Response

to

House Joint Resolution #135 - 1986 Session

Requesting the Board of Education to Evaluate the Public and Commercial School Driver Education Programs

by

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Virginia Highway & Transportation Research Council
(A Cooperative Organization Sponsored Jointly by the Virginia Department of Highways & Transportation and The University of Virginia.)

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INTRODUCTION

Over the past three decades, driver education programs have been one of the most evaluated units of secondary school education throughout the nation. Numerous studies have been carried out to determine the effectiveness of these programs, both in promoting traffic safety and in imparting skills in vehicle operation. Over the years, studies have been made of various aspects of the programs, including variations in curricula, educational settings, student characteristics, and the safety performance of students across time.

During 1979-1980, the Driver Education Service of the Department of Education (DOE) contacted the Highway Safety Division and requested funding for a cooperative study of the effectiveness of the various driver education programs in Virginia. The Virginia Highway and Transportation Research Council (VHTRC) received federal grants in 1980 and 1981 to conduct the first phase of the study. The major objectives of this first phase were to design, test, and implement a computerized student performance reporting system for use in evaluating the driver education programs taught throughout the state. The novel feature of this new system was to tie together the 260 plus conviction categories with instructional elements in the curriculum as included in the State Curriculum Guide and contained in the various textbooks in use for instructional purposes. The results of these efforts were given in the report entitled "A Performance Report for Use in Driver Education Evaluation."

The 1982 session of the Virginia General Assembly passed House Joint Resolution (HJR) #80 requesting that the DOE study driver education programs in Virginia. HJR #32 (1983 session) and HJR #28 (1984 session) continued this charge to study state programs. Because a performance reporting system had been developed, the basis for a response to the General Assembly's request was available. The VHTRC was again contacted and asked to analyze the data obtained as a result of

its previous work and to prepare a report detailing the results for use by the DOE and the General Assembly.

The second phase of this longitudinal study was to analyze educational programs by program type (traditional classroom and in-car instruction, use of simulators, use of multiple-car driving ranges, and combinations of all four elements), type of school attended (public, nonpublic, and commercial), and years of driving experience (less than 1 year, 1 to 2 years, and 2 to 3 years). The results of these efforts were presented in the report entitled "Driver Education in Virginia: An Analysis of Performance Report Data."

Subsequent to the publication of this second report, the 1986 session of the General Assembly passed HJR #135, which cited a number of the findings from the report. The resolution requested that the Board of Education (1) evaluate the driver education programs at all public and commercial schools in the state to determine how they might be made more proficient and effective, (2) review the 3- and 4-phase instructional programs and make recommendations for their continuation, and (3) study the present requirements for the approval of commercial school driver education teachers and determine whether modifications were necessary.

PURPOSE AND SCOPE

The purpose of this document is to present a response to each of the three charges contained in HJR #135.

RESPONSES

For the 1984-1985 school year, there were 69 licensed commercial driving schools in operation throughout the state. There also were 77 private schools and 288 public secondary schools in 139 school divisions conducting state approved driver education programs. Of the 288 public schools, 148 had the traditional classroom and on-street program for instructing novice drivers, 11 had a program in which simulators were used in addition to the traditional instruction, 116 used off-street, multiple-car driving ranges in addition to classroom and on-street instruction, and 13 combined classroom, simulators, a range, and on-street training into a 4-phase curriculum package. In light of the number of schools and programs in operation throughout the state and the necessity of preparing a prompt response to the resolution, this document is an overall look at the issues rather than an attempt to analyze each and every program taught throughout the state. The

responses are presented below under two headings: Commercial vs. Public School Programs and 2-Phase vs. 3- and 4-Phase Programs.

Commercial vs. Public School Programs

The data in Figures 1-18 and Tables 1-3 contained in the report "Driver Education in Virginia: An Analysis of Performance Report Data," published by the VHTRC in January 1986, form the basis for this section of the response to HJR #135. (All figures and tables referenced in this response are attached as an Appendix.) These data indicate that the crash and conviction records of students who had had their driver education instruction in a commercial school had substantially different driving records than did those who had been instructed in the public schools.

Figure 14 in the above cited report summarizes the 1983-1984 school year conviction data contained in Figures 11-13. These figures show the number of convictions for each 1-year period of driving experience. The data are also arrayed for male and female students and for the type of school attended. It is readily apparent from these data that the conviction records of commercial school students were significantly worse than those for students instructed in the public and private schools. For example, in a 1-year period, when drivers had between 2 and 3 years of operator experience (generally comparable to persons 18 to 19 years old), male drivers who had received their instruction in a commercial school had 71.3 convictions per 100 trained drivers as compared to 50.7 and 49.1 convictions per 100 male drivers who had received their instruction in a public or private school,respectively. The conviction records for the other two levels of driving experience for males and the conviction records for all three driving experience levels for females indicate the same unfavorable direction for the drivers who had received their instruction in a commercial school. In addition, the 1982-1983 school year data (see Figures 7-9 and 10) followed the same patterns as those for the 1983-1984 school year cited here. It should also be noted that the rate of convictions rose as the years of experience increased (see Figures 15 and 16).

The data in Table 1 of the report are a further indication of the extreme divergence in the conviction records of public, private, and commercial school students. For each school year, data from all three experience levels are combined into a total figure. For the 1983-1984 school year, males who had attended a commercial school had 194.0 convictions per 100 drivers, and females had 69.7 convictions per 100 drivers. The comparable figures for males who had attended public or private schools were 118.8 and 114.3 convictions per 100 drivers and those for females were 42.4 and 41.8 convictions per 100 drivers. The combined number of convictions for male commercial school students was 63.3% higher than that for male public school students, and 69.8% higher

than that for male private school students. The combined number of convictions for female commercial school students was 64.4% and 66.7% higher, respectively. The 1982-1983 school year data followed this same general trend, with commercial school students having conviction records 68.6%, 76.3%, 80.3%, and 85.1% higher than those for male and female public and private school students.

For each set of crash data categorized by school year, operator experience, and sex of driver, students who had successfully completed a commercial school program had a greater number of crashes per 100 drivers than did those who had successfully completed their instruction in a public or private school. For example, the 1983-1984 school year data for male drivers with 2 to 3 years of operator experience (see Figure 6), show that commercial school students had 16.1 crashes per 100 drivers while public school students had 11.9 and private school students had 12.4. For the female drivers, the figures were 9.8, 7.2, and 7.2. The same trend is apparent in the other experience levels for 1983-1984 and for all 3 experience levels for the 1982-1983 data (see Figures 1-5). One important difference in the conviction and crash trends is that crashes peaked at the 1-to-2-year experience level, while, as noted earlier, the number of convictions rose each year.

During the 1983-1984 school year, the combined number of crashes for males who had attended a commercial school was 47.4 per 100 drivers, while those for males who had attended public and private schools were 31.5 and 35.0 per 100 drivers, respectively (see Table 3). The 1982-1983 school year crash figures were 42.9 for commercial school students, 29.1 for public school students, and 29.0 for private school students. The comparable 1983-1984 figures for female commercial school students were 31.2 crashes per 100 drivers and those for female public and private school students were 21.1 and 23.1 crashes per 100 drivers. The 1982-1983 school year figures were 29.3 (commercial), 18.7 (public), and 15.9 (private) crashes per 100 female drivers. The combined numbers of crashes for both males and females who had successfully completed their instruction in a commercial school were over 50% higher than those for students who had completed their instruction in a public or private school.

As shown in the above analyses of the crash and conviction records, students who had successfully completed their driving instruction in a commercial school had significantly worse driving records than did those instructed in the public and private schools. In light of these factors, it is recommended that each commercial school instructor be required to successfully complete 3 credit hours of college course work in the methods of teaching classroom and in-car instruction to beginning drivers. The preferred course is entitled "The Beginning Driver," a new course now available for driver education teachers in Virginia. In addition, each commercial school in the state should critically analyze the Performance Report of its school provided by the DOE. By performing

this analysis, a school can determine the areas of instruction and student performance that fall below the state average for its type of school, below the state average for all students, and below what is expected of a good instructional program in driver education. And finally, the DOE should continue to monitor the performance of each commercial school to determine if additional action is necessary.

While it is recognized that the crash and conviction records of public and private school students are not as good as they should or could be, no specific recommendation for additional course work is made for teachers in these schools, because to be recertified to teach, they must complete 6 credit hours of course work each 5 years. It is recommended, however, that each division superintendent have both the division level and the individual school Performance Report analyzed in an effort to improve the local instructional program in driver education.

2-Phase vs. 3- and 4-Phase Programs

In the above cited report analyzing Performance Report data, Figures 19-24 contain conviction data and Figures 25-30 contain crash data categorized according to the four instructional programs taught in the state. Tables 1 and 2 of this response have been prepared, using the 1982-1983 and 1983-1984 school year data, to show the variations in program effectiveness as reflected by the number of crashes and convictions per 100 drivers. The tables include data for male and female students for each of the 3 operator experience levels. The data are also arrayed by the statewide public school average for all schools combined, the average performance of those instructed in a 2-phase curriculum, and the averages for those who attended a school that used a simulator, an off-street multiple-car range, or a 4-phase curriculum combining all instructional elements.

An analysis of the data in these two tables shows that drivers who received their instruction in the traditional classroom/on-street behind-the-wheel program had fewer crashes and convictions than did those instructed in any one of the other three types of educational programs. In the cases of the conviction data alone and of conviction plus crash data, there is a wide gap between the relative effectiveness of the 2-phase program for instructing students and the second best 4-phase program. In addition, the differences between the 4-phase, simulator, and range programs (listed in order of effectiveness) are slight for these two measures of effectiveness. In the case of the crash data alone, the relative effectiveness of the 2-phase program is superior to that for the other three programs, but the strength of this difference is low. In fact, while the 2-phase program is relatively the best and the range program is relatively the worst, there is little difference in the number of crashes per 100 drivers among each of the four programs for each set of data analyzed.

Table 1

Crash and Conviction Rates

1982-1983 State Averages

Program Type	Less than 1 Year		1 to 2 Years		2 to 3 Years	
	Male	Female	Male	Female	Male	Female
Public School Average						
Crashes/100 drivers	6.3	4.5	11.2	7.2	11.6	7.0
Convictions/ 100 drivers	24.9	8.4	38.9	13.0	48.0	16.6
Two Phase State Average						
Crashes/100 drivers	5.9	4.0	11.8	7.3	10.3	6.0
Convictions/ 100 drivers	20.2	6.2	30.4	9.3	46.2	14.3
Three Phase (Simulator) State Average						
Crashes/100 drivers	6.3	4.2	11.2	6.9	12.3	6.2
Convictions/ 100 drivers	27.1	9.7	42.9	15.6	47.0	15.5
Three Phase (Range) State Average						
Crashes/100 drivers	6.9	5.0	10.4	7.0	12.9	8.0
Convictions/ 100 drivers	28.9	10.0	43.6	15.0	45.0	16.6
Four Phase State Average						
Crashes/100 drivers	5.5	4.2	13.5	7.4	8.8	5.5
Convictions/ 100 drivers	23.3	8.9	41.6	12.7	67.7	22.8

Table 2

Crash and Conviction Rates

1983-1984 State Averages

Program Type	Less than 1 Year		1 to 2 Years		2 to 3 Years	
	Male	Female	Male	Female	Male	Female
Public School Average						
Crashes/100 drivers	6.7	5.0	12.9	8.9	11.9	7.2
Convictions/ 100 drivers	27.5	10.0	40.6	14.0	50.7	18.4
Two Phase State Average						
Crashes/100 drivers	6.5	4.9	11.9	8.2	12.1	7.7
Convictions/ 100 drivers	21.8	7.0	35.8	11.2	43.8	15.0
Three Phase (Simulator) State Average						
Crashes/100 drivers	7.0	4.4	14.5	9.7	10.2	6.4
Convictions/ 100 drivers	31.9	12.5	42.0	15.1	55.2	15.9
Three Phase (Range) State Average						
Crashes/100 drivers	6.6	5.1	13.8	9.6	11.5	6.9
Convictions/ 100 drivers	34.5	13.9	44.4	16.3	53.3	20.2
Four Phase State Average						
Crashes/100 drivers	7.9	4.7	11.8	8.2	14.3	7.7
Convictions/ 100 drivers	24.7	8.1	41.3	15.0	58.5	19.1

The data in Table 3 show that there are schools that use one of the expanded programs and have fewer crashes or convictions than either the state average or the 2-phase average. Although this situation does not alter the general findings and conclusions relative to the superiority of the 2-phase program, it does indicate that in specialized and individualized cases, other types of educational programs can also be effective. Because of this, the determination of whether to offer a course of instruction that includes the use of a simulator, an off-street multiple-car range, or a combination of the two techniques should be left to the judgement of local school officials. Since 129 schools already have range facilities in place and in operation, and 24 schools have simulators installed for use by their students, it does not seem appropriate for the DOE to demand that these schools not use equipment and methods of instruction available on a local level. The local school officials, using the Performance Report data available to them from the Driver Education Service of the DOE, are in the best position to judge whether simulators or ranges should be used in their instructional programs.

While the state should not demand that local school authorities not use simulator or range instruction in their educational programs, the data are clear that the 2-phase program is a superior crash and conviction countermeasure program when compared to these expanded programs. In light of this, it does seem appropriate to establish a state policy and procedure whereby hours spent at a simulator or on an off-street driving range not automatically decrease the number of hours of training in a vehicle on the road and in traffic.

The policy should allow a local school division to appeal to the state DOE, and by offering sufficient and convincing data that its expanded educational program is of a quality at least as good as that for the state average, to then use simulator and range hours as a substitute for on-road in-traffic training at a rate not to exceed that currently allowed.

The new policy would also allow these expanded hours of instruction to serve as a prima facie substitute for classroom hours of instruction, activities to which they seem more closely aligned.

FINDINGS AND CONCLUSIONS

It has been established that the crash and conviction performances of students who were instructed to drive in the public and private schools were similar, and that the performances of students instructed in the commercial schools were much worse than those of the other two groups. There are a number of variables which could account for these findings, including differences in the students, instructional staff,

Table 3

1983-1984 Crash and Conviction Rates

From Selected Schools

Program Type	Less than 1 Year		1 to 2 Years		2 to 3 Years	
	Male	Female	Male	Female	Male	Female
Public School Average						
Crashes/100 drivers	6.7	5.0	12.9	8.9	11.9	7.2
Convictions/ 100 drivers	27.5	10.0	40.6	14.0	50.7	18.4
Two Phase State Average						
Crashes/100 drivers	6.5	4.9	11.9	8.2	12.1	7.7
Convictions/ 100 drivers	21.8	7.0	35.8	11.2	43.8	15.0
Fort Chiswell (Simulator)						
Crashes/100 drivers	8.1	5.1	11.3	5.6	4.8	9.4
Convictions/ 100 drivers	13.0	2.6	24.5	13.9	4.8	0.0
Lake Taylor (Range)						
Crashes/100 drivers	3.5	4.1	7.5	8.6	14.1	5.9
Convictions/ 100 drivers	16.4	2.5	47.0	11.7	26.9	16.8
Mills Godwin (4-Phase)						
Crashes/100 drivers	10.0	4.7	9.3	11.2	12.8	6.8
Convictions/ 100 drivers	23.6	4.7	28.7	11.2	29.5	5.5

the way the programs were taught, or the programs themselves. The recommendation for increased education for the commercial school instructional staff is aimed at three of these differences, staff, students, and program presentation.

