

5. J. Hitchcock
PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY
WASHINGTON 25

INFORMATIONAL MEMORANDUM NO. 40

DATE: JULY 20, 1943

SUBJECT: EFFECT ON HIGHWAY TRAFFIC OF GASOLINE SHORTAGES AND
SECOND PLEASURE DRIVING BAN IN 12 NORTHEASTERN STATES

Through the excellent cooperation of the State highway planning surveys and operators of many toll facilities, the Public Roads Administration has been able to keep abreast of changes in traffic as they occur and thereby to furnish other governmental agencies current data extremely valuable for policy-making purposes.

A relatively small part of the information compiled and used by the Public Roads Administration has been published, but from time to time figures indicative of the effects of the major restrictions imposed have been announced. Informational Memorandum No. 27, for example, reported the effect of the first pleasure driving ban in January 1943, and the widespread interest in that report suggests the desirability of another at this time to show the effect of gasoline shortages and restrictions on motor transportation in the 12 northeastern States, with specific reference to the results of the second pleasure driving ban, which became effective at noon on May 20, 1943.

Table 1 shows that at 105 automatic recorder stations in the area affected, the average daily traffic volume during the period from May 20 to May 31, as compared with that during the period from May 1 to May 19, decreased 15.0 percent. On weekdays only the average decrease was 8.2 percent, on Saturdays, 15.5 percent, and on Sundays, 42.1 percent. As expected, the ban had its greatest effect on Sunday traffic, when nonessential travel is normally greatest. Sunday traffic dropped to a figure well below that for the average weekday, whereas before the pleasure driving ban it was considerably higher. As traffic during the latter part of May is normally higher than during the first part of the month, it is probable that the effect was even greater than the comparative percentages indicate.

At 20 toll facilities, including 3 operated by the Port of New York Authority, total traffic during the period from May 20 to May 31 decreased 25.0 percent on all days of the week, 14.1 percent on weekdays, 27.1 percent on Saturdays, and 58.6 percent on Sundays from the average levels for corresponding days during the period May 1 to May 19.

At 17 of the 20 facilities, not including those of the Port of New York Authority, classification figures are available. At these facilities decreases in total traffic amounted to 18.6, 11.2, 21.5, and 51.0 percent for all days, weekdays, Saturdays, and Sundays, respectively, figures that are reasonably consistent with those for the entire 20 facilities. Corresponding decreases for commercial vehicle traffic at the 17 facilities were 2.5 percent for all days, 3.4 percent for weekdays, 0.8 percent for Saturdays, and 7.3 percent for Sundays, showing that the commercial traffic was practically unaffected by the pleasure driving ban, as would be anticipated.

The result of the smaller decreases in commercial vehicle traffic has been, of course, an increase in the proportion of such traffic in the total. Commercial vehicle traffic from May 1 to May 19 was 19.1 percent of the total for all days and 9.8 percent for Sundays. In the period from May 20 to May 31, the corresponding figures were 23.1 and 18.5.

The composite analysis of all these figures leads to the conclusion that there has been a considerable amount of nonessential, or so-called pleasure driving, on week ends, particularly on Sundays, but that nonessential travel had already been substantially eliminated from weekday traffic.

Although it is apparent from the comparisons that there have been marked decreases in week-end travel, the full significance of these reductions will be appreciated only when it is realized that the present volumes are compared with traffic that had already been greatly decreased by rationing and other restrictions. Comparisons of Memorial Day traffic in the last three years at 78 automatic traffic recorder stations in the area affected by the second pleasure driving ban show that the holiday traffic in 1941 and 1942 was respectively 5.7 and 2.4 times that of the 1943 holiday. At individual points the change was much greater. On the Merritt Parkway the Memorial Day traffic in 1941 was 13.9 and in 1942, four times that of 1943. Corresponding figures for the Fleetwood Viaduct are 16.8 and 5.4.

Figure 1 shows that on the Philadelphia-Camden bridge prior to the second pleasure driving ban, 1943 traffic was maintained at practically the level reached after the initial gasoline rationing in May 1942. The second pleasure driving ban caused an immediate drop in traffic volume, the weekday volume receding to about three-quarters of its level of the year before, and the Sunday volume to less than one-third of the 1942 level. The usual Sunday peaks have again become valleys as during the first pleasure driving ban in January. These decreases have come from

passenger car traffic almost entirely since there has been little change in the commercial traffic using this bridge in May 1943, either before or after the second pleasure driving ban, from that of the year before. June traffic figures for this facility further emphasize the effects of gasoline shortages and artificial restrictions, particularly by comparison with the 60,000 figure reached on Sunday, May 10, 1942, which would, except for wartime restrictions, have been equaled or exceeded on each summer Sunday thereafter.

Figure 2 shows results of restrictions on motor transportation on a highway used exclusively by passenger cars. June 1942 figures are recorded to show that gasoline, tire, and automobile restrictions were insufficient to cause the Sunday traffic on the Fleetwood Viaduct to drop below that for weekdays, although the general level was far below that for June 1941.

Figure 3 illustrates a comparison of the daily total and commercial traffic at two toll facilities before and after the pleasure driving ban in May 1943. The commercial traffic crossing the Potomac River bridge increased during the latter part of May while the total traffic decreased.

The traffic patterns on U. S. Route 30 in Pennsylvania in May 1942 and 1943, illustrated in figure 4, are probably fairly typical of those on rural highways in the area where the second pleasure driving ban is in effect. Traffic volumes on Sundays before gasoline rationing were much above the weekday densities. Gasoline shortages and rationing materially decreased the general traffic level, but Sunday traffic was still greater than that of other days of the week in May 1942. Since May 20, 1943, however, the Sunday traffic has decreased to a point below the weekday level, which was lowered only slightly by the pleasure driving ban.

Figure 5 illustrates the May traffic in 1941, 1942, and 1943 on a Maryland route leading to a recreational area. Rationing in 1942 reduced the Sunday peaks to less than two-thirds of their 1941 level. The pleasure driving ban in 1943 reduced them to about one-sixth of the 1941 level, and to a point below the weekday volume, which itself on this route suffered a substantial reduction. These comparisons of 1943 traffic are striking because of their comparison with previous years. Figures for the period in 1943 immediately before the pleasure driving ban, however, show that gasoline shortages had already reduced traffic to levels far below those of previous years, and that the pleasure driving ban only depressed a little more a volume already reduced almost to the barest minimum.

Again it should be emphasized that traffic patterns and general factors from the prewar period must be used with extreme caution, if at all, in estimating present traffic volumes. The need for current traffic information is of extreme importance. It is worth repeating that at no time in our road-building history have strictly current data been of greater importance than now. Other governmental agencies are dependent on the Public Roads Administration to furnish them up-to-the-minute traffic data on which to evaluate the changes currently taking place. Each State and each facility owner reporting this useful information has an important part in contributing factual data on which far-reaching decisions may be based.

