

PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY
WASHINGTON

INFORMATIONAL MEMORANDUM NO. 29

DATE: MARCH 30, 1943

SUBJECT: TRAFFIC VOLUME TRENDS

Rates of decline in traffic volume are smaller in February 1943 for all areas and types of vehicle. Traffic decreases are greater in the previously rationed area than in the newly rationed area in all tabulations of February traffic. Since the comparisons are for February 1943 with February 1942 in table 1 and since traffic for February 1942 was considerably affected by war influences, it is helpful to compare average traffic volumes in February 1943 with those for the same month in 1941. These averages indicate that traffic in February 1943 on State highways is 42 percent less, and on local highways 38 percent less, than in February 1941. A preliminary summary of traffic at 486 stations in February 1943 is given in table 1.

A revised summary of automatic recorder data for January 1943, shown in table 2, indicates a decline of 41.5 percent in 45 States over that of the previous January. The preliminary figure, given in last month's traffic bulletin, was 41.1 percent.

Traffic at toll facilities indicates the very great reduction in pleasure driving and in the use of passenger cars. At the Fleetwood Viaduct, Westchester County, New York, where traffic is entirely restricted to passenger cars, the decline is 80 percent. The irregularity in rates of decline which is noticeable at toll facilities is largely due to the proportions of commercial traffic at the different facilities. Some further irregularity is introduced by the presence, or absence, of nearby war production areas. Nevertheless, there is a rather striking similarity in the volume changes at the 43 drawbridges in North Carolina, the Sumner Tunnel, and at the 11 stations in Washington, D. C., all of which were unaffected by specific local war influences, but at which other conditions were greatly dissimilar.

H. S. Fairbank, Chief,
Division of Information,
Public Roads Administration.

Attachments.

TABLE 1.—PRELIMINARY SUMMARY OF AUTOMATIC TRAFFIC RECORDER DATA
FOR FEBRUARY 1943 INCLUDING 486 STATIONS IN 39 STATES

Type of highway and State	Number of stations	Total daily traffic	Percent decreased ¹ from February 1942	Type of highway and State	Number of stations	Total daily traffic	Percent decreased ¹ from February 1942
<i>STATE HIGHWAYS</i>				<i>STATE HIGHWAYS</i>			
Arizona	6	10,934	36.1	Virginia	1	2,030	39.7
Arkansas	22	13,134	32.6	Washington ³	9	12,050	36.9
Colorado	6	7,467	14.3	West Virginia	9	10,186	32.7
Connecticut	17	29,974	55.0	Wisconsin	9	12,443	27.8
Delaware	5	10,506	37.5				
Georgia*	5	7,438	42.6	TOTAL - 39 States	454	557,531	32.6
Idaho*	6	5,748	15.9	<i>LOCAL HIGHWAYS</i>			
Illinois*	5	5,118	23.6	Connecticut	2	474	34.6
Indiana	20	23,548	29.0	Delaware	1	214	29.9
Iowa	26	21,931	24.7	Georgia	4	771	12.1
Kansas ³	9	7,443	21.0	Iowa	10	1,107	3.9
Kentucky ⁵ *	13	12,239	21.7	Maryland	1	204	21.5
Louisiana ³	7	13,474	31.4	Massachusetts	1	164	51.8
Maine*	9	7,104	35.0	Michigan	2	369	45.5
Maryland ⁴ *	15	26,985	37.2	Montana	2	251	24.9
Massachusetts*	9	17,224	47.4	Nebraska	1	158	+19.7
Michigan	26	49,952	27.3	North Dakota	2	180	34.8
Mississippi	10	10,662	34.7	Ohio	1	303	24.1
Montana	12	5,008	24.7	Rhode Island	1	278	15.8
Nebraska	11	8,827	11.8	Tennessee	2	861	5.0
Nevada ³	11	4,611	25.5	Wisconsin	2	295	19.2
New Hampshire*	5	2,526	48.5				
New Mexico ³	12	12,471	24.6	TOTAL - 14 States	32	5,629	20.4
New York ⁴ *	7	10,937	35.2	<i>ALL HIGHWAYS</i>			
North Dakota	6	1,065	35.6	39 States²			486
Ohio ⁴ *	21	34,712	24.0			563,160	32.4
Oklahoma	20	27,247	24.2	Previously rationed area		117	149,040
Pennsylvania	30	32,234	42.2	Newly rationed area		369	414,120
Rhode Island	3	3,773	44.0				26.7
South Carolina*	10	10,830	44.6				
South Dakota	9	4,773	21.5				
Tennessee	2	2,616	27.9				
Texas	40	71,122	23.1				
Utah	8	5,984	16.6				
Vermont	3	1,245	39.7				

* Subject to revision.

1. Plus sign before percentage indicates increase.

2. Includes all States except the following: Alabama, California, Florida, Missouri, Minnesota, New Jersey, North Carolina, Oregon, and Wyoming.

STATIONS NOT INCLUDED:

3. Defense activity - 1 each in Kansas, Louisiana, Nevada, New Mexico, and Washington.

4. Detour - 1 each in Maryland, New York, and 2 in Ohio.

5. Road closed - 1 in Kentucky.

TABLE 2. REVISED SUMMARY¹ OF AUTOMATIC TRAFFIC RECORDER DATA FOR
JANUARY 1943 INCLUDING 534 STATIONS IN 39 STATES

Geographic division and State	Number of stations	Percent decrease from January 1942	Geographic division and State	Number of stations	Percent decrease from January 1942
<i>NEW ENGLAND</i>	51	53.5	<i>EAST SOUTH CENTRAL</i>	33	37.3
Connecticut	19	59.9	Alabama	8	35.0
Maine	9	49.1	Kentucky ⁵	12	30.5
Massachusetts	10	51.1	Mississippi	10	45.7
New Hampshire	6	57.2	Tennessee	3	35.1
Rhode Island	4	50.0	<i>WEST SOUTH CENTRAL</i>	88	34.2
Vermont	3	41.4	Arkansas	20	39.4
<i>MIDDLE ATLANTIC</i>	38	49.5	Louisiana	8	37.8
New York ⁴	8	49.4	Oklahoma	20	35.3
Pennsylvania	30	49.5	Texas	40	31.9
<i>SOUTH ATLANTIC</i>	85	47.3	<i>MOUNTAIN</i>	61	31.1
Delaware	6	42.8	Arizona	5	35.9
Florida	16	47.5	Colorado ³	3	21.7
Georgia	9	47.4	Idaho	6	23.0
Maryland ⁴	16	44.9	Montana	14	42.5
North Carolina ⁶	20	49.0	Nevada ³	11	26.4
South Carolina	8	53.4	New Mexico ³	12	32.9
Virginia	1	44.0	Utah	7	14.7
West Virginia	9	48.5	Wyoming	3	35.6
<i>EAST NORTH CENTRAL</i>	81	37.0	<i>PACIFIC</i>	23	40.7
Illinois	4	36.9	California	10	37.9
Indiana	20	38.3	Oregon	4	39.2
Michigan	28	37.0	Washington ³	9	45.1
Ohio ⁴	18	36.3	TOTAL - 45 States²	534	41.5
Wisconsin	11	35.9	<i>STATE HIGHWAYS</i>	502	41.6
<i>WEST NORTH CENTRAL</i>	74	35.4	<i>LOCAL HIGHWAYS</i>	32	30.8
Iowa	36	36.8	Previously rationed area	152	49.8
Kansas ³	9	29.6	Newly rationed area	382	36.7
Nebraska	12	28.8			
North Dakota	10	51.8			
South Dakota	7	40.0			

1. Combined State and local highways.

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

STATIONS NOT INCLUDED:

3. Defense activity: 2 in Colorado; 0 each in Kansas, Nevada, New Mexico, and Washington.

4. Detours: 1 each in Maryland and New York; and 3 in Ohio.

5. Road closed: 1 in Kentucky.

6. Military traffic was observed in January 1942 at more than half of the automatic traffic recorder stations in North Carolina.

TABLE 3.—TRAFFIC VOLUME DATA FOR FEBRUARY 1943, BY VEHICLE TYPES COMPARED WITH SIMILAR INFORMATION FOR FEBRUARY 1942 AT TOLL FACILITIES

<i>Previously rationed area</i>						
	February 1943			Percentage change from 1942		
	Total	Passenger cars	Trucks and busses	Total	Passenger cars	Trucks and busses
Total - 23 facilities - Maine to Florida	2,839,368	1,623,869	765,499	-38.0	-47.2	- 2.1
<i>Miscellaneous locations not included above:</i>						
43 drawbridges in eastern North Carolina (not toll) ¹	15,980	11,455	4,525	-32.6	-38.9	- 8.8
Sumner Tunnel - Boston	328,244	290,797	37,447	-31.7	-34.1	- 5.2
11 stations in Washington D. C. (not toll) ²	193,095	--	--	-31.9	--	--
Fleetwood Viaduct, Westchester County, New York	47,001	47,001	--	-80.0	-80.0	--
Pennsylvania Turnpike	49,839	26,561	23,278	-46.1	-60.9	- 5.1
<i>Newly rationed area</i>						
4 facilities on eastern Canadian border	120,456	96,215	24,241	-22.9	-28.4	+11.2
2 facilities Great Lakes area	37,872	24,228	13,644	-17.5	-24.4	- 1.8
Subtotal - 6 facilities	158,328	120,443	37,885	-21.7	-27.6	+ 6.1
10 facilities on the Ohio River	555,092	450,851	104,241	-21.0	-23.0	-11.2
13 facilities in the Ohio River area ³	137,432	100,000	37,432	-15.2	-18.9	- 3.6
Subtotal - 23 facilities	692,524	550,851	141,673	-19.9	-22.3	- 9.3
2 facilities in Florida and Alabama Gulf Coast area ⁴	184,078	154,530	29,548	+73.4	+66.6	+121.2
Subtotal - 2 facilities	184,078	154,530	29,548	+73.4	+66.6	+121.2
8 facilities on the Mississippi River, St. Louis and north	846,716	657,658	189,058	-11.3	- 9.3	-17.5
3 facilities on the Mississippi River south of St. Louis	45,374	29,965	15,409	-20.7	-24.4	-12.3
Subtotal - 11 facilities	892,090	687,623	204,467	-11.8	-10.1	-17.2
7 facilities on the Missouri River	300,094	221,775	78,319	- 3.3	-10.2	-0.6
2 facilities Missouri River area	1,783	1,454	329	-11.0	-10.2	-14.3
Subtotal - 9 facilities	301,877	223,229	78,648	- 3.4	-10.2	-0.7
4 facilities on Mexican border	67,911	59,990	7,921	+27.6	+25.4	+47.2
Subtotal - 4 facilities	67,911	59,990	7,921	+27.6	+25.4	+47.2
3 facilities in California	1,481,539	1,300,742	180,797	-16.1	-19.1	+13.3
5 facilities in the Washington-Oregon area	148,551	123,257	25,294	-15.9	-19.8	+10.6
Subtotal - 8 facilities	1,630,090	1,423,999	206,091	-16.0	-19.0	+13.0
Total - 63 facilities in newly rationed area	3,916,898	3,220,665	706,233	-12.6	-14.6	- 1.8
8 facilities reporting only total traffic ⁵	338,592	--	--	+ 7.6	--	--

1. Total of 8-hour counts on weekdays at 43 locations.

2. Based on weekday traffic. The decrease for Saturday amounted to 34 percent, and for Sunday approximately 51 percent.

3. One facility in West Virginia and 12 in Kentucky.

4. Not the same two facilities reported in February.

5. The 7.6 percent increase may be compared with the 21.1 percent decrease for January. This is due to added war workers using one facility which last month showed a small decrease.

FEDERAL WORKS AGENCY
PUBLIC ROADS ADMINISTRATION
WASHINGTON

IN YOUR REPLY PLEASE
REFER TO FILE No. _____

INFORMATIONAL MEMORANDUM NO. 27

DATE: March 6, 1943

The accompanying charts show some of the effects of restrictions on motor vehicle transportation made necessary by the war effort, and particularly the changes in traffic patterns resulting from the pleasure driving ban effective at noon on January 7, 1943. The daily and hourly traffic patterns at a number of locations in several eastern States are compared for January 1942 and 1943. Absolute figures were used in plotting the graphs so that not only the shapes of the curves but also the differences in volumes might be shown without the necessity of including volume tables.

The percentage decreases in 1943 as compared with 1942 have not been shown except for two toll facilities, for which these figures are given to illustrate the effect of a decrease in total traffic while commercial traffic remains constant or increases. The Portsmouth-Kittery Bridge (figure 2) is listed to illustrate an unusual situation and to emphasize that traffic data must be studied and analyzed with extreme care under present conditions. Previous general relationships cannot be assumed to apply to wartime conditions.

The week prior to the pleasure driving ban does not lend itself to strict comparison with the week following due to the position of the holiday in relation to the week end and to weather conditions. A comparison of hourly and daily patterns for several locations before and after January 7, 1943, indicates that the pleasure driving ban did not greatly affect weekday traffic on either rural highways or at two locations in the District of Columbia. The effect on Sunday traffic totals and patterns, however, was great, as illustrated by figures 3, 4, 5, 6, 7, and 8.

Because of the inclement weather that occurred over the week end following the pleasure driving ban the data for Sunday, January 17, were chosen as more representative than those of January 10 of the effect of the ban. The traffic volumes on January 17, 1943, were therefore compared with those on January 18, 1942, and on January 3, 1943, at four locations in Pennsylvania (figure 4) and ten locations in Maryland (figure 8).

Figure 9 shows the traffic patterns on the Merritt Parkway in Connecticut for January 1942 and 1943. Since commercial vehicle traffic is prohibited from using this parkway, the effect of the pleasure driving ban is very noticeable. Sunday traffic in 1942, even on days when the weather was bad, was very much higher than on weekdays, sometimes as much as threefold. Likewise, Sunday traffic in 1943 before January 7 showed a very noticeable peak. After that date, however, Sunday traffic is even less than weekday traffic and approximately one-fifth of the traffic for the average day of the week in 1943 as compared with January 1942. A generally similar pattern, but with differences between Sunday and weekdays far more pronounced, is shown in figure 1 for the Delaware River Bridge. The high peaks shown in this figure for the usual Sunday traffic in January 1942 become valleys in the traffic pattern in 1943. Sunday traffic on January 4 and January 11 in 1942 was low because of cold weather and snow, according to the bridge authorities.

The pattern for a location on U. S. Route 1 at Westport, Connecticut, (figure 10) stands in marked contrast with the patterns previously mentioned. This route, which parallels the Merritt Parkway, was used by a large volume of commercial and business traffic, and, even in 1942, the week end volume was materially below the weekday volume. This was the opposite of the condition then existing on the parallel Merritt Parkway. It is of interest to note that the form of the traffic pattern on U. S. Route 1 in 1943 is almost identical with that of the previous year, although the volume is considerably less.

If the effects of the very cold weather in the early part of January 1942 are eliminated, the traffic patterns for the 12 locations in Connecticut (figure 11), probably best represent the results of the restrictions placed on motor vehicle transportation because of the war effort and illustrate particularly well the effect of the pleasure driving ban on week end traffic.

In figures 12, 14, and 15, data for three northern States are compared with data for three southern States, and the same general differences of traffic pattern are shown to exist in States of substantially differing climatic conditions. For these graphs, data from several stations were used so that the variation resulting at individual stations from local conditions would not unduly affect the general result.

Figure 15 shows that there has been a larger Sunday decrease in Massachusetts than in Florida. Part of this greater decrease may have been caused by the more severe winter in New England during January 1943 than in January 1942. A more likely reason, however, is that traffic in January 1942 increased about 10 percent in Massachusetts as compared with January 1941 while a corresponding comparison in Florida showed a decrease of approximately 20 percent.

At no time in our road-building history has up-to-the-minute traffic information been of greater importance than today. The scattered data transmitted herewith show unmistakably how artificial influences are causing traffic patterns to fluctuate in a most unpredictable manner. General factors cannot be employed with any degree of certainty in adjusting earlier recorded volume or classification figures to present levels. Maintenance of adequate traffic counting schedules and prompt and discriminating analysis of field data are of prime importance if construction activities are to be continued on an intelligent basis during the War. Certifying and other approving agencies place more emphasis on current traffic data than on any other one item in reviewing highway improvement projects.

