total consumption percentage calculated in Method I may be high.

It is therefore suggested that an accurate representation of total annual marine gasoline use can be found between the 1.35% figure of Method III and the mean figure (1.63%) of the three methods.

Another motorboat related concern is M.S. 296.18 Subd. 1. This statute allows motorboat owners to reclaim any gasoline excise tax they have paid in the form of an income tax refund. This could conceivably drain most of the available funds from the account before any funds could be appropriated. In calendar year 1981, the first year of the tax credit, 46% of the revenue generated was returned as income tax refund. First half figures for 1982 indicate that refunds will reduce gasoline tax revenues by slightly greater than 50%. Therefore, this statute must be adjusted if an appropriate level of funding for water access facilities, park development, boating safety and game & fish activities is to be maintained.

SNOWMOBILES

Definitive totals for annual gasoline use by snowmobiles are not available. Consequently, two different methodologies which use the best available data and a number of assumptions were used to estimate gasoline consumption. The two methods are outlined below with an explanation of data limitations and assumptions.

Method I

Method I multiplies annual snowmobile occasions (with an estimated adjustment for more than one person on a snowmobile), length of occasion, and rate of fuel used, thus estimating annual consumption. Table 4 outlines the formula and these factors with their 1980 and adjusted 1982 values for all occasions by registered snowmobiles.

TABLE 4

<u>YEAR</u>	<u>ANNUAL SNOWMOBILE OCCASIONS</u> ¹⁰	<u>PASSENGER/ DRIVER ADJUSTMENT</u> ¹¹	<u>AVERAGE LENGTH OF OCCASIONS</u> ¹⁰ <u>(HOURS)</u>	<u>RATE OF FUEL USE</u> ¹² <u>(GAL/HR)</u>	<u>ANNUAL FUEL USE BY SNOWMOBILES</u> <u>(GALLONS)</u>
1980 (only registered snowmobiles)	7,061,113	x .9	x 3.28	x .89	= 18,551,520
1982 (only registered snowmobiles)	5,758,572	x .9	x 3.28	x .89	= 15,129,381

In 1980, total gasoline consumption for registered snowmobiles was estimated to be 18,551,520 gallons. This represents approximately 0.95% of all gasoline consumed within Minnesota for 1980. In 1982 the total was 15,129,381 gallons, or 0.81% of all gasoline consumed.

According to estimates found within the 1978 SCORP, however, only 65% of all snowmobiles in the state are registered. This means that if all snowmobiles were represented, the total percentage would rise to 1.44% for 1980 and 1.24% for 1982.

Data Limitations

- The figures for snowmobile occasions for all snowmobiles are based upon 1977-1978 SCORP estimates as reported in SCORP Report 2319¹⁰. This report was derived from the same telephone survey which sampled boating activity. The snowmobile portion of this survey was done during the winter of 1977-78 (a Minnesota winter which fortunately had "average" snowfall).
- The number of registered snowmobiles was provided by the DNR License Center.

- The activity figures assume that the proportion of registered snowmobiles to all snowmobiles (as identified in 1978 with the use of SCORP surveys) is the same in 1982 and that registered and non-registered snowmobiles have similar recreational use patterns. No data are available to support or refute these assumptions.
- The passenger/driver adjustment assumes that 1 out of 10 snowmobile occasions occur as a passenger (second person on the machine)¹¹. No data are available to support or refute this assumption.
- The length-of-occasion figure is taken directly from SCORP Report 2319 and the 1977-78 figure is accepted as accurate for 1980. The average length of occasion is assumed to have a direct relationship to gasoline consumption.
- The rate of fuel use is taken from an International Snowmobile Industry Association study¹². This study was completed during a period of energy conservation consciousness and it is unlikely that this industry association would publish a study that did not reflect well upon the fuel economy of their product. The fuel consumption rate from this study is therefore believed to be relatively conservative.