H. S. FAIRBANK, CHIEF,
DIVISION OF INFORMATION,
PUBLIC ROADS ADMINISTRATION.

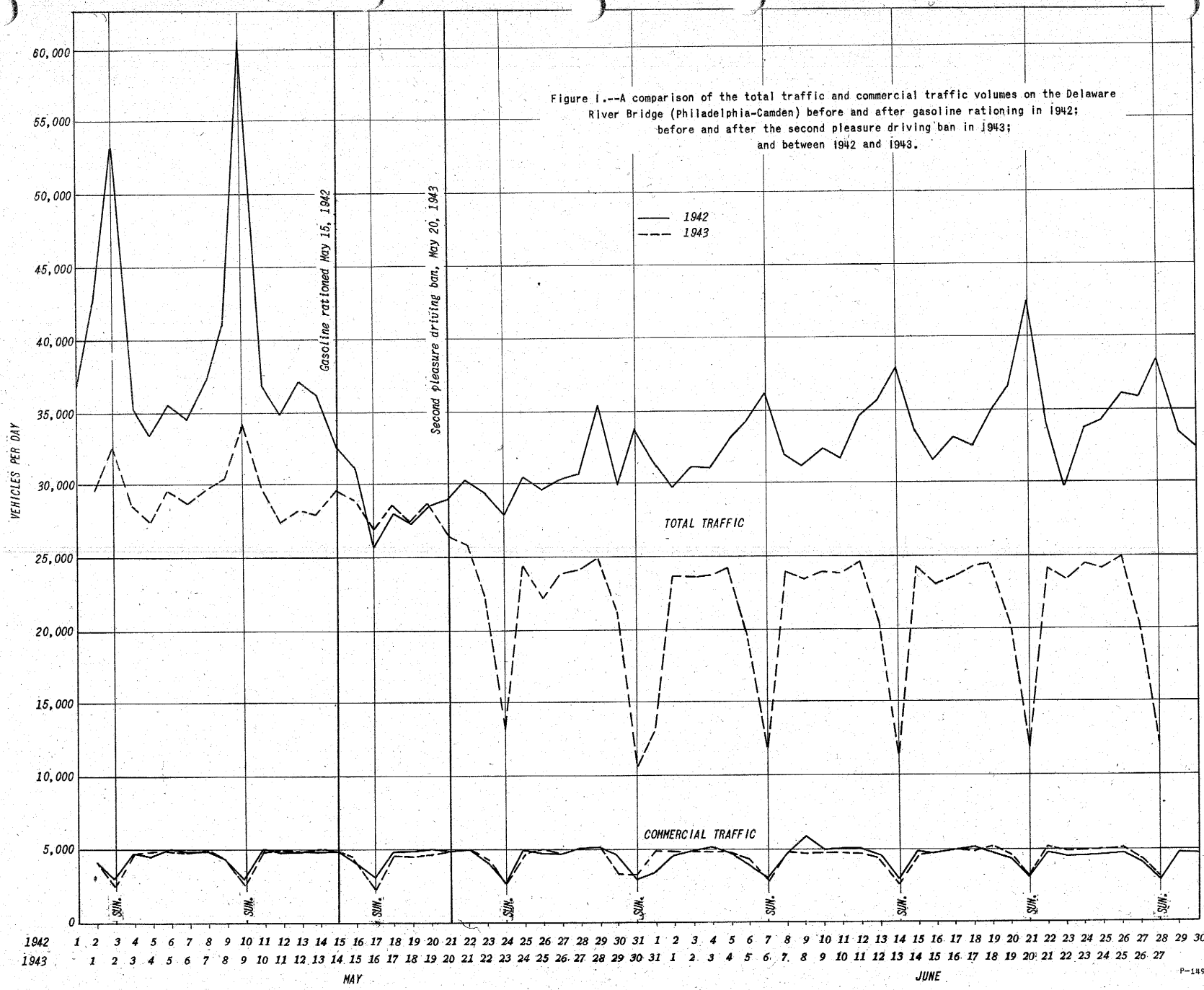
Enclosures.

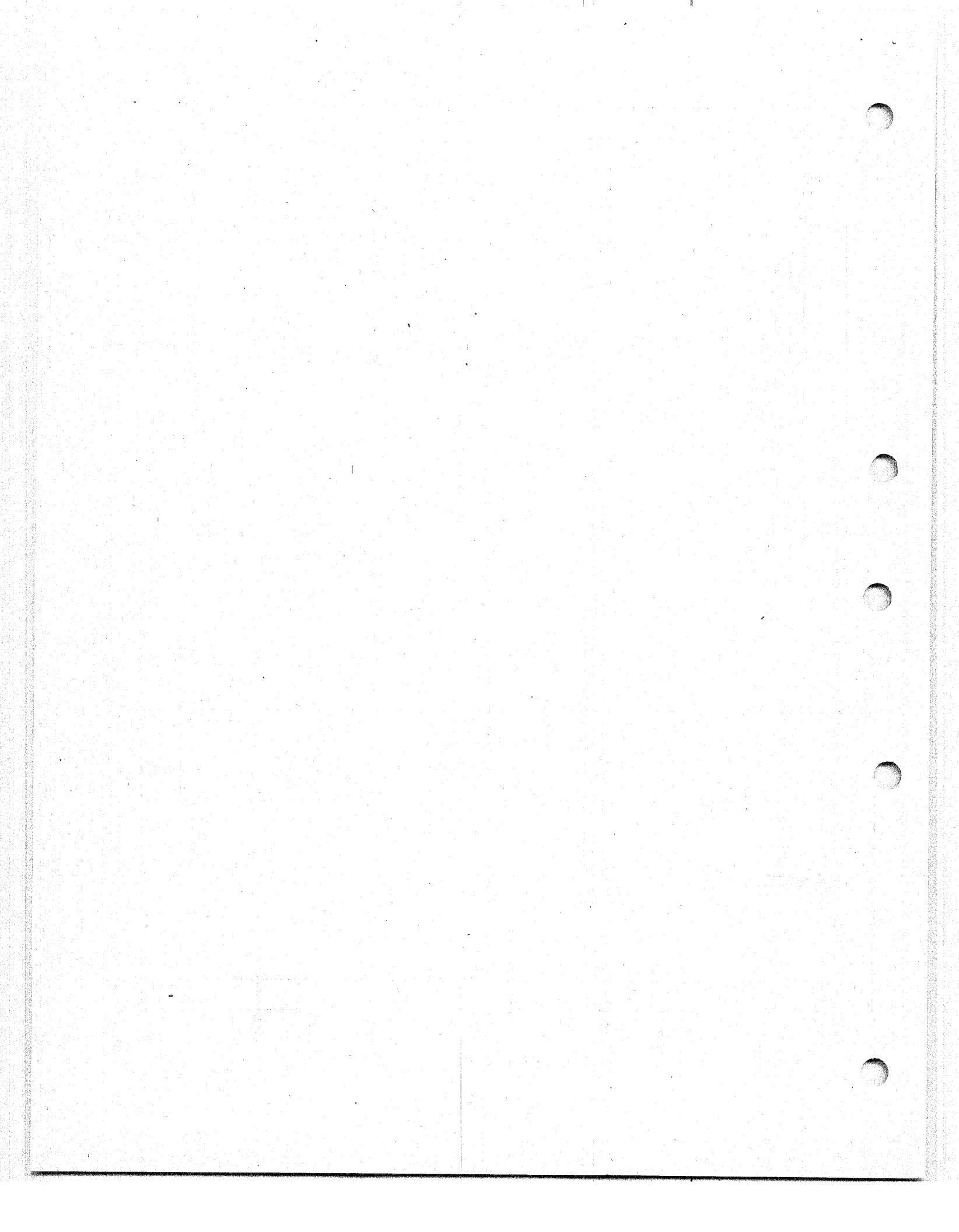
Table 1.--A comparison of the average daily traffic before and after May 20, 1943, at automatic traffic recorder stations and toll facilities in the 12 northeastern States affected by the gasoline shortages and the second pleasure driving ban, and the Memorial holiday traffic in 1941, 1942, and 1943, at points where information is available.