H. S. Fairbank, Chief,
Division of Information

Attachment

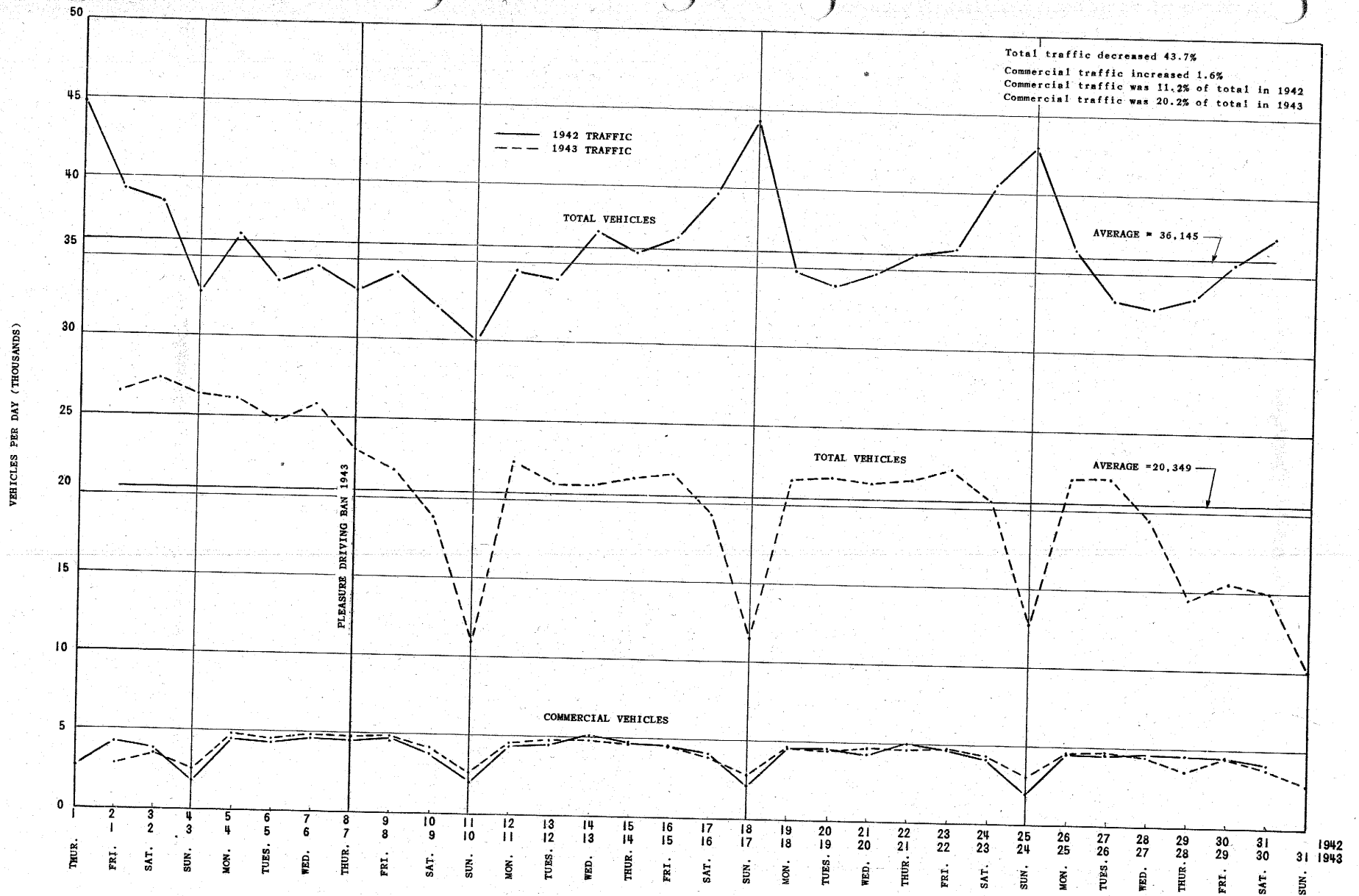


FIGURE 1.- TRAFFIC PATTERNS FOR JANUARY 1942 AND 1943 (MOTOR VEHICLES) ON THE DELAWARE RIVER BRIDGE BETWEEN PHILADELPHIA AND CAMDEN

THE STATE OF TEXAS, COUNTY OF DALLAS, this 1st day of August, 1900, before me, the undersigned, a Notary Public in and for said County and State, personally appeared _____, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office this 1st day of August, 1900.

Notary Public in and for the County of Dallas, State of Texas.

Witness my hand and seal of office this 1st day of August, 1900.

Notary Public in and for the County of Dallas, State of Texas.

Notary Public in and for the County of Dallas, State of Texas.

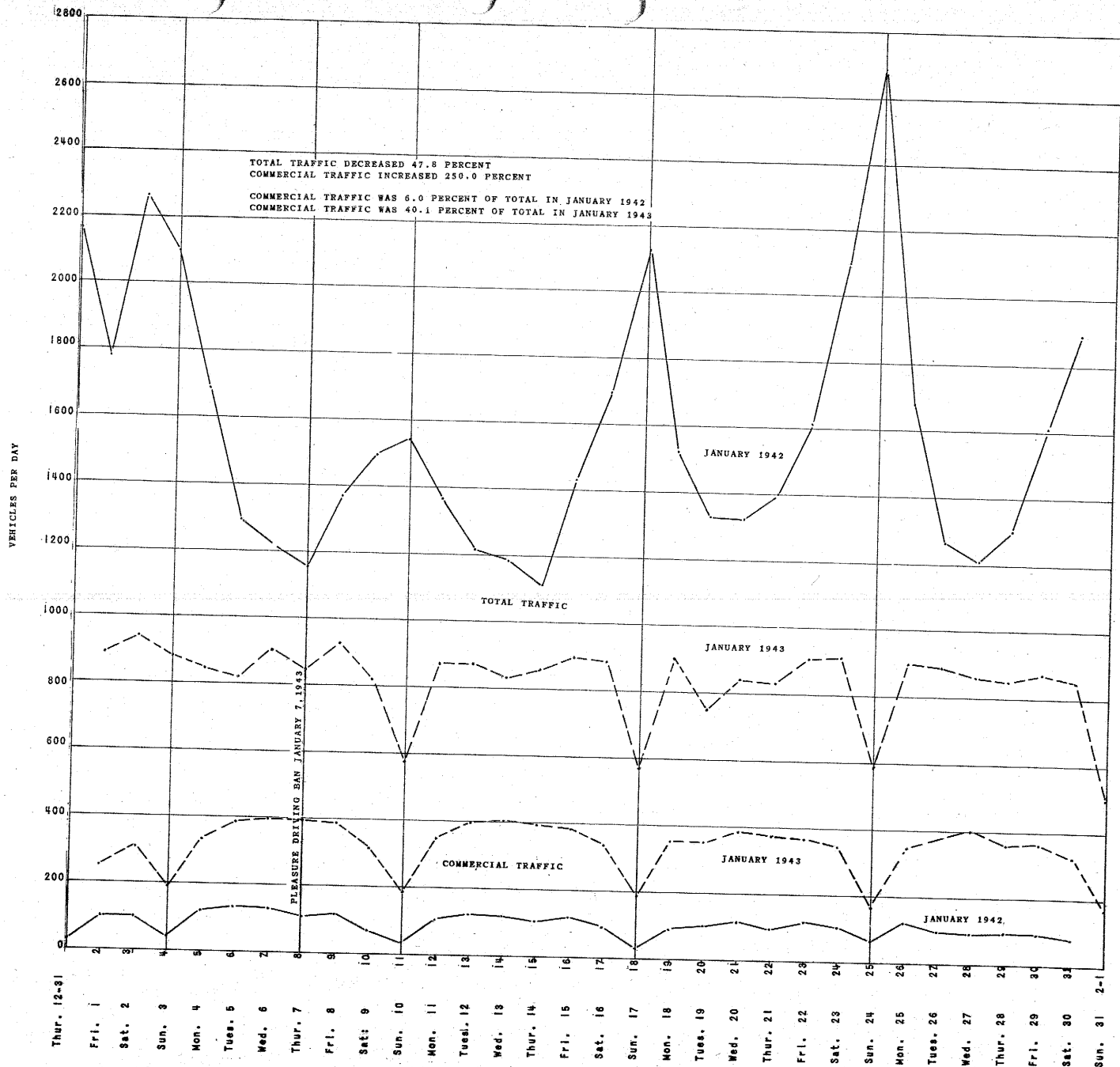
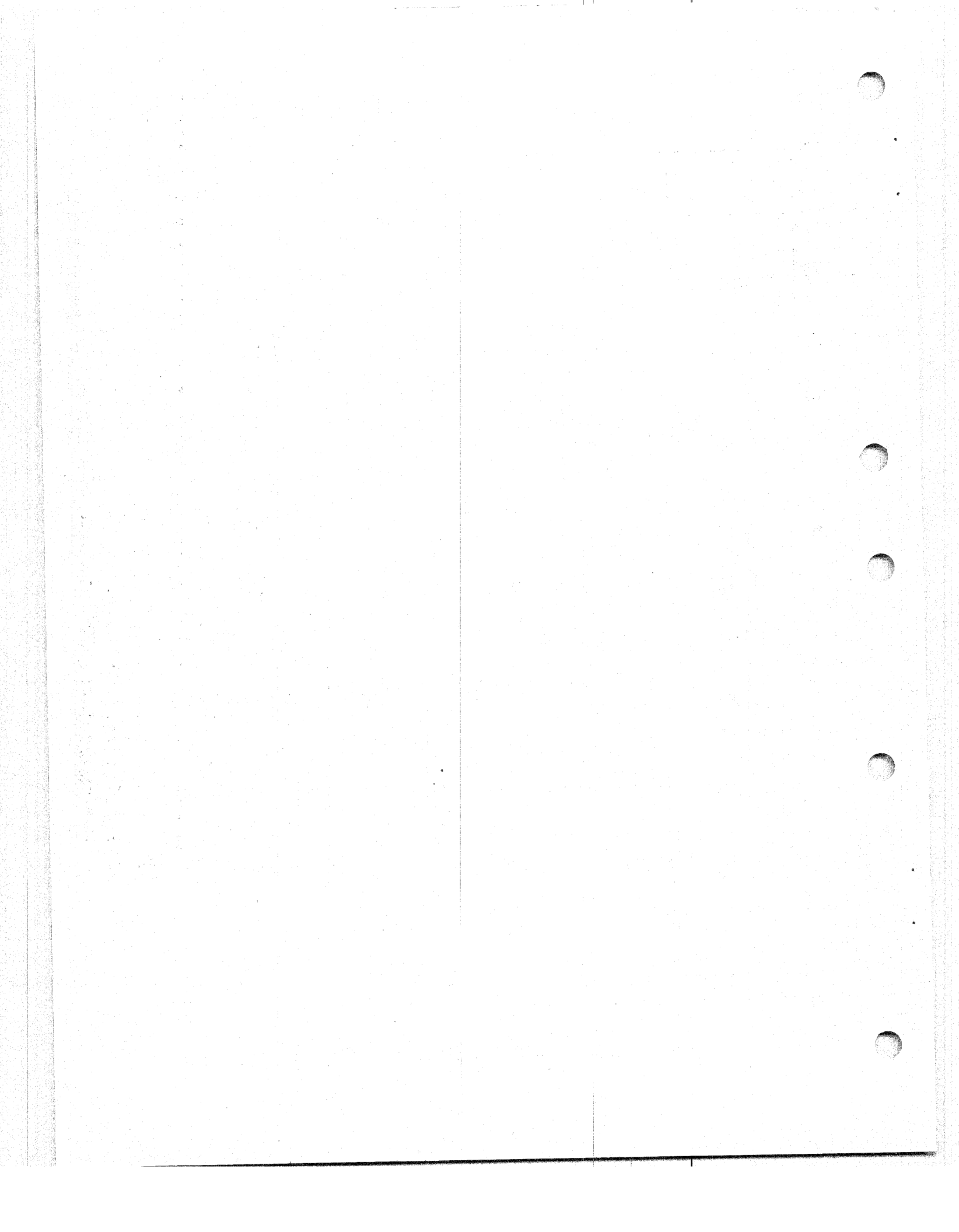


FIGURE 2.-A COMPARISON OF THE DAILY PATTERNS FOR TOTAL AND COMMERCIAL TRAFFIC IN JANUARY 1942 AND 1943 AT ONE LOCATION BETWEEN MAINE AND NEW HAMPSHIRE. NOTE THAT THE TOTAL TRAFFIC DECREASED GREATLY WHILE THE COMMERCIAL TRAFFIC INCREASED ENORMOUSLY IN 1943.



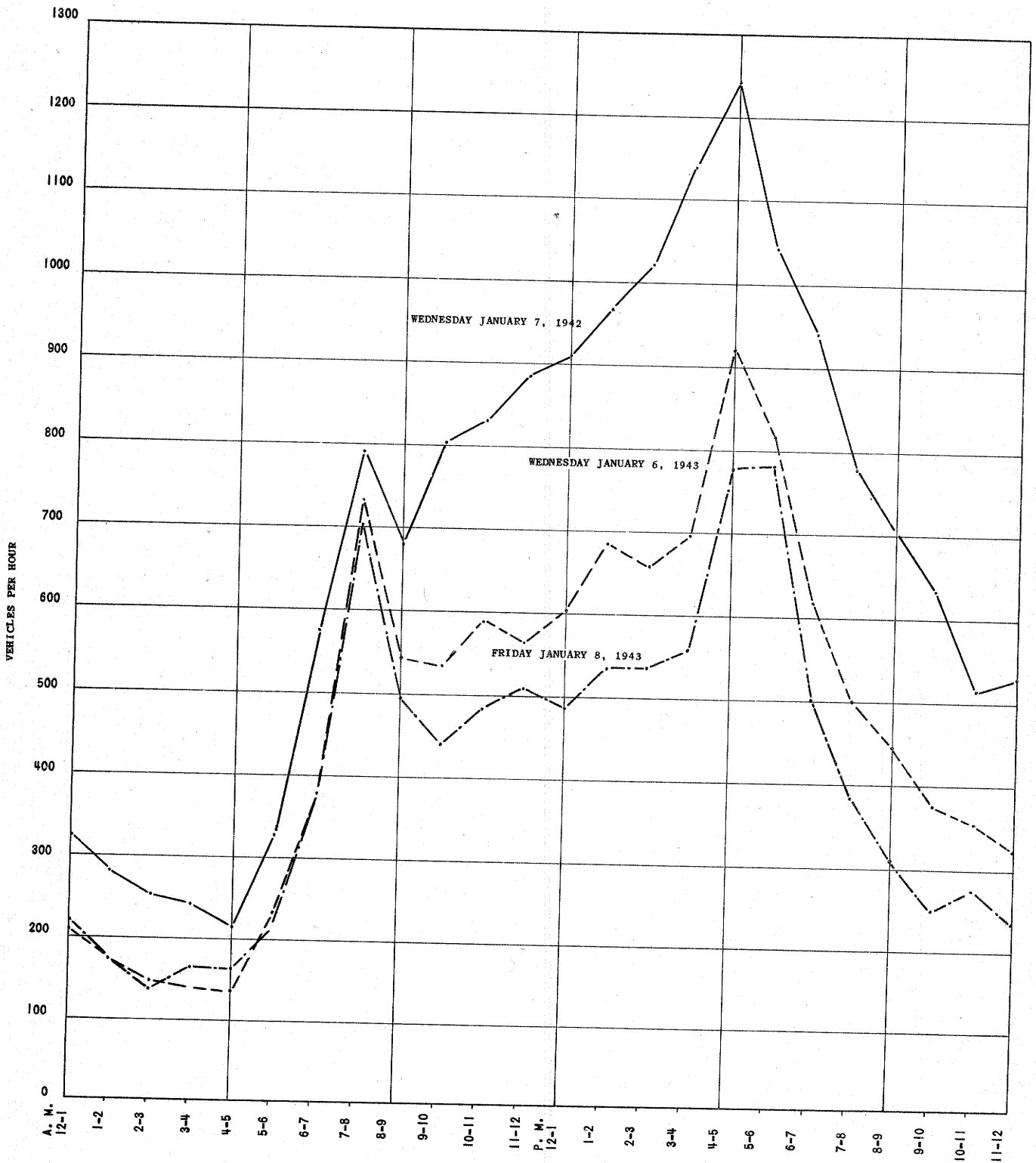
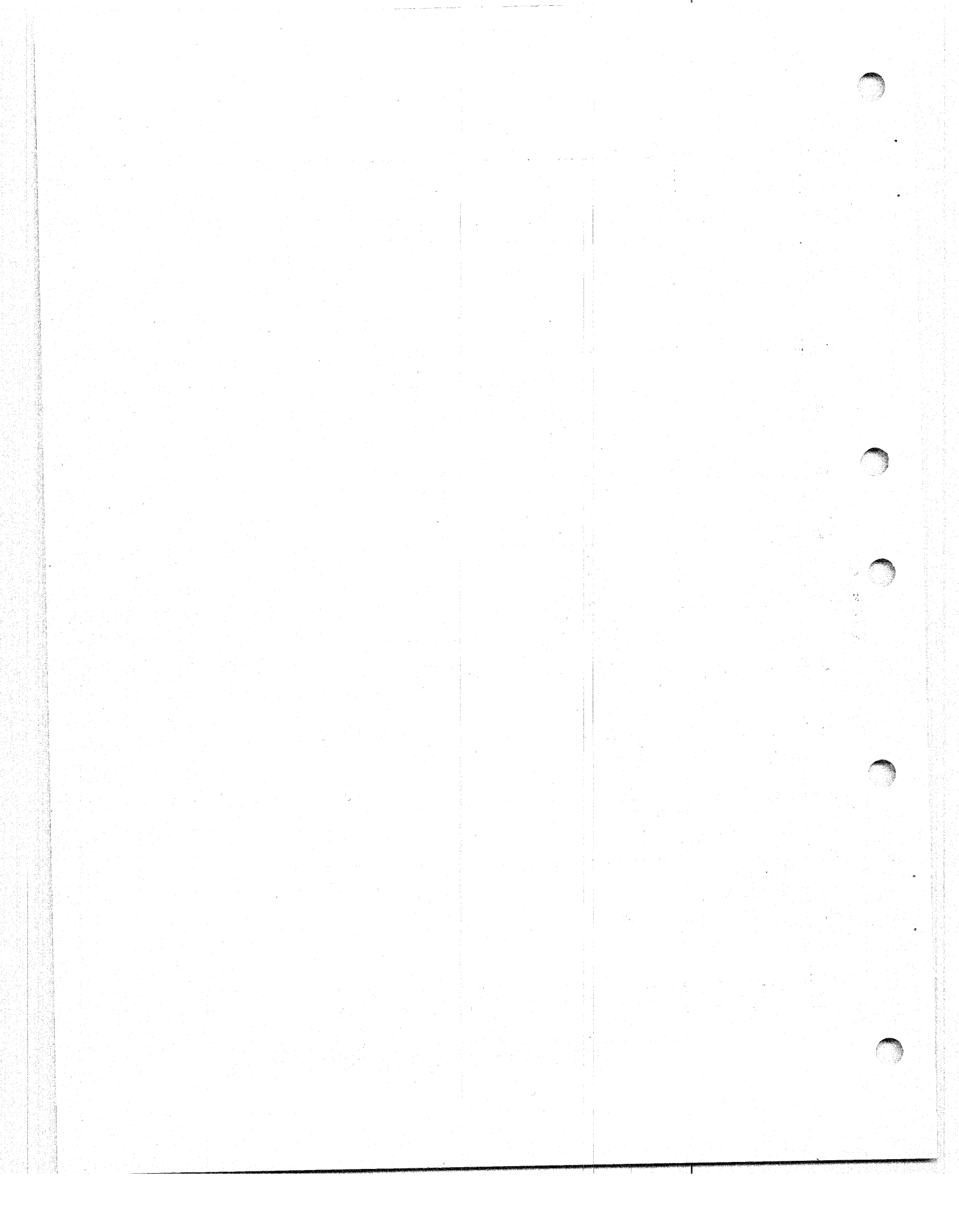