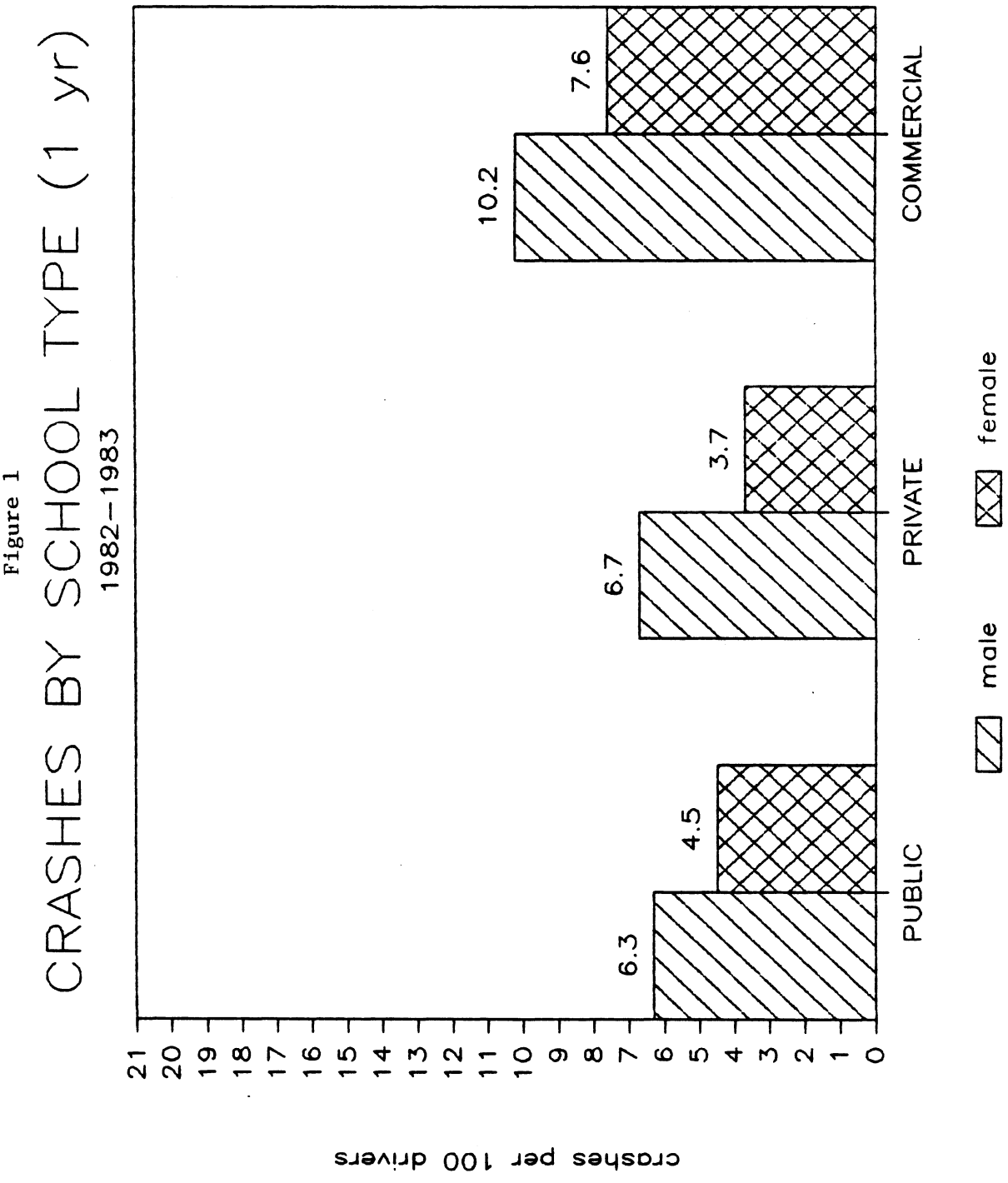
It has further been established that the crash and conviction performances of students instructed in a traditional 2-phase program were superior to the performances of students instructed in one of the expanded educational programs. It was also shown that several schools could be identified that used one of the expanded programs and whose students had driving records better than the state average. The recommendation dealing with the automatic substitution of simulator and off-street training accommodates both of these positions, but puts the burden of proof on the locality, while at the same time assuring them that the data will be available through the continuation of the production of the Performance Report.

APPENDIX A

Tables and Figures from Report

Driver Education in Virginia: An Analysis of Performance Report Data

Figure 1


CRASHES BY SCHOOL TYPE (1 yr)
1982-1983
crashes per 100 drivers
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
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6.3
4.5
6.7
3.7
10.2
7.6
PUBLIC
PRIVATE
COMMERCIAL
male
female

Figure 2

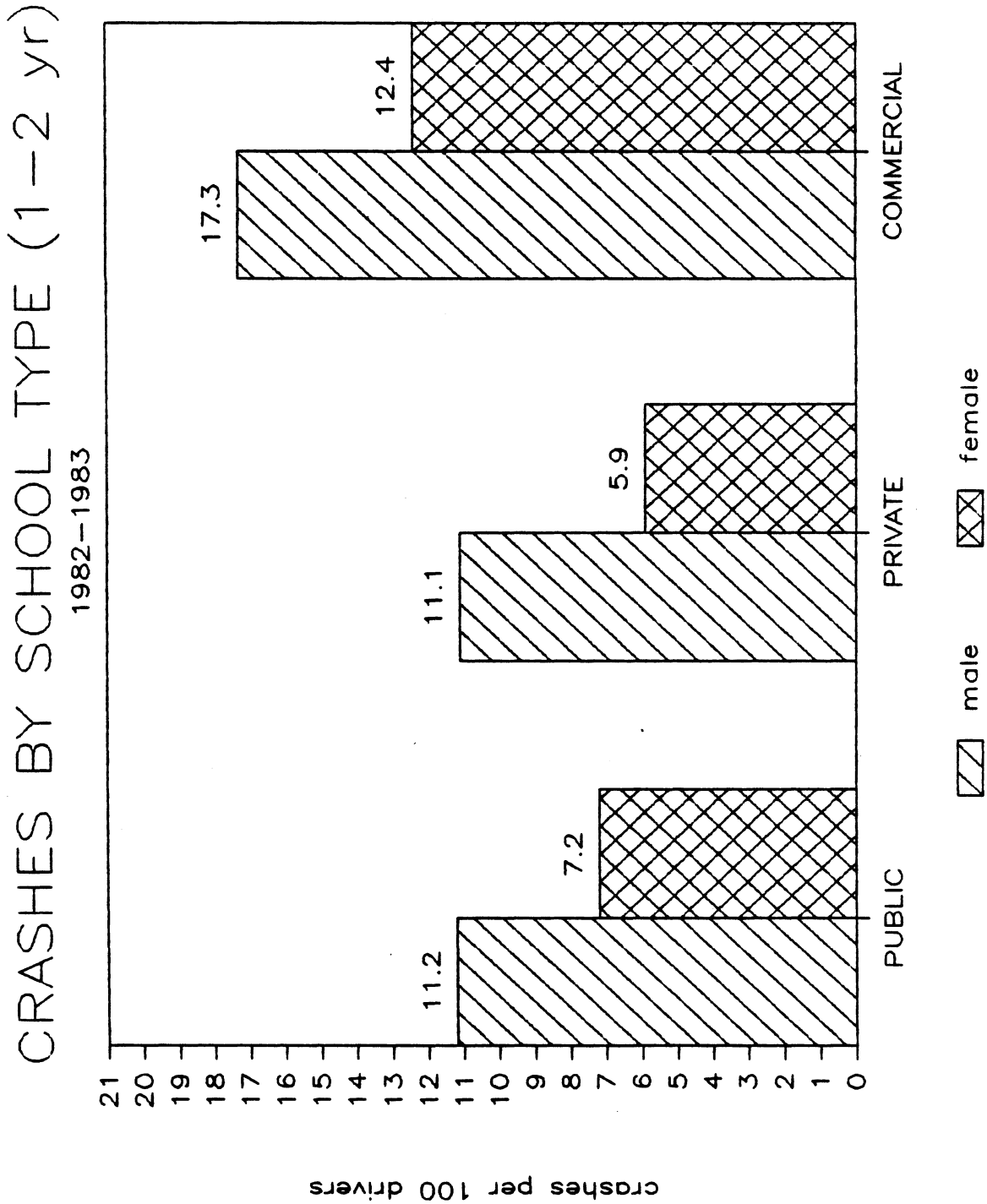

CRASHES BY SCHOOL TYPE (1-2 yr)
1982-1983
crashes per 100 drivers
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
11.2
7.2
11.1
5.9
17.3
12.4
PUBLIC
PRIVATE
COMMERCIAL
male
female

Figure 3

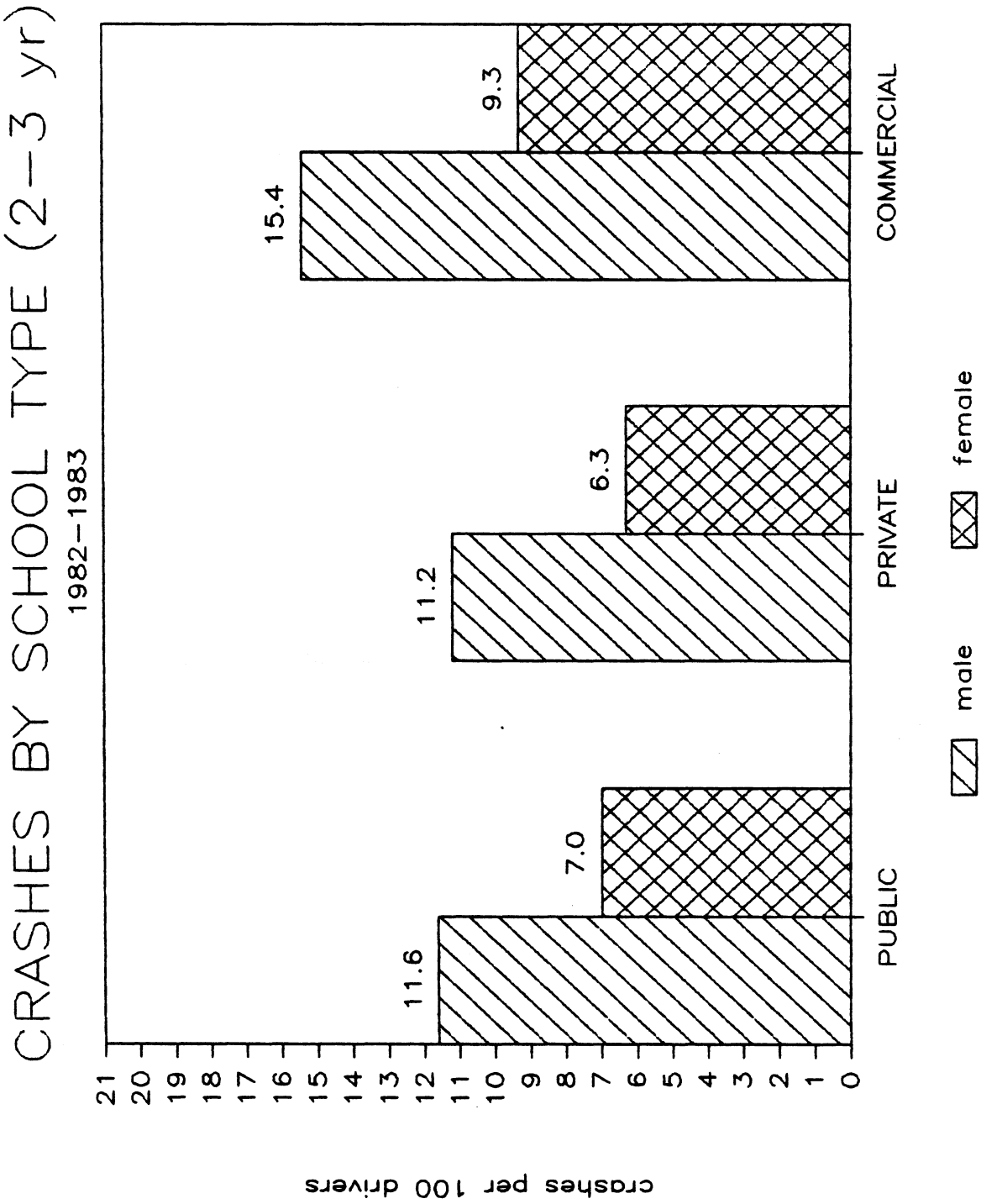

CRASHES BY SCHOOL TYPE (2–3 yr)
1982–1983
crashes per 100 drivers
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
11.6
7.0
11.2
6.3
15.4
9.3
PUBLIC
PRIVATE
COMMERCIAL
male
female

Figure 4

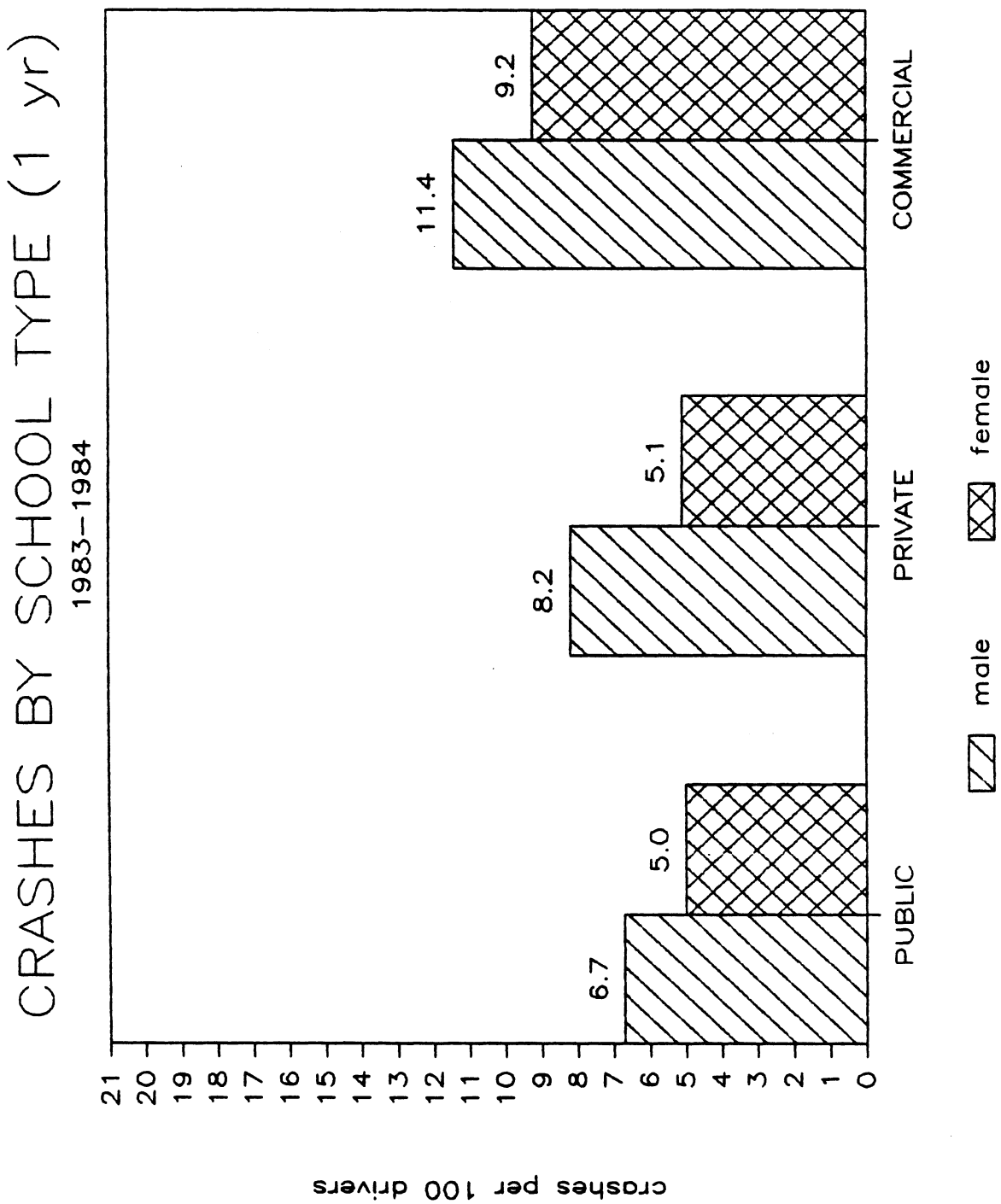
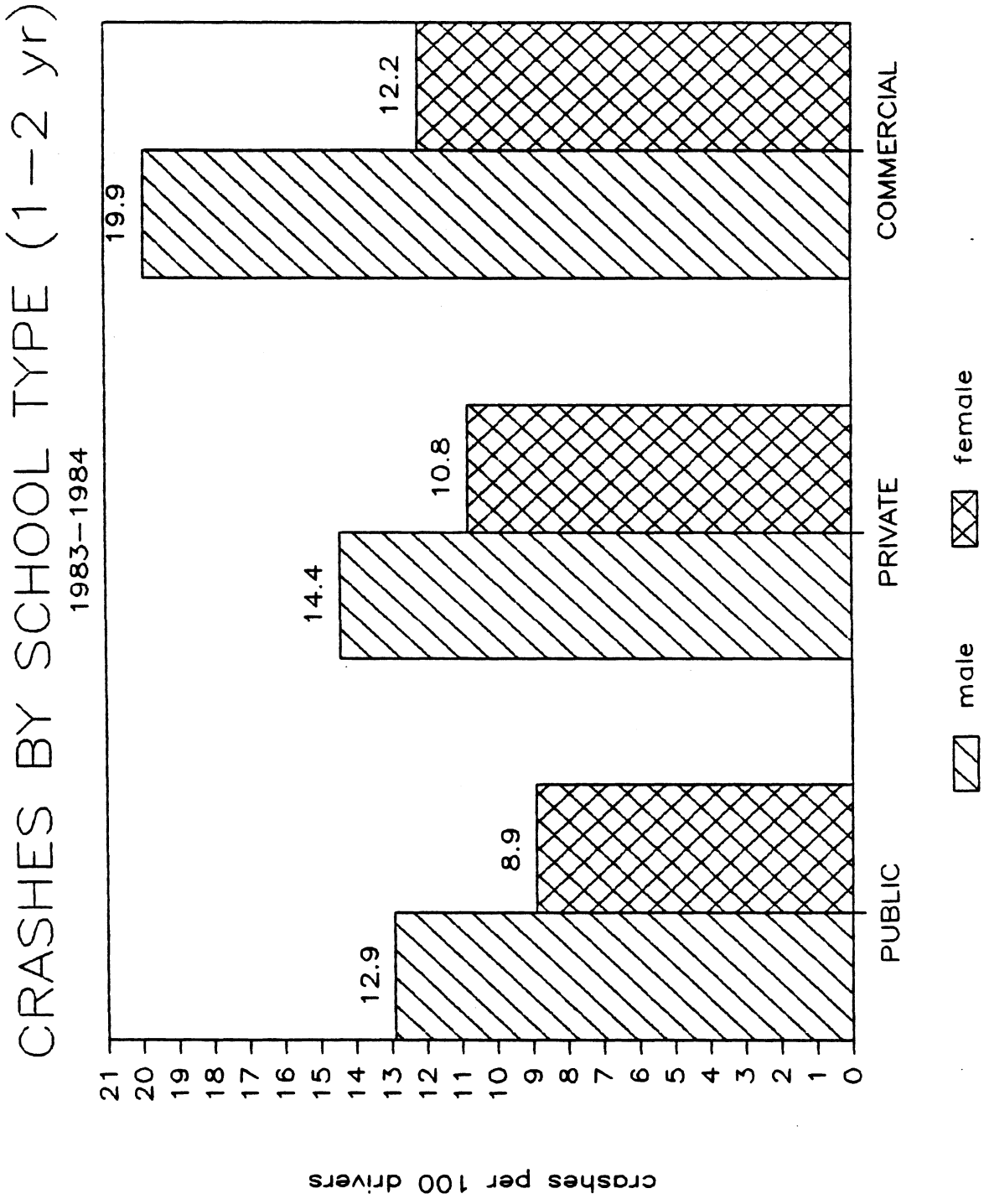

