AD-A119 576 WEATHER SQUADRON (26TH) BLYTHEVILLE AFB AR DETACHMENT 14 F/G 4/2
TERMINAL FORECAST REFERENCE NOTEBOOK. DETACHMENT 14, 26TH WEATH--ETC(U)
APR 82

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AD A119576

DTIC ACCESSION NUMBER

LEVEL: II

INVENTORY

Terminal Forecast Reference Notebook
Detachment 14 26th Weather Squadron Blytheville AFB Arkansas
Apr. 82

DOCUMENT IDENTIFICATION

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DETACHMENT 14

26th WEATHER SQUADRON

BLYTHEVILLE AFB, ARKANSAS

APRIL 1982

MILITARY AIRLIFT COMMAND
AIR WEATHER SERVICE
3rd WEATHER WING

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This TFRN has been reviewed and approved for publication.

FOR THE COMMANDER

Danny R. Pophin

DANNY R. POPHIN, Capt, USAF
Aerospace Sciences Officer

RECORD OF CHANGES

CHANGE NUMBER	DATE	DATE POSTED	INITIALS

TFRN INDEX

PART I TOPOGRAPHY

TOPOGRAPHY AND GEOGRAPHICAL FEATURES WHICH INFLUENCE THE WEATHER AT BLYTHEVILLE AIR FORCE BASE, ARKANSAS

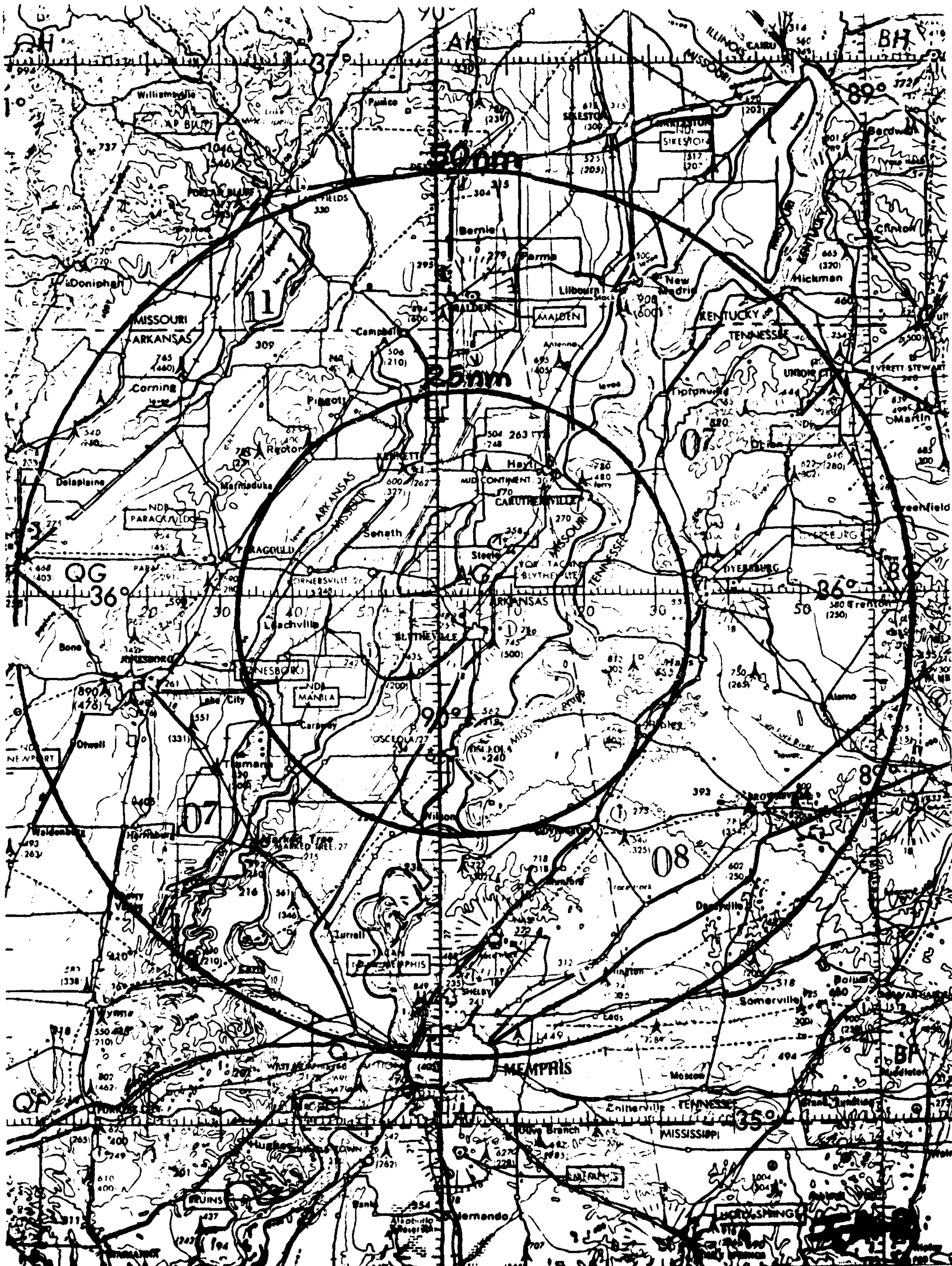
Blytheville AFB is located in the extreme northeast corner of Arkansas. 55 NM north of Memphis, Tennessee, 11 NM west of the Mississippi River, and 425 NM north of the Gulf of Mexico.

The local topography is relatively flat, although the terrain slopes gradually upward to the west and northwest. This slope has a negligible effect on local weather conditions.

The Boston Mountains, elevation of 2,700 feet above MSL, are oriented east-west 180 NM west of the base. Thunderstorms will occasionally develop across this range with the approach of fast moving cold fronts.

The major moisture source for this area is the Gulf of Mexico. However, there are a few minor moisture sources near the base. The Mississippi River to the east and Big Lake located 9½ NM to the west-southwest. The water table throughout this area is very high. That allows drainage ditches and natural basins to fill with run-off water and become a moisture source for fog during the winter season. The farm area to our south produces a large rice crop. The rice fields are flooded during the late spring and this becomes another moisture source.

The runway heading at Blytheville AFB is 360°/180°; the elevation is 254 feet, and the barometer elevation is 256 feet.



30nm
25nm
MISSOURI
ARKANSAS
KENTUCKY
TENNESSEE
MISSISSIPPI
MEMPHIS
Blytheville
Caruthersville
Dyersburg
Jonesboro
Malden
Kennett
Sikeston
Hickman
Corning
Piggott
Doniphan
Leachville
Senath
Osceola
Covington
Somerville
Collierville
Hernando
Trenton
Union City
Martin
Ripley
Lake City
Marked Tree
Pocahontas
Paragould
36°
35°
89°
90°
QG
07
08
11

ATMOSPHERIC POLLUTION SOURCES AND THEIR EFFECTS ON LOCAL WEATHER

There are smoke sources to the east, southeast and west during October and November caused by cotton gins located in and near Blytheville. Under very stable conditions smoke from this source can lower visibility to 3 miles, particularly between 0700 and 1000 hours, but generally only 5-7 miles. This is not considered to be a serious problem.

Nearly all of the farmers in this area harvest a double crop each year. During late May to June the winter wheat crop is harvested and the fields are then burned prior to planting a second crop. The burning of the fields usually does not reduce visibility below 6-7 miles. This is not considered a serious problem at this time.

LOCATION OF OBSERVING EQUIPMENT AND REPRESENTATIVENESS OF OBSERVATIONS.

The primary observing point for weather observations at Blytheville AFB is the roof of Building 201 (Base Weather Station). From this point the observer's horizontal field of view is restricted in the sector 230 degrees through 350 degrees to a maximum of 1¼ miles by trees and structures. During periods when the roof of Building 201 is unsafe due to ice and snow or high winds, the official observations are made from the ramp in front of Building 201. From this point the observer's view is completely restricted from 190 degrees through approximately 330 degrees by building 201 and adjacent structures, also the field of view may be restricted by parked and/or taxiing aircraft from approximately 030 degrees through 170 degrees.