FIGURE 3.- A COMPARISON OF HOURLY TRAFFIC PATTERNS AT FOUR LOCATIONS IN PENNSYLVANIA ON THE DAY BEFORE (JANUARY 6) AND THE DAY AFTER (JANUARY 8) THE PLEASURE DRIVING BAN OF JANUARY 7, 1943 AND A COMPARABLE WEEKDAY (JANUARY 7) IN 1942



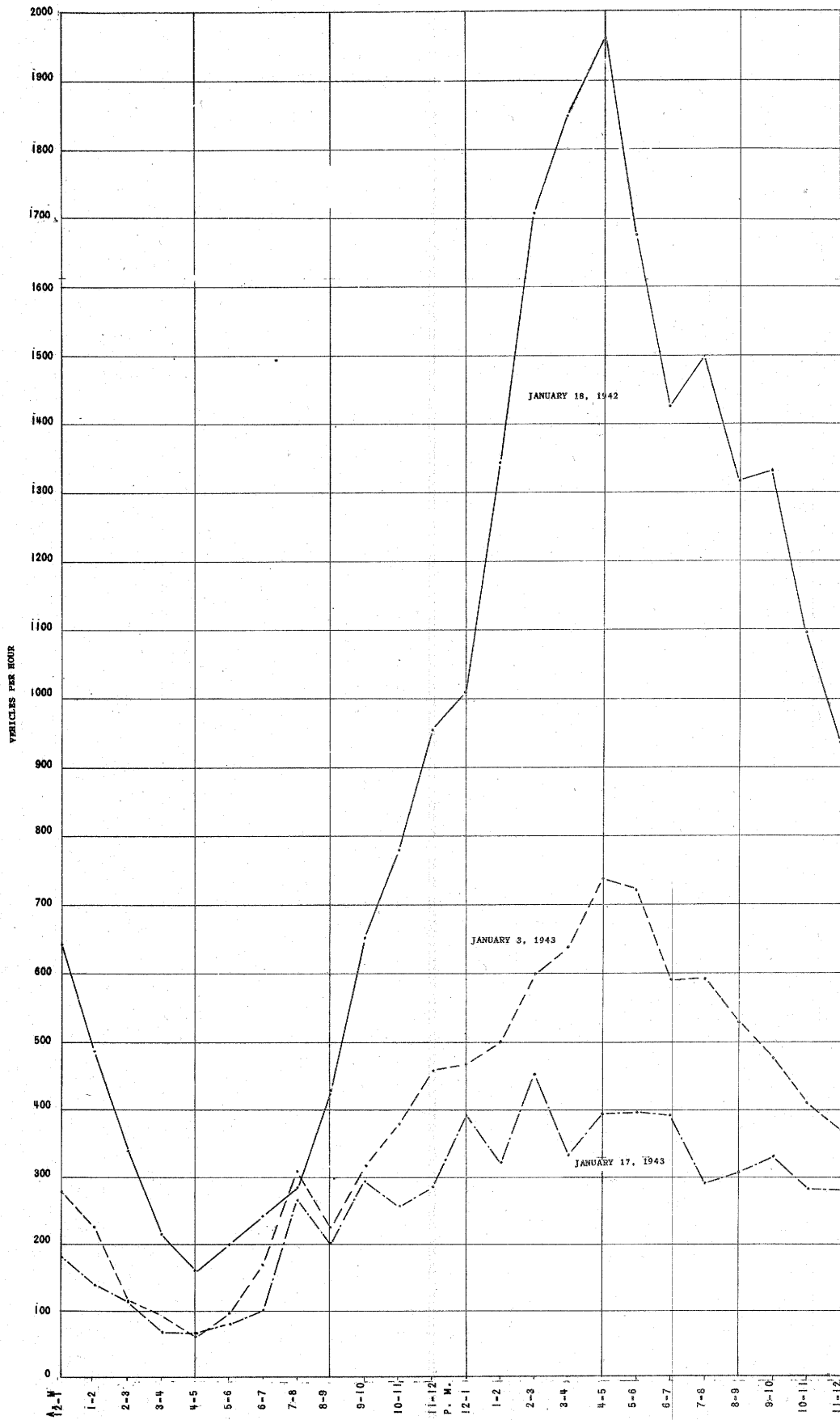
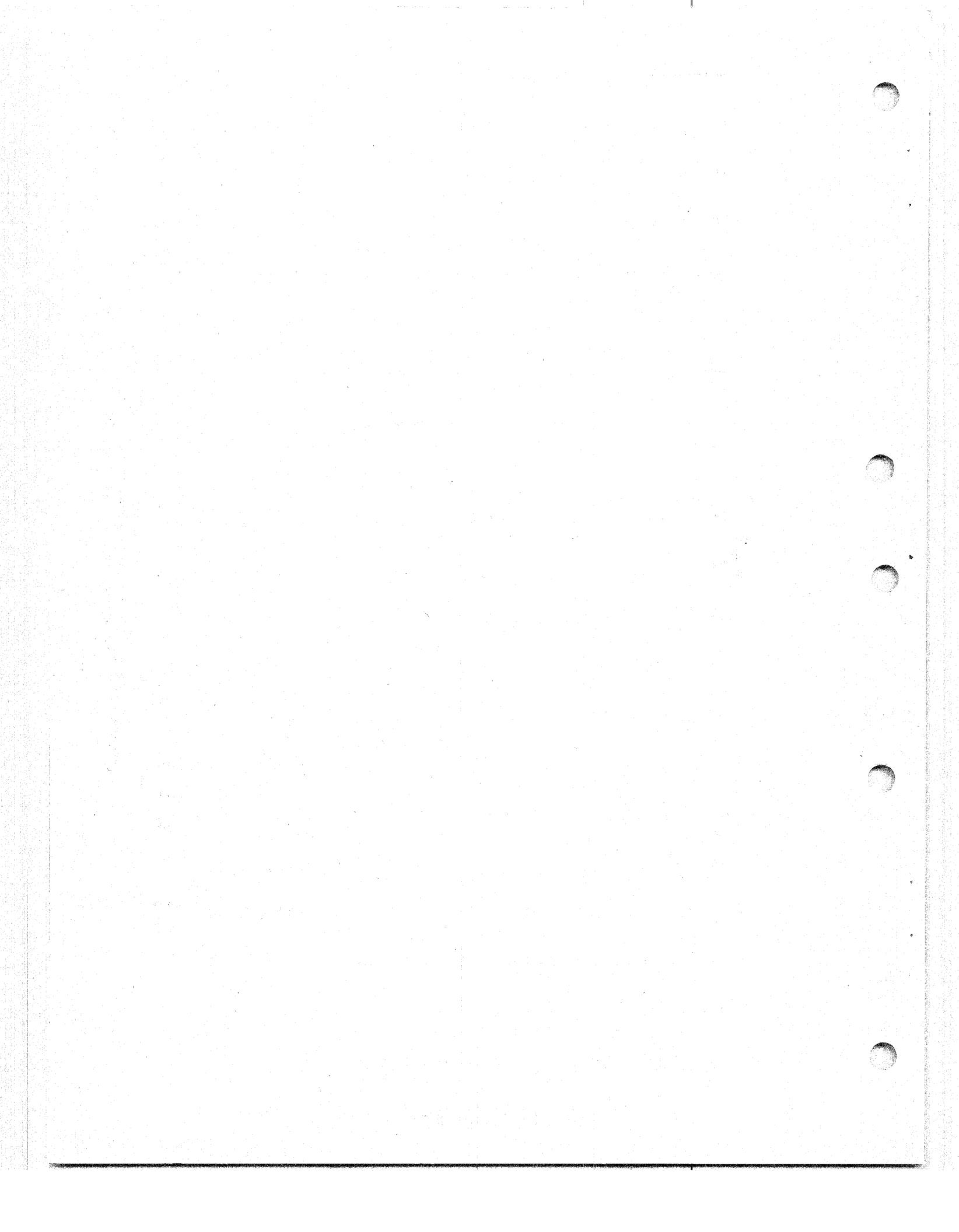


FIGURE 4. - A COMPARISON OF THE HOURLY TRAFFIC PATTERNS AT FOUR LOCATIONS IN PENNSYLVANIA ON SUNDAYS, JANUARY 18, 1942, JANUARY 17, 1943, AND JANUARY 3, 1943, SHOWING THE EFFECTS OF MOTOR TRANSPORTATION RESTRICTIONS DUE TO THE WAR.



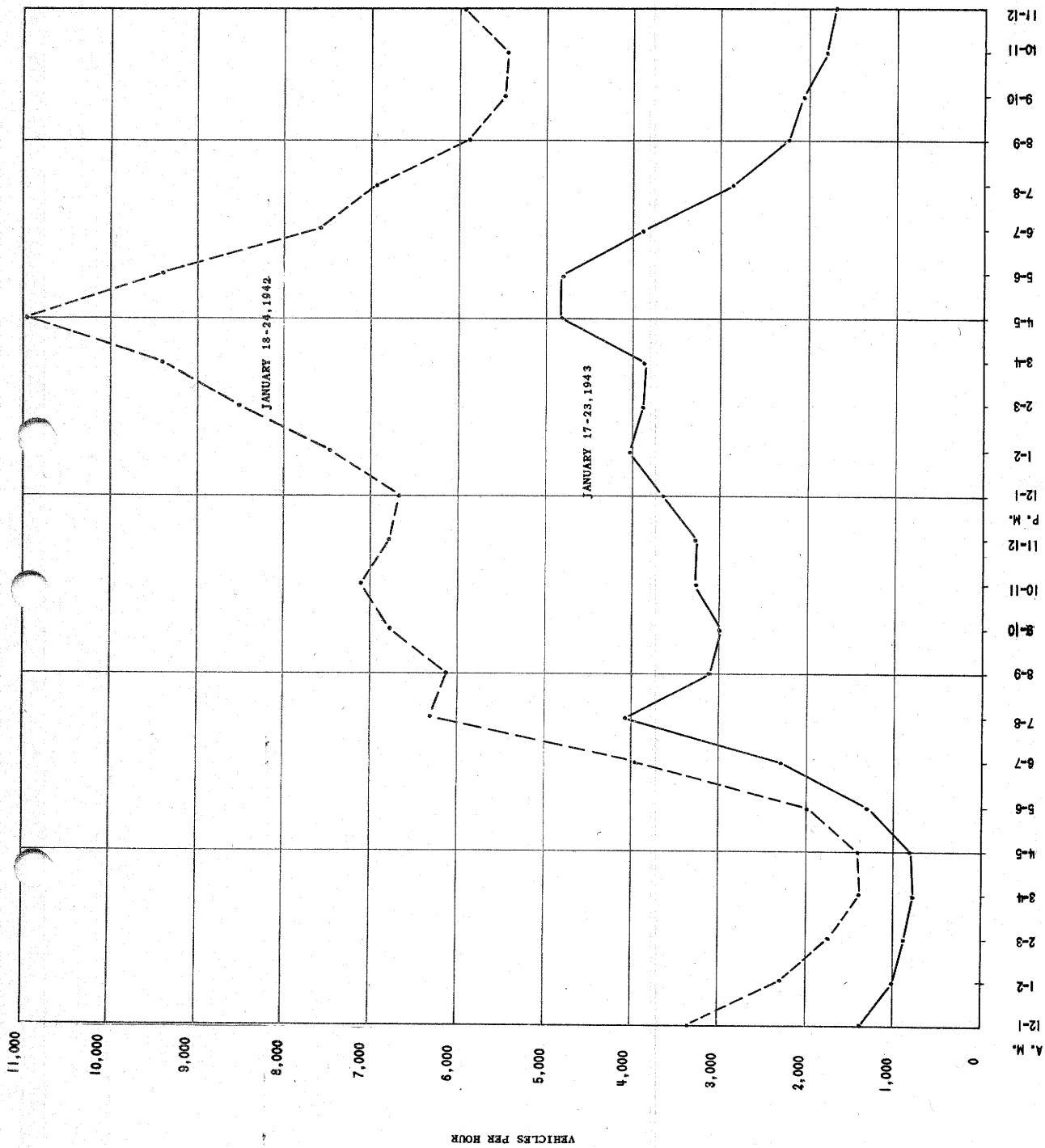
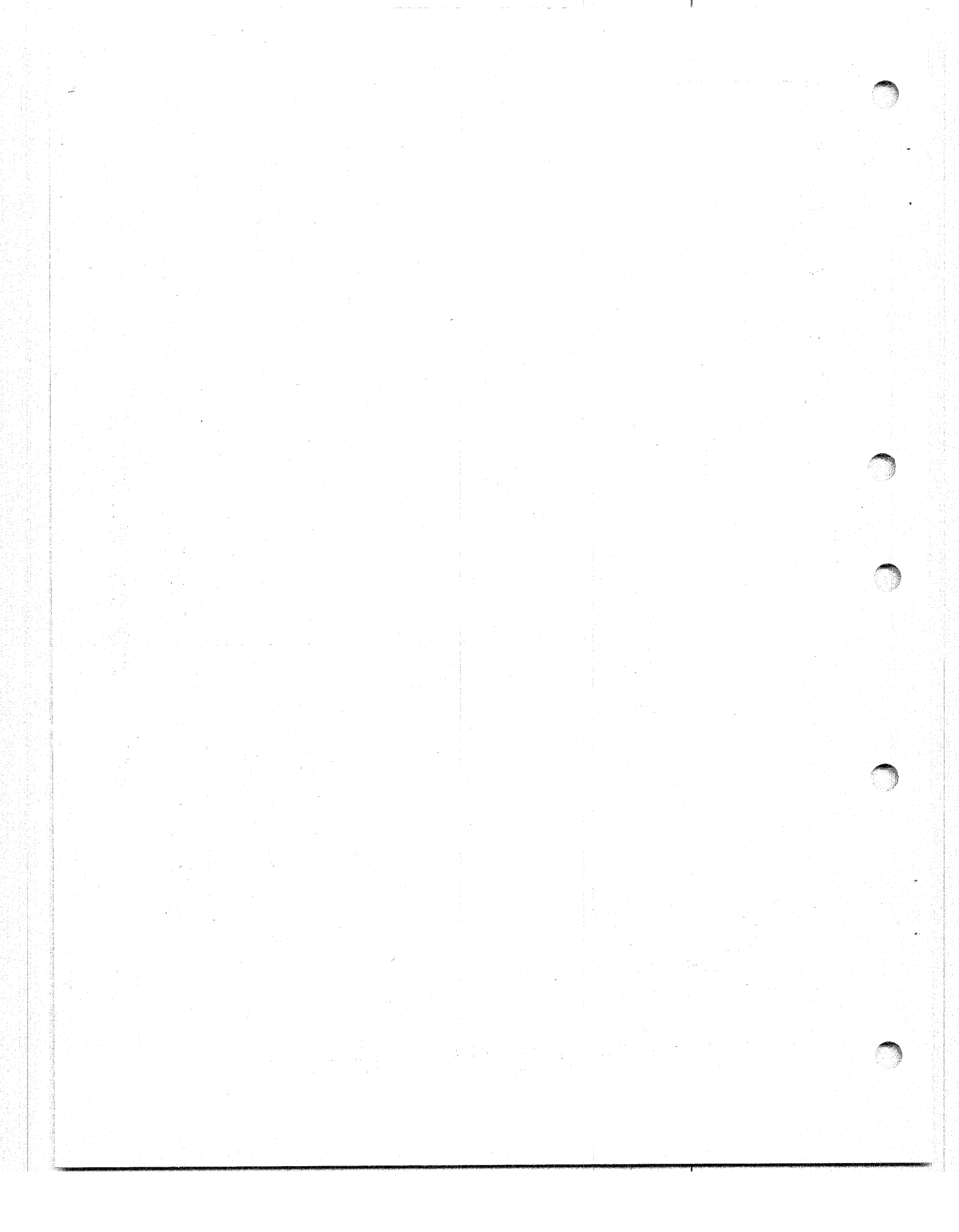