CRASHES BY SCHOOL TYPE (1 yr)
1983-1984
crashes per 100 drivers
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
6.7
5.0
8.2
5.1
11.4
9.2
PUBLIC
PRIVATE
COMMERCIAL
male
female

Figure 5


CRASHES BY SCHOOL TYPE (1–2 yr)
1983–1984
crashes per 100 drivers
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
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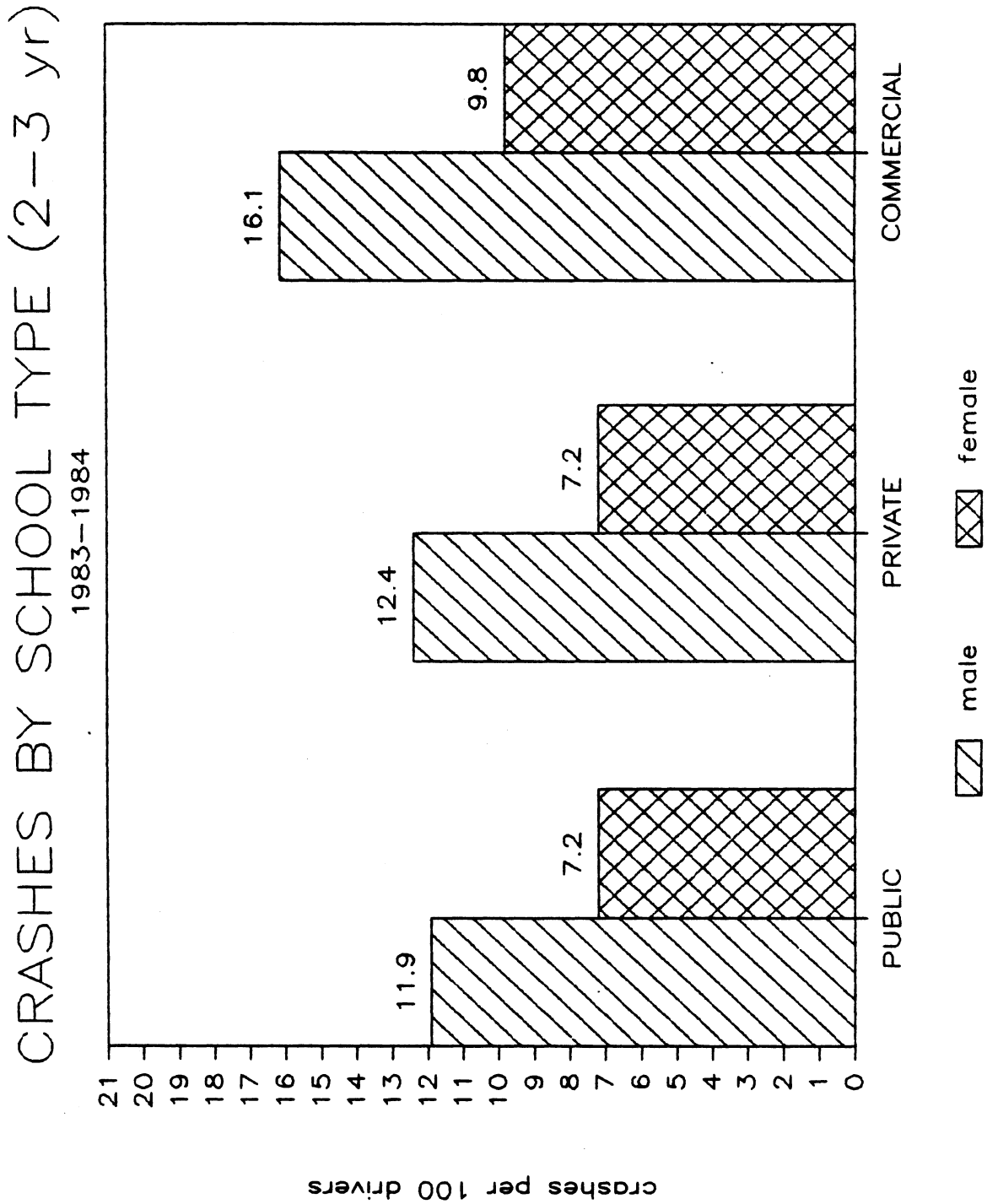
12.9
8.9
14.4
10.8
19.9
12.2
PUBLIC
PRIVATE
COMMERCIAL
male
female

Figure 6


CRASHES BY SCHOOL TYPE (2–3 yr)
1983–1984
crashes per 100 drivers
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
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21
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12.4
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16.1
9.8
PUBLIC
PRIVATE
COMMERCIAL
male
female

Figure 7

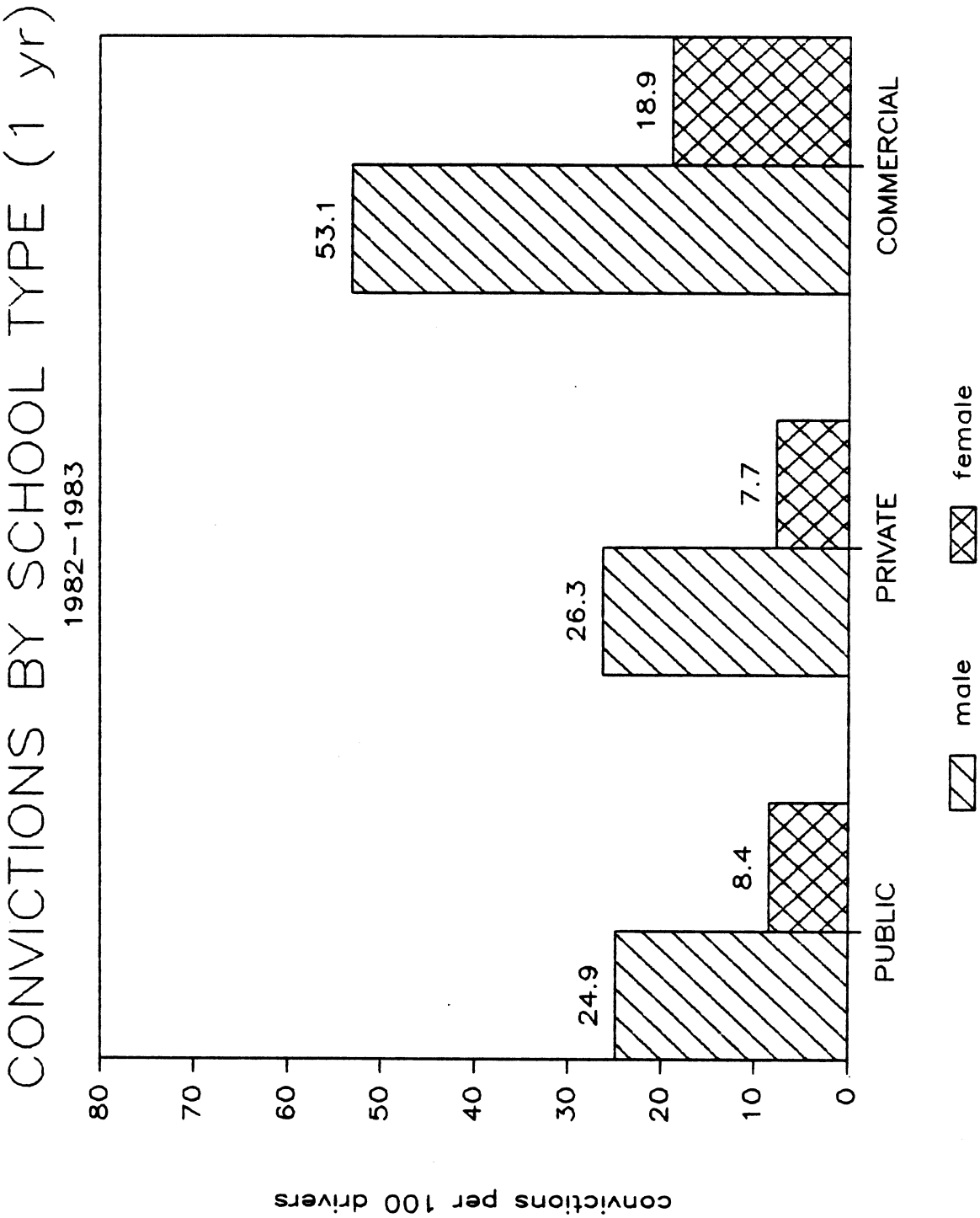
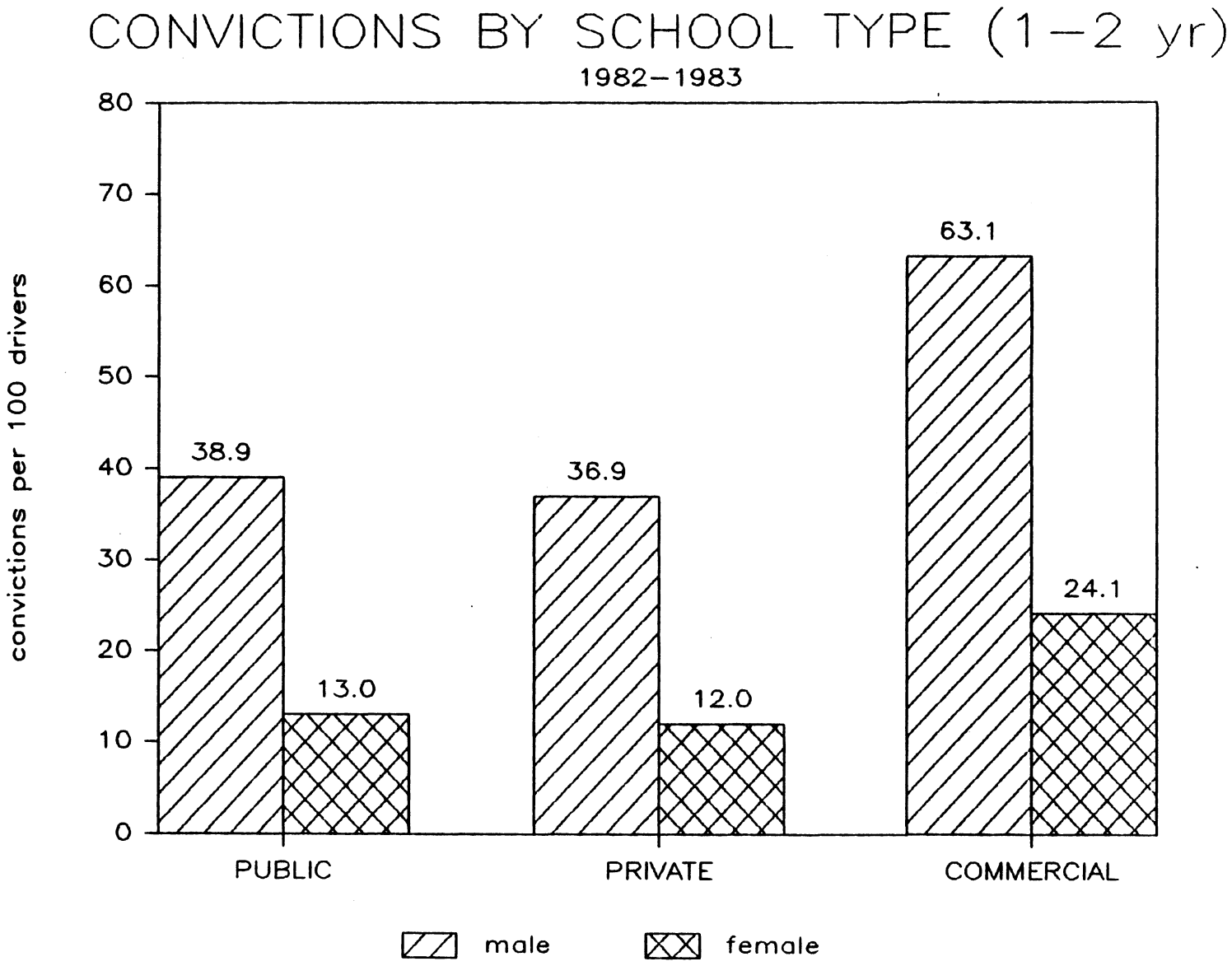

CONVICTIONS BY SCHOOL TYPE (1 yr)
1982–1983
convictions per 100 drivers
0
10
20
30
40
50
60
70
80
24.9
8.4
26.3
7.7
53.1
18.9
PUBLIC
PRIVATE
COMMERCIAL
male
female

Figure 8


CONVICTIONS BY SCHOOL TYPE (1-2 yr)
1982-1983
convictions per 100 drivers
80
70
60
50
40
30
20
10
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13.0
36.9
12.0
63.1
24.1
PUBLIC
PRIVATE
COMMERCIAL
male
female

Figure 9

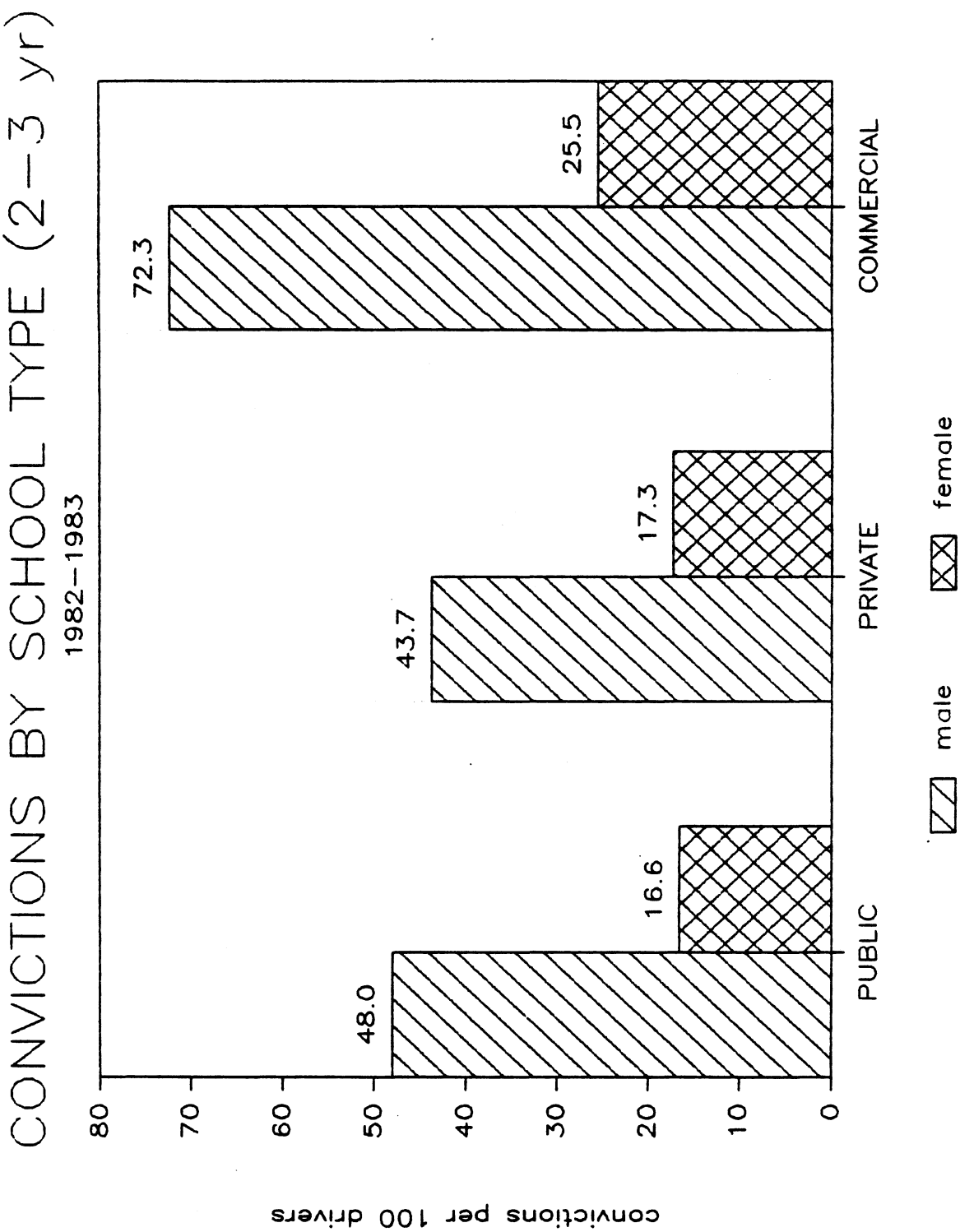

CONVICTIONS BY SCHOOL TYPE (2–3 yr)
1982–1983
convictions per 100 drivers
0
10
20
30
40
50
60
70
80
48.0
16.6
43.7
17.3
72.3
25.5
PUBLIC
PRIVATE
COMMERCIAL
male
female