State	Number of stations	May 1 - 19, 1943				May 20 - 30, 1943				Percent change				Memorial Day		
		Average day	Average weekday	Average Saturday	Average Sunday	Average day	Average weekday	Average Saturday	Average Sunday	All days	Weekday	Saturday	Sunday	Friday May 30, 1941	Saturday May 30, 1942	Monday May 31, 1943
Automatic Recorder Stations																
Connecticut	14	30,552	28,124	34,443	38,787	24,718	25,237	26,554	20,116	-19.1	-10.3	-22.9	-48.1	147,740	48,355	16,826
Delaware	3	5,908	5,813	6,448	4,850	5,075	5,519	3,087	-14.1	-5.1	-14.0	-36.4	19,467	8,956	3,946	
Maine	11	11,068	10,914	11,982	11,088	10,043	10,072	8,859	-9.3	-7.7	-5.6	-21.6	5,580	2,500	1,404	
Maryland	12	23,455	21,961	26,686	27,771	18,956	19,318	14,335	-19.2	-12.0	-18.4	-48.4	63,591	16,717	8,536	
Massachusetts	10	24,529	23,744	26,080	26,902	21,562	22,299	15,645	-12.1	-6.1	-12.6	-38.1	102,452	40,907	19,412	
New Hampshire	13	11,532	11,232	12,622	11,944	10,162	10,497	7,345	-11.9	-6.5	-10.5	-38.5	15,493	4,423	1,724	
New Hampshire	8	16,066	15,285	17,788	18,392	13,812	14,314	10,171	-14.1	-6.4	-16.0	-44.7	73,106	29,868	4,137	
New York	26	37,367	35,428	41,999	42,407	32,114	32,668	24,945	-14.1	-7.8	-12.6	-41.2	111,020	62,461	20,414	
Pennsylvania	4	5,522	5,252	5,919	6,480	4,703	4,909	3,592	-14.8	-6.5	-19.2	-44.6	14,879	7,761	4,325	
Rhode Island	2	829	826	888	785	683	716	525	-17.6	-13.3	-23.5	-33.1	3,185	1,281	435	
Vermont	2	3,600	3,298	4,217	4,487	3,027	2,987	2,891	-15.9	-9.4	-18.8	-36.9	3,559	3,884	1,867	
Virginia	105	170,458	161,877	189,077	193,843	144,856	148,536	112,252	-15.0	-8.2	-15.5	-42.1	560,172	240,350	98,108	
Total																
Toll facilities																
17 Facilities																
Total traffic		63,864	62,572	67,760	66,426	51,959	55,588	53,201	32,579	-18.6	-11.2	-21.5	-51.0	--	53,313	24,187
Commercial vehicles		12,222	13,532	11,764	6,503	11,922	13,076	11,675	6,031	-2.5	-3.4	-0.8	-7.3	--	--	--
20 Facilities																
Total traffic ¹		105,579	100,095	112,989	124,193	79,184	86,020	51,892	25.0	-14.1	-27.1	-58.6	--	--	--	--
Summer Tunnel ²																
Boston, Massachusetts																
Total traffic		15,302	15,575	16,210	13,029	14,275	14,855	10,328	-6.7	-4.6	-5.5	-20.7				
Commercial vehicles		1,425	1,591	1,391	629	1,321	1,497	481	-7.3	-5.9	-8.1	-23.5				
Fleetwood Viaduct ²																
Westchester County, New York																
Passenger vehicles		4,079	3,314	5,025	6,959	2,379	2,404	2,074	-41.7	-27.5	-49.1	-70.2	31,462	10,088	1,872	

1. Includes the 17 facilities shown above and 3 facilities operated by the Port of New York Authority.

2. Summer Tunnel and Fleetwood Viaduct figures not included in total for 17 or 20 toll facilities. Fleetwood Viaduct restricted to passenger cars.





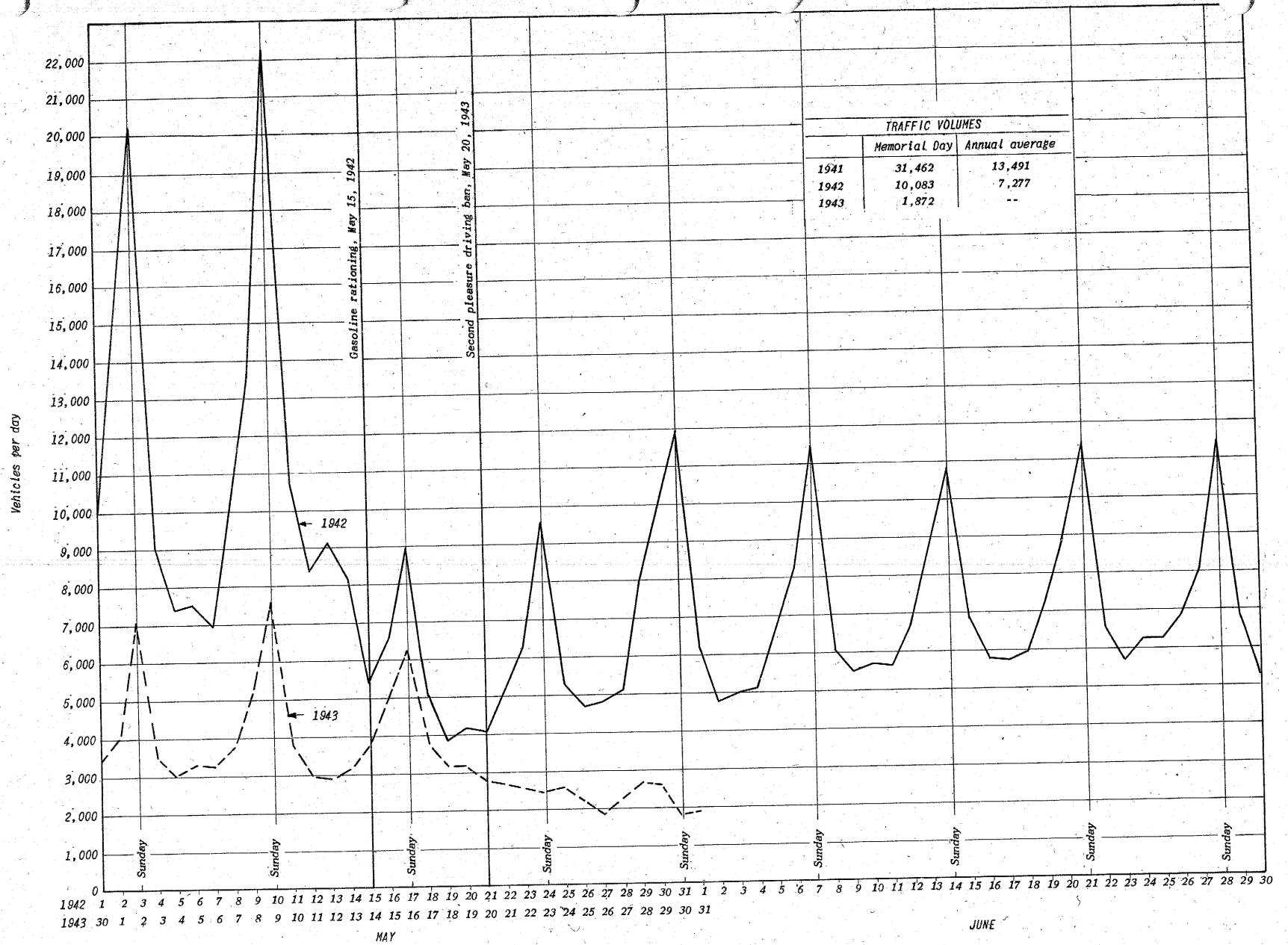
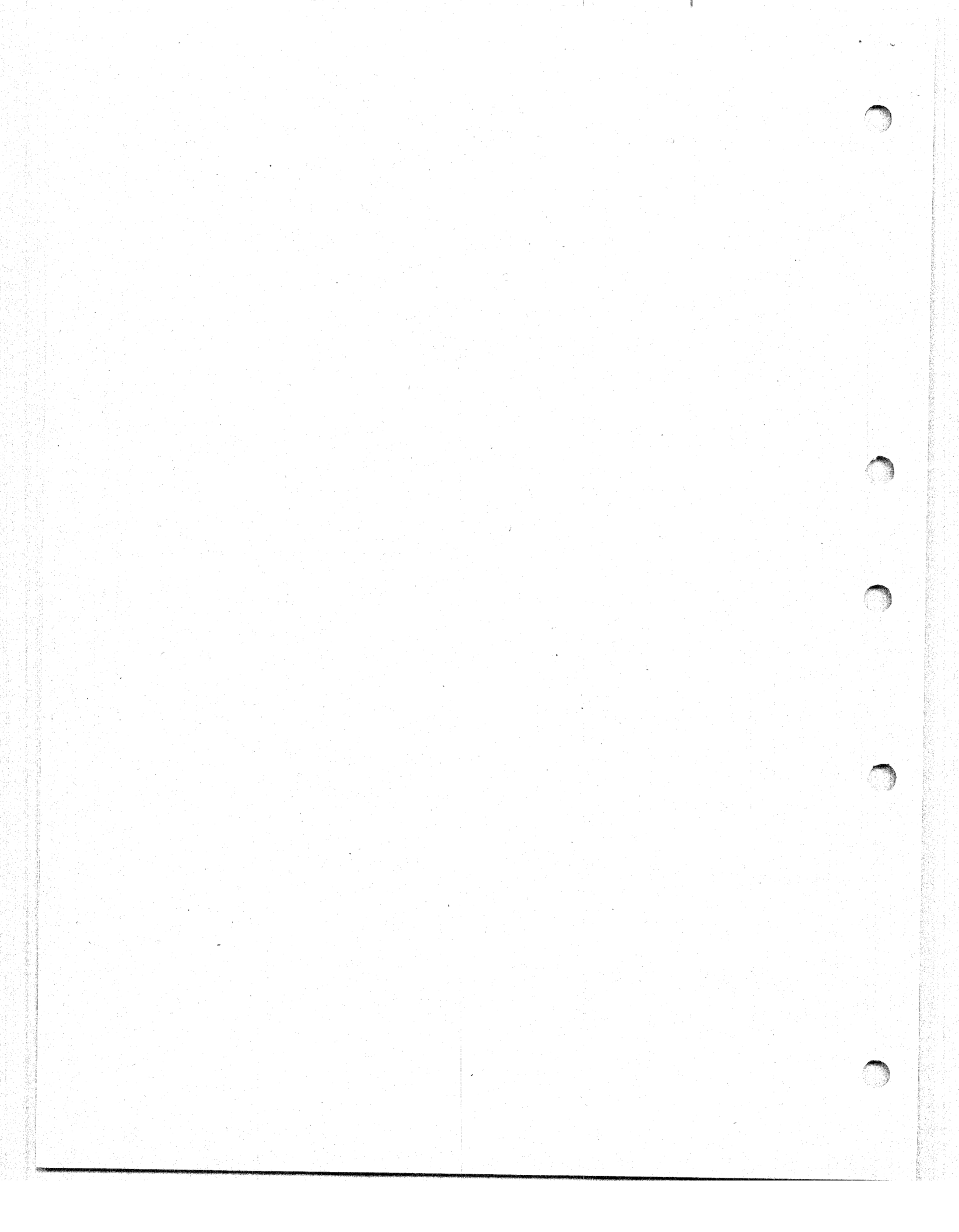