FIGURE 5.- A COMPARISON OF HOURLY TRAFFIC PATTERNS FOR FOUR PENNSYLVANIA LOCATIONS FOR WEEKS OF JANUARY 18-24, 1942, AND JANUARY 17-23, 1943



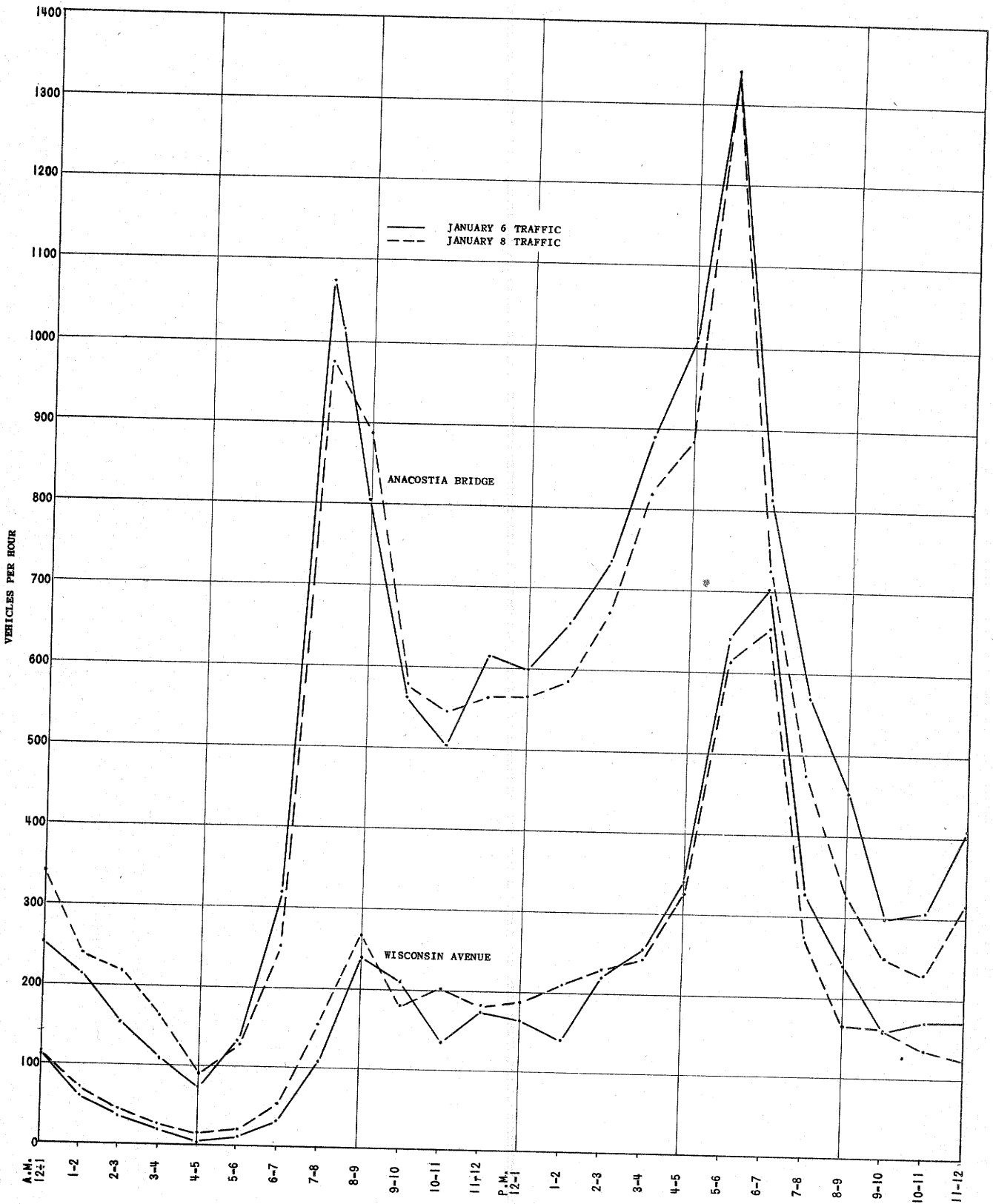
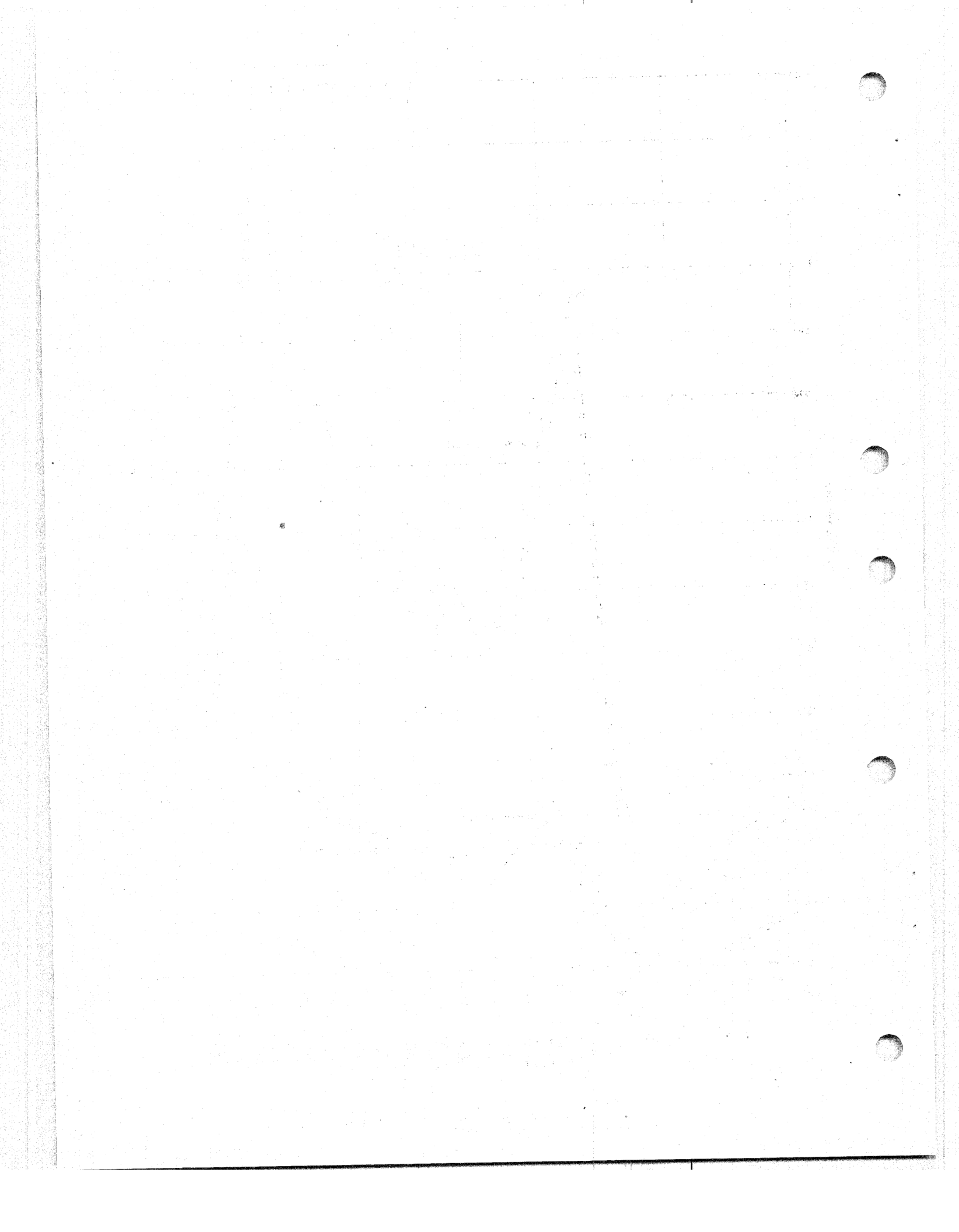


FIGURE 6.- THE HOURLY TRAFFIC PATTERNS OBSERVED ON WISCONSIN AVENUE (OUTBOUND) AT DISTRICT OF COLUMBIA LINE, AND ON ANACOSTIA BRIDGE (INBOUND) ON THE DAY BEFORE AND THE DAY AFTER THE PLEASURE DRIVING BAN ORDER, JANUARY 6 AND 8, 1943



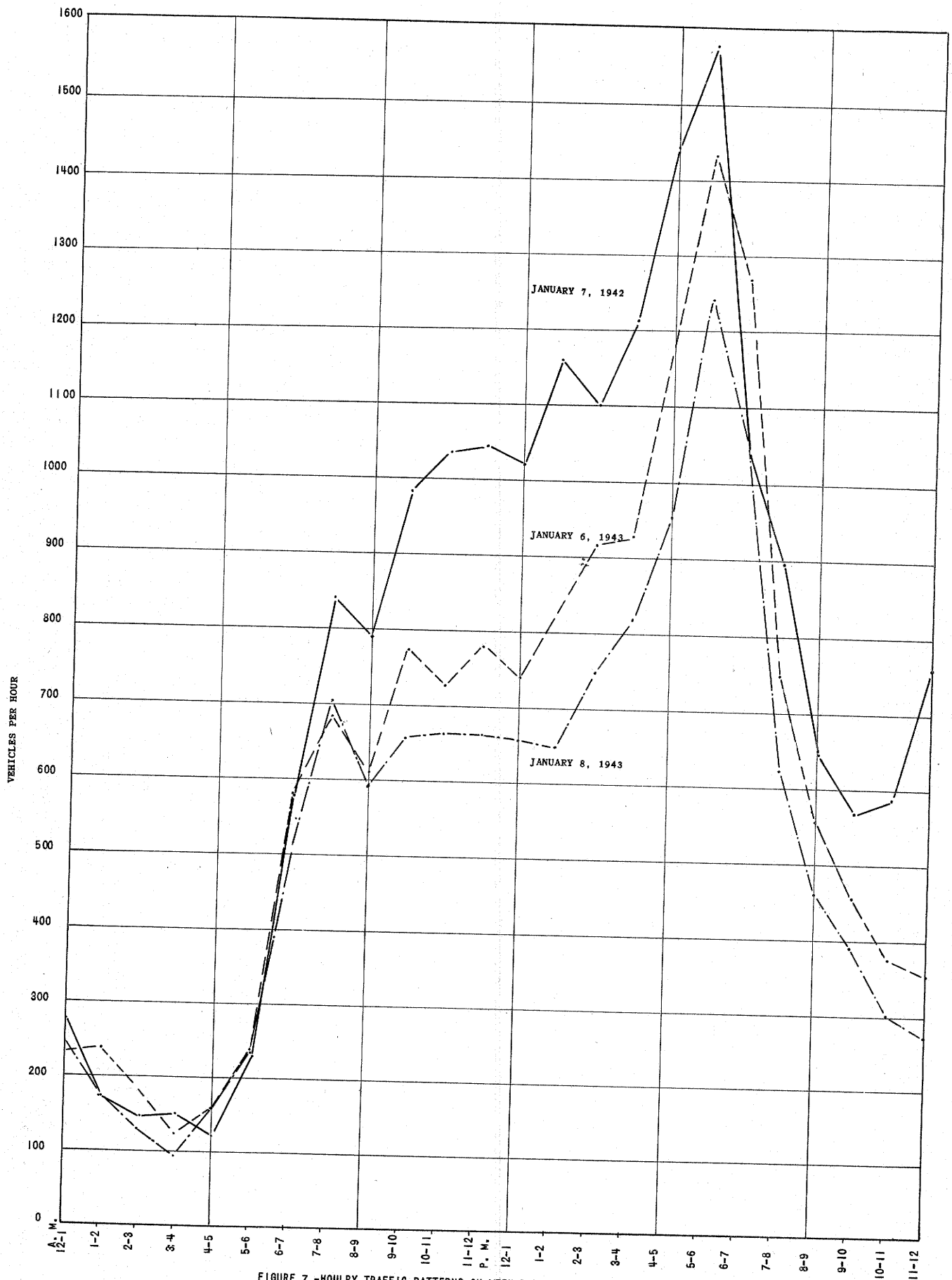
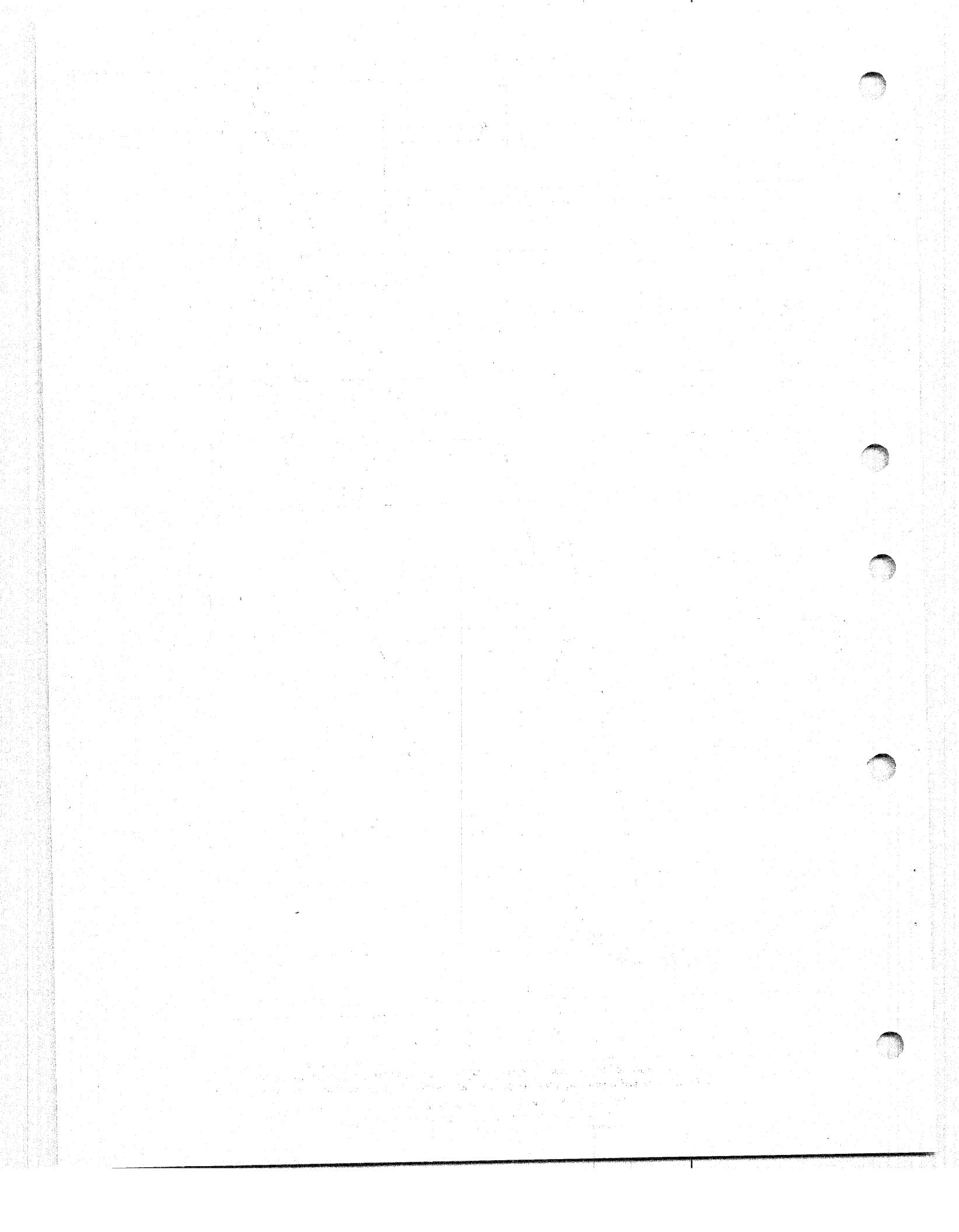


FIGURE 7.-HOURLY TRAFFIC PATTERNS ON WEEK DAYS AT TEN LOCATIONS IN MARYLAND ON THE DAY BEFORE (JANUARY 6) AND THE DAY AFTER (JANUARY 8) THE PLEASURE DRIVING BAN JANUARY 7, 1942, AND JANUARY 7, 1942.