The following is a complete list of the local weather equipment:

a. GMQ-20 Wind Measuring System - T755 wind transmitters are located at both ends of the runway.

b. ID-815 wind indicators are located in the BWS & RAPCON (2). Two (2) ID-373 wind indicators are located in the control tower.

c. RO-362 wind recorder is located in the BWS.

d. The mercurial barometer is located in the BWS at 256 feet MSL.

e. There is a GMQ-13 rotating beam ceilometer at both ends of the runway. One is located at the middle marker on the northern end of the runway and the other is located on the centerline approximately 100 yards south of the southern end of the runway.

f. The ML-17 rain gauge is located 75 feet northwest of Building 201.

g. A GMQ-32 transmissometer is located parallel to the touch down points at the north and south ends of the runway. The AN/FMN-1 is located in the BWS.

h. A TMQ-11 temperature set is located just west of the midpoint of the runway.

i. An AN/FPS-77 radar set is located in the BWS with antenna 100 feet north of Building 201.

j. ML 102G Aneroid Barometer is located in the BWS.

k. ML 563A Barograph is located in the BWS.

All instruments are ideally positioned on flat terrain. The observations are considered to be representative.

PART II CLIMATOLOGY

PREPARED BY USAFETAC MARCH 1979	STATION NAME BLYTHEVILLE AFB AR LOCATION N35 58 W89 57	PERIOD NOV 55-FEB 78 B ELEV 294	STN LTRS BYH WBAN NO 13814 WMO NO

AWS CLIMATIC BRIEF

MONTH	TEMPERATURE (°F) MEAN DAILY MAX	MEAN DAILY MIN	MEAN MONTHLY	EXTREME MAX	EXTREME MIN	PRECIPITATION (IN) MONTHLY MEAN	MONTHLY MAX	MONTHLY MIN	MAX 24 HRS	SNOWFALL (IN) MONTHLY MEAN	MONTHLY MAX	MAX 24 HRS	MEAN RELATIVE HUMIDITY (%) LST 04	LST 13	MEAN VAPOR PRESSURE (IN HG)	MEAN DEW PT (°F)	PRESSURE ALTITUDE (FT)	SURFACE WINDS PVLG DRCTN (16 PTS)	SPEED MEAN (KT)	SPEED MAX (KT) **	MEAN CLOUD COVER (tenths)	PRECIP (IN) ≥ .01	PRECIP ≥ .5	SNOWFALL (IN) ≥ 0.1	SNOWFALL ≥ 1.5	THUNDERSTORMS	FOG VSBY < 7 MI	TEMP MAX ≥ 90	TEMP MAX ≥ 80	TEMP MIN ≤ 32	TEMP MIN ≤ 00
JAN	44	28	36	75	-9	3.9	8.9	.8	4.2	4	11	7	79	65	.15	27	800	N	8	50	6	10	2	2	1	2	14	0	0	22	#
FEB	48	32	40	80	[illegible]	3.8	9.7	.9	3.3	2	10	5	78	62	.17	31	800	S	8	59	6	9	2	1	#	2	12	0	#	15	#
MAR	58	40	49	85	6	5.0	12.6	.2	4.4	2	14	9	79	58	.24	39	850	S	9	76	6	11	3	1	#	5	12	0	1	7	0
APR	71	51	61	92	30	5.0	9.3	.5	5.3	#	#	#	80	56	.35	49	750	S	8	71	6	10	3	#	0	7	10	#	6	#	0
MAY	80	60	70	95	37	5.1	12.5	.9	2.9	[illegible]	0	0	84	54	.47	57	700	S	6	53	5	10	3	0	0	8	9	3	17	0	0
JUN	87	67	77	101	49	4.1	9.2	1.1	3.0	[illegible]	0	0	85	55	.62	65	550	S	6	49	5	9	3	0	0	9	10	12	26	0	0
JUL	90	71	80	103	52	3.4	4.7	.7	[illegible]	0	0	0	87	56	.74	70	450	$ S	5	50	5	8	2	0	0	9	13	17	30	0	0
AUG	88	68	78	[illegible]	51	3.7	9.3	.8	[illegible]	0	0	0	89	58	.71	69	450	$ S	4	42	4	7	2	0	0	7	17	12	29	0	0
SEP	81	62	72	97	38	4.4	10.8	.2	[illegible]	0	0	0	87	59	.56	63	500	$ N	5	47	5	7	2	0	0	4	17	4	19	0	0
OCT	73	50	62	93	27	2.6	7.2	.3	3.4	0	0	0	82	52	.36	50	600	$ N	5	40	4	6	2	0	0	2	14	#	#	1	0
NOV	59	40	50	85	14	4.4	13.9	.2	4.4	#	6	3	78	58	.24	39	700	S	7	52	6	9	2	#	#	3	12	0	#	7	0
DEC	48	33	41	74	-7	4.7	8.6	.4	[illegible]	1	9	7	79	65	.19	33	800	S	7	65	6	10	2	1	#	1	13	0	0	15	#
ANN	69	50	60	103	-9	49.6	13.5	.2	[illegible]	9	14	9	82	58	.35	49	700	$ S	6	76	5	120	28	5	1	59	153	48	136	67	#
PYR	21	21	21	21	21	21	21	21	21	21	21	21	10	10	10	10	11	10	10	19	10	21	21	21	21	21	21	21	21	21	21

REMARKS RUSSW RCF
HRLY OBS: [illegible]
DAILY OBS: [illegible]

NOTE * DATA NOT AVAILABLE # AMT < 1/2 UNITS SHOWN IN HEADING ** INSTANTANEOUS PEAK WINDS $ % CALM GRTR % PVLG DRCTN + BASED ON < FULL MONTHS

CAV FREQ %	HRS LST	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	PYR
CEILING LESS THAN 3000 FT AND OR VISIBILITY LESS THAN 3 MI	00-02	31	21	17	11	8	4	4	6	9	11	18	25	14	
	03-05	34	26	20	12	10	8	10	13	17	14	22	30	18	
	06-08	35	31	25	16	12	8	12	25	31	22	25	34	23	
	09-11	34	29	25	19	14	8	8	11	19	16	24	33	20	
	12-14	32	28	22	16	11	5	3	6	13	13	23	34	17	
	15-17	26	23	18	13	5	3	3	3	9	8	18	29	13	
	18-20	24	19	15	9	6	2	2	3	8	7	17	26	12	
	21-23	26	19	14	9	6	2	2	5	8	8	18	23	12	
	ALL HRS	30	25	20	13	9	5	6	9	14	12	21	29	16	10
CEILING LESS THAN 1500 FT AND OR VISIBILITY LESS THAN 3 MI	00-02	21	14	10	5	5	3	4	6	7	7	10	19	9	
	03-05	25	16	11	6	7	5	10	12	13	9	12	21	12	
	06-08	27	19	14	[illegible]	8	5	11	23	27	16	15	24	17	
	09-11	24	19	13	9	6	3	4	8	13	10	14	24	12	
	12-14	21	16	10	6	3	1	2	2	5	6	11	21	9	
	15-17	17	12	9	5	2	1	2	1	3	3	9	19	7	
	18-20	17	10	8	4	2	1	2	2	5	4	9	16	7	
	21-23	18	11	9	4	3	1	2	3	5	5	10	16	7	
	ALL HRS	21	15	10	6	5	3	5	7	10	8	11	20	10	10
CEILING LESS THAN 1000 FT AND OR VISIBILITY LESS THAN 2 MI	00-02	16	9	6	3	3	1	2	3	4	4	6	13	6	
	03-05	19	11	8	4	5	2	6	6	6	6	7	16	8	
	06-08	21	12	10	6	5	1	7	12	15	10	11	17	11	
	09-11	17	14	8	5	3	1	1	3	5	6	9	15	7	
	12-14	14	10	4	2	1	#	0	1	2	3	7	13	5	
	15-17	12	8	4	2	1	1	1	1	1	2	5	11	4	
	18-20	12	7	5	2	1	#	#	1	1	2	4	12	4	
	21-23	14	7	5	2	2	#	1	1	2	3	6	11	5	
	ALL HRS	16	10	5	3	3	1	2	4	5	5	7	14	6	10
CEILING LESS THAN 200 FT AND/OR VISIBILITY LESS THAN 1/2 MI	00-02	4	1	1	0	0	#	0	0	#	1	1	1	1	
	03-05	4	1	2	#	#	#	#	0	#	3	1	2	1	
	06-08	6	2	1	#	#	0	1	1	1	2	1	3	2	
	09-11	3	2	#	0	#	0	0	0	0	#	#	1	1	
	12-14	2	#	0	0	0	0	0	0	0	0	0	1	#	
	15-17	2	#	0	#	0	0	0	#	0	0	#	#	#	
	18-20	4	#	#	0	0	#	0	0	0	0	#	1	#	
	21-23	4	#	#	0	0	0	#	0	0	#	#	1	#	
	ALL HRS	4	1	1	#	#	#	#	#	#	1	#	1	1	10

AWS FORM APR 76 42
PREVIOUS EDITION IS OBSOLETE

LISTING OF CLIMATOLOGICAL REFERENCES

Publication	Filed
RUSSWO	Completed at Det in pencil.
CC Tables	
Temp/Dew Pt Curves	
Onset Duration Tables	

Other references are located with the unit technical library.