Figure 2.--A comparison of traffic volume trends on the Fleetwood Viaduct, Westchester County, New York, in May 1942 and 1943. Also June 1942 traffic together with volume figures for Memorial Day and annual averages. Use of this roadway restricted to passenger cars.



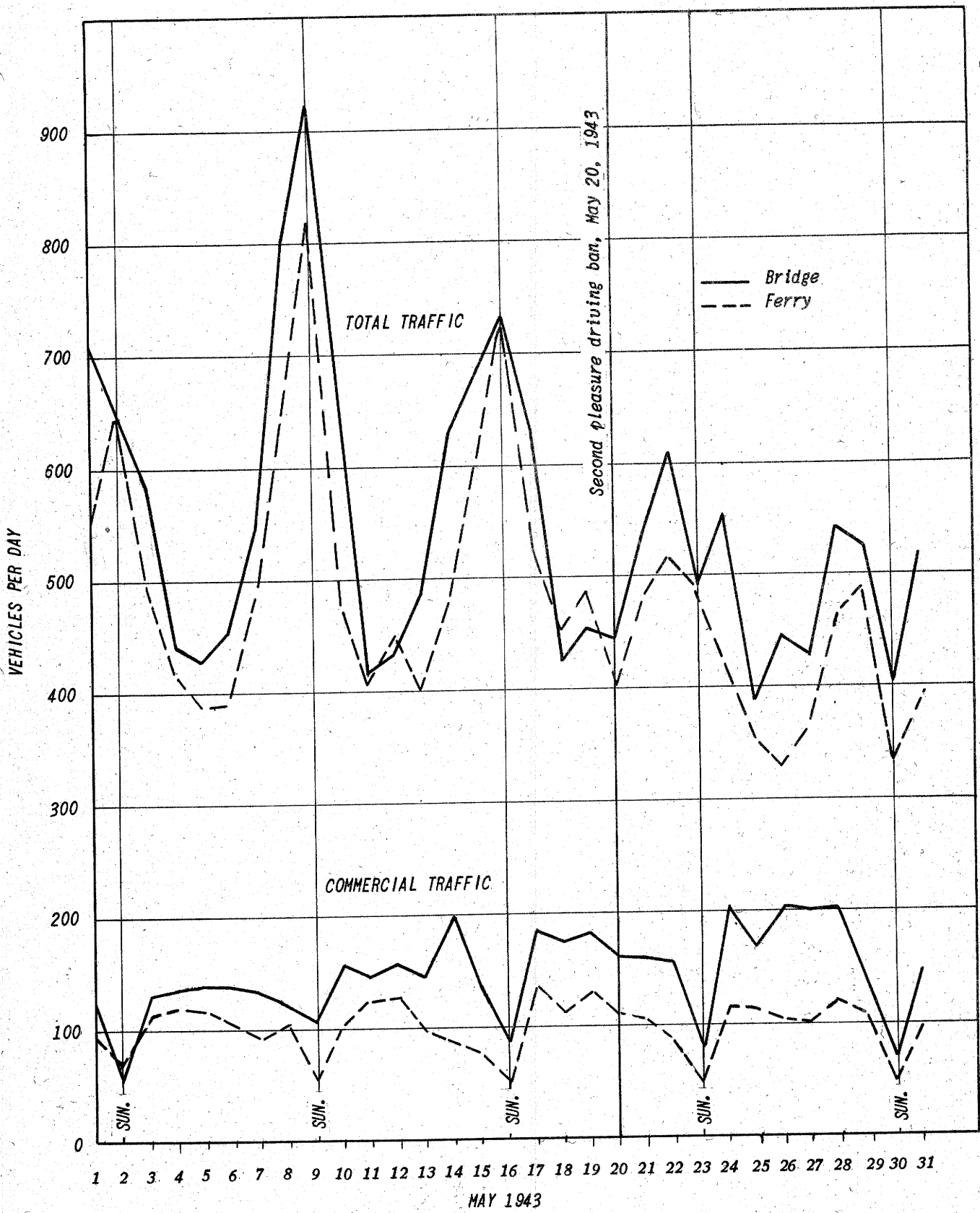
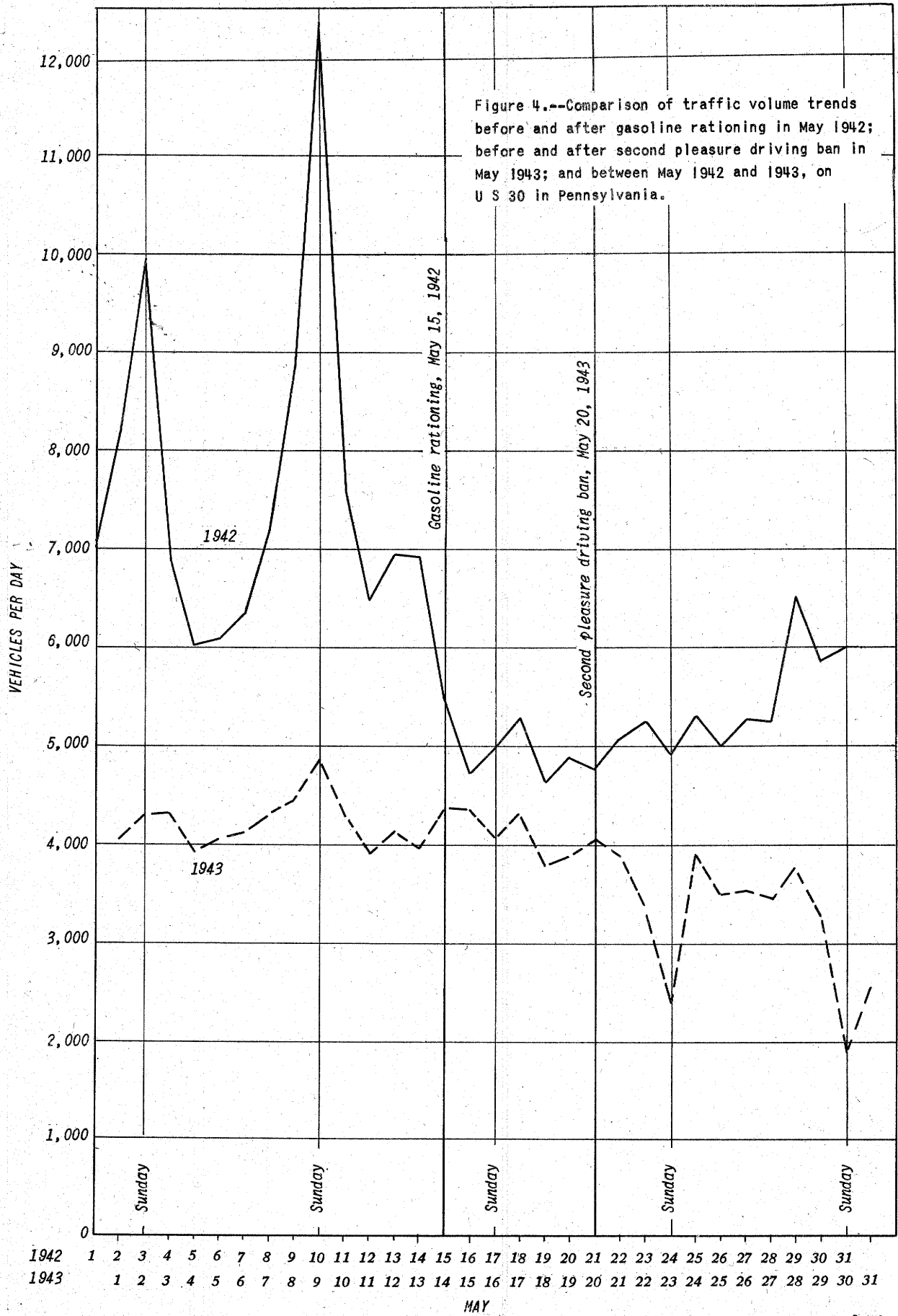
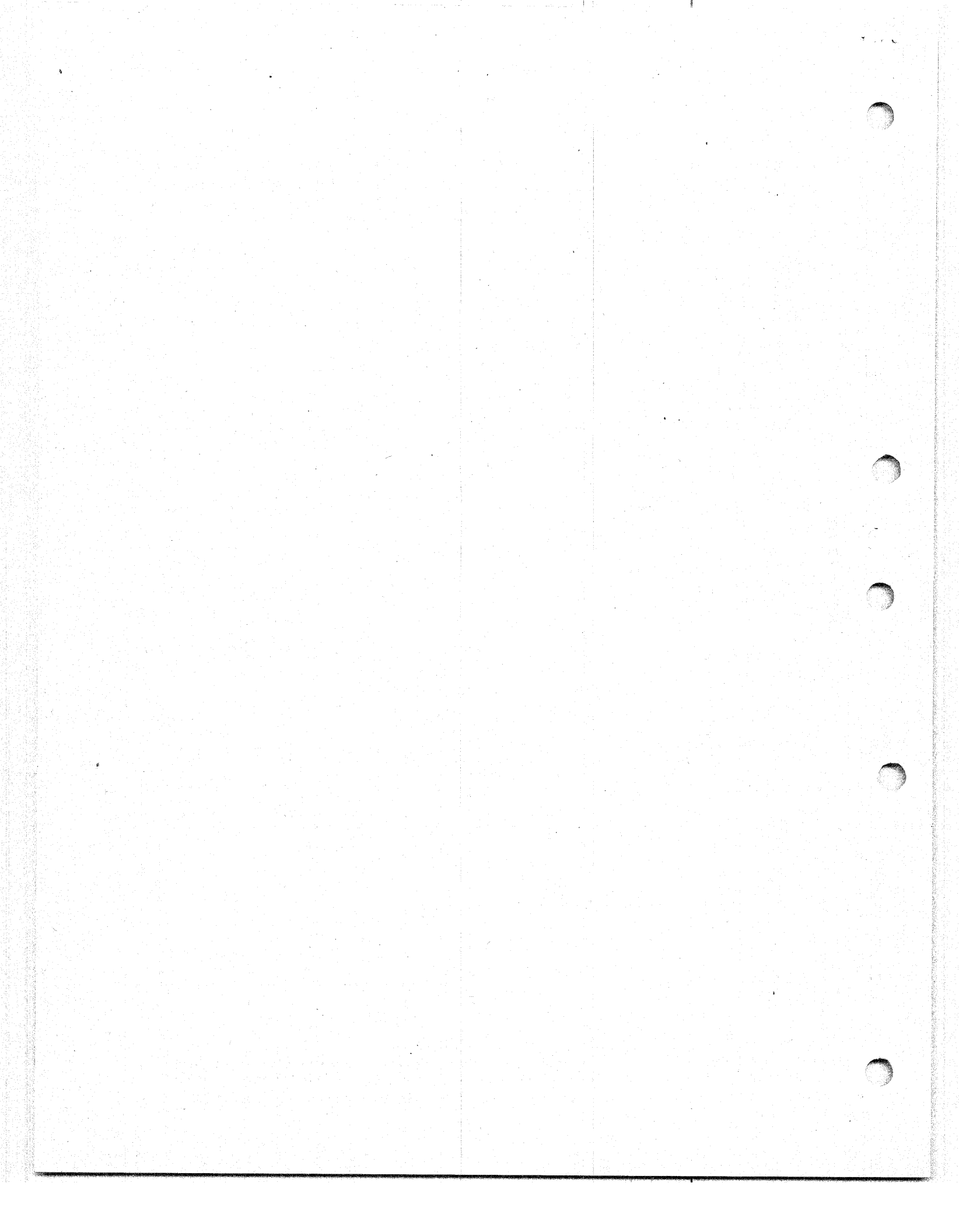