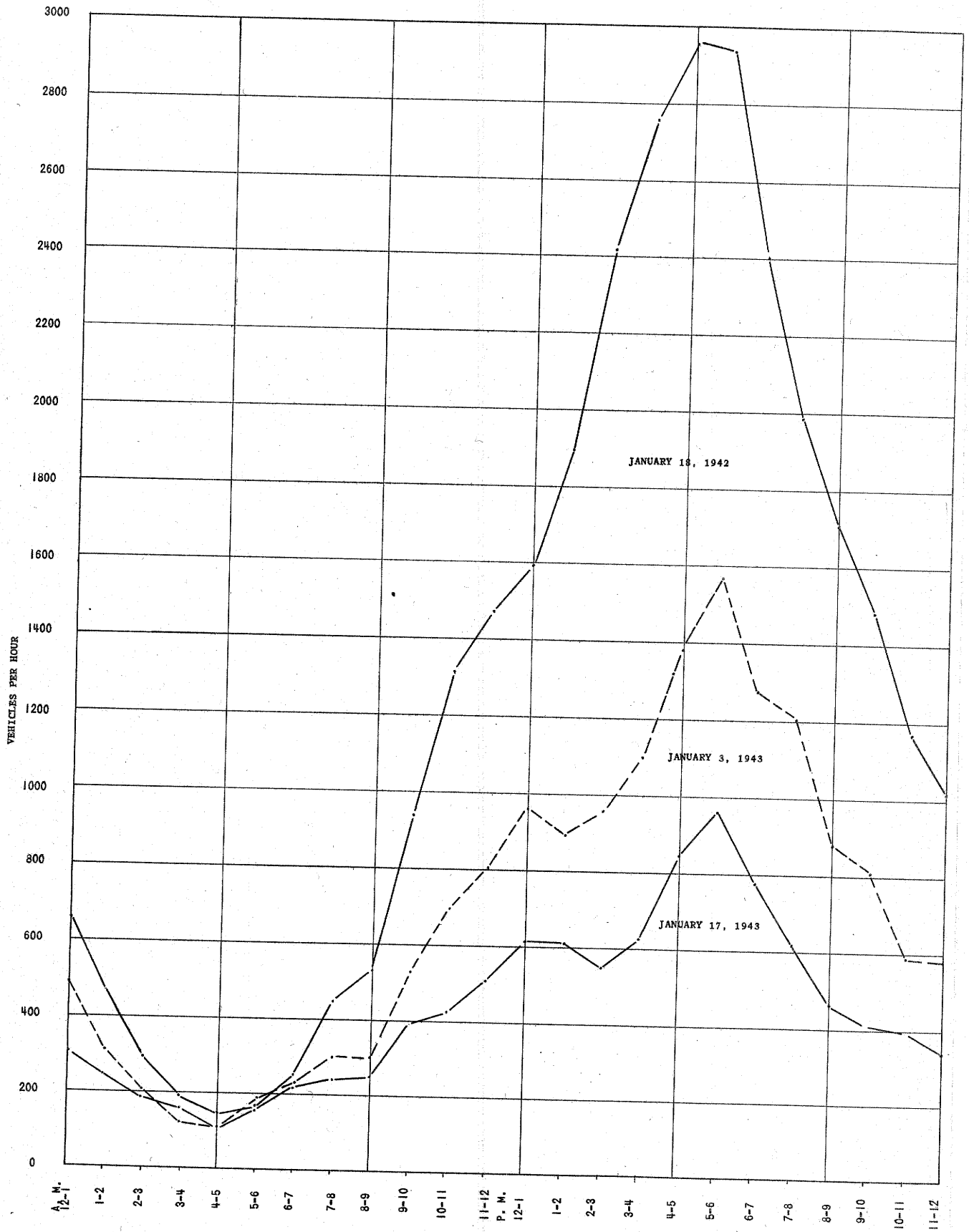
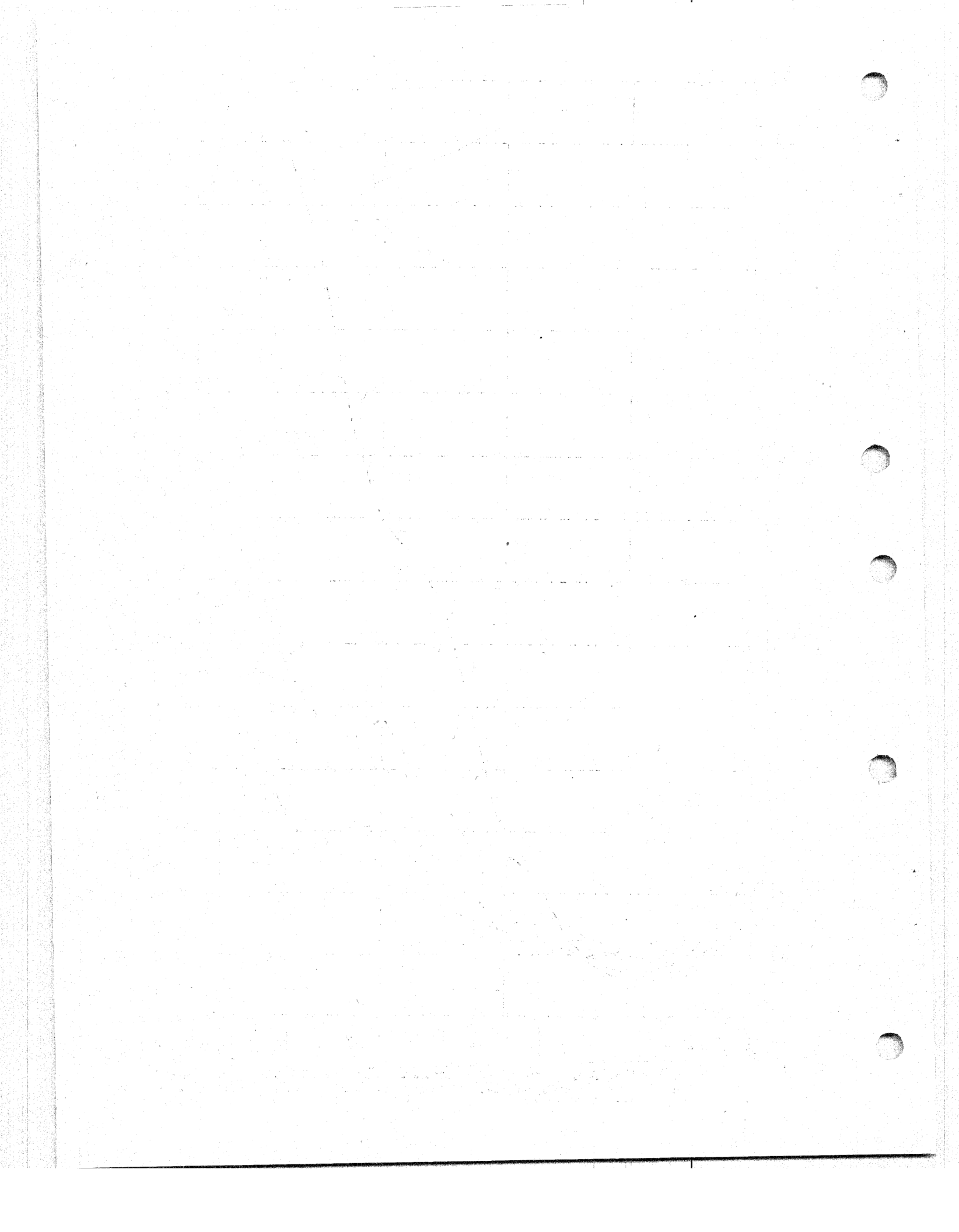


FIGURE 8.-A COMPARISON OF THE HOURLY TRAFFIC PATTERNS AT 10 LOCATIONS IN MARYLAND ON SUNDAYS, JANUARY 18, 1942, JANUARY 17, 1943 AND JANUARY 3, 1943, WHICH SHOW THE EFFECTS OF MOTOR TRANSPORTATION RESTRICTIONS DUE TO THE WAR.



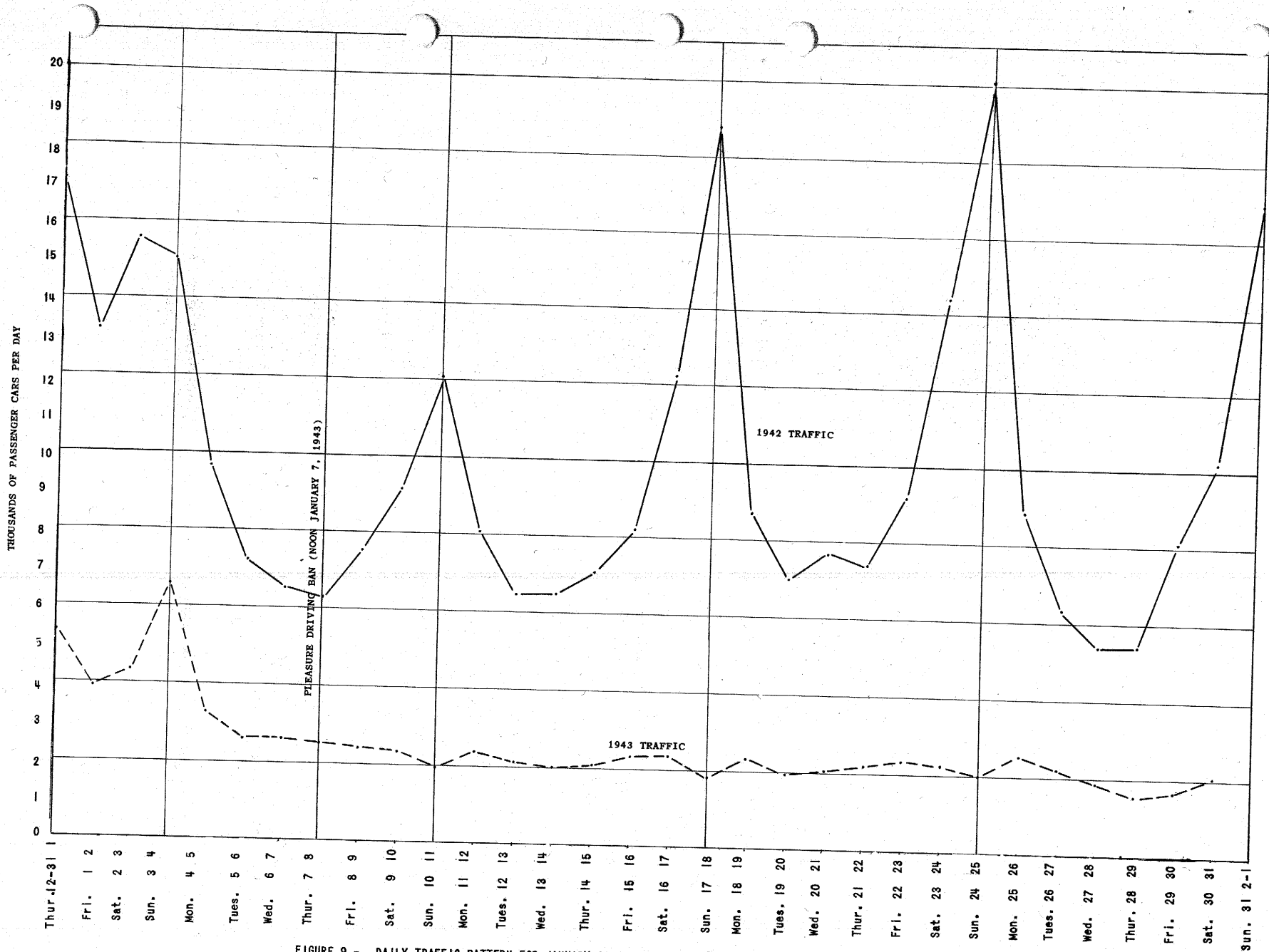
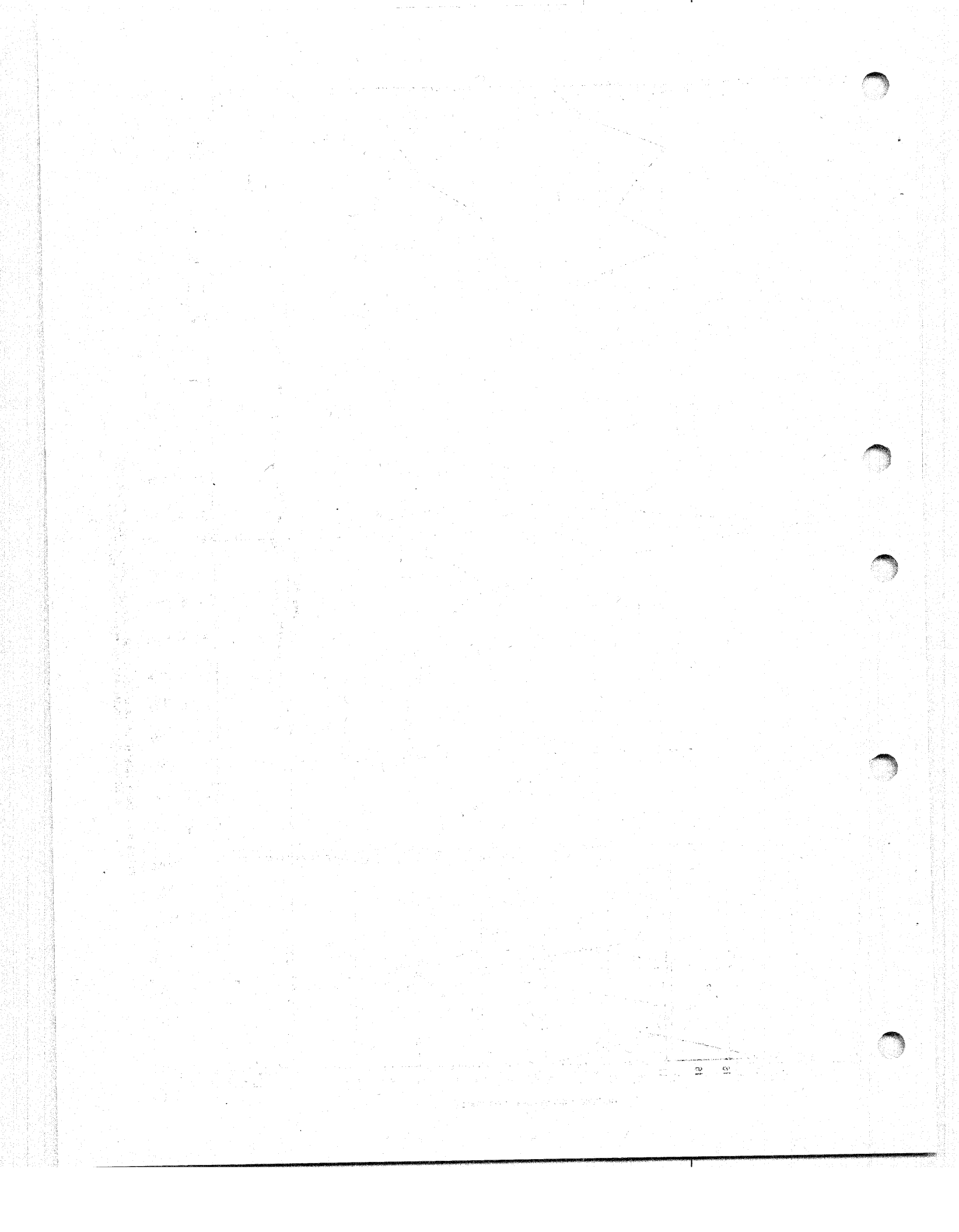


FIGURE 9.- DAILY TRAFFIC PATTERN FOR JANUARY 1942 AND 1943 ON MERRITT PARKWAY IN CONNECTICUT. TRUCKS ARE NOT PERMITTED ON THIS HIGHWAY.