FIGURE 10

CONVICTIONS BY DRIVING EXPERIENCE AND
SCHOOL ATTENDED - 1982-1983

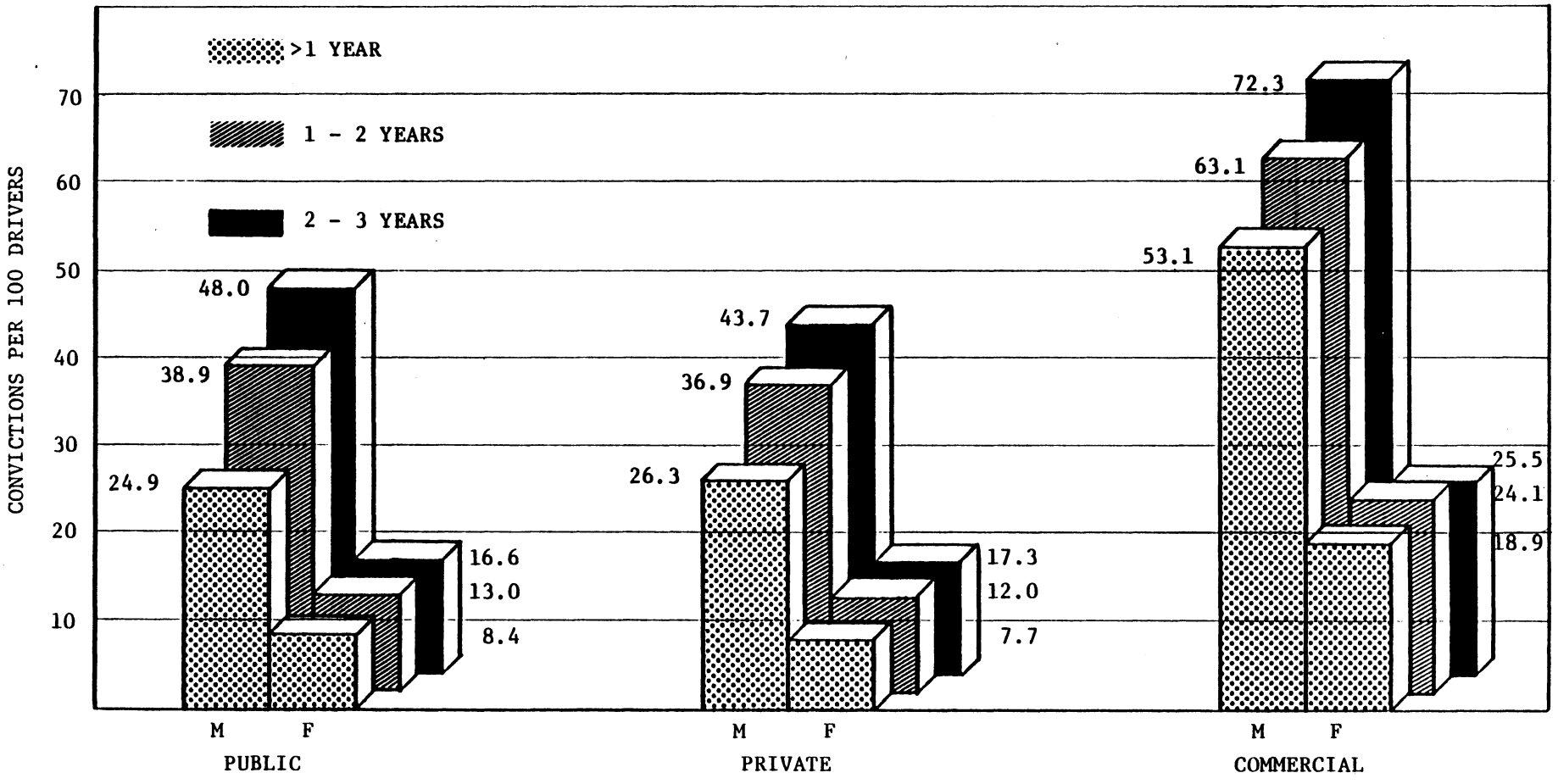


Figure 11

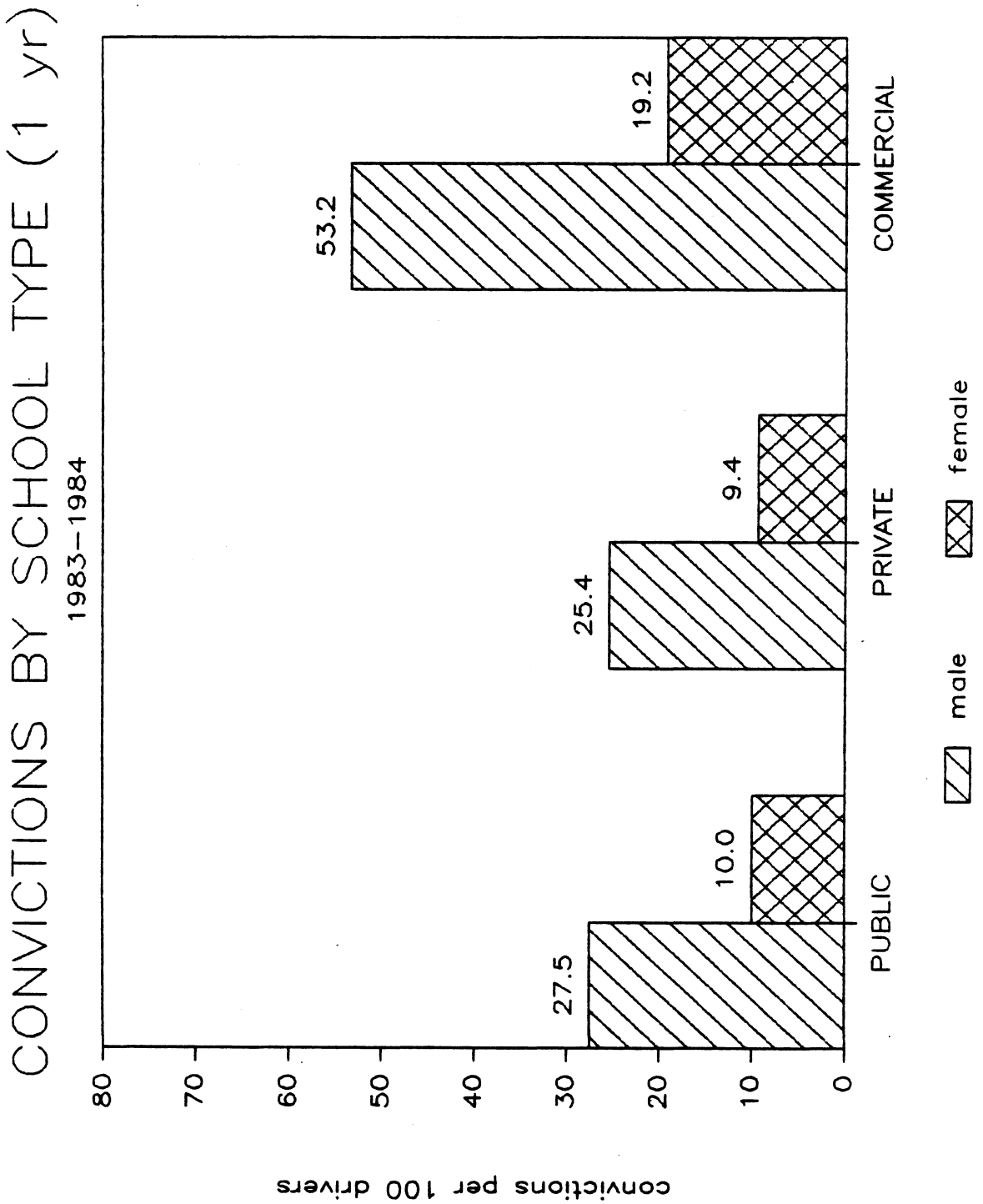

CONVICTIONS BY SCHOOL TYPE (1 yr)
1983-1984
convictions per 100 drivers
80
70
60
50
40
30
20
10
0
27.5
10.0
25.4
9.4
53.2
19.2
PUBLIC
PRIVATE
COMMERCIAL
male
female

Figure 12

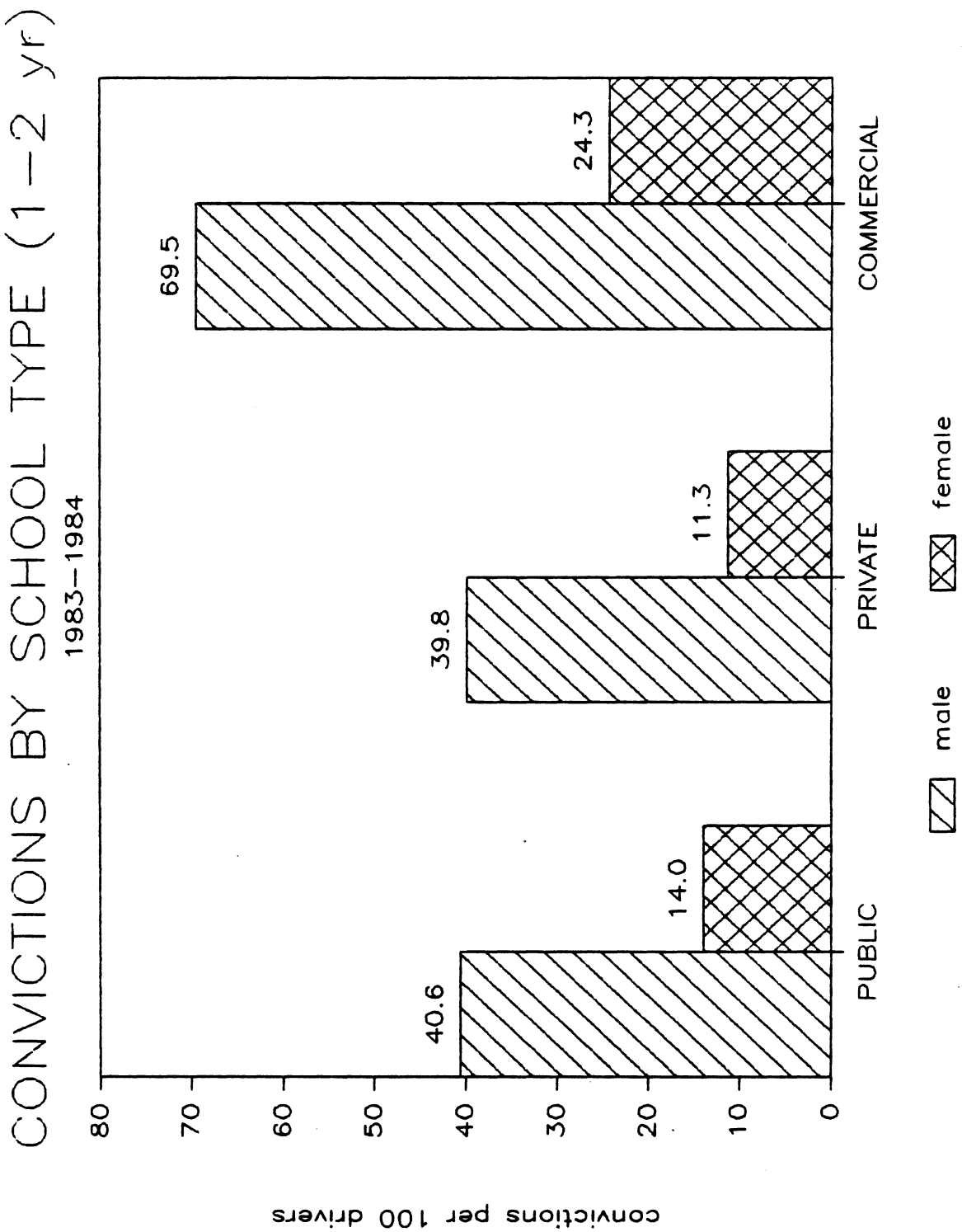

CONVICTIONS BY SCHOOL TYPE (1-2 yr)
1983-1984
convictions per 100 drivers
80
70
60
50
40
30
20
10
0
40.6
14.0
39.8
11.3
69.5
24.3
PUBLIC
PRIVATE
COMMERCIAL
male
female