Figure 3.--A comparison of the total traffic and the commercial traffic volumes before and after the second pleasure driving ban in May 1943, for the Potomac River Bridge (Newburg, Maryland-Dahlgren, Virginia) and the Annapolis-Matapeake Ferry, over the Chesapeake Bay.





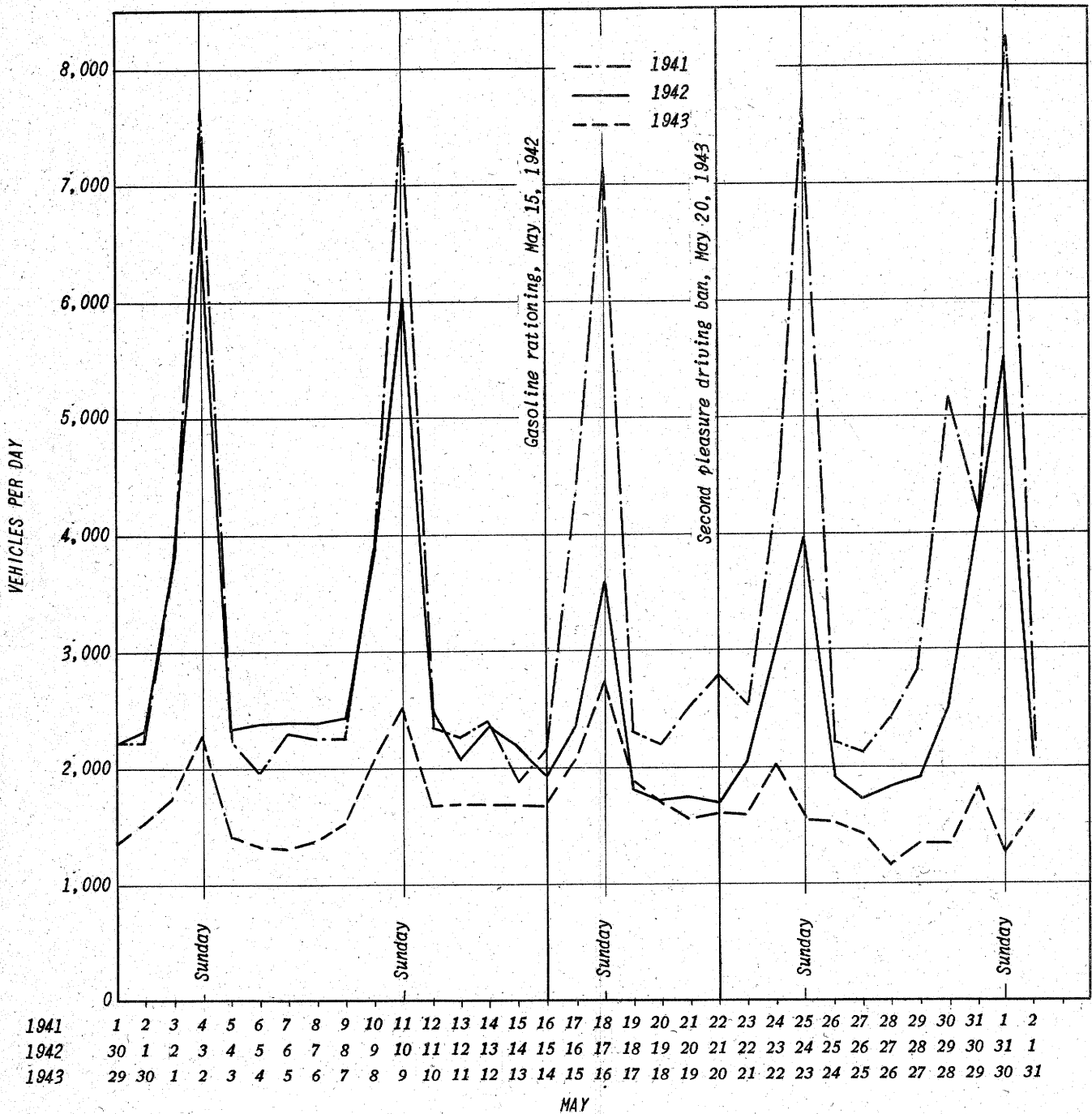
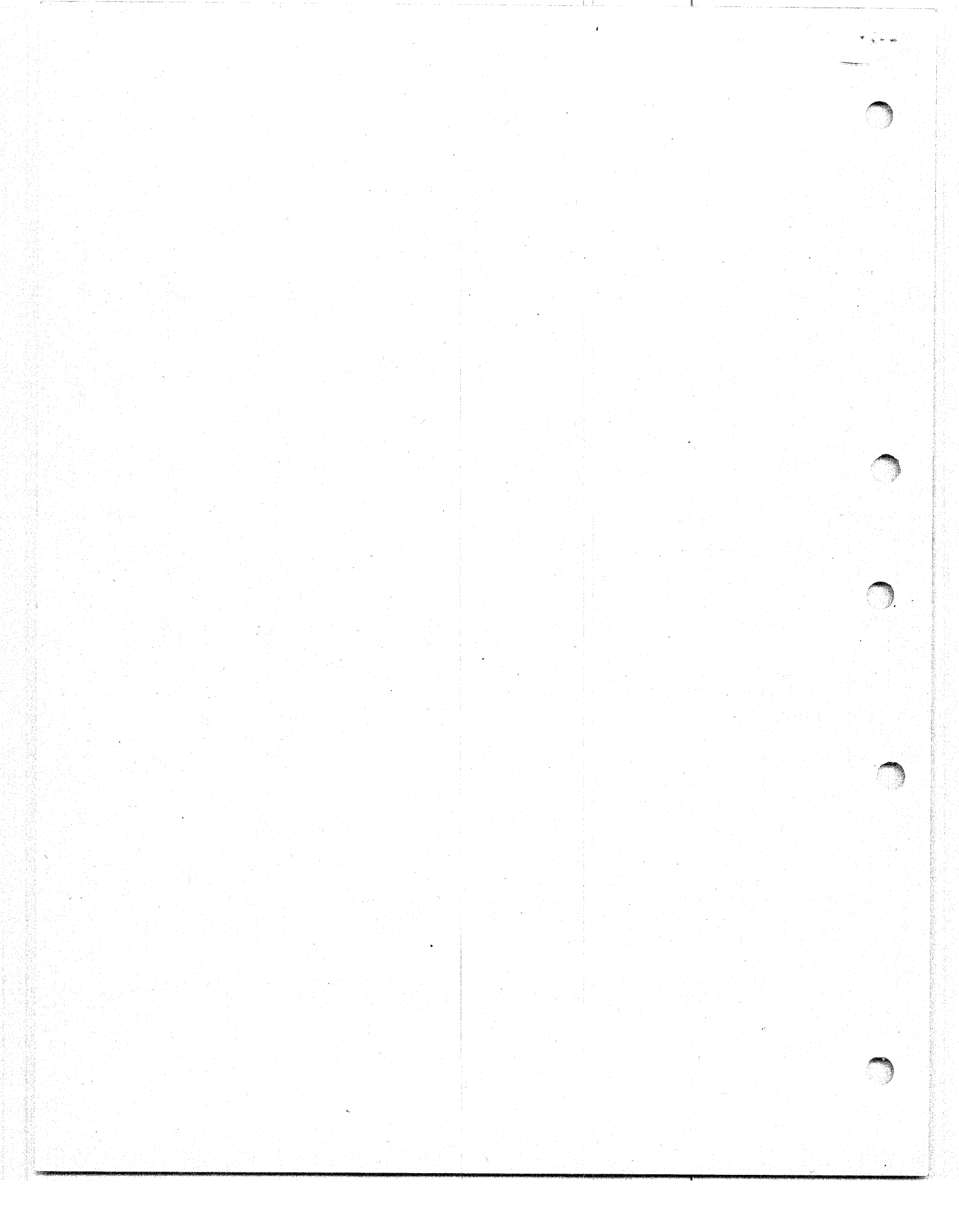


Figure 5.