THOUSANDS OF VEHICLES PER DAY

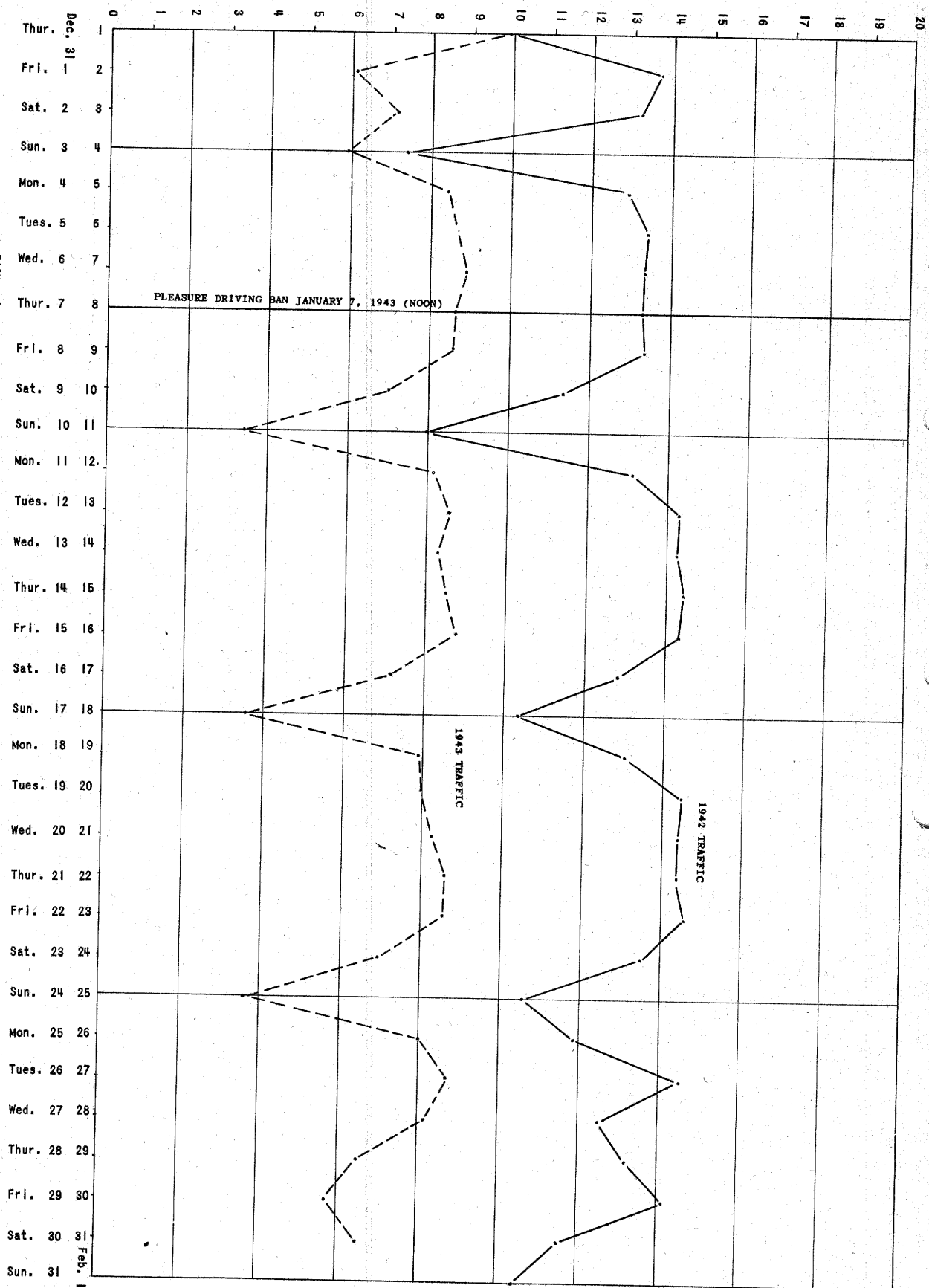
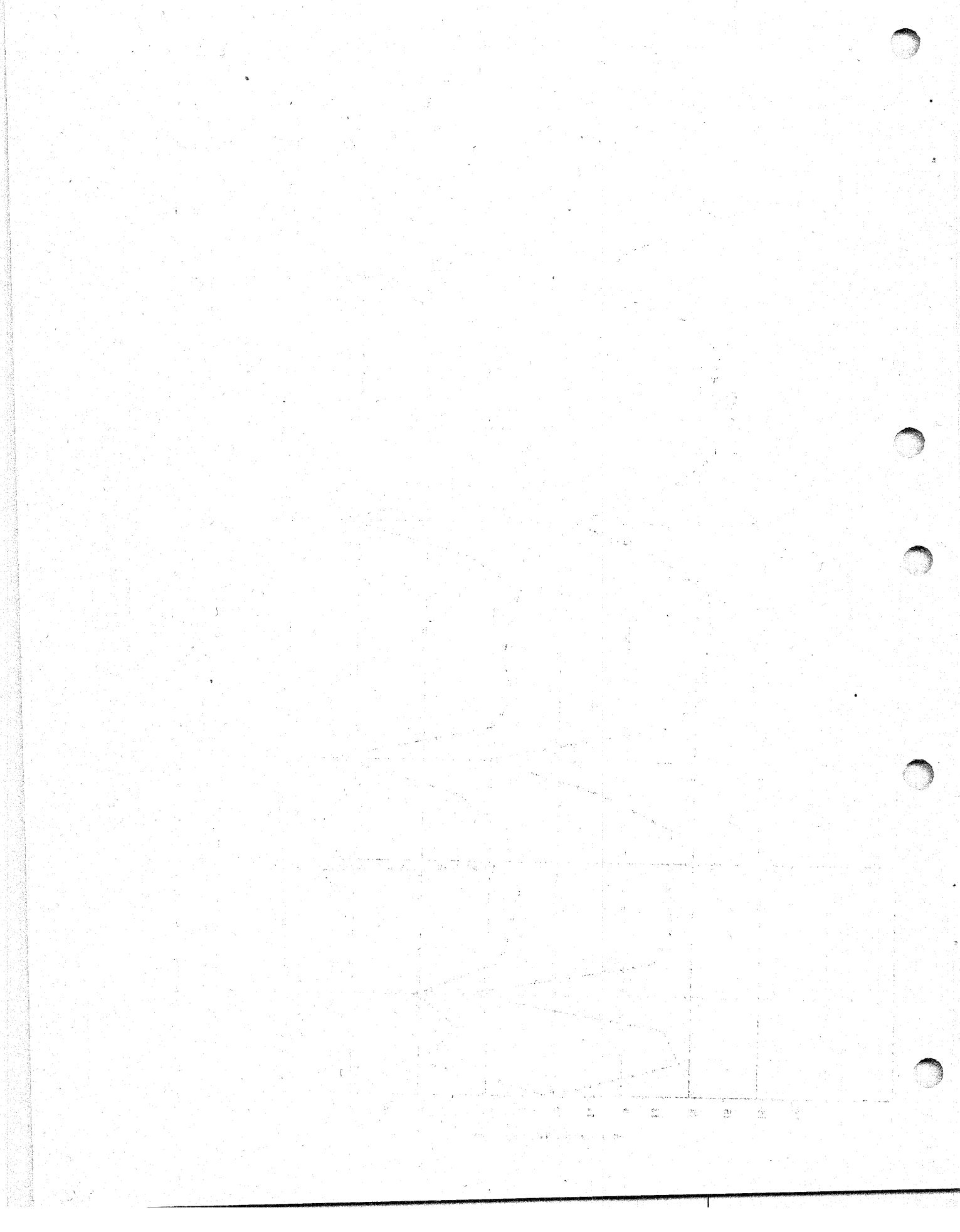


FIGURE 10.- DAILY TRAFFIC PATTERNS FOR JANUARY 1942 AND 1943 ON U. S. 1 AT WESTPORT, CONNECTICUT. COMMERCIAL VEHICLES APPROXIMATE ONE THIRD OF TOTAL VEHICLES AT THIS POINT.



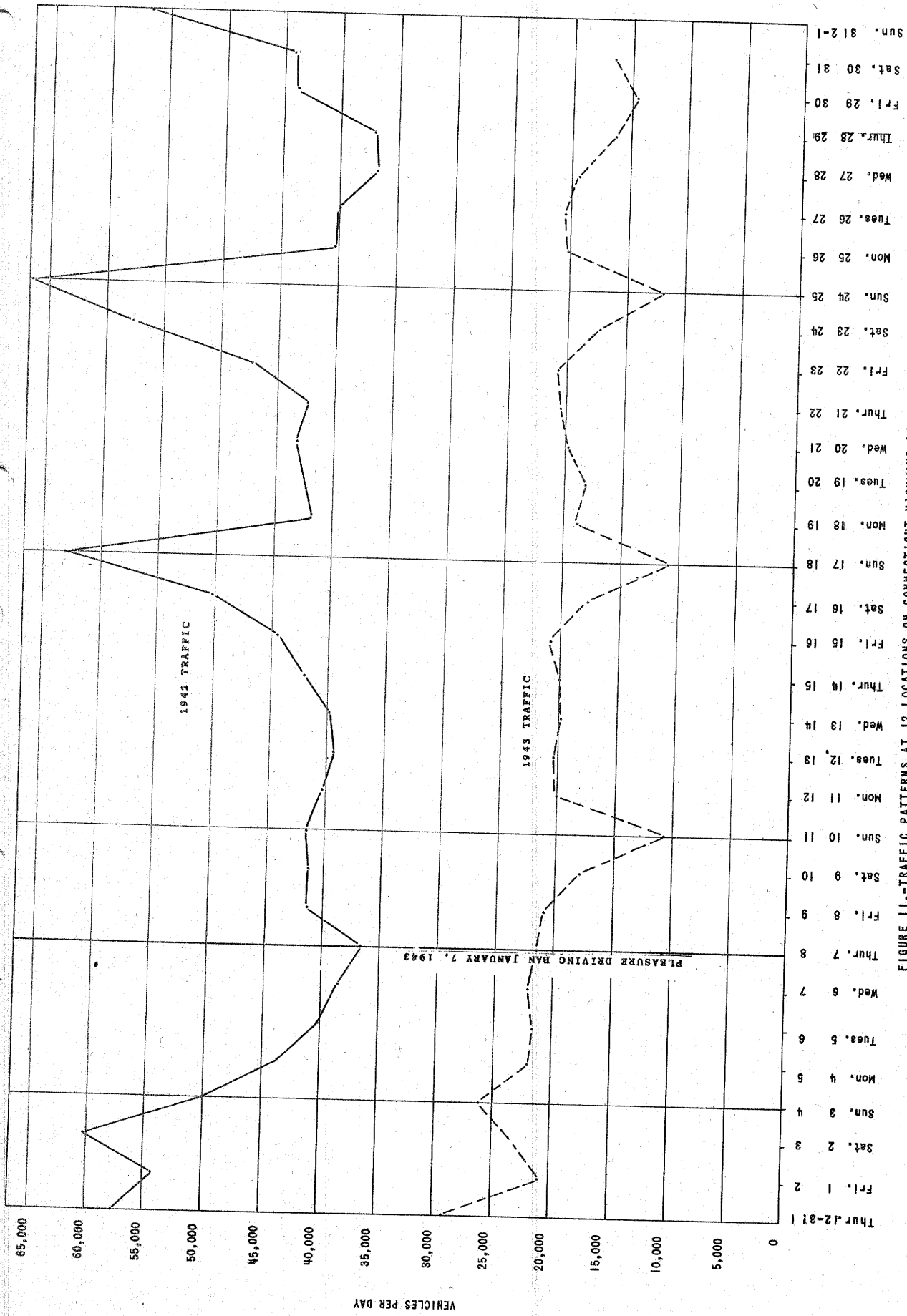
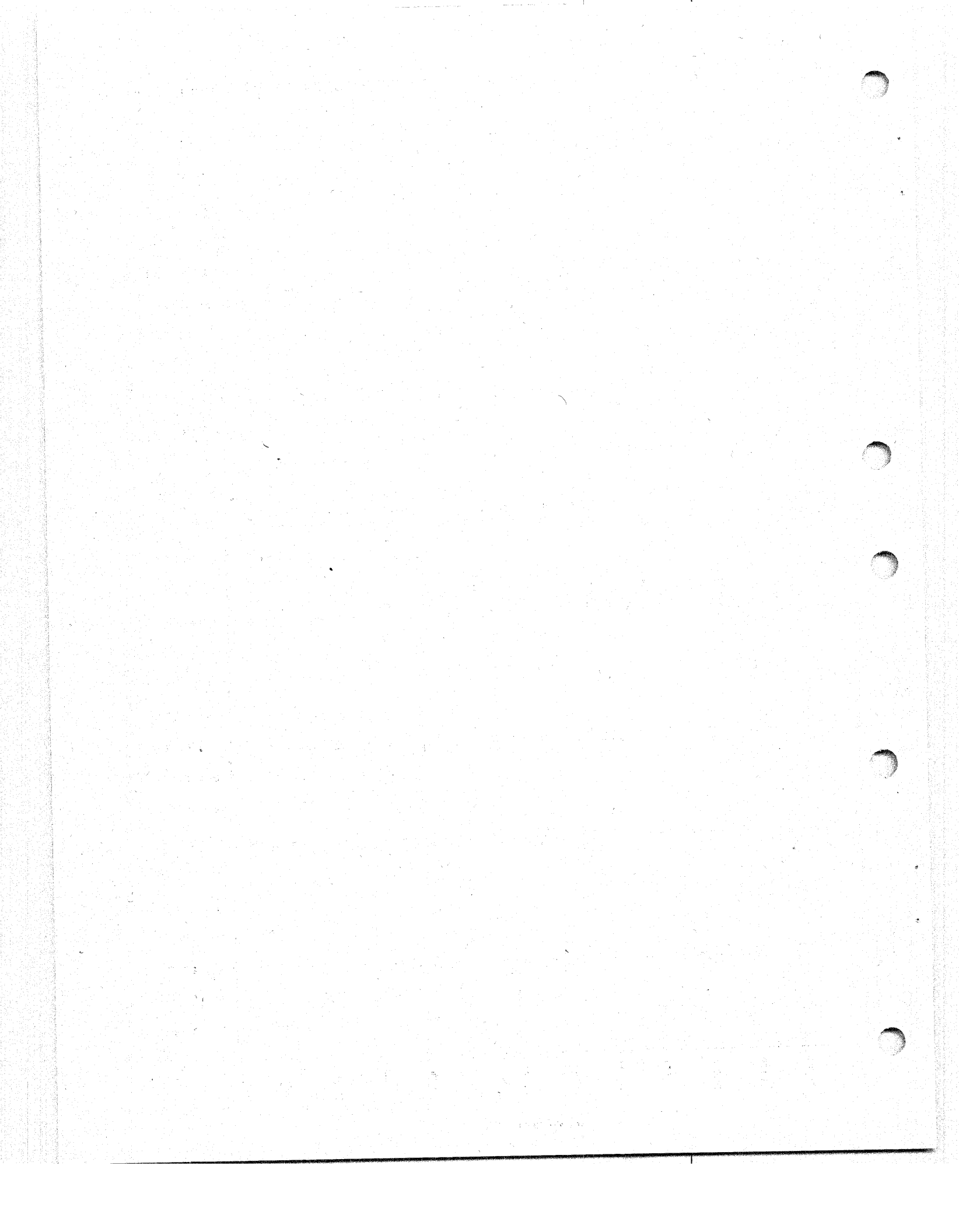