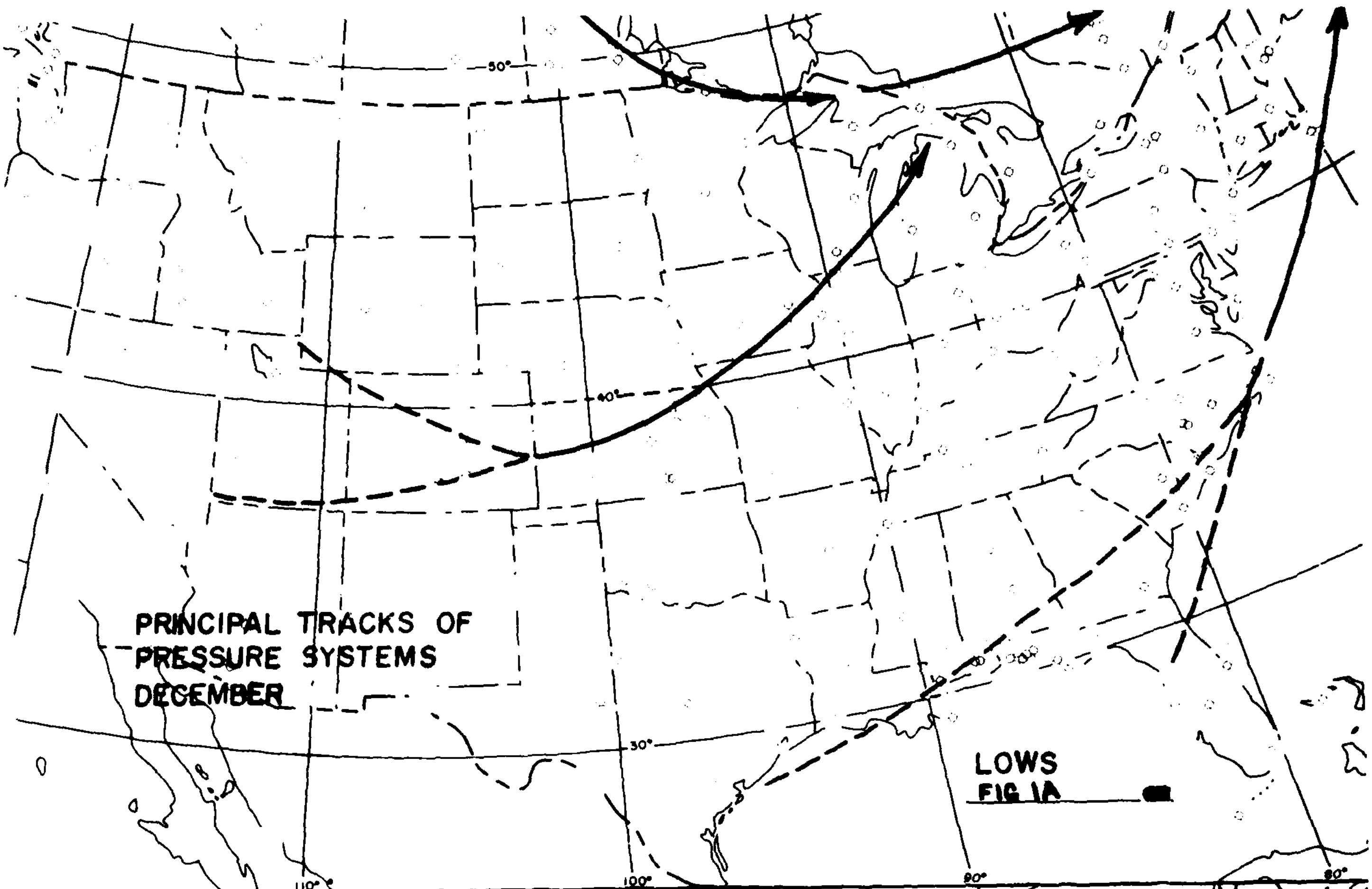
PART III WEATHER REGIMES

PRESSURE SYSTEMS

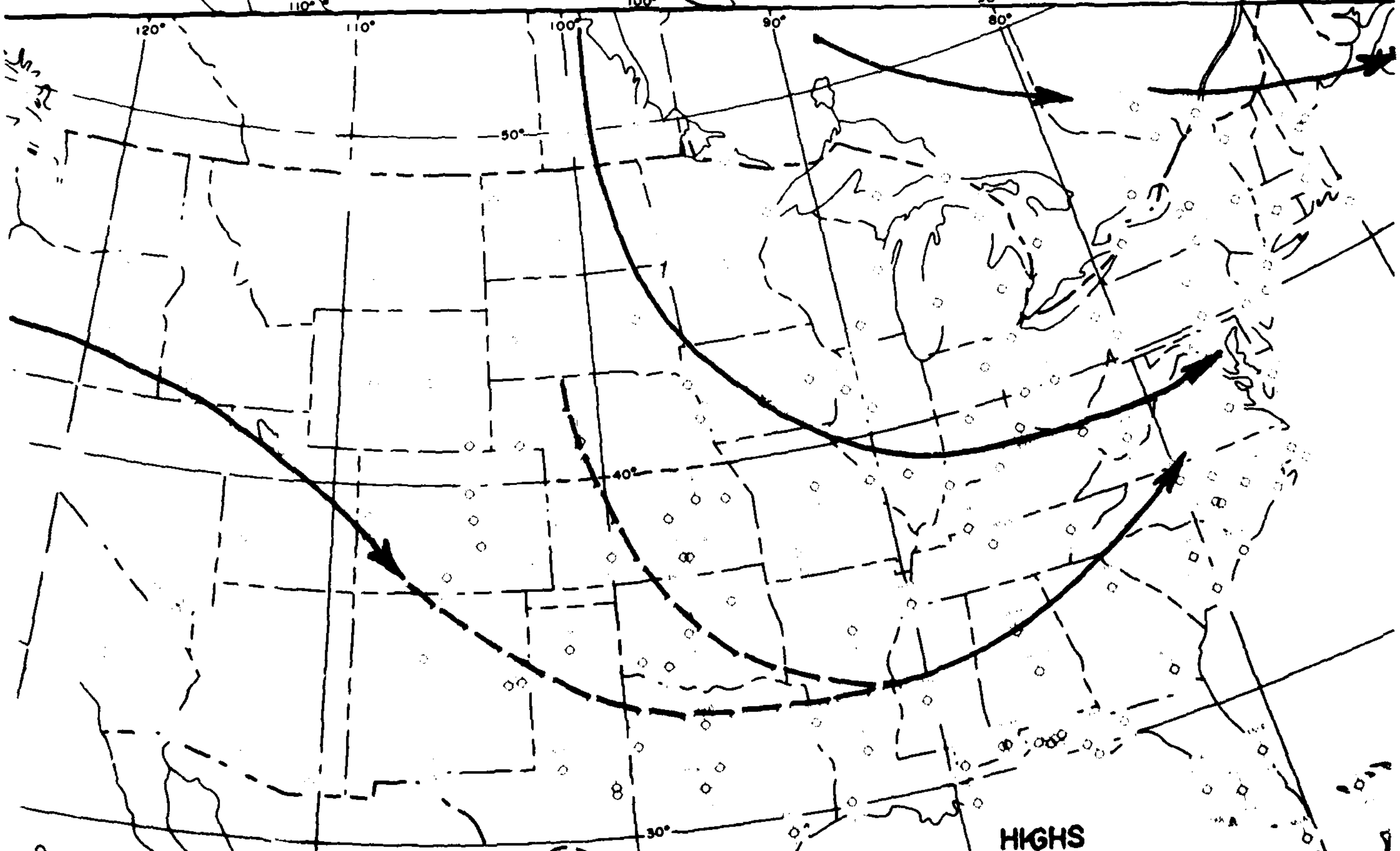
Figures 1A through 12B show the average track of high and low pressure systems for each month.