--A comparison of the traffic volume trends on Maryland route No. 4 at Patuxent River for May 1941, 1942, and 1943, as well as before and after initial gasoline rationing in May 1942 and second pleasure driving ban in May 1943.



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PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY
WASHINGTON 25

INFORMATIONAL MEMORANDUM NO. 4643

DATE: JULY 30, 1943

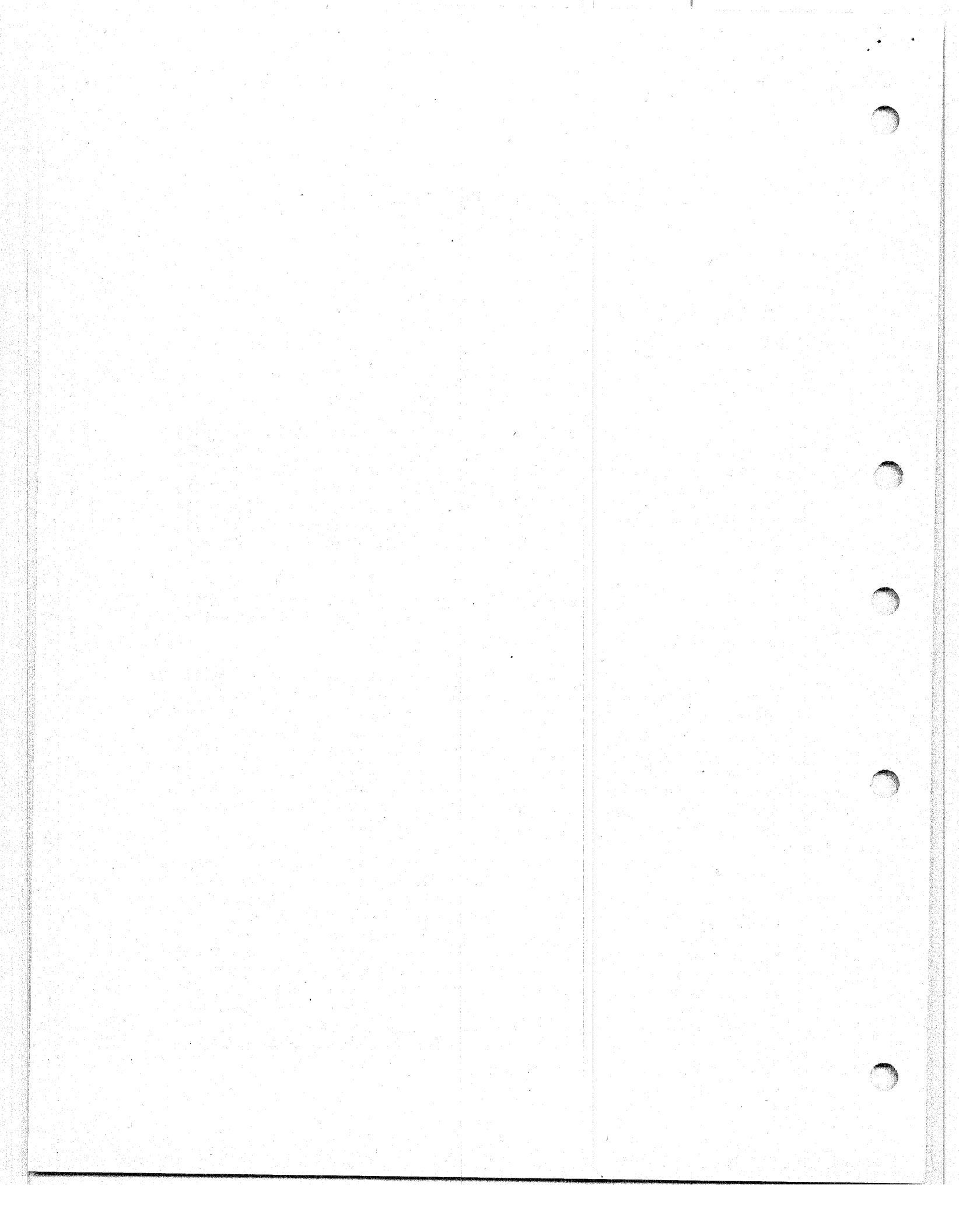
SUBJECT: TRAFFIC VOLUME TRENDS.