Figure 13

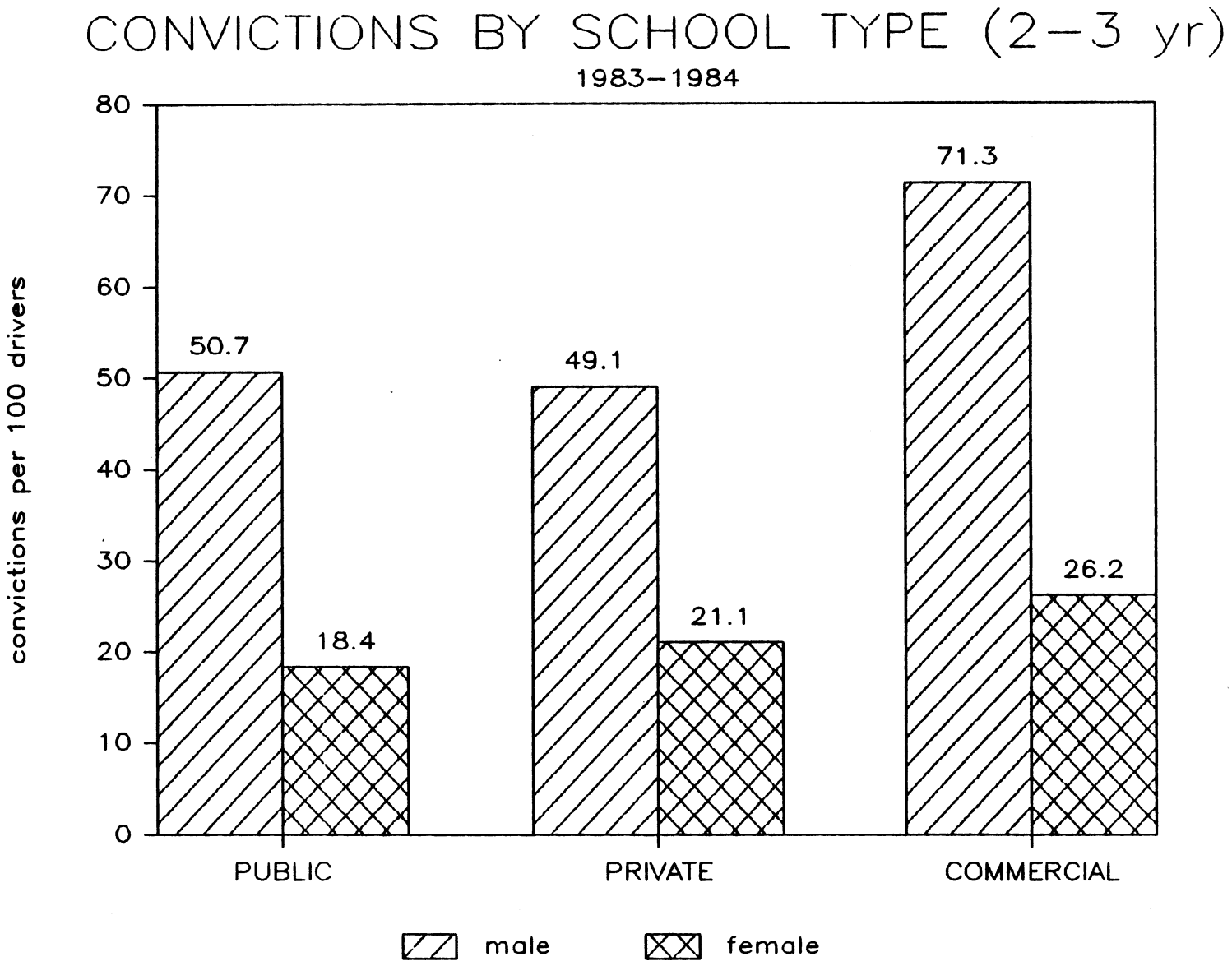
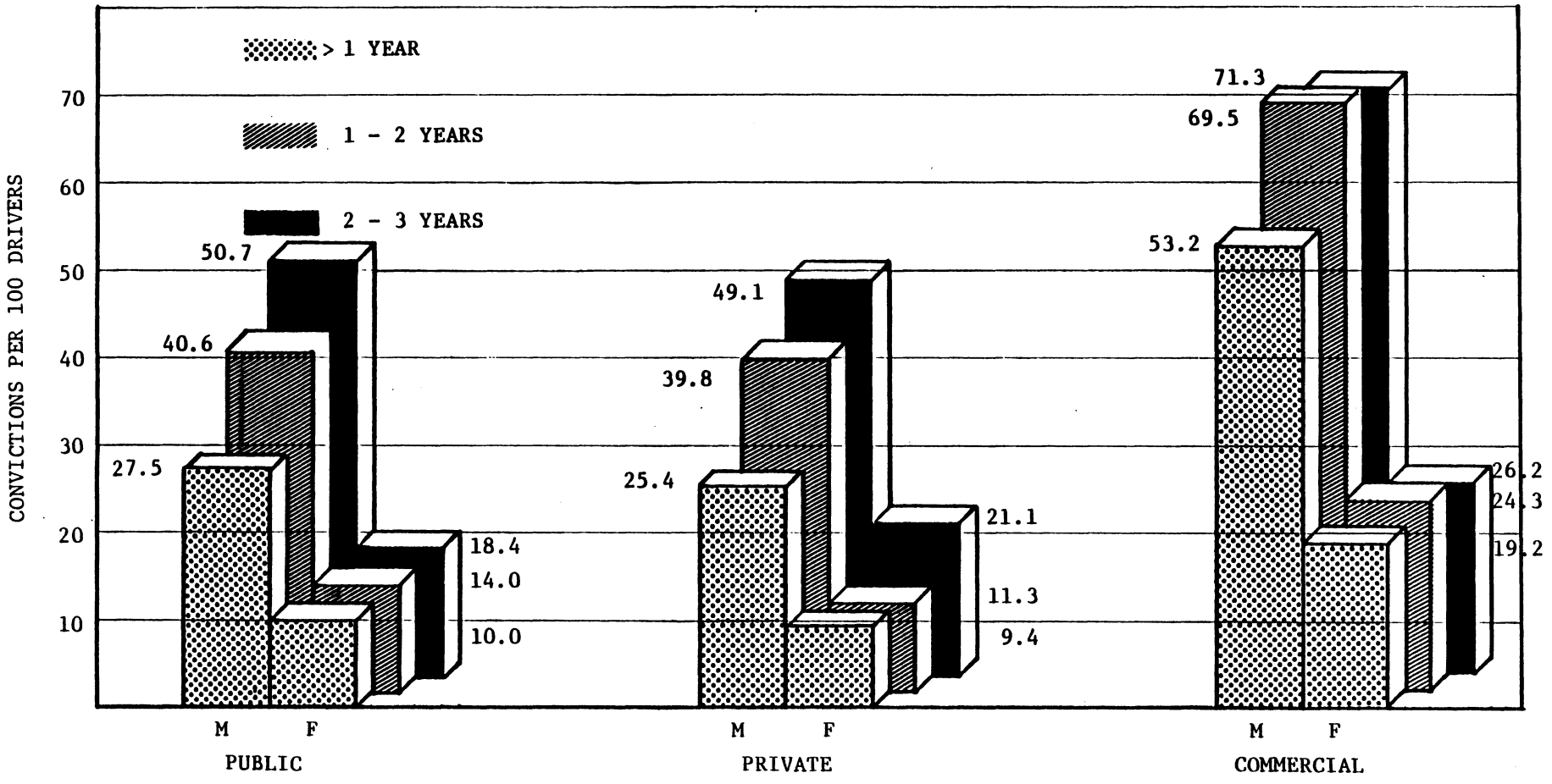

CONVICTIONS BY SCHOOL TYPE (2–3 yr)
1983–1984
convictions per 100 drivers
80
70
60
50
40
30
20
10
0
50.7
18.4
49.1
21.1
71.3
26.2
PUBLIC
PRIVATE
COMMERCIAL
male
female