The principal tracks are indicated by a solid line and secondary tracks by a dashed line

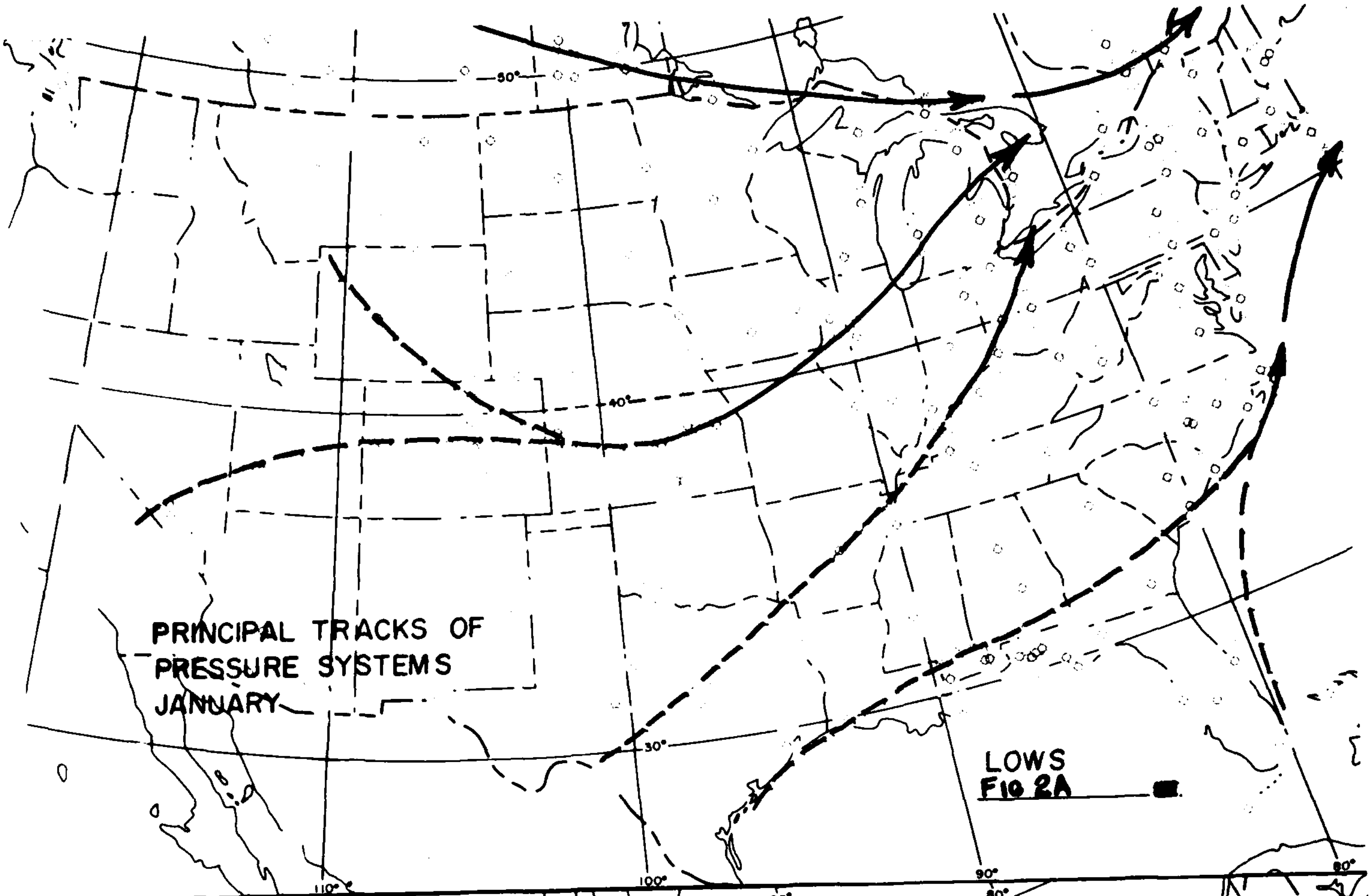
PRINCIPAL TRACKS OF PRESSURE SYSTEMS DECEMBER

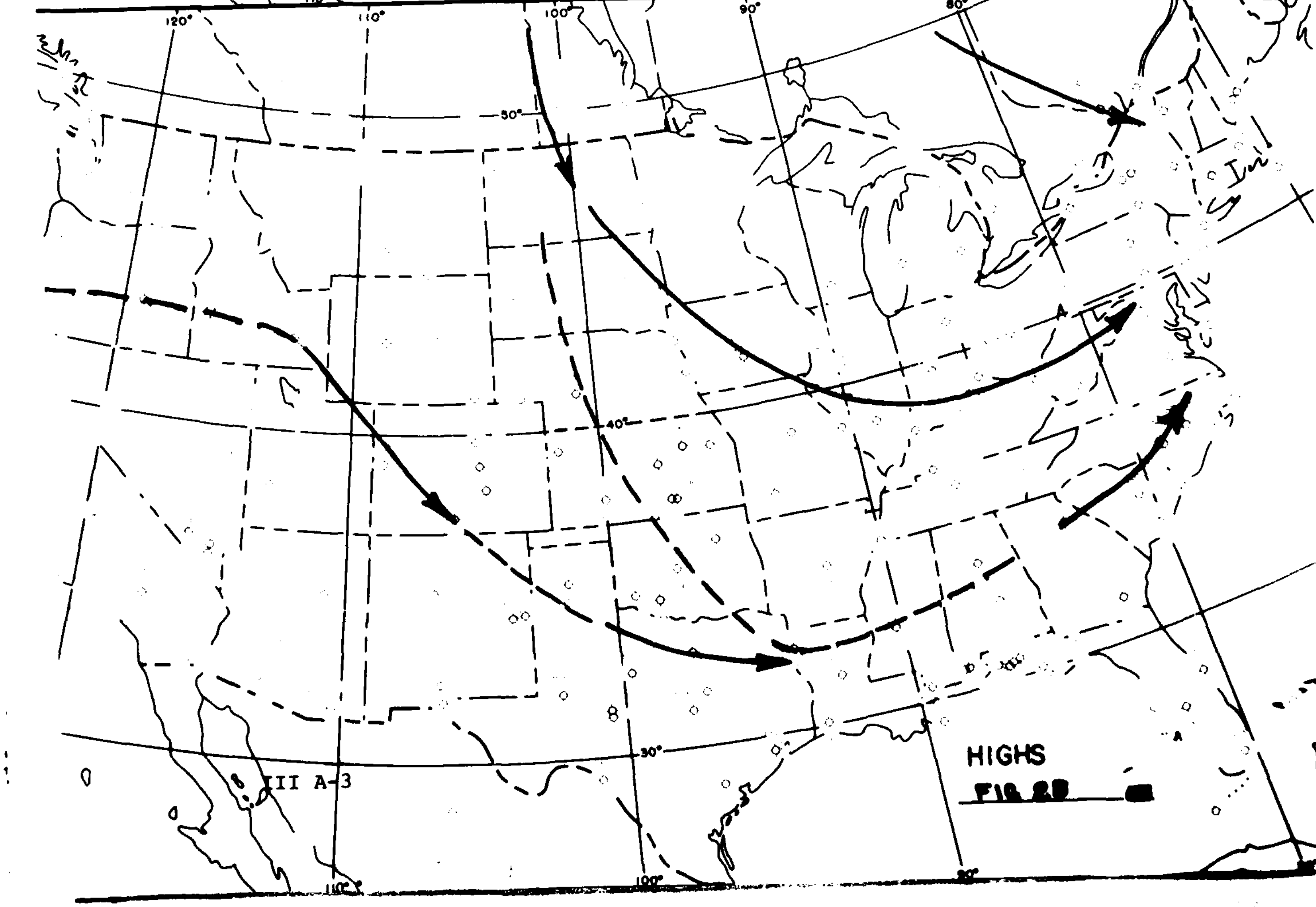


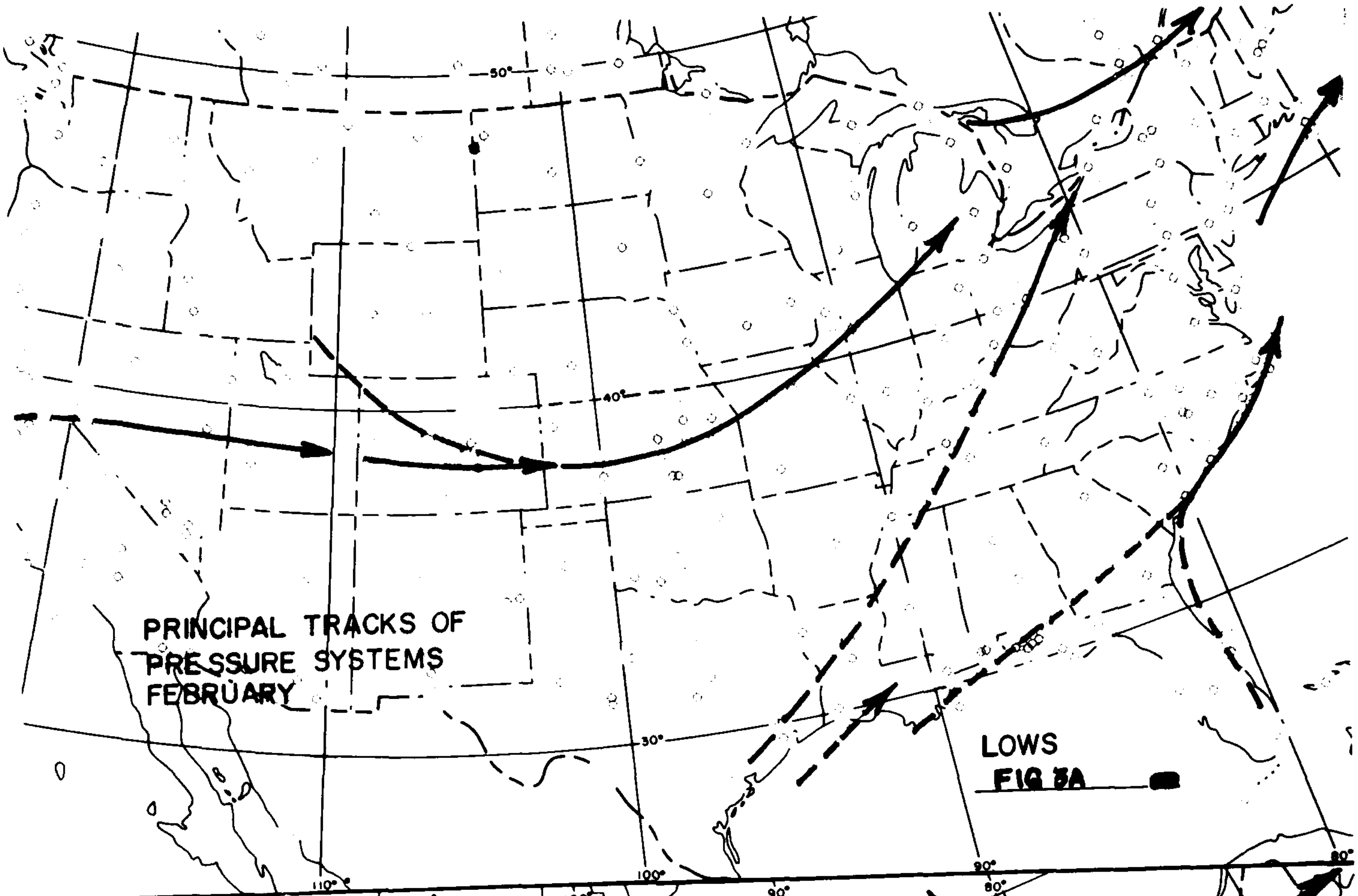