Method II

This method has as its base a survey done by Snowgoer magazine in 1982 estimating oil to gasoline consumption patterns. Method II multiplies the estimated number of snowmobiles (arranged by oil to fuel requirements), estimated number of cans of oil used per snowmobile per year and the corresponding number of gallons used per can, thus estimating annual consumption. Table 5 outlines the application of the formula for these factors (data for 1979 and 1982 values were used; 1980 data was not available).

TABLE 5

<u>SNOWMOBILE TYPE BY OIL TO FUEL REQUIREMENTS^{13 & 14}</u>	<u>ESTIMATED NUMBER OF REGISTERED SNOWMOBILES BY TYPE</u>	<u>CANS OF OIL USED PER SNOWMOBILE PER YEAR¹³</u>	<u>CORRESPONDING NUMBER OF GALLONS USED PER CAN</u>	<u>FUEL USE (GAL)</u>
<u>1979</u>				
1:20 (1 qt oil to 5 gal gas):	90,973	x 16.7	x 5 =	7,596,245
1:40 (1 pt oil to 5 gal gas):	79,571	x 16.7	x 5 =	6,644,179
1:24 (1 qt oil to 6 gal gas):	35,305	x 16.7	x 6 =	3,537,561
1:50 (1 pt oil to 6 gal gas):	41,823	x 16.7	x 6 =	4,190,665
oil injection (1 pt oil to 6 gal gas)*:	<u>21,997</u>	x 16.7	x 6 =	<u>2,204,099</u>
Total Registered Snowmobiles:	269,669		Proportional Gasoline Consumption (gal):	24,172,749
<u>1982</u>				
1:20 (1 qt oil to 5 gal gas):	42,489	x 11.8	x 5 =	2,506,851
1:40 (1 pt oil to 5 gal gas):	54,079	x 11.8	x 5 =	3,190,661
1:24 (1 qt oil to 6 gal gas):	16,428	x 11.8	x 6 =	1,163,102
1:50 (1 pt oil to 6 gal gas):	47,306	x 11.8	x 6 =	3,349,265
oil injection (1 pt oil to 6 gal gas)*:	<u>59,622</u>	x 11.8	x 6 =	<u>4,221,238</u>
Total Registered Snowmobiles:	219,924		Proportional Gasoline Consumption (gal):	14,431,213

*Approximate oil consumption for six gallons gas.

In 1979 total gasoline consumption for registered snowmobiles was estimated to be 24,172,749 gallons. This represents approximately 1.12% of all gasoline consumed within Minnesota for 1979. In 1982 the total was 14,431,213 gallons, or 0.78% of all gasoline consumed.

As in Method I for snowmobiles, if all snowmobiles were included into the computations (i.e., not just those registered), significant increases in the consumption percentages would exist. The total percentage would rise to 1.74% for 1979 and 1.27% for 1982.

Data Limitations

- The number of registered snowmobiles was received from the DNR License Center.
- In order to determine the total oil consumption per snowmobile, it was necessary to manipulate the household figures provided in the on-going, nationwide survey conducted by Snowgoer magazine¹³. This was done by dividing total oil consumption per snowmobile by the average number of snowmobiles per household (as provided in SCORP).
- The oil use/fuel mixture ratio and percentage of snowmobiles using each ratio came from the same Snowgoer survey.
- Method II makes a critical assumption. The Snowgoer survey assumes that snowmobile owners buy oil in the unit size necessary for mixing directly with the necessary amount of gasoline. In other words, a snowmobile owner with a 1-quart-to-5-gallon gas ratio will buy oil in quarts and mix 1 quart of oil with 5 gallons of gasoline at a time.

Snowmobile Summary

Both methods show downward trends in fuel use by snowmobiles. This could be the result of relatively poor snow conditions in Minnesota ('78-'79, '79-'80, and '80-'81). It could also be the result of the increasing cost of snowmobiling. Noteworthy also is the fact that snowmobiles sold today are considerably more fuel efficient.

Whereas the results of the two methods are nearly identical for 1982, the calculations utilizing Method II data for 1979 are not as consistent with calculations generated in Method I using 1980 data. Although the percentage of gasoline consumed by snowmobiles appears to be lessening over time, the amount of the decrease between 1979-1980 is suspect.