Traffic in June 1943 was nearly 30 percent lower than that of June 1942. Data from 559 automatic traffic recorder stations distributed throughout 43 States are presented in table 1, attached. More data are available for this preliminary summary than for any previous month. The traffic decreases on State highways are greater than those on local roads, and decreases in the area rationed in May 1942 exceed those in the area rationed in December 1942.

The revised summary of data for May 1943 is shown in table 2. It follows closely the values in the preliminary summary in last month's traffic bulletin.

It may be observed that traffic decreases in Florida, Georgia, and North Carolina are generally smaller than those of other States in the eastern area, both in May and in June. All three of these States operate a considerable number of traffic recorders, and the samples taken at these stations should be adequate measures of traffic changes. The decrease in South Carolina traffic in June, table 1, is also smaller than in other eastern States except Georgia. The greater decreases in the remaining eastern States are presumably the result of the pleasure driving ban.

The attached chart is a monthly record of traffic volumes in two areas since January 1940; the eastern seaboard States, where rationing began in May 1942, and the remainder of the country, where rationing began in December 1942. The data are expressed as percentages of traffic in the corresponding month of 1941. It may be observed that traffic in the eastern area in June 1943 is 39.8 percent of that in June 1941. In the Middle West and West, the comparable figure is 57.4 percent. This is a new low in traffic volume in the eastern area, well below that of January 1943. In the West and Middle West there is also a decline, but June ratios are still well above those of December 1942, when rationing was instituted in this area.



Traffic at toll facilities (table 3) follows a pattern somewhat similar to that at the automatic traffic recorders except that, in general, decreases are slightly smaller at toll facilities. Where both 1941 and 1942 data are available, the relative stability of truck and bus traffic is very evident. At certain toll facility locations there has been a considerable increase in this type of traffic since 1941.

H. S. FAIRBANK, CHIEF,
DIVISION OF INFORMATION,
PUBLIC ROADS ADMINISTRATION.

Attachments.

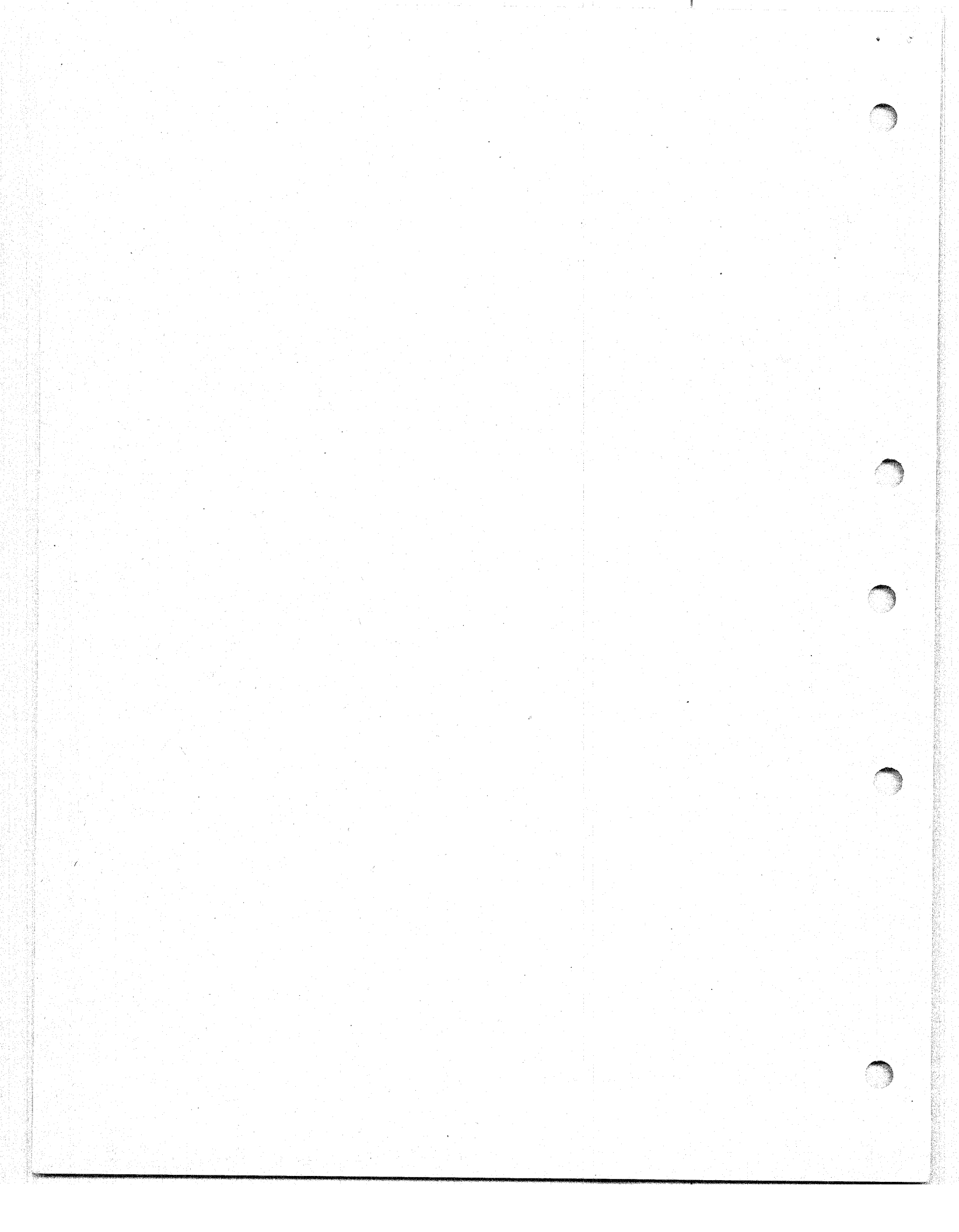


TABLE 1.—PRELIMINARY SUMMARY* OF AUTOMATIC TRAFFIC RECORDER DATA FOR JUNE 1943 INCLUDING 559 STATIONS IN 43 STATES

Type of highway and State	Number of stations	Total daily traffic	Percent decrease ¹ from June 1942	Type of highway and State	Number of stations	Total daily traffic	Percent decrease ¹ from June 1942	
<i>STATE HIGHWAYS</i>				<i>STATE HIGHWAYS</i>				
Alabama	6	9,711	10.0	Washington	9	16,124	22.7	
Arizona	5	11,824	19.2	West Virginia	11	15,465	24.7	
Arkansas	22	15,259	25.2	Wisconsin	9	18,967	37.8	
California	10	21,373	15.7	Wyoming	3	2,199	31.5	
Colorado	5	5,760	31.9					
Connecticut	17	33,314	49.0	<i>Total - 43 States:</i>	518	738,210	29.9	
Delaware	4	8,138	39.0	<i>LOCAL HIGHWAYS</i>				
Georgia ⁴	7	10,346	8.0	Alabama	2	720	17.3	
Illinois	4	5,452	28.9	Connecticut	2	678	17.5	
Indiana	21	31,490	28.0	Georgia	4	746	26.6	
Iowa	26	27,150	26.4	Indiana	2	632	23.6	
Kansas ³	9	8,935	24.6	Iowa	10	1,194	11.5	
Kentucky	11	17,142	32.3	Kentucky	1	197	10.0	
Louisiana ³	6	12,601	18.3	Maryland	1	271	7.2	
Maine	11	9,739	34.2	Massachusetts	1	210	50.4	
Maryland	15	27,518	30.5	Michigan	2	555	42.7	
Massachusetts	9	22,074	37.9	Missouri	2	762	13.1	
Michigan	26	65,182	33.2	Montana	2	414	6.8	
Mississippi	10	12,631	16.3	Nebraska	1	171	0.6	
Missouri	24	38,012	33.8	North Dakota	2	376	7.4	
Montana	12	6,995	30.5	Ohio	3	1,266	39.8	
Nebraska	11	9,925	25.1	Oregon	1	194	23.0	
Nevada ³	11	5,715	42.5	Rhode Island	1	331	9.6	
New Hampshire	18	11,938	47.5	Tennessee	2	926	11.8	
New Mexico	13	17,055	19.3	Wisconsin	2	410	15.1	
New York	7	8,801	48.8					
North Dakota	9	4,249	26.7	<i>Total - 18 States:</i>	41	10,053	22.3	
Ohio	22	37,972	26.7	<i>ALL HIGHWAYS</i>				
Oklahoma	20	31,539	20.5	<i>43 States²</i>		559	748,263	29.8
Oregon	1	469	41.2	<i>Rationed May 1942</i>		135	170,977	38.4
Pennsylvania	30	36,136	45.0	<i>Rationed December 1942</i>		424	577,286	26.8
Rhode Island	3	4,222	30.8					
South Carolina	8	8,802	11.4					
South Dakota	9	6,418	24.1					
Tennessee	2	3,674	22.9					
Texas	46	83,669	16.6					
Utah	7	8,514	22.8					
Vermont	8	4,355	39.9					
Virginia	1	1,396	16.1					