LOWS
FIG 1A

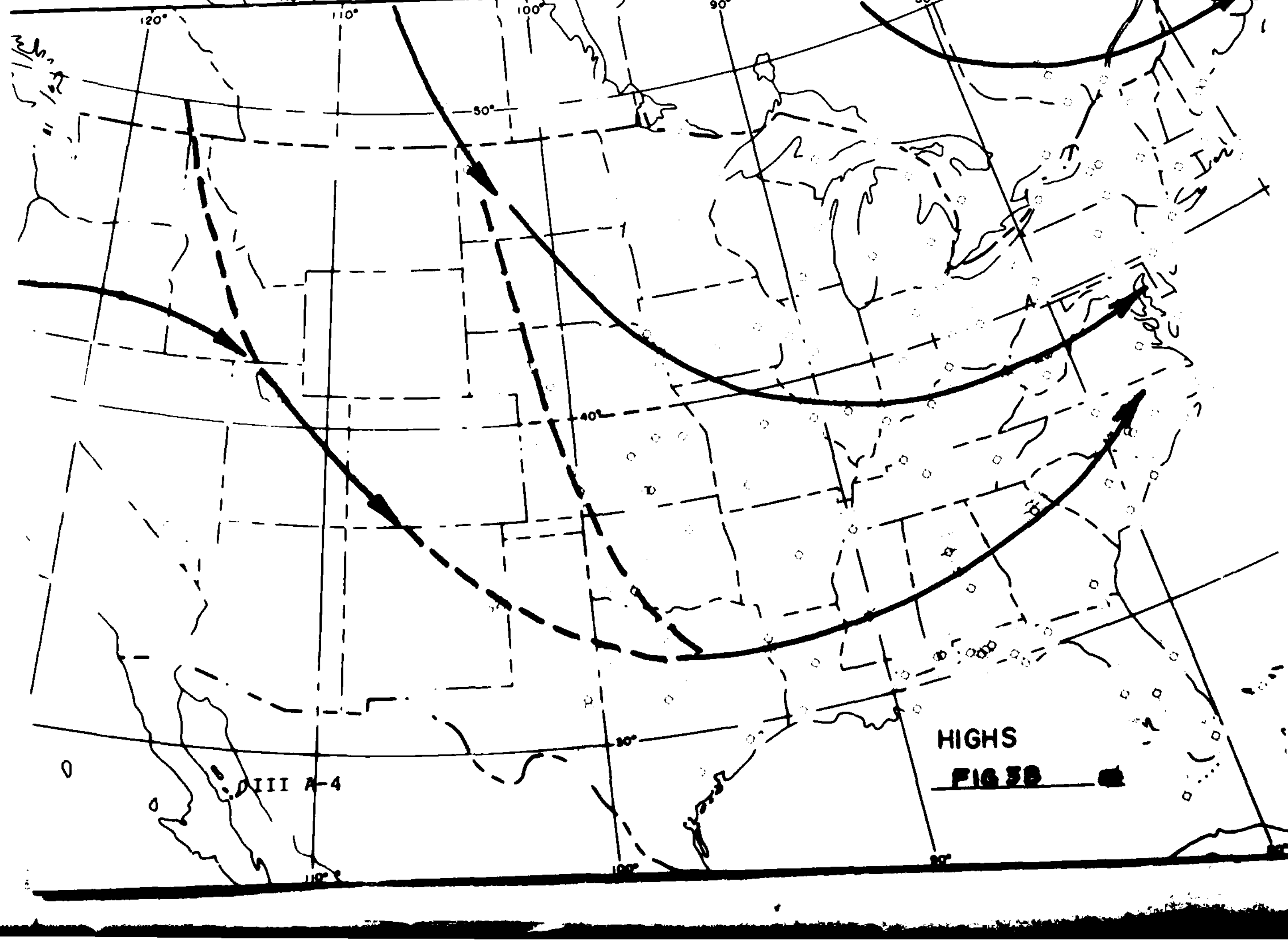


HIGHS
FIG 1B

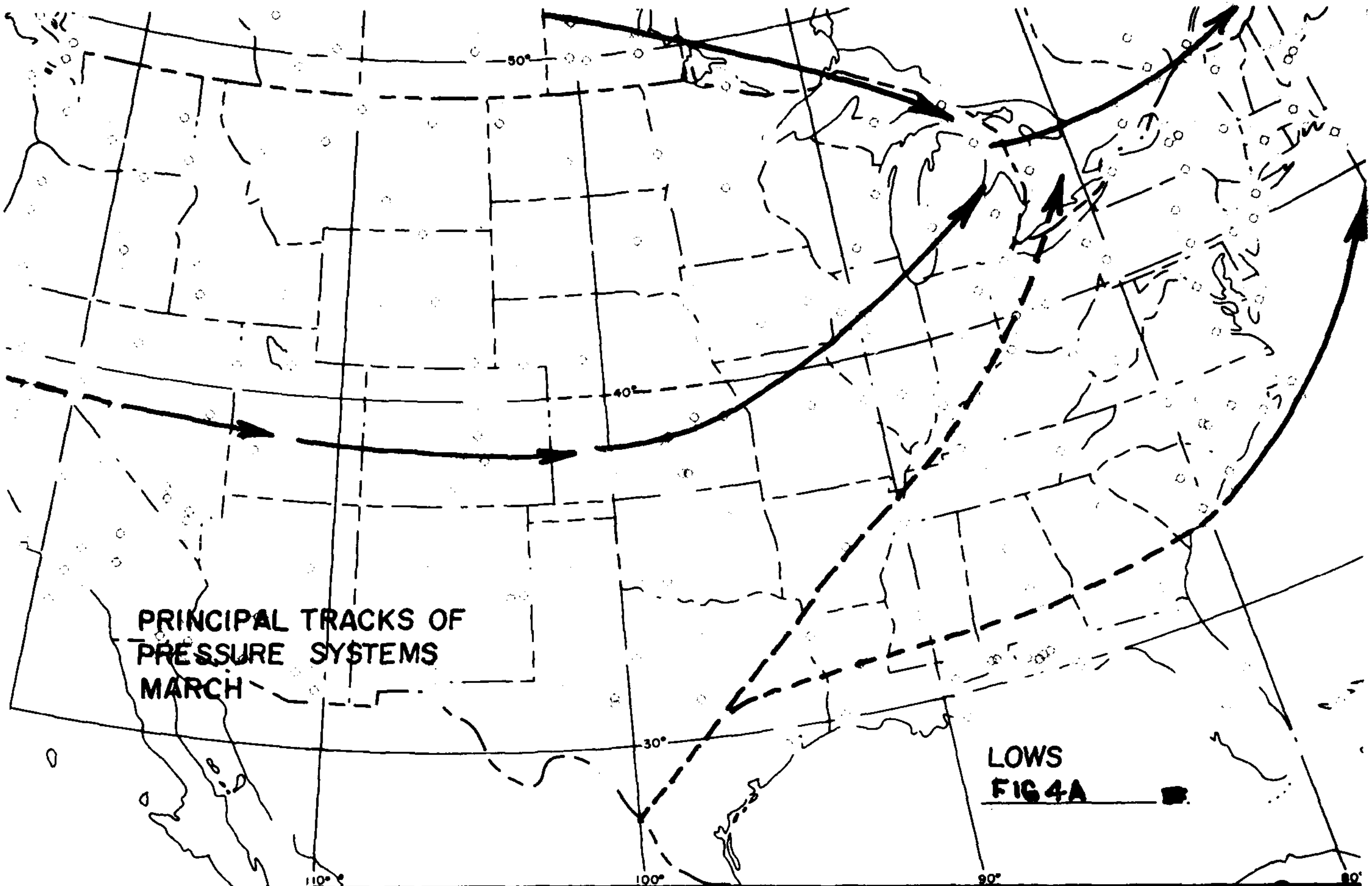

PRINCIPAL TRACKS OF
PRESSURE SYSTEMS
JANUARY
50°
40°
30°
110°
100°
90°
80°
LOWS
FIG 2A


120°
110°
100°
90°
80°
50°
40°
30°
HIGHS
FIG 2B