FIGURE 11.-TRAFFIC PATTERNS AT 12 LOCATIONS ON CONNECTICUT HIGHWAYS IN JANUARY 1942 AND 1943



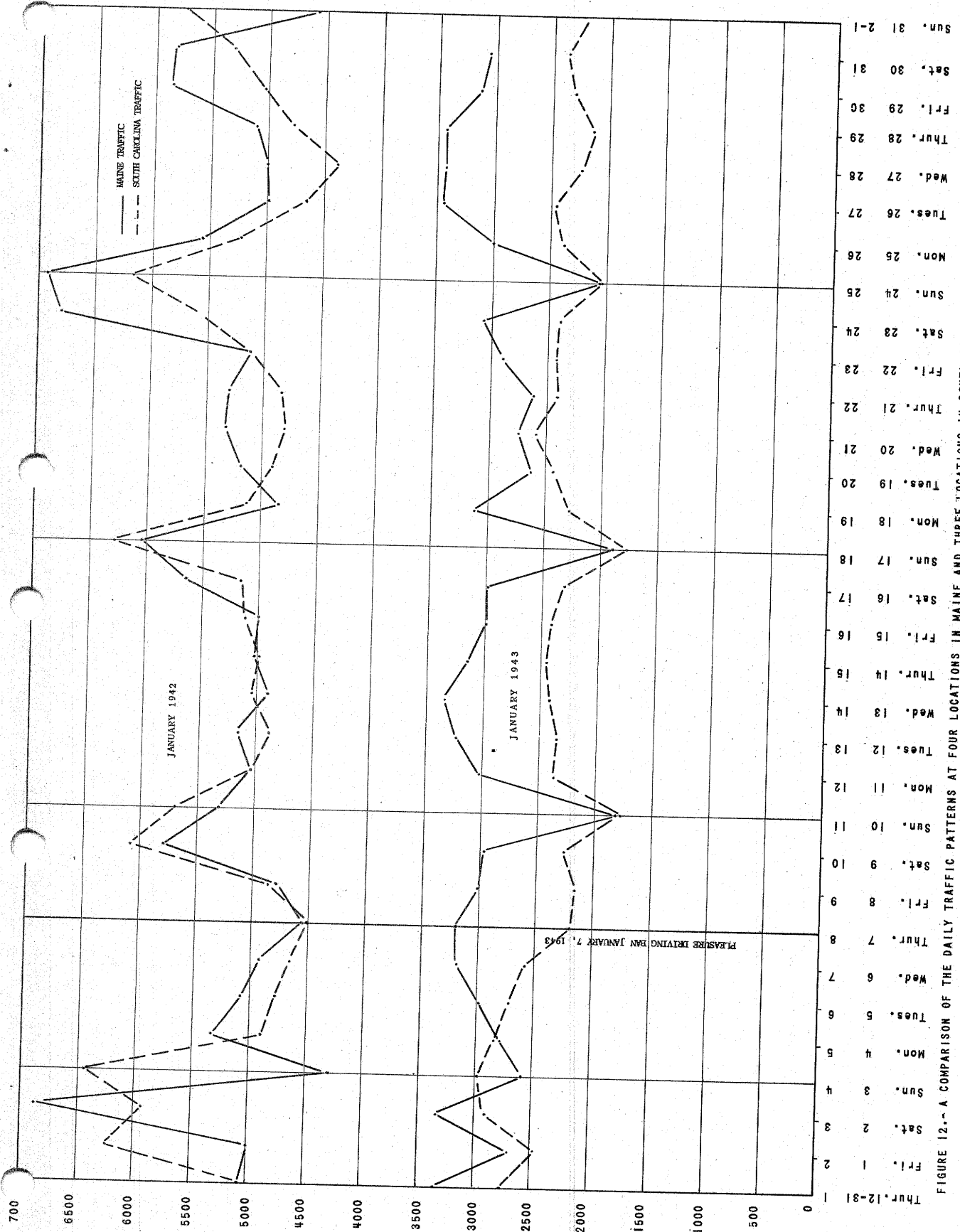
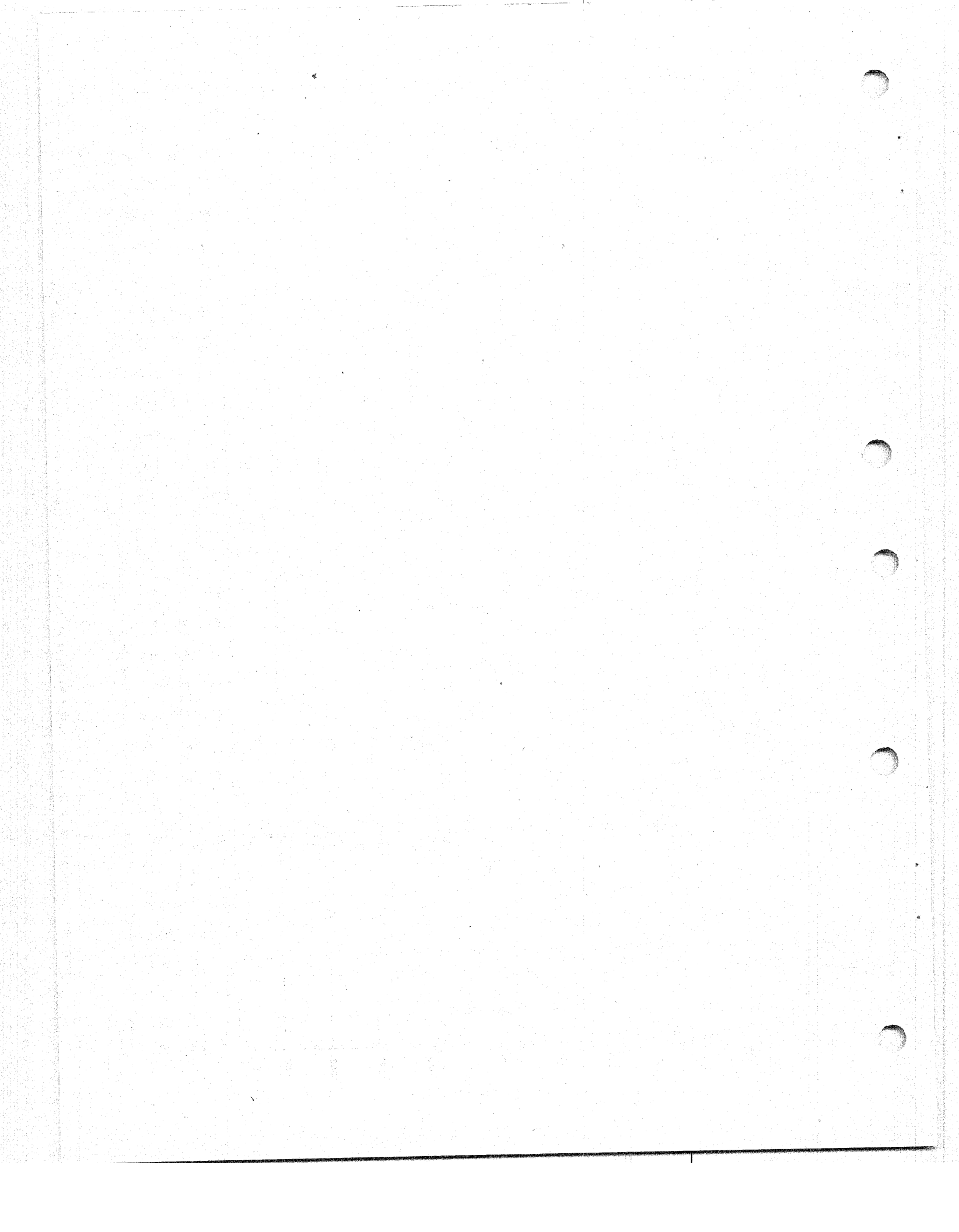


FIGURE 12.-A COMPARISON OF THE DAILY TRAFFIC PATTERNS AT FOUR LOCATIONS IN MAINE AND THREE LOCATIONS IN SOUTH CAROLINA FOR JANUARY 1942 AND 1943



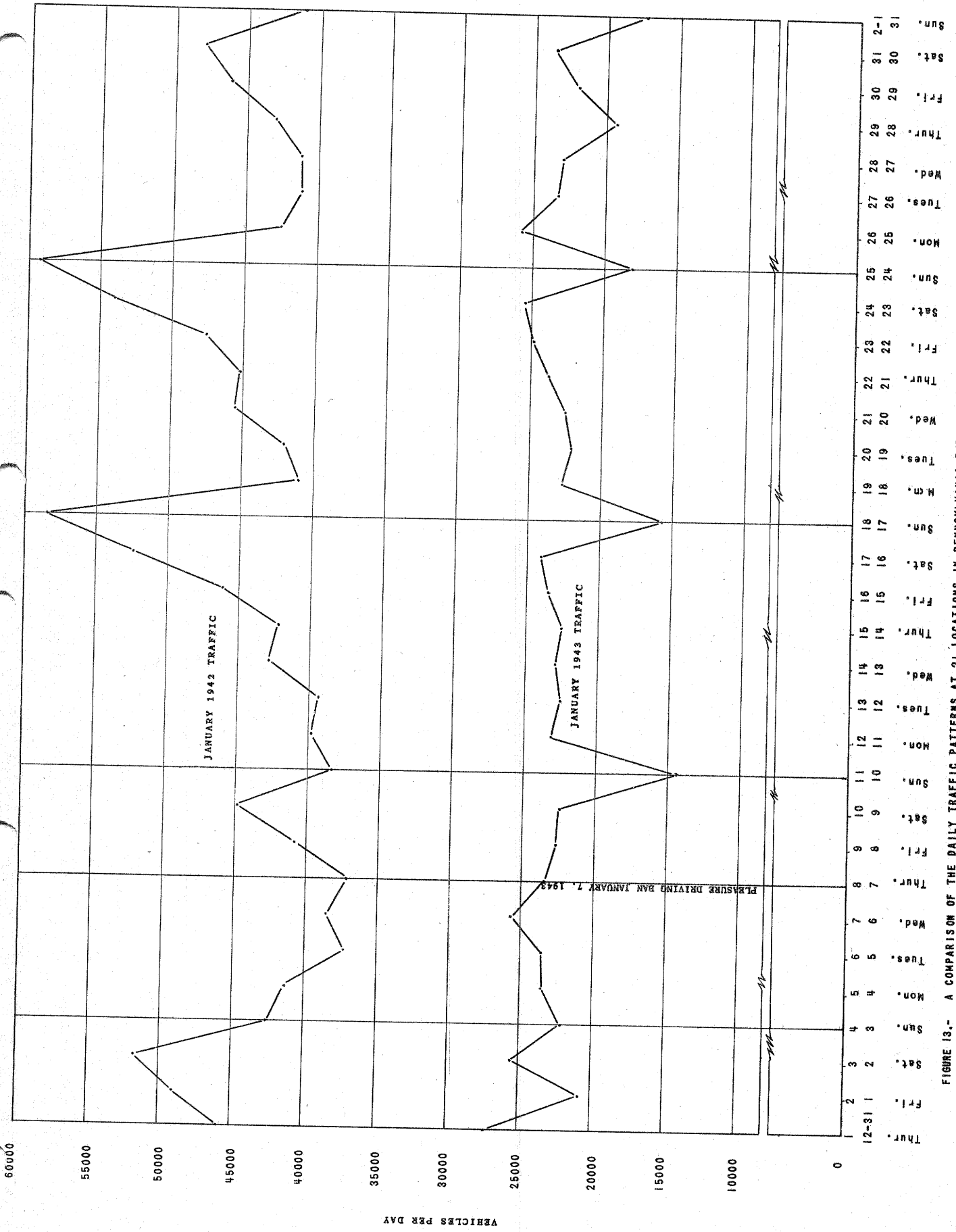
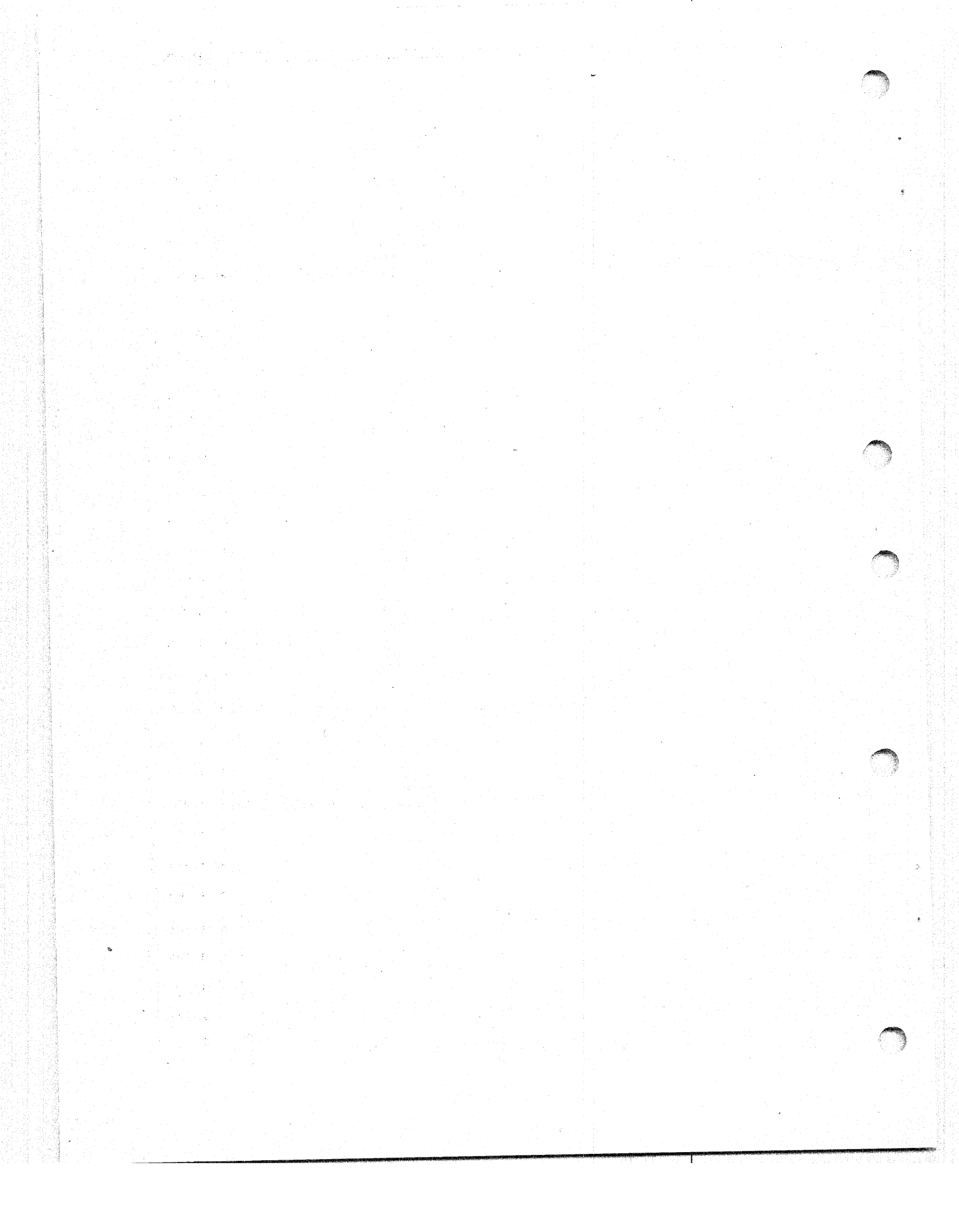