* Data from some States cover only a portion of the month, or have not been adjusted for the difference in numbers of Saturdays and Sundays between this year and last.

1. Plus sign before percentage indicates increase.

2. Includes all States except the following: Florida, Indiana, Minnesota, New Jersey, North Carolina.

Stations not included:

3. Defense activity: 1 each in Kansas and Nevada, and 2 in Louisiana.

4. Road construction: 1 in Georgia.

TABLE 2.—REVISED SUMMARY¹ OF AUTOMATIC TRAFFIC RECORDER DATA FOR MAY 1943, INCLUDING 583 STATIONS AND 46 STATES.

Geographic division and State	Number of stations	Percent decrease from May 1942	Geographic division and State	Number of stations	Percent decrease from May 1942
<i>NEW ENGLAND</i>	56	38.9	<i>EAST SOUTH CENTRAL</i>	30	20.9
Connecticut	19	41.6	Alabama	10	16.5
Maine	10	31.1	Kentucky	9	26.0
Massachusetts	10	38.6	Mississippi	9	20.4
New Hampshire	8	43.0	Tennessee	2	22.4
Rhode Island	4	23.7	<i>WEST SOUTH CENTRAL</i>	85	21.6
Vermont	5	37.2	Arkansas	18	29.3
<i>MIDDLE ATLANTIC</i>	43	40.3	Louisiana ³	7	19.4
New York	13	40.7	Oklahoma	20	26.2
Pennsylvania	30	40.0	Texas	40	18.5
<i>SOUTH ATLANTIC</i>	91	23.4	<i>MOUNTAIN</i>	65	25.1
Delaware	5	33.7	Arizona	5	19.9
Florida	19	13.3	Colorado	5	36.8
Georgia ⁵	11	20.0	Idaho	6	19.4
Maryland ⁴	15	27.2	Montana	14	20.3
North Carolina	20	18.7	Nevada ³	11	36.1
South Carolina	9	24.0	New Mexico	13	25.3
Virginia	1	39.7	Utah	8	22.5
West Virginia	11	25.6	Wyoming	3	26.2
<i>EAST NORTH CENTRAL</i>	89	30.6	<i>PACIFIC</i>	21	24.4
Illinois	4	31.0	California	10	20.5
Indiana	23	28.9	Oregon	2	28.2
Michigan	28	33.5	Washington	9	28.0
Ohio	23	24.9	<i>Total - 46 States²</i>	583	28.9
Wisconsin	11	35.5	<i>State highways:</i>	545	29.0
<i>WEST NORTH CENTRAL</i>	103	28.8	<i>Local highways:</i>	38	21.1
Iowa	36	24.9	<i>Rationed May 1942</i>	163	32.4
Kansas ³	9	23.5	<i>Rationed December, 1942</i>	420	27.3
Missouri	27	35.6			
Nebraska	12	18.0			
North Dakota	11	28.6			
South Dakota	8	19.6			

1. Combined State and local highways.

2. Includes all States except the following: Minnesota and New Jersey.

Stations not included:

3. Defense activity: 1 each in Kansas, Louisiana, and Nevada.

4. Detour: 1 in Maryland

5. Road construction: 1 in Georgia.

TABLE 3.—TRAFFIC VOLUME DATA FOR JUNE 1943 BY VEHICLE TYPES, COMPARED WITH SIMILAR INFORMATION FOR JUNE 1942 AT TOLL FACILITIES. WHERE AVAILABLE, COMPARISONS ARE SHOWN FOR 1941.

AREA RATIONED MAY 1942									
	June 1943			Percentage change from 1942			Percentage change from 1941		
	Total	Passenger cars	Trucks and busses	Total	Passenger cars	Trucks and busses	Total	Passenger cars	Trucks and busses
15 facilities - Maine to Virginia ¹	2,586,398	1,785,023	801,375	-29.8	-38.0	-0.4	-50.8	-59.8	-2.4
TOTAL - 24 facilities-Maine to Florida	3,234,955	2,300,132	934,823	-30.1	-37.4	-2.1			
MISCELLANEOUS LOCATIONS NOT INCLUDED ABOVE:									
42 drawbridges in eastern North Carolina (not toll) ²	21,401	14,797	6,604	+0.5	+1.2	-0.9	-17.9	-22.6	-4.9
12 stations in Washington, D. C. (not toll) ³	244,623	---	---	-22.5	---	---	-34.0	---	---
Fleets Road Viaduct, Westchester County, New York	65,570	65,570	---	-69.0	-69.0	---	-87.7	-87.7	---
AREA RATIONED DECEMBER 1942									
4 facilities on eastern Canadian Border	222,871	194,432	28,439	-35.9	-39.5	+6.2			
1 facility in the Great Lakes area	9,607	7,030	2,577	-70.9	-75.5	-39.9			
Subtotal - 5 facilities	232,478	201,462	31,016	-39.0	-42.4	-0.1			
8 facilities on the Ohio River	694,851	592,198	102,653	-13.6	-13.4	-14.5			
13 facilities in the Ohio River area	198,929	154,349	44,580	-13.6	-15.9	-4.2			
Subtotal - 21 facilities	893,780	746,547	147,233	-13.6	-14.0	-11.6			
11 facilities on the Mississippi and St. Croix Rivers, St. Louis and north	1,022,434	795,577	226,857	-23.9	-26.7	-12.1			
3 facilities on the Mississippi River south of St. Louis	50,207	39,264	10,943	-10.0	-12.7	+1.0			
Subtotal - 14 facilities	1,072,641	834,841	237,800	-23.4	-26.2	-11.6			
4 facilities on the Missouri River	111,795	84,871	26,924	-12.8	-14.7	-5.9			
2 facilities in the Missouri River area	1,955	1,699	256	-47.6	-48.3	-42.5	-61.9	-62.5	-57.3
Subtotal - 6 facilities	113,750	86,570	27,180	-13.7	-15.8	-6.5			
3 facilities in California	1,365,271	1,566,723	198,548	-13.7	-15.0	-1.2	-10.4	-14.1	+35.2
5 facilities in the Washington-Oregon area	219,055	188,053	31,002	-5.3	-6.6	+3.5			
Subtotal - 8 facilities	1,984,326	1,754,776	229,550	-12.8	-14.2	-0.6			
TOTAL - 54 FACILITIES IN THE AREA RATIONED DECEMBER 1942	4,296,975	3,624,196	672,779	-17.7	-19.4	-7.4			
27 of the 54 facilities for which data were reported for June 1941	2,359,317	2,056,188	303,129	-17.1	-18.7	-4.8	-19.3	-22.4	+10.6
5 facilities reporting only total traffic	333,722	---	---	-8.4	---	---			

1. These facilities located within the second pleasure driving ban area have comparative data for 1941, 1942, and 1943, and are included in the 24 facilities from Maine to Florida.
2. Total of 8-hour weekday counts at 42 bridges.
3. Based on weekday traffic.



PERCENT OF TRAFFIC IN CORRESPONDING MONTH, 1941

TRAFFIC VOLUME AT AUTOMATIC TRAFFIC RECORDERS, 1940-1943