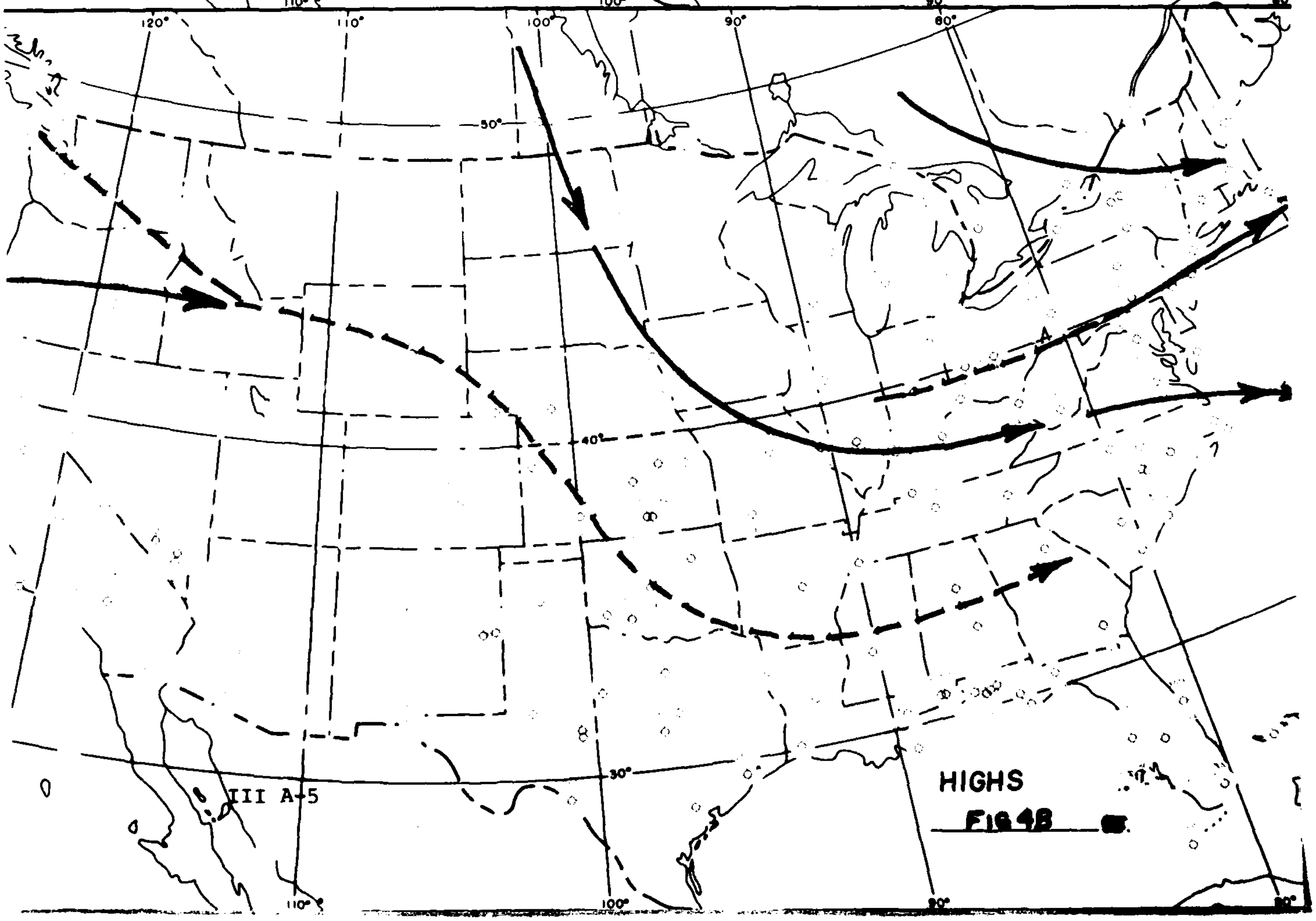

PRINCIPAL TRACKS OF
PRESSURE SYSTEMS
FEBRUARY
50°
40°
30°
110°
100°
90°
80°
LOWS
FIG 3A


120°
110°
100°
90°
80°
50°
40°
30°
HIGHS
FIG 3B

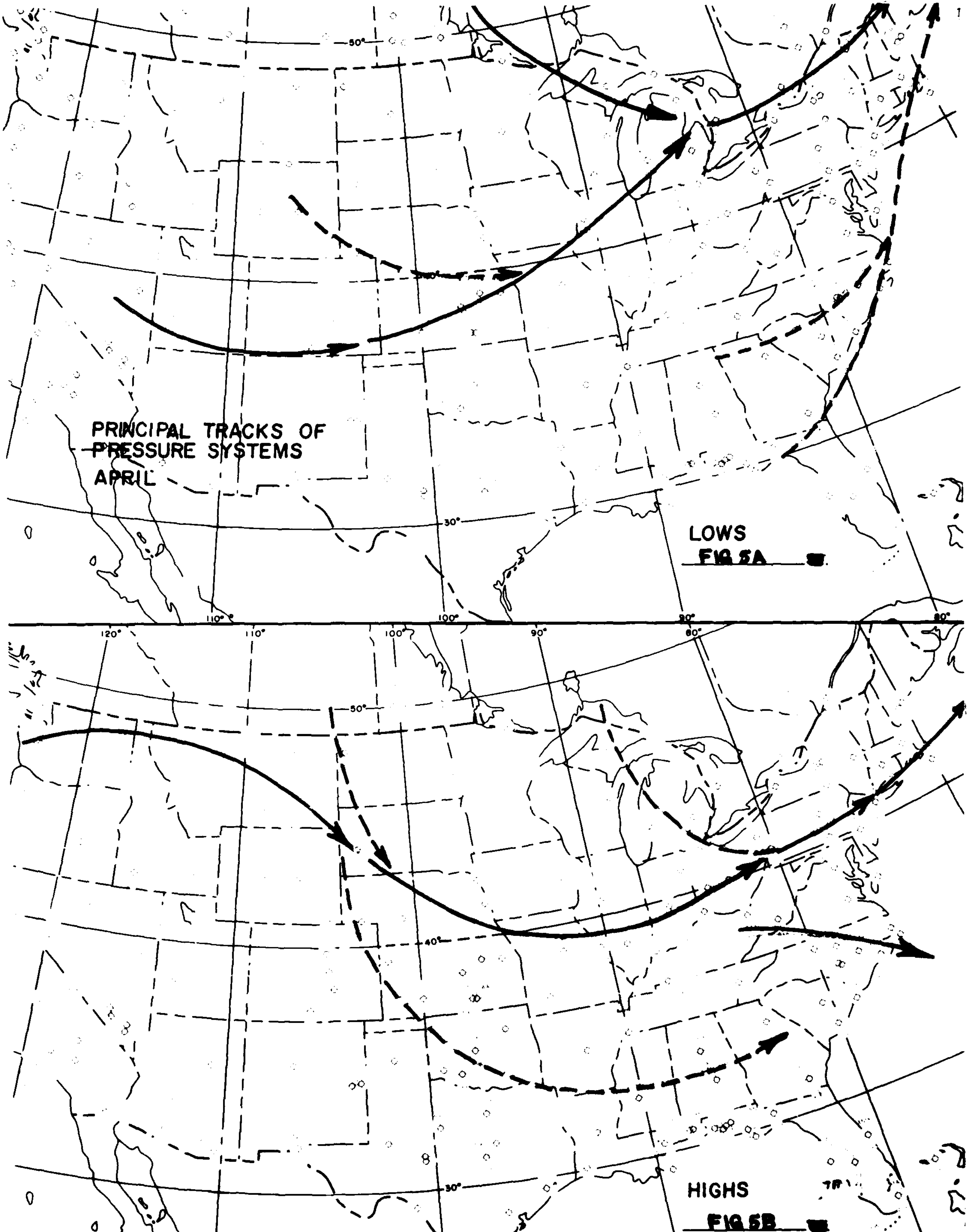
PRINCIPAL TRACKS OF PRESSURE SYSTEMS MARCH