FIGURE 13.- A COMPARISON OF THE DAILY TRAFFIC PATTERNS AT 21 LOCATIONS IN PENNSYLVANIA FOR JANUARY 1942 AND 1943



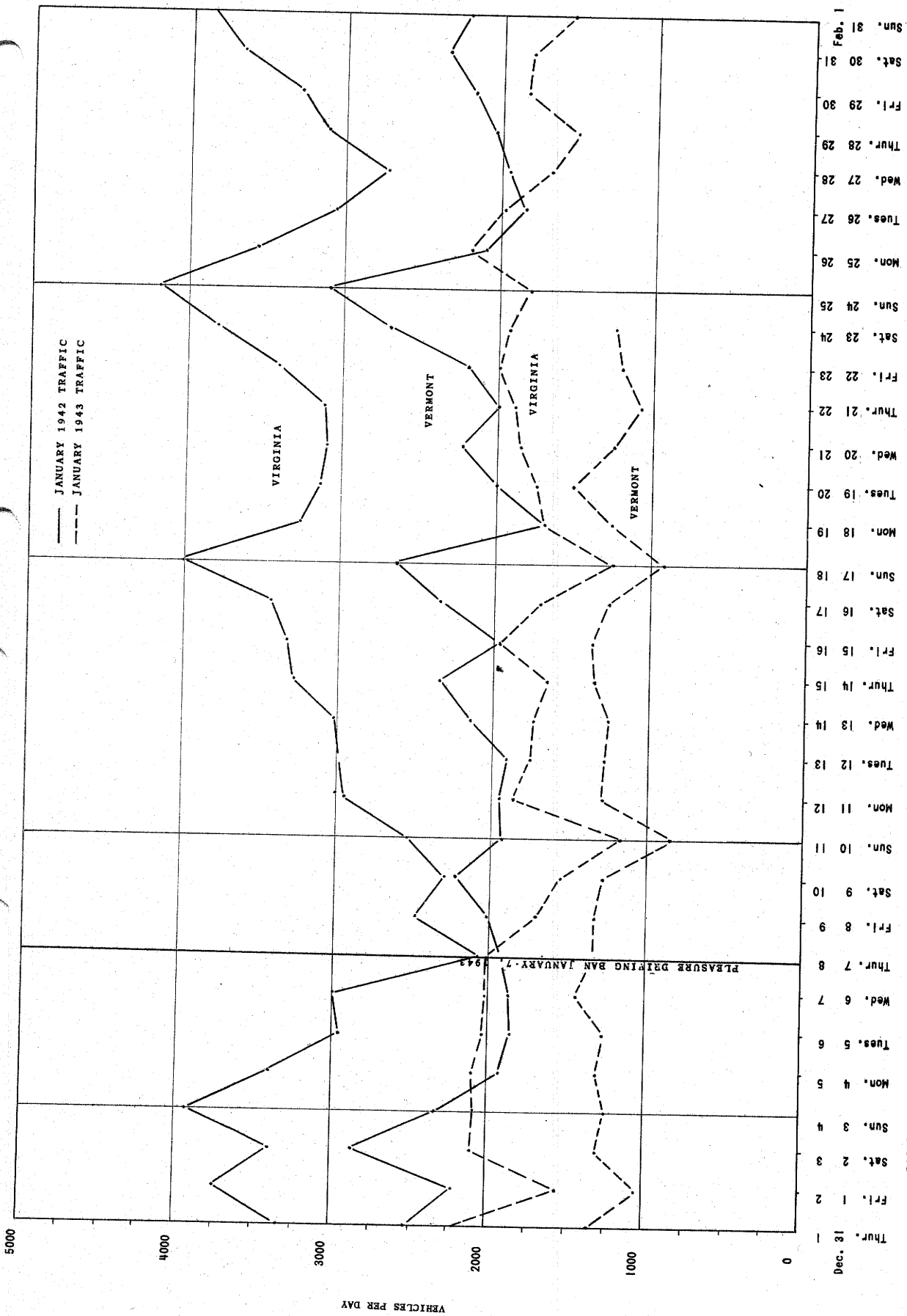
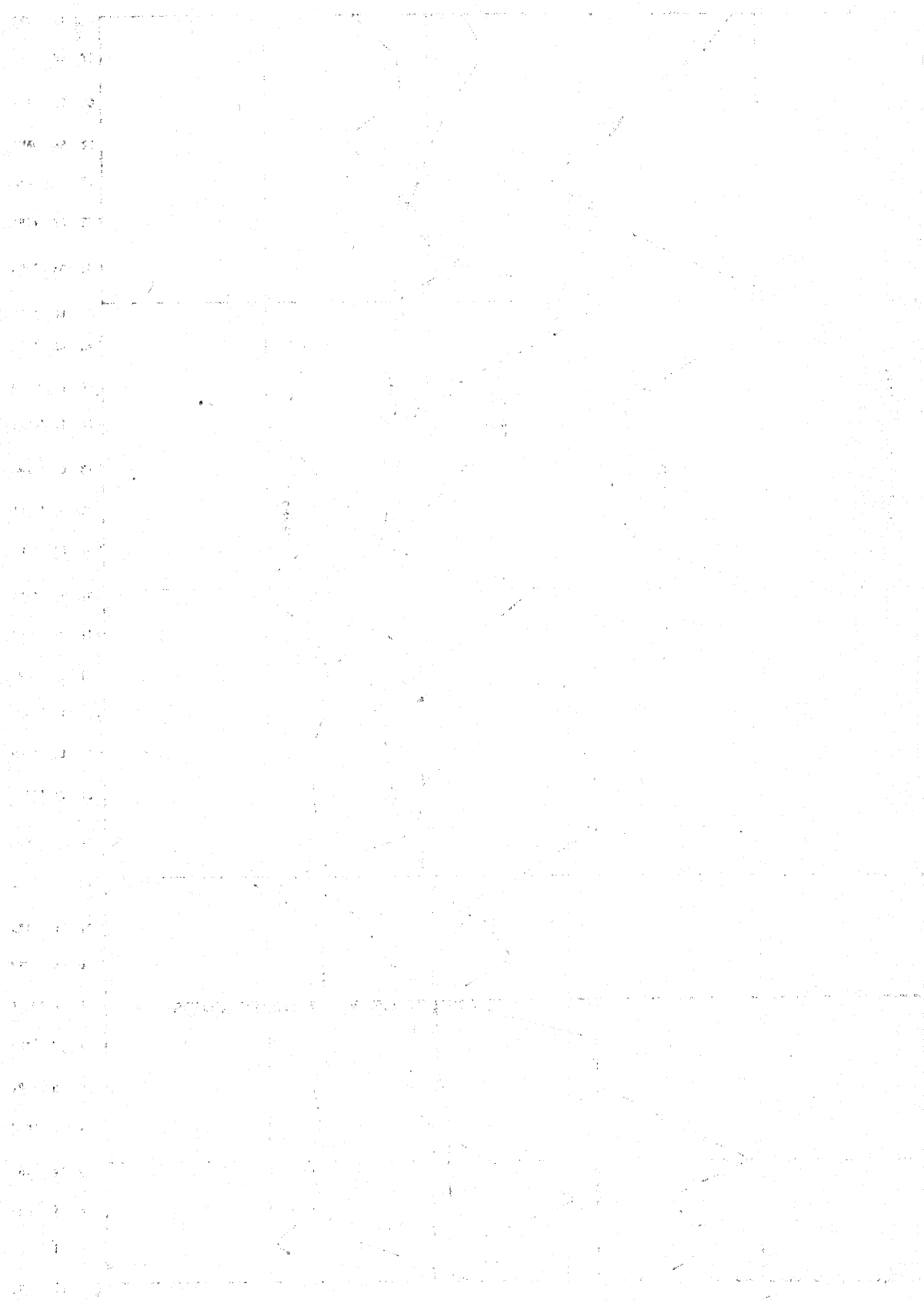


FIGURE 14.—DAILY TRAFFIC PATTERNS FOR JANUARY 1942 AND 1943 AT ONE LOCATION IN VIRGINIA AND THREE LOCATIONS IN VERMONT

Vertical text on the left margin, possibly a page number or reference code.



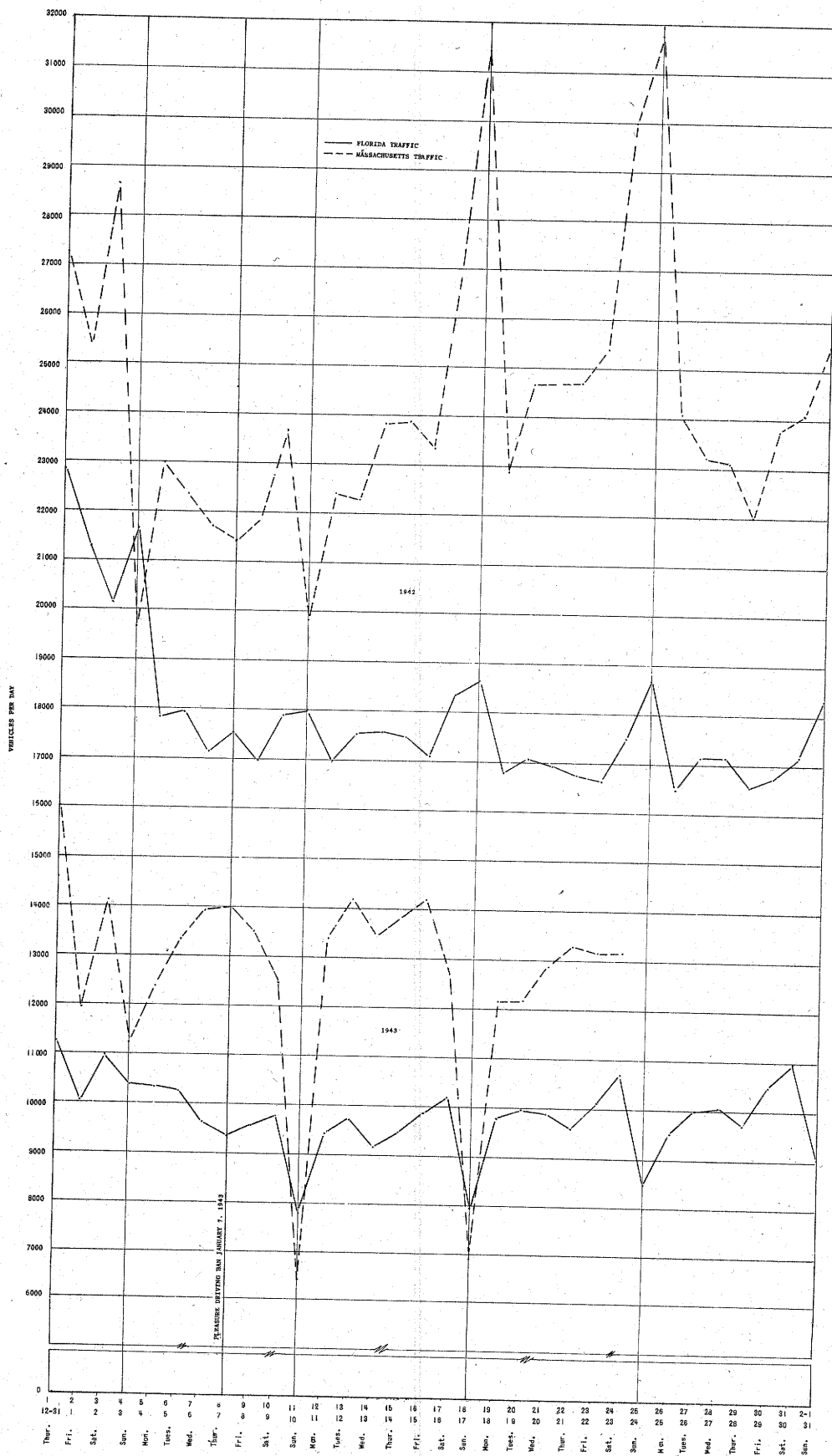
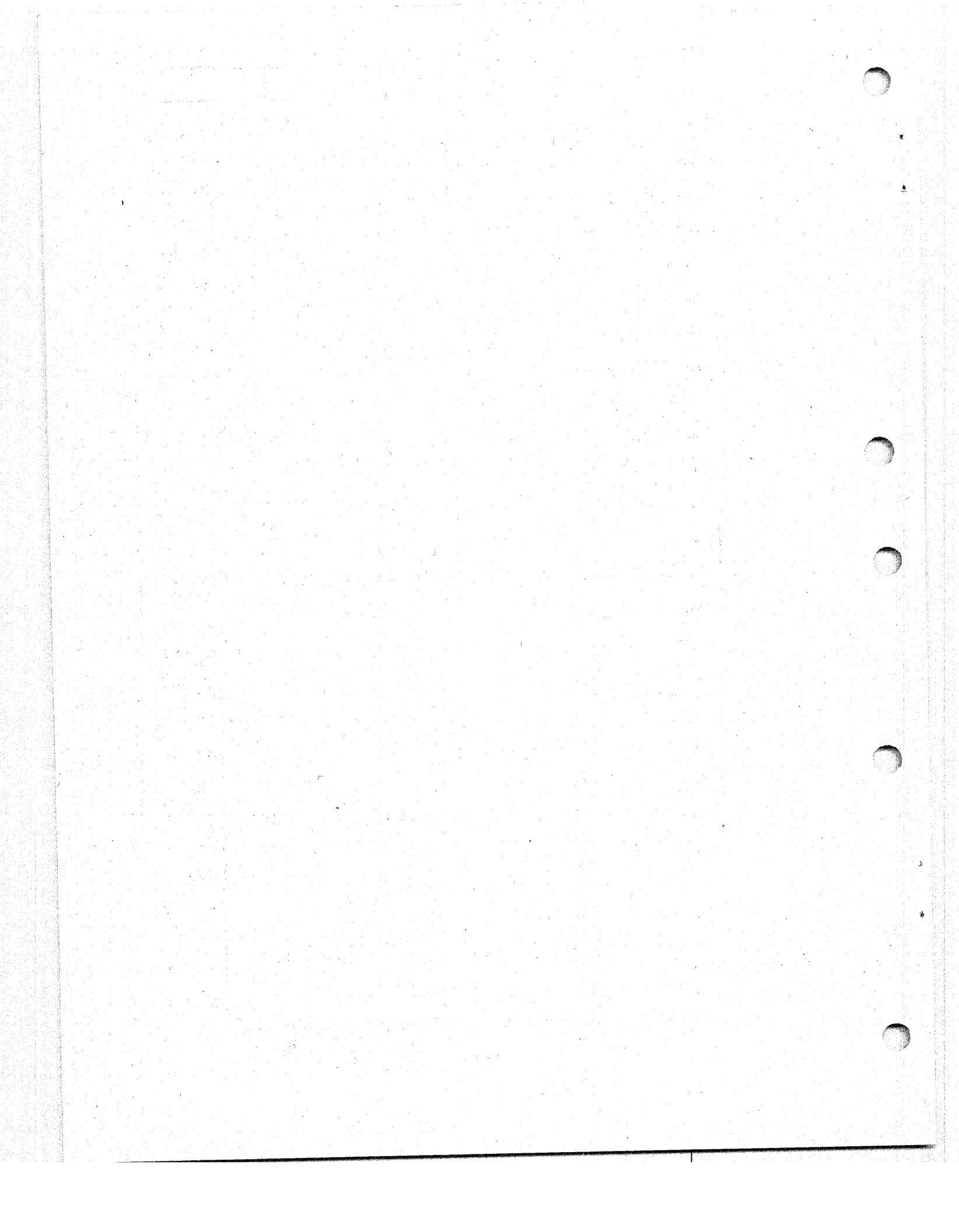


FIGURE 15.-DAILY TRAFFIC PATTERNS FOR 8 LOCATIONS IN FLORIDA AND 7 LOCATIONS IN MASSACHUSETTS FOR JANUARY 1942 AND 1943.



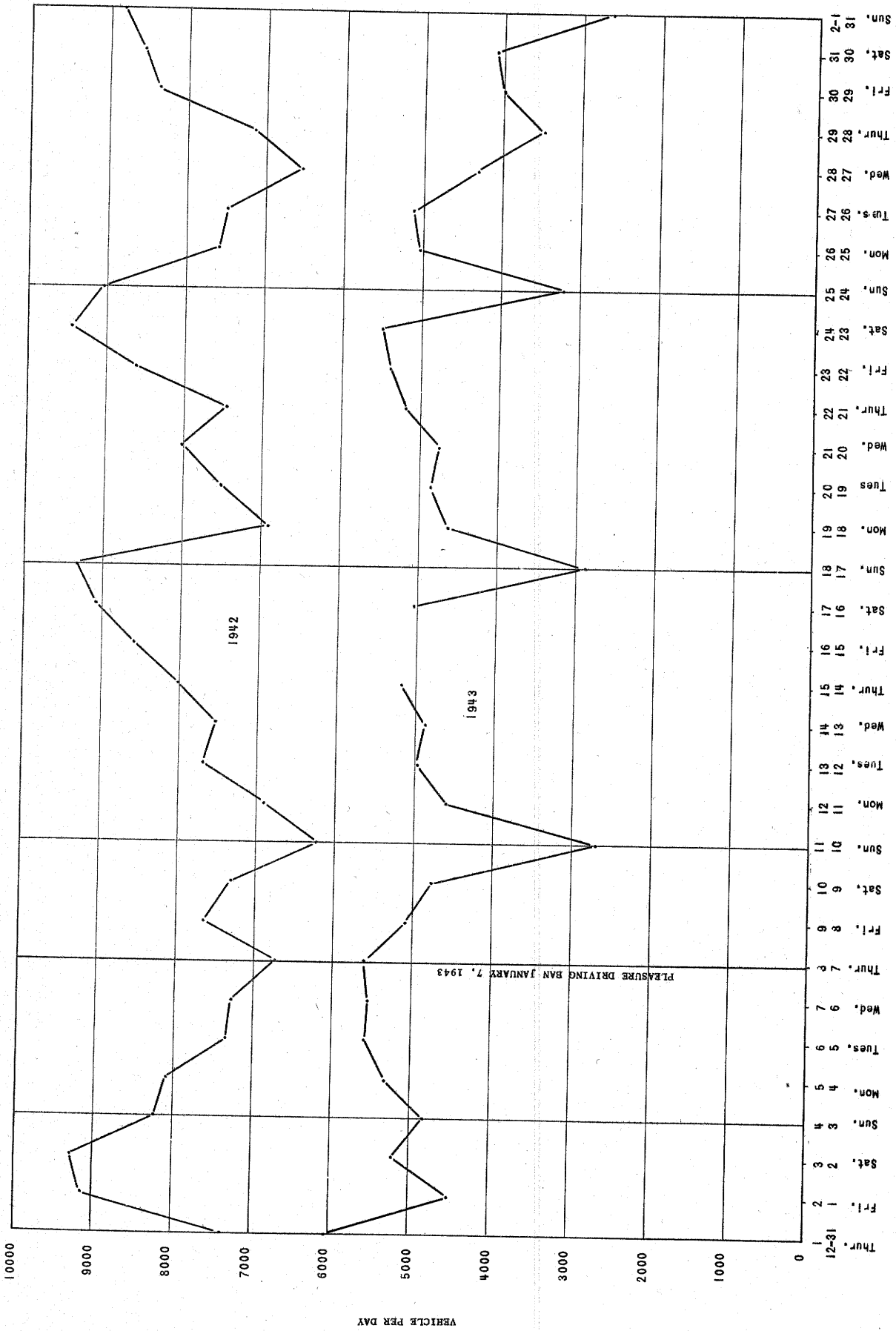


FIGURE 16.-DAILY TRAFFIC PATTERNS FROM FOUR DELAWARE STATIONS IN JANUARY 1942 AND 1943

PLEASURE DRIVING BAN JANUARY 7, 1943

VEHICLE PER DAY