FIGURE 14

CONVICTIONS BY DRIVING EXPERIENCE AND
SCHOOL ATTENDED - 1983-1984



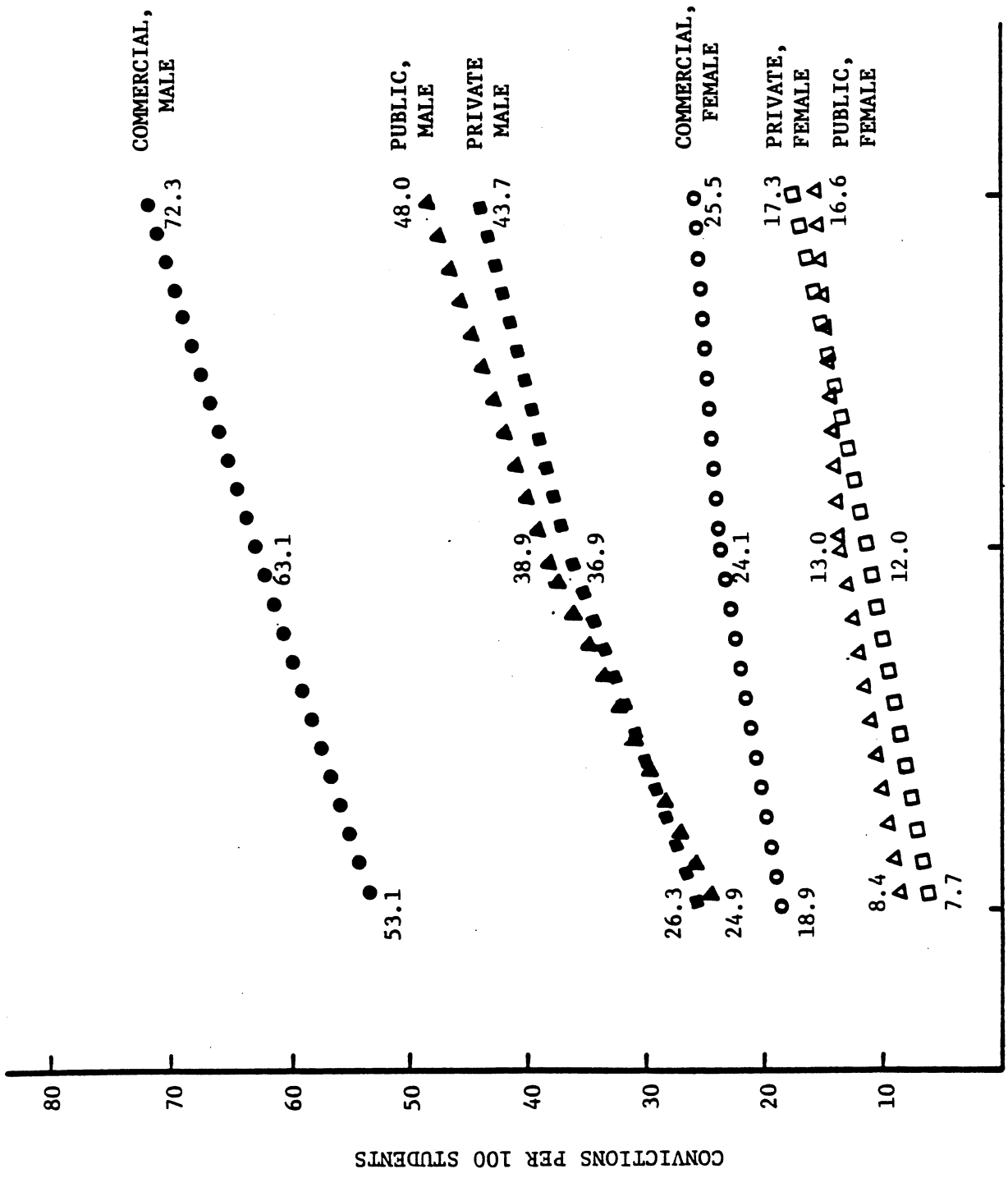


FIG. 15 - CONVICTIONS BY EXPERIENCE LEVEL - 1982-1983

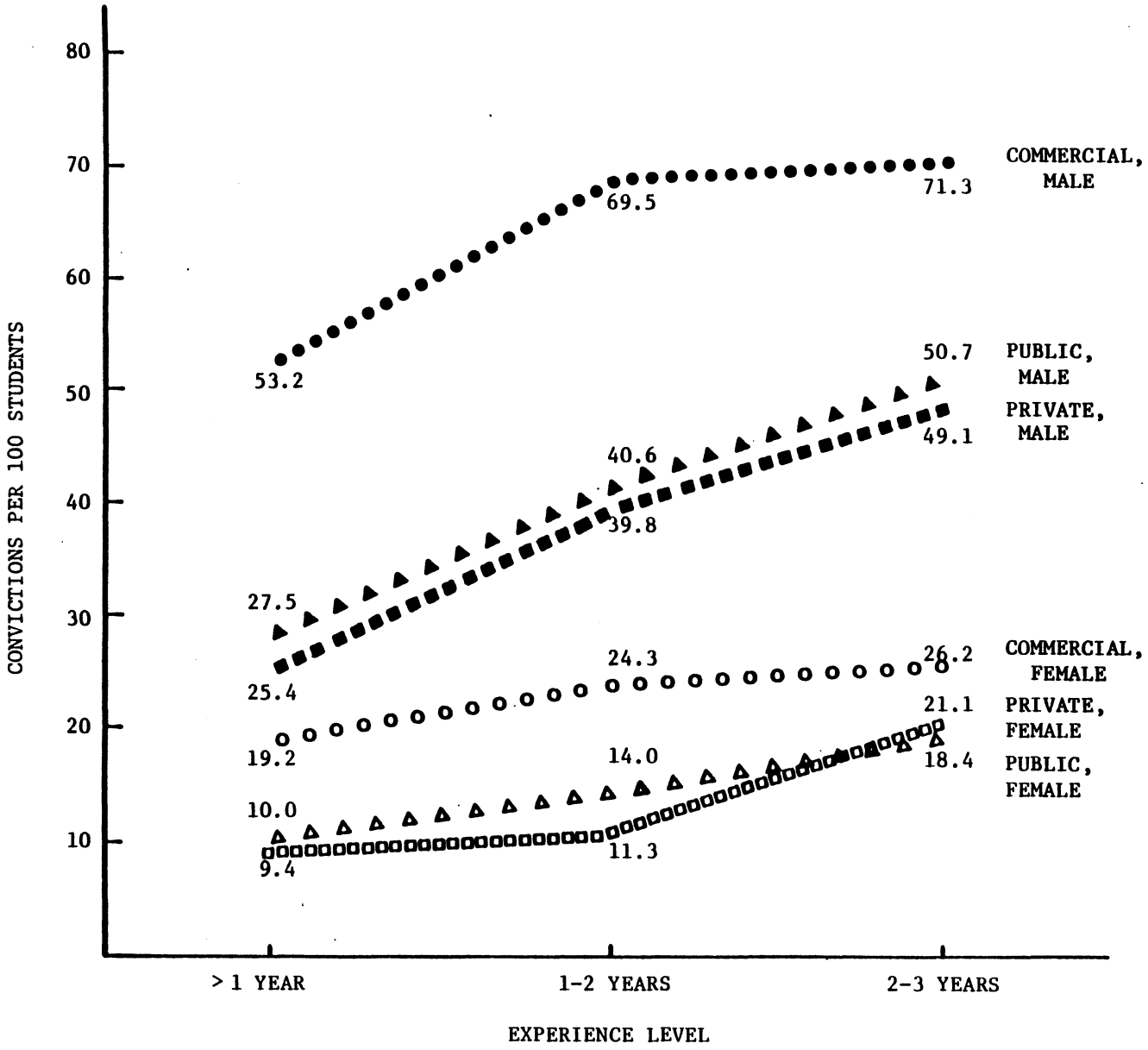


FIG. 16 - CONVICTIONS BY EXPERIENCE LEVEL - 1983-1984

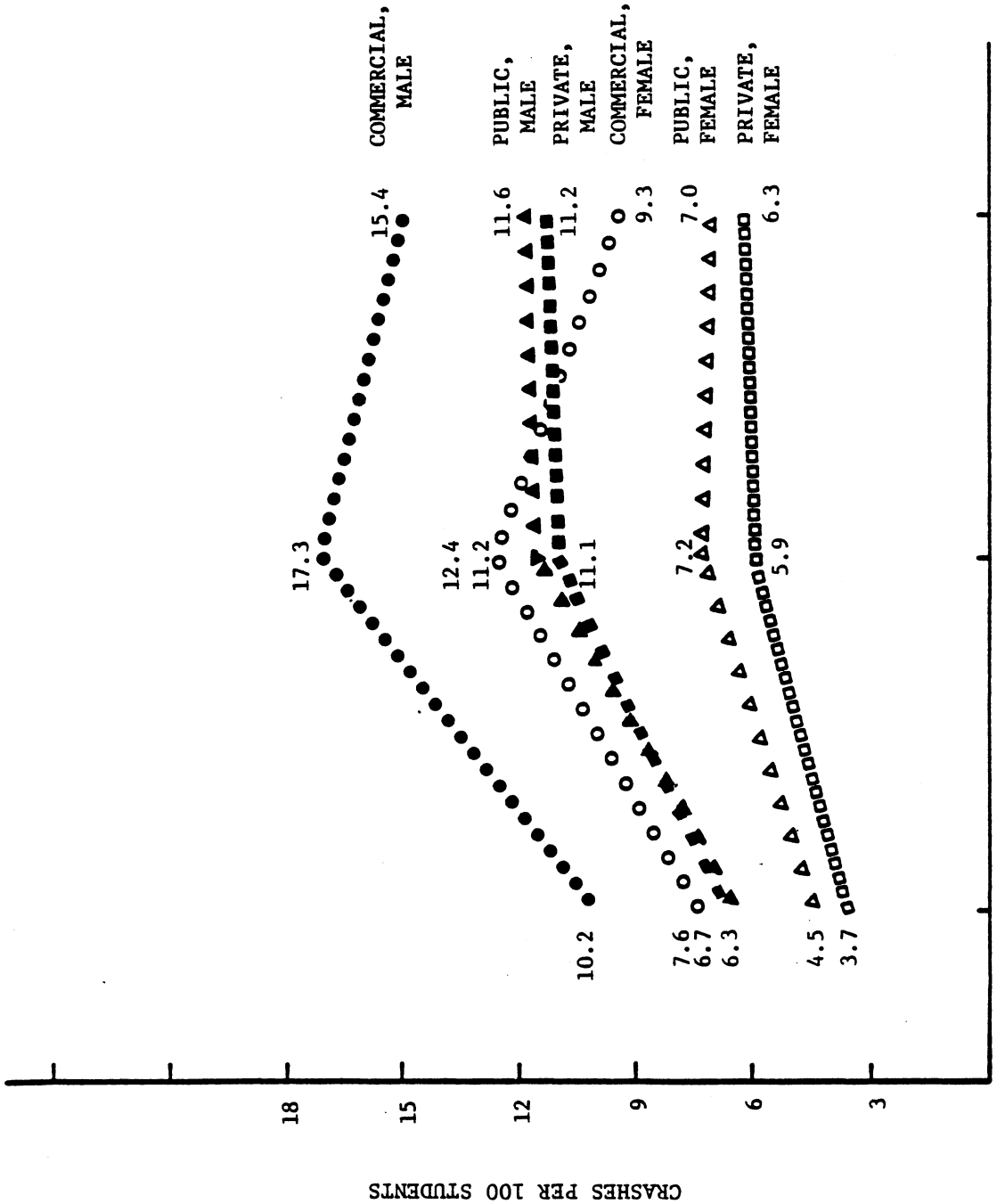


FIG. 17 - CRASHES BY EXPERIENCE LEVEL - 1982-1983

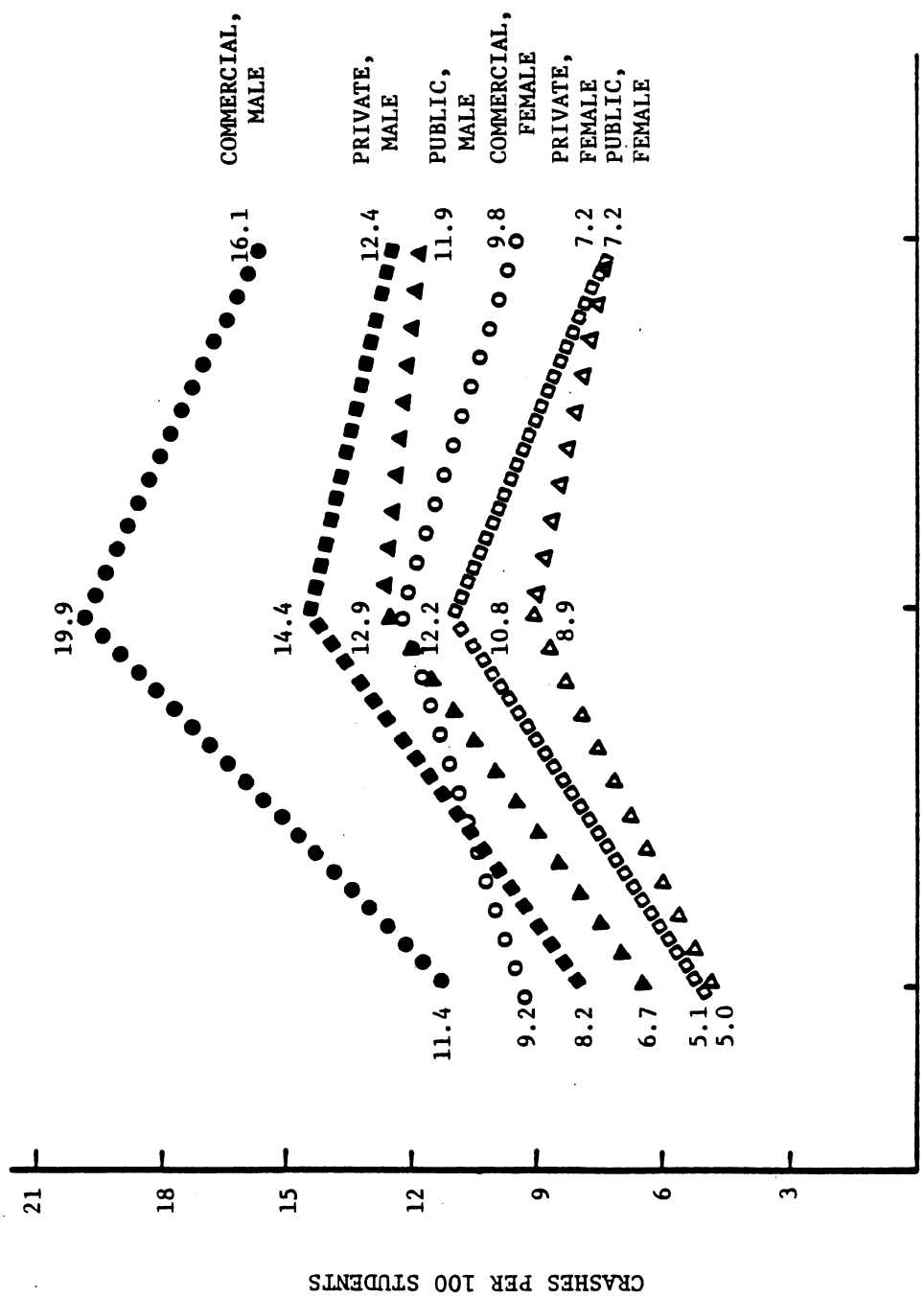


FIG. 18 - CRASHES BY EXPERIENCE LEVEL - 1983-1984

TABLE 1

THREE-YEAR CUMULATIVE CONVICTIONS

1982-1983

EXPERIENCE LEVEL	PUBLIC M	PUBLIC F	PRIVATE M	PRIVATE F	COMMERCIAL M	COMMERCIAL F
0 to 1 year	24.9	8.4	26.3	7.7	53.1	18.9
1 to 2 years	38.9	13.0	36.9	12.0	63.1	24.1
2 to 3 years	48.0	16.6	43.7	17.3	72.3	25.5
COMBINED TOTALS	111.8	38.0	106.9	37.0	188.5	68.5

1983-1984

EXPERIENCE LEVEL	PUBLIC M	PUBLIC F	PRIVATE M	PRIVATE F	COMMERCIAL M	COMMERCIAL F
0 to 1 year	27.5	10.0	25.4	9.4	53.2	19.2
1 to 2 years	40.6	14.0	39.8	11.3	69.5	24.3
2 to 3 years	50.7	18.4	49.1	21.1	71.3	26.2
COMBINED TOTALS	118.8	42.4	114.3	41.8	194.0	69.7

TABLE 2

PERCENTAGE OF CONVICTIONS SERIOUS IN NATURE

	0 to 1 yr experience		1 to 2 yr experience		2 to 3 yr experience	
1982-1983	M	F	M	F	M	F
PUBLIC	78.5	85.2	73.9	84.0	74.5	82.8
PRIVATE	79.3	94.3	79.2	90.5	75.3	80.2
COMMERCIAL	76.3	86.5	70.9	85.2	70.2	81.0
COMBINED AVG	78.0	88.7	74.7	86.6	73.3	81.3
1983-1984						
PUBLIC	77.4	82.5	72.4	82.2	70.7	80.1
PRIVATE	83.4	87.9	73.6	79.8	70.5	81.7
COMMERCIAL	74.6	80.3	68.4	80.0	67.2	76.6
COMBINED AVG	78.5	83.6	71.5	80.7	69.5	79.5
AVERAGE FOR BOTH YEARS						
COMBINED AVG	78.3	86.1	73.1	83.6	71.4	80.4

AVERAGE FOR BOTH YEARS AND EXPERIENCE LEVELS

MALES	74.2
FEMALES	83.4

TABLE 3

THREE-YEAR CUMULATIVE CRASHES

1982-1983

	PUBLIC		PRIVATE		COMMERCIAL	
EXPERIENCE LEVEL	M	F	M	F	M	F
0 to 1 year	6.3	4.5	6.7	3.7	10.2	7.6
1 to 2 years	11.2	7.2	11.1	5.9	17.3	12.4
2 to 3 years	11.6	7.0	11.2	6.3	15.4	9.3
COMBINED TOTALS	29.1	18.7	29.0	15.9	42.9	29.3

1983-1984

	PUBLIC		PRIVATE		COMMERCIAL	
EXPERIENCE LEVEL	M	F	M	F	M	F
0 to 1 year	6.7	5.0	8.2	5.1	11.4	9.2
1 to 2 years	12.9	8.9	14.4	10.8	19.9	12.2
2 to 3 years	11.9	7.2	12.4	7.2	16.1	9.8
COMBINED TOTALS	31.5	21.1	35.0	23.1	47.4	31.2

Figure 19

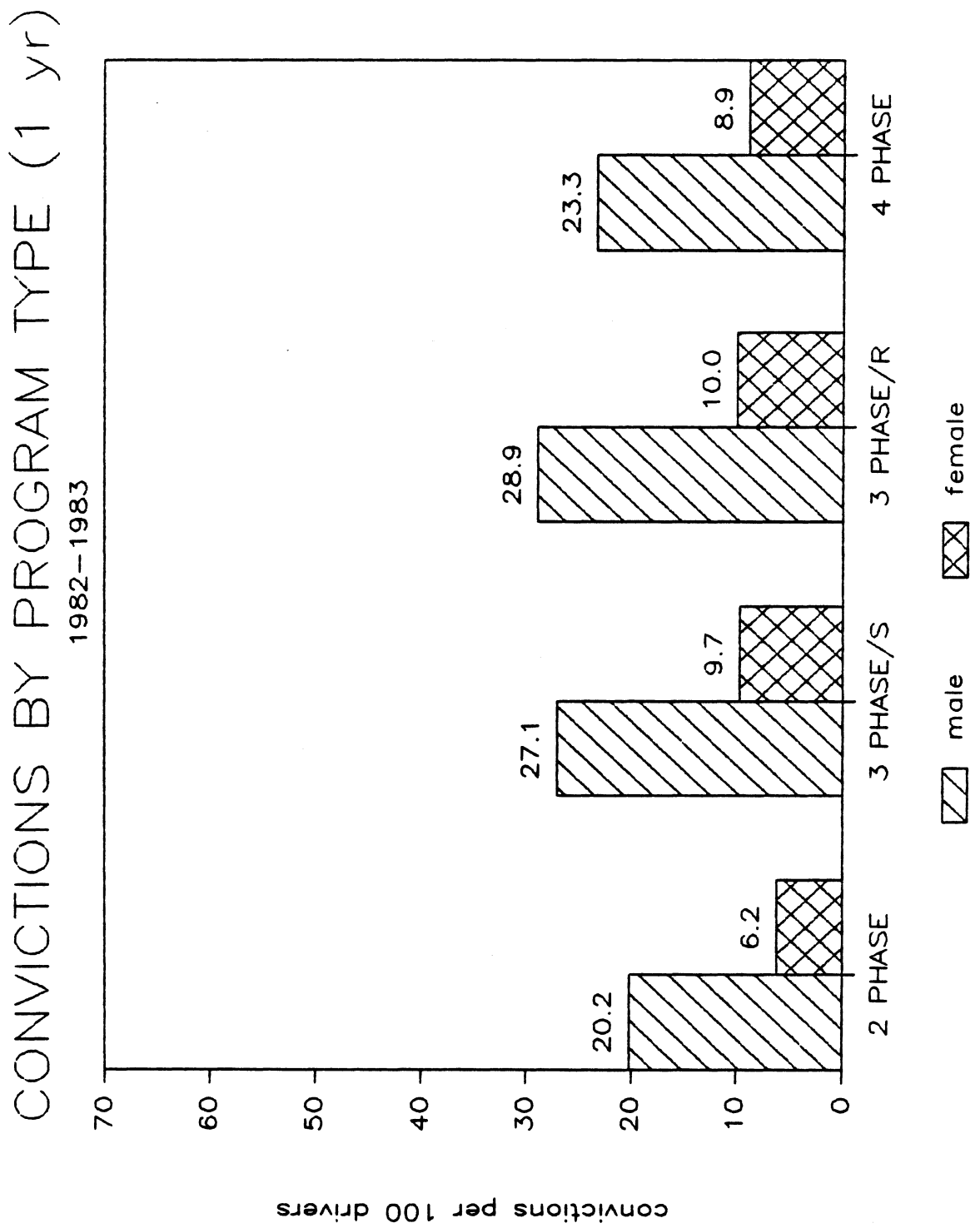

CONVICTIONS BY PROGRAM TYPE (1 yr)
1982-1983
convictions per 100 drivers
70
60
50
40
30
20
10
0
20.2
6.2
27.1
9.7
28.9
10.0
23.3
8.9
2 PHASE
3 PHASE/S
3 PHASE/R
4 PHASE
male
female

Figure 20

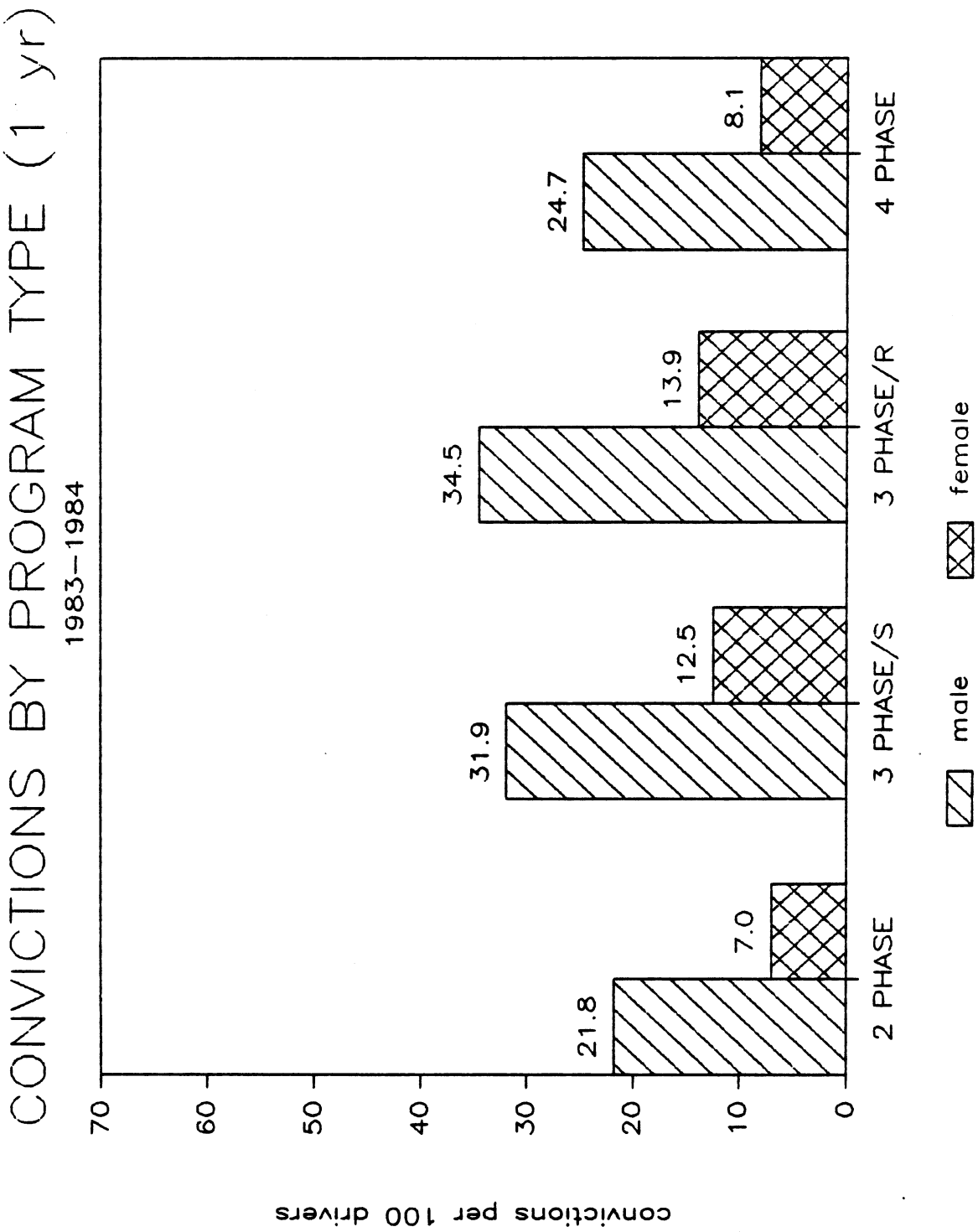

CONVICTIONS BY PROGRAM TYPE (1 yr)
1983–1984
convictions per 100 drivers
70
60
50
40
30
20
10
0
21.8
7.0
31.9
12.5
34.5
13.9
24.7
8.1
2 PHASE
3 PHASE/S
3 PHASE/R
4 PHASE
male
female

Figure 21

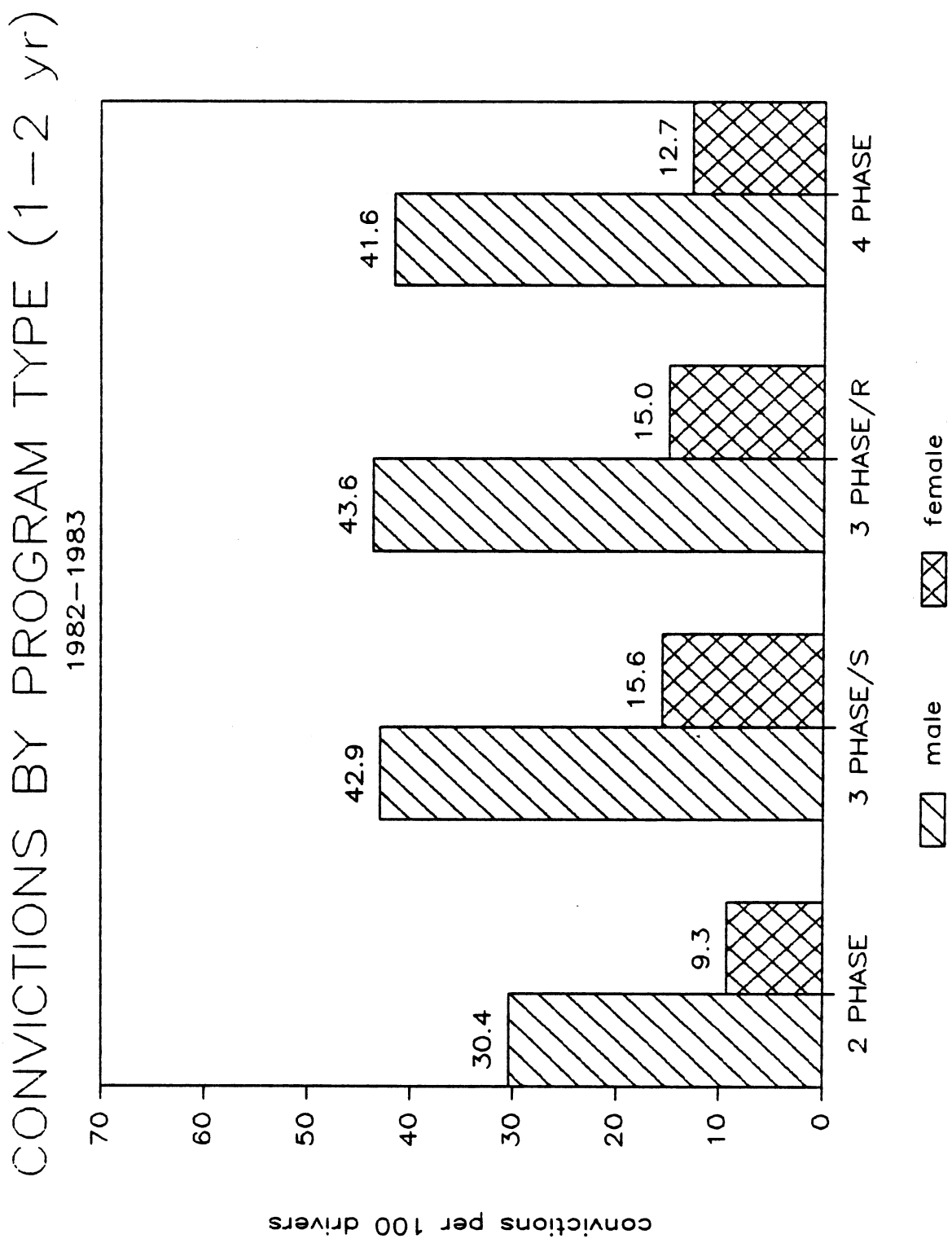

CONVICTIONS BY PROGRAM TYPE (1-2 yr)
1982-1983
convictions per 100 drivers
70
60
50
40
30
20
10
0
30.4
9.3
42.9
15.6
43.6
15.0
41.6
12.7
2 PHASE
3 PHASE/S
3 PHASE/R
4 PHASE
male
female