TABLE 6

	<u>METHOD</u>	<u>REGISTERED SNOWMOBILES ONLY</u>	<u>ALL SNOWMOBILES</u>
1979	II	1.12%	1.74%
1980	I	0.95%	1.44%
1982	I	0.81%	1.24%
1982	II	0.78%	1.27%

This discrepancy may be attributed to the differences in survey years. However, a more probable explanation of the differences would favor Method I as clearly the more dependable calculation. As already stated, Method II labored under the assumption that the person buying oil for a snowmobile would be buying oil in the can size convenient for mixing. Undoubtedly this is not always true. Further, the SCORP data used to calculate the consumption percentage in Method I more thoroughly concentrated on recreational use in Minnesota. Therefore, to the extent that Method II corroborates the finding in Method I, it is appropriate to be included here, but it is suggested that the more accurate representation of total annual snowmobile gasoline use is in the range of 0.81% to 1.44%, as calculated in Method I.

It is also suggested that more detailed studies be completed over at least three seasons so that use trends can be identified and a more accurate figure can be determined.

FOOTNOTES

1. The gasoline referred to is the total taxable gasoline excluding aviation fuel and gasoline used in federally owned and operated vehicles.
2. Figures for 1980 and 1981 are taken from Minnesota Department of Revenue C-2 Annual Products, Receipts, Collections, Refunds and Distribution dated 1981 and 1982. The 1982 figure required estimates for November and December and was supplied by phone from Ron Doughty, December 20, 1982. (NOTE: Because of difficulty in obtaining figures, gasoline consumption in federally owned and operated vehicles has not been subtracted. By reducing the divisor in the use consumption formula the resulting percentage of gasoline use will be decreased accordingly.)
3. "Report of certificates of numbers issued to boats for Minnesota-1980" (CGHQ - 3923) as reported by the DNR License Center.
4. National Marine Manufacturers Association (NMMA) Report, Appendix I, pp.8-10. (Note actual average horsepower for Minnesota from MAREX Annual Market Research Notebook 1979-80 was approximately 37 hp. so the 35 hp. used from the national average is somewhat conservative).
5. Correspondence from Mr. R.H. Lincoln, Outboard Marine Corporation on 5/4/82 indicating that outboard fuel usage amounts to 1/3 full throttle figure. Inboard-Inboard/Outdrive full usage amounts to 40% full throttle.
6. Motor Fuel Use by Wisconsin Boaters, 1978, Ted Lauf and Dr. Ayse Somersan, Wisconsin Department of Natural Resources and Wisconsin Waterways Commission.
7. Minnesota State Comprehensive Outdoor Recreation Plan (SCORP) Report #2326 Projections of Summer Recreation Occasions 1978-1995, Research and Planning Section, Office of Planning. May 1979.
8. SCORP Fishing Study 1978 plus estimates from DNR Section of Fisheries (Duane Shodeen).
9. These figures were calculated in Method I and are the result of multiplying the average hp times the gal/hp/hr rating for each motor type.
10. SCORP Report 2319, Projections of Winter Occasions, January 1979, SCORP Equipment Inventory (Appendix B, 1979), and Minnesota DNR License Center.
11. SCORP assumption.
12. Recreational Use of Energy, International Snowmobile Industry Association.
13. SNOWGOER, Continuing Market Analysis of Snowmobile Owners 1982, Miller Research Services.
14. SCORP, Office of Planning, 1979.

15. Minnesota DNR License Center.
16. Fleishman, William A., (University of Minnesota-Duluth), unpublished as of December, 1982. "non-resident Minnesota motor vehicle visitor study, summer 1978".
17. These figures were calculated in Method II and are the result of multiplying the number of registered snowmobiles (MN/DNR License Center) times the percentages of snowmobiles within each class (Snowgoer research).
18. Boat and Motor Dealer, December, 1982. Page 3 (Zevern Publications, Inc.).