Figure 22

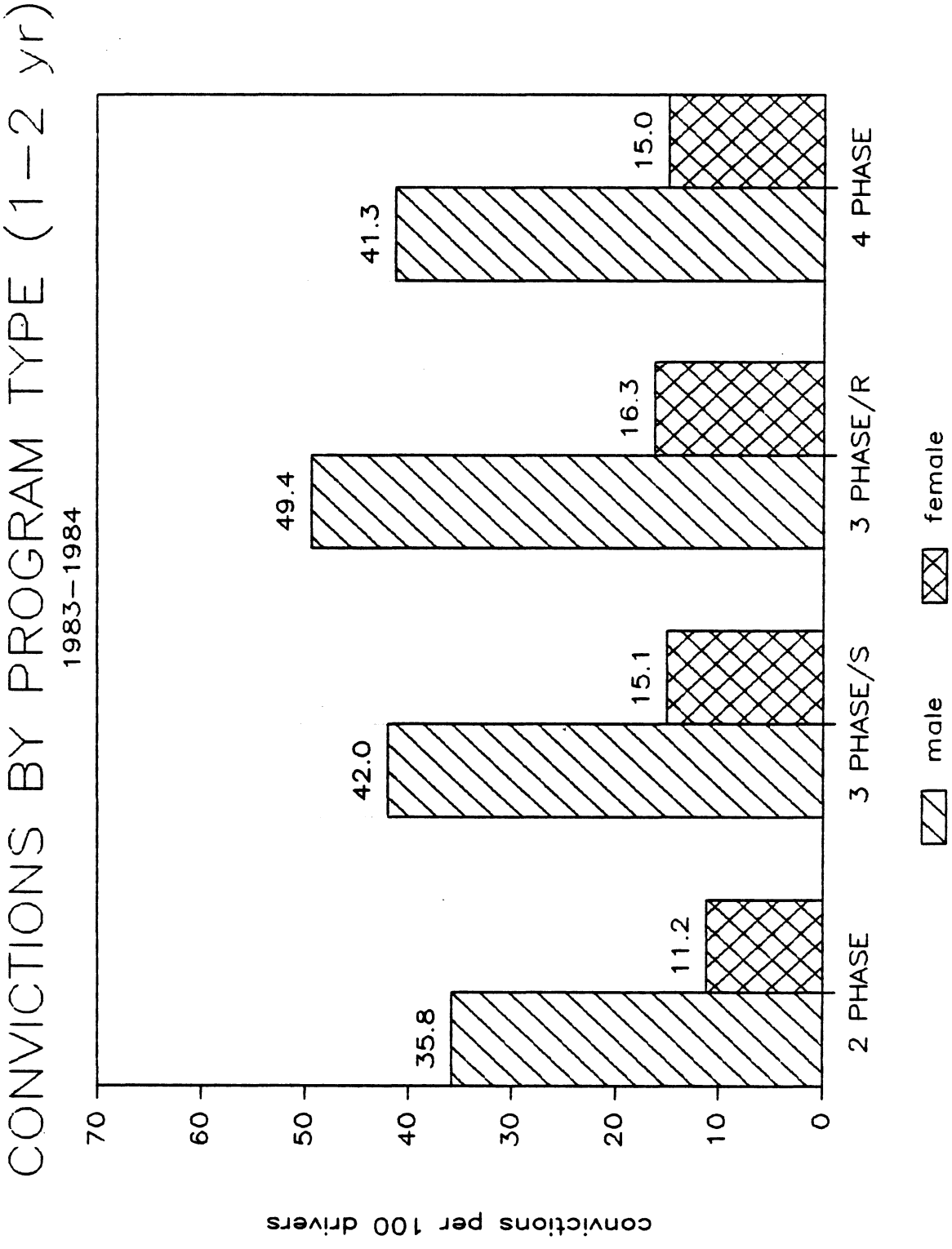

CONVICTIONS BY PROGRAM TYPE (1-2 yr)
1983-1984
convictions per 100 drivers
70
60
50
40
30
20
10
0
35.8
11.2
42.0
15.1
49.4
16.3
41.3
15.0
2 PHASE
3 PHASE/S
3 PHASE/R
4 PHASE
male
female

Figure 23

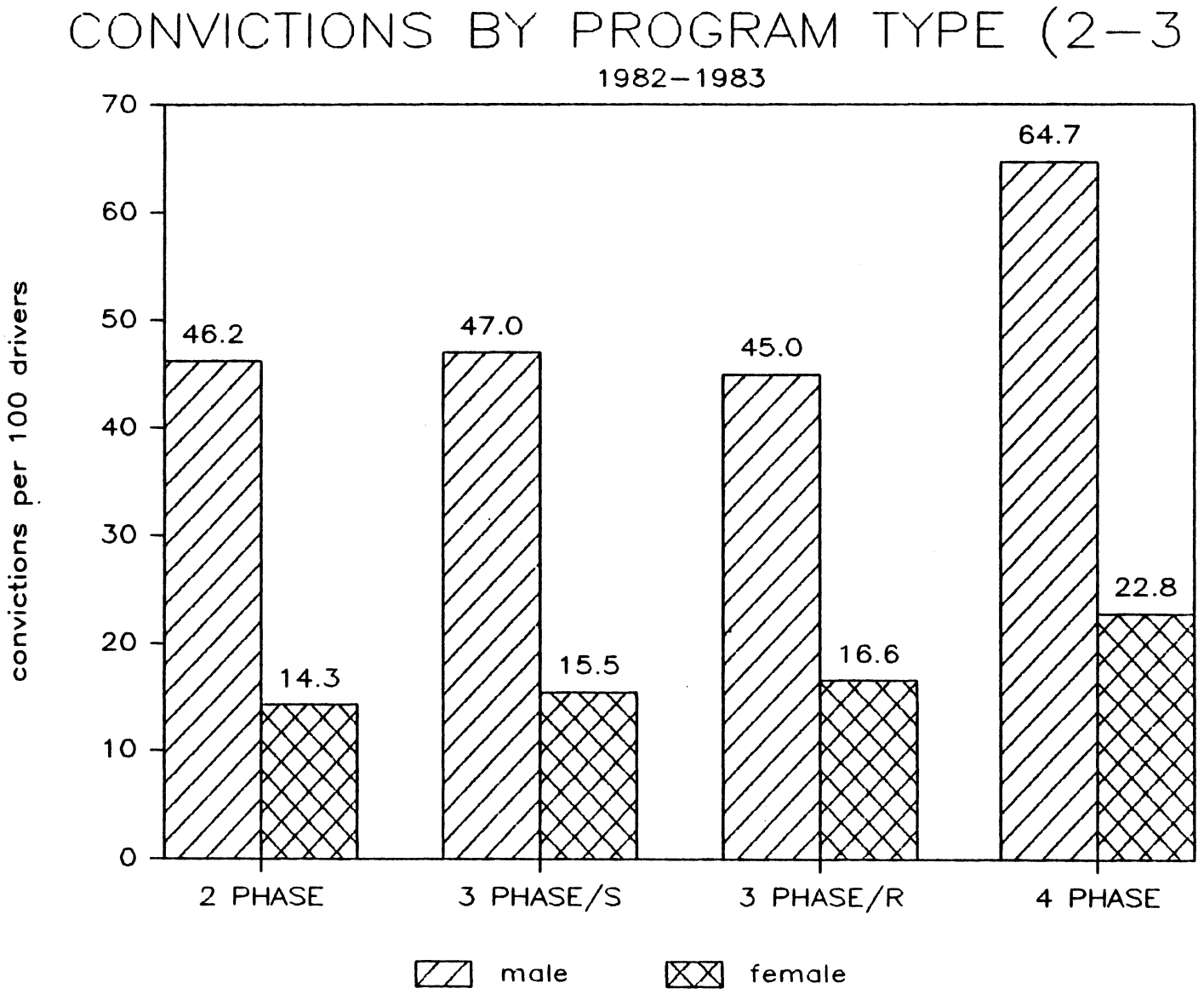

CONVICTIONS BY PROGRAM TYPE (2–3 yr)
1982–1983
convictions per 100 drivers
70
60
50
40
30
20
10
0
46.2
14.3
47.0
15.5
45.0
16.6
64.7
22.8
2 PHASE
3 PHASE/S
3 PHASE/R
4 PHASE
male
female

Figure 24

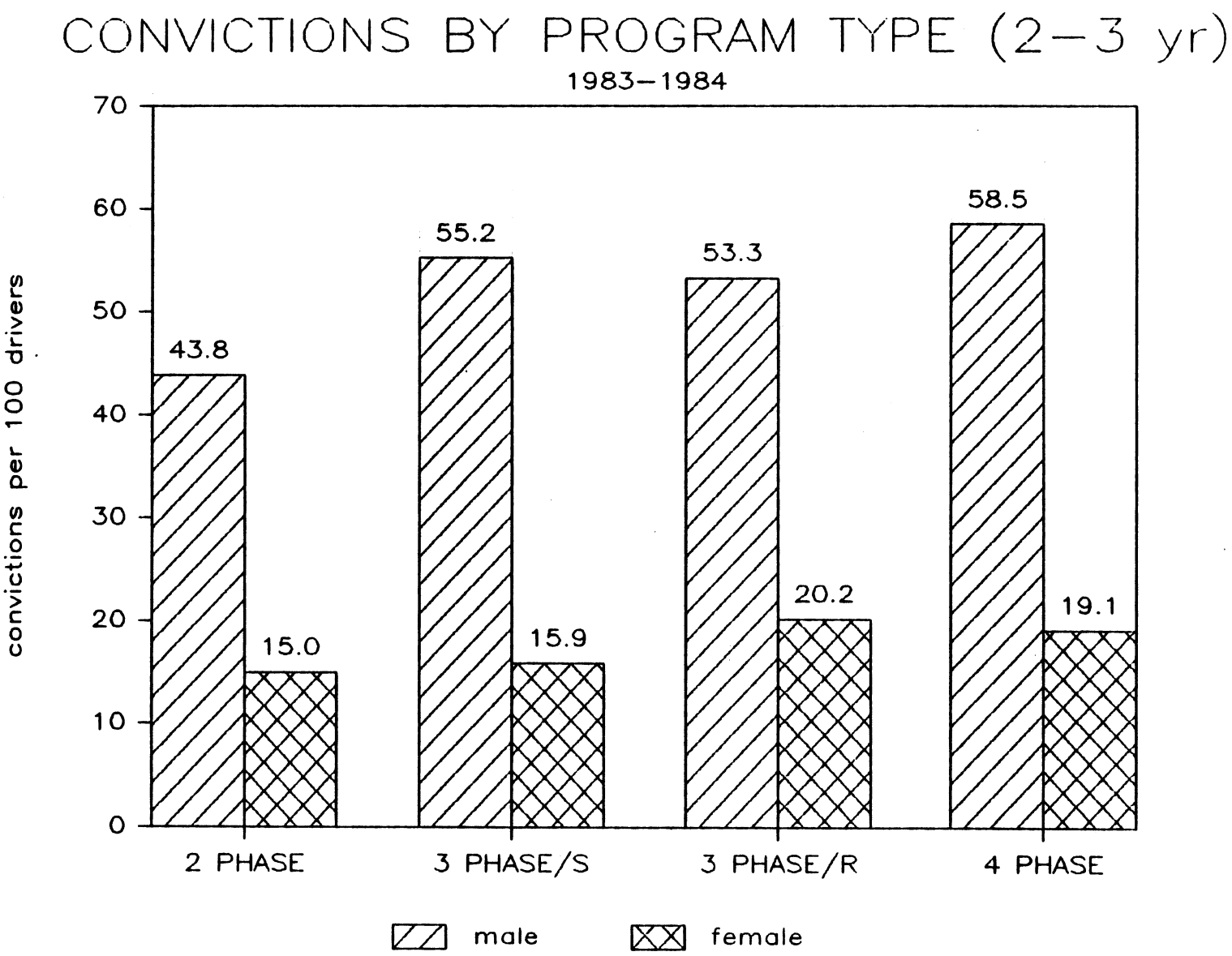

CONVICTIONS BY PROGRAM TYPE (2–3 yr)
1983–1984
convictions per 100 drivers
70
60
50
40
30
20
10
0
43.8
15.0
55.2
15.9
53.3
20.2
58.5
19.1
2 PHASE
3 PHASE/S
3 PHASE/R
4 PHASE
male
female

Figure 25

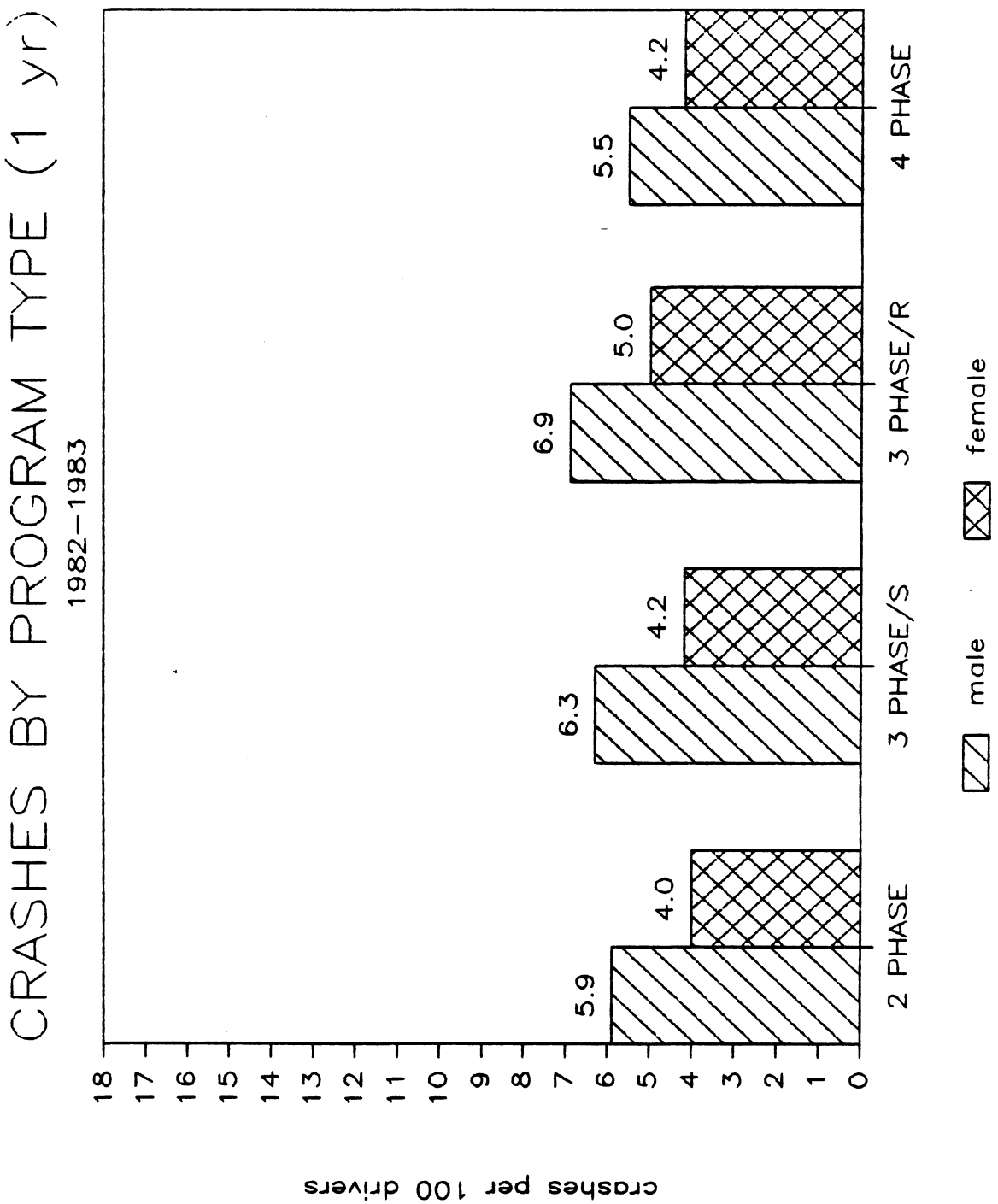

CRASHES BY PROGRAM TYPE (1 yr)
1982-1983
crashes per 100 drivers
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
5.9
4.0
6.3
4.2
6.9
5.0
5.5
4.2
2 PHASE
3 PHASE/S
3 PHASE/R
4 PHASE
male
female

Figure 26

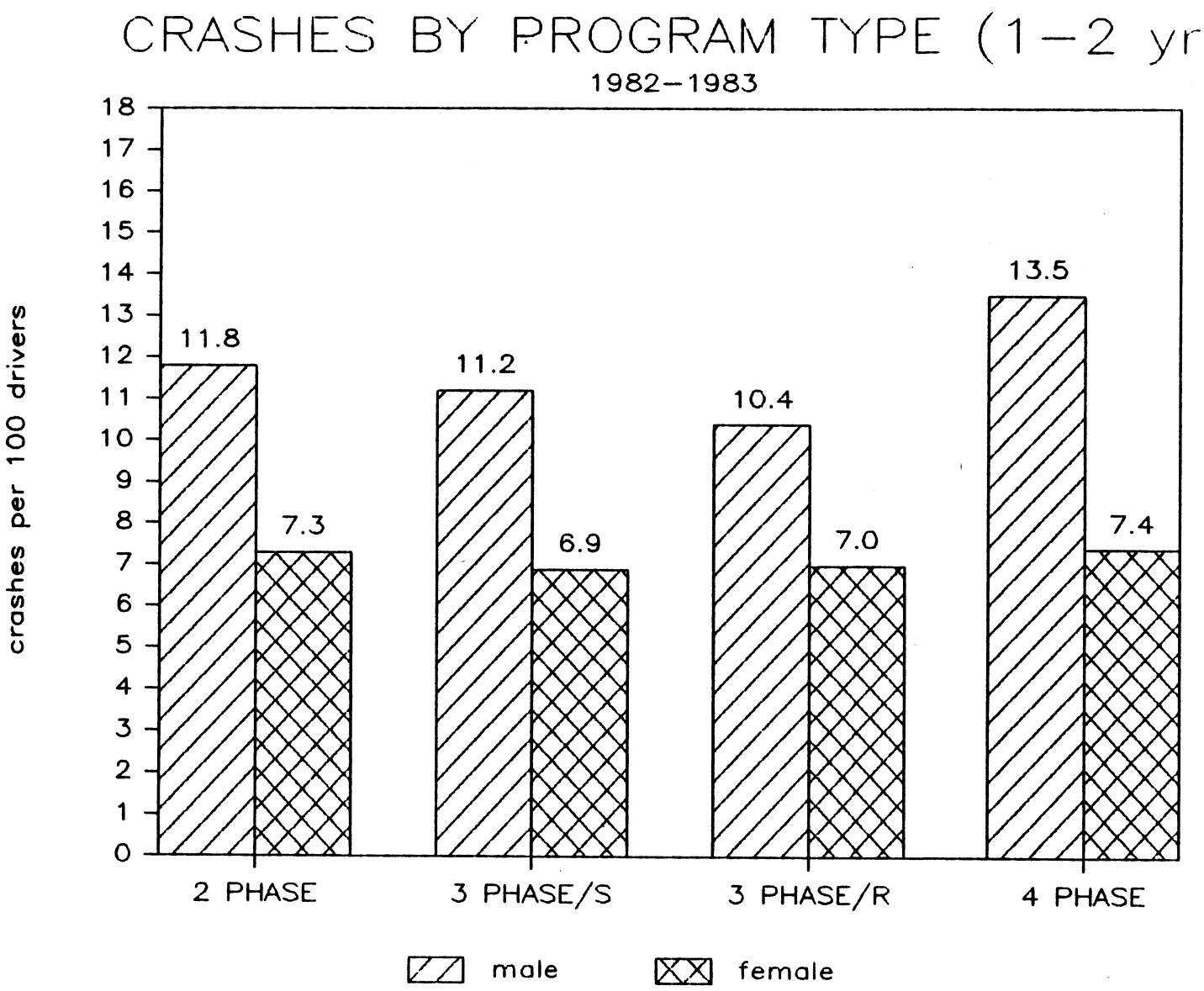

CRASHES BY PROGRAM TYPE (1–2 yr)
1982–1983
crashes per 100 drivers
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
11.8
7.3
11.2
6.9
10.4
7.0
13.5
7.4
2 PHASE
3 PHASE/S
3 PHASE/R
4 PHASE
male
female

Figure 27

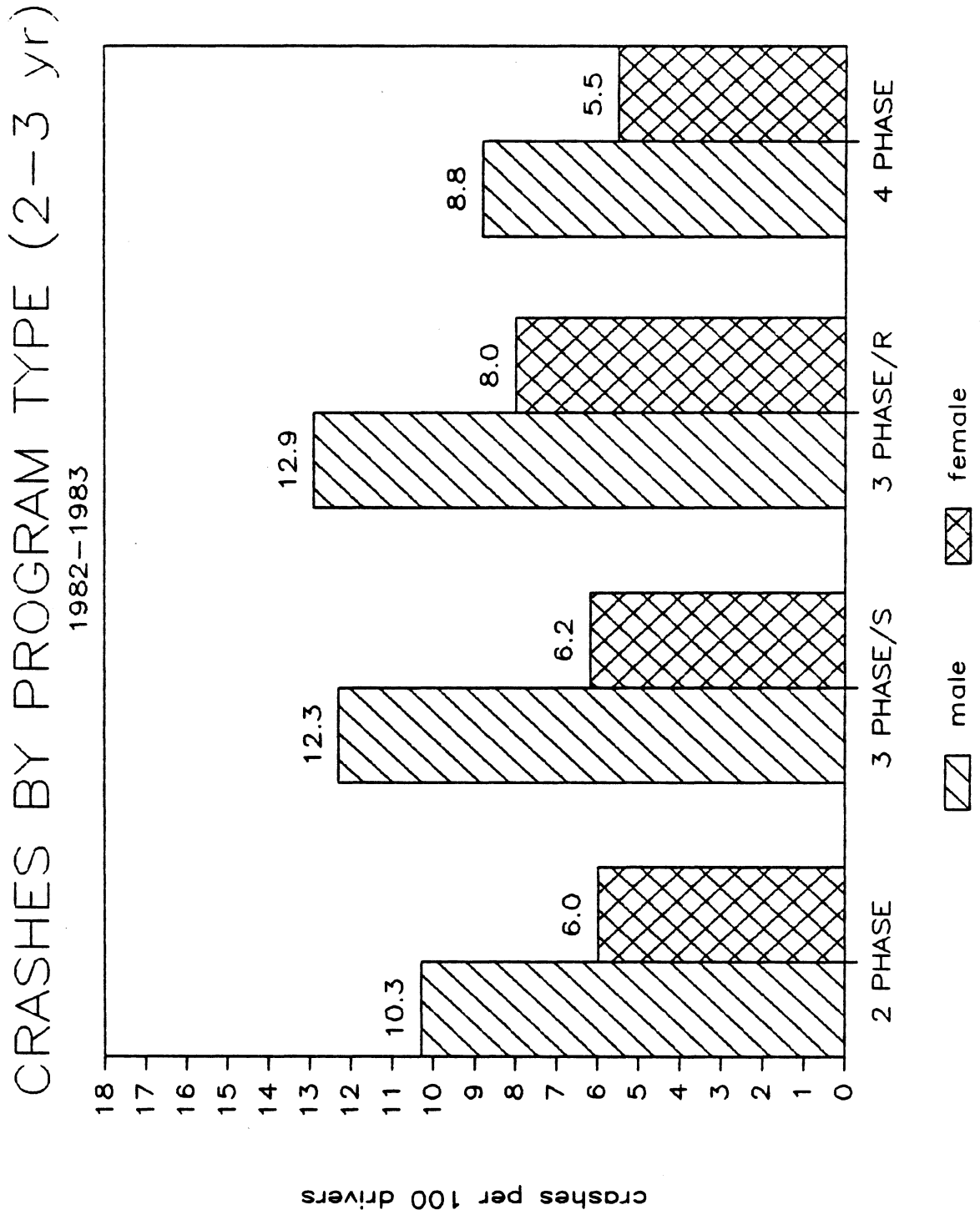

CRASHES BY PROGRAM TYPE (2–3 yr)
1982–1983
crashes per 100 drivers
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
10.3
6.0
12.3
6.2
12.9
8.0
8.8
5.5
2 PHASE
3 PHASE/S
3 PHASE/R
4 PHASE
male
female

Figure 28

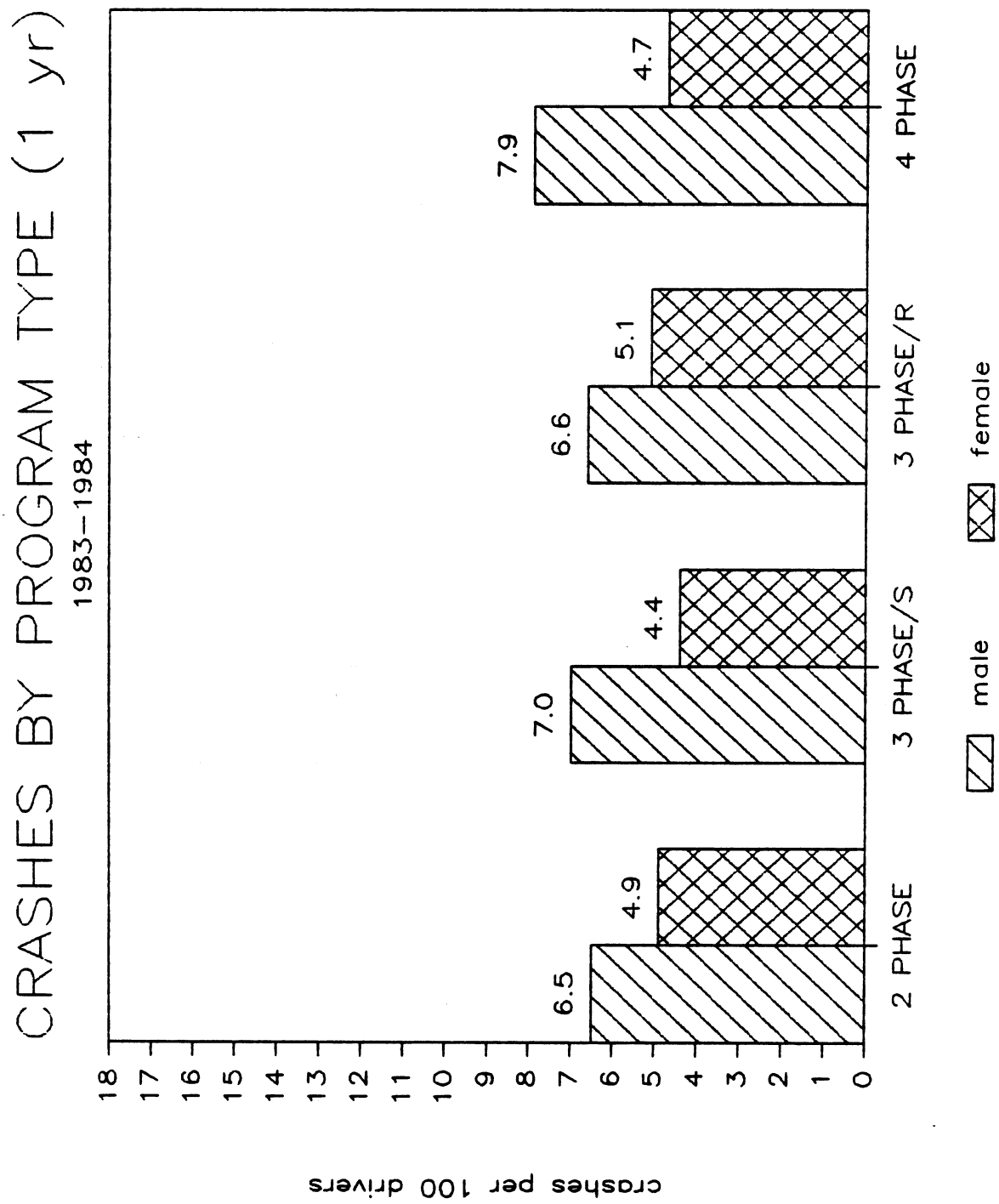

CRASHES BY PROGRAM TYPE (1 yr)
1983–1984
crashes per 100 drivers
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
6.5
4.9
7.0
4.4
6.6
5.1
7.9
4.7
2 PHASE
3 PHASE/S
3 PHASE/R
4 PHASE
male
female

Figure 29

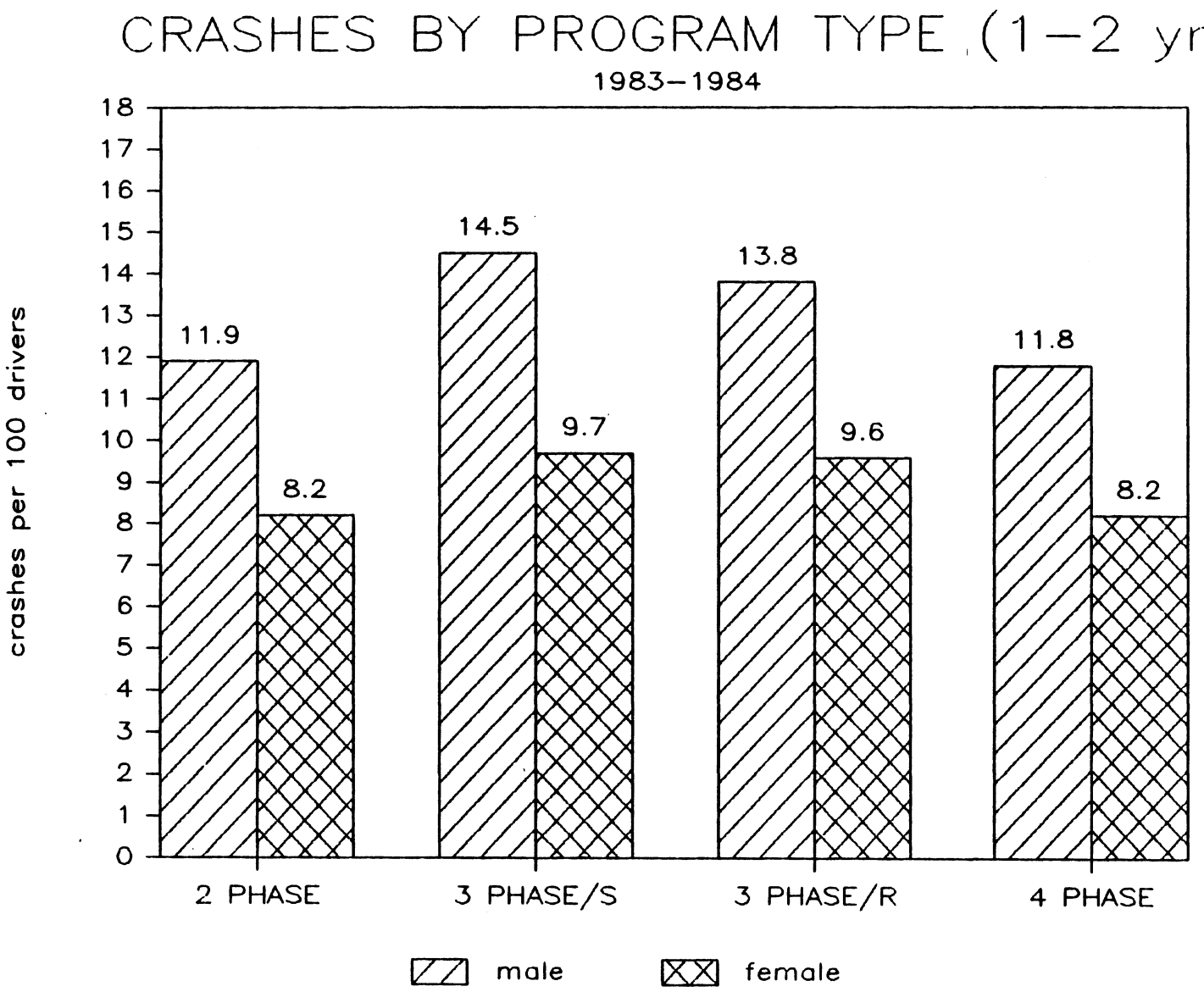

CRASHES BY PROGRAM TYPE (1-2 yr)
1983-1984
crashes per 100 drivers
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
11.9
8.2
14.5
9.7
13.8
9.6
11.8
8.2
2 PHASE
3 PHASE/S
3 PHASE/R
4 PHASE
male
female

Figure 30