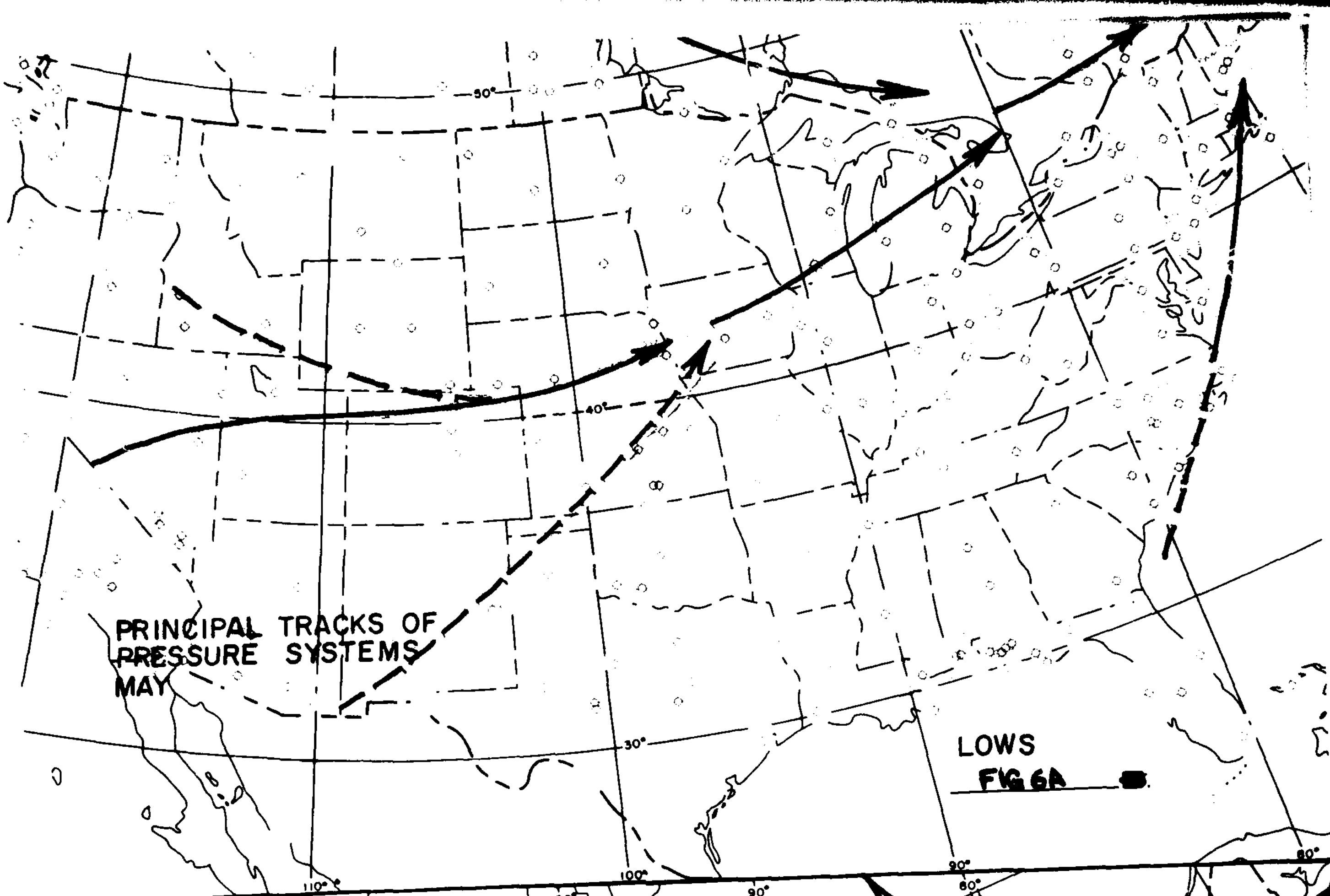


LOWS
FIG 4A

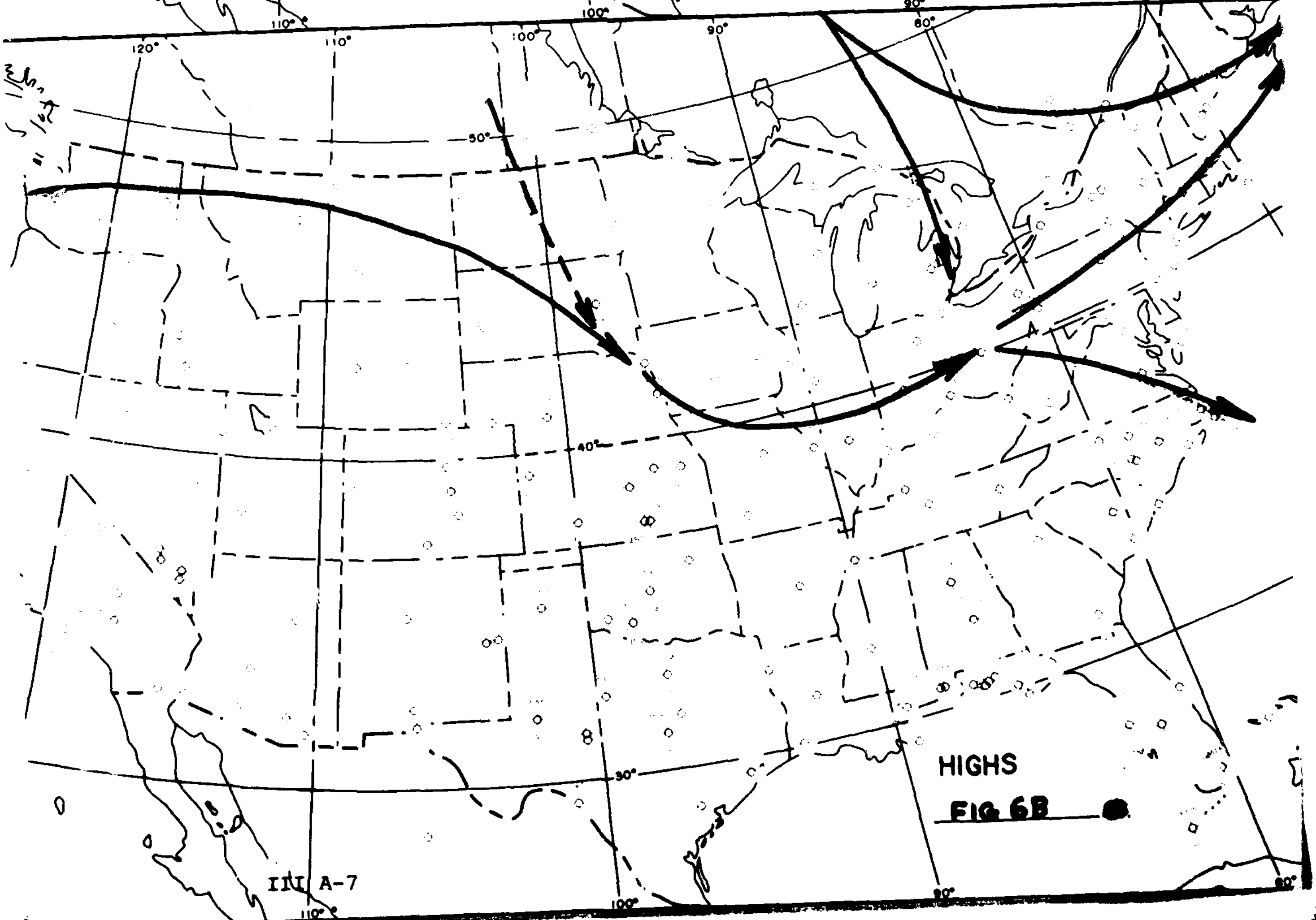


HIGHS
FIG 4B

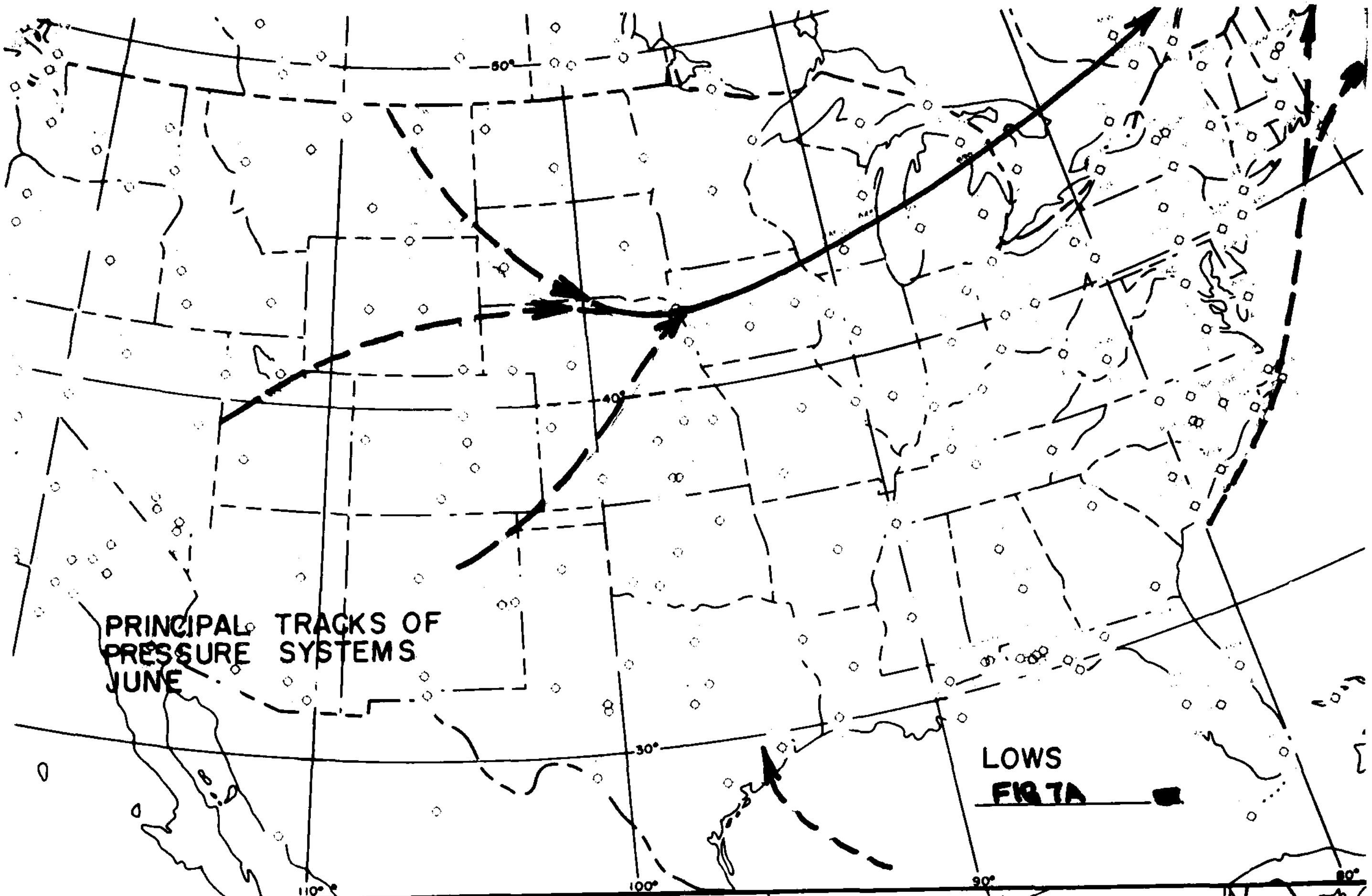

PRINCIPAL TRACKS OF PRESSURE SYSTEMS
APRIL
LOWS
FIG 5A
HIGHS
FIG 5B
50°
40°
30°
120°
110°
100°
90°
80°
70°



LOWS
FIG 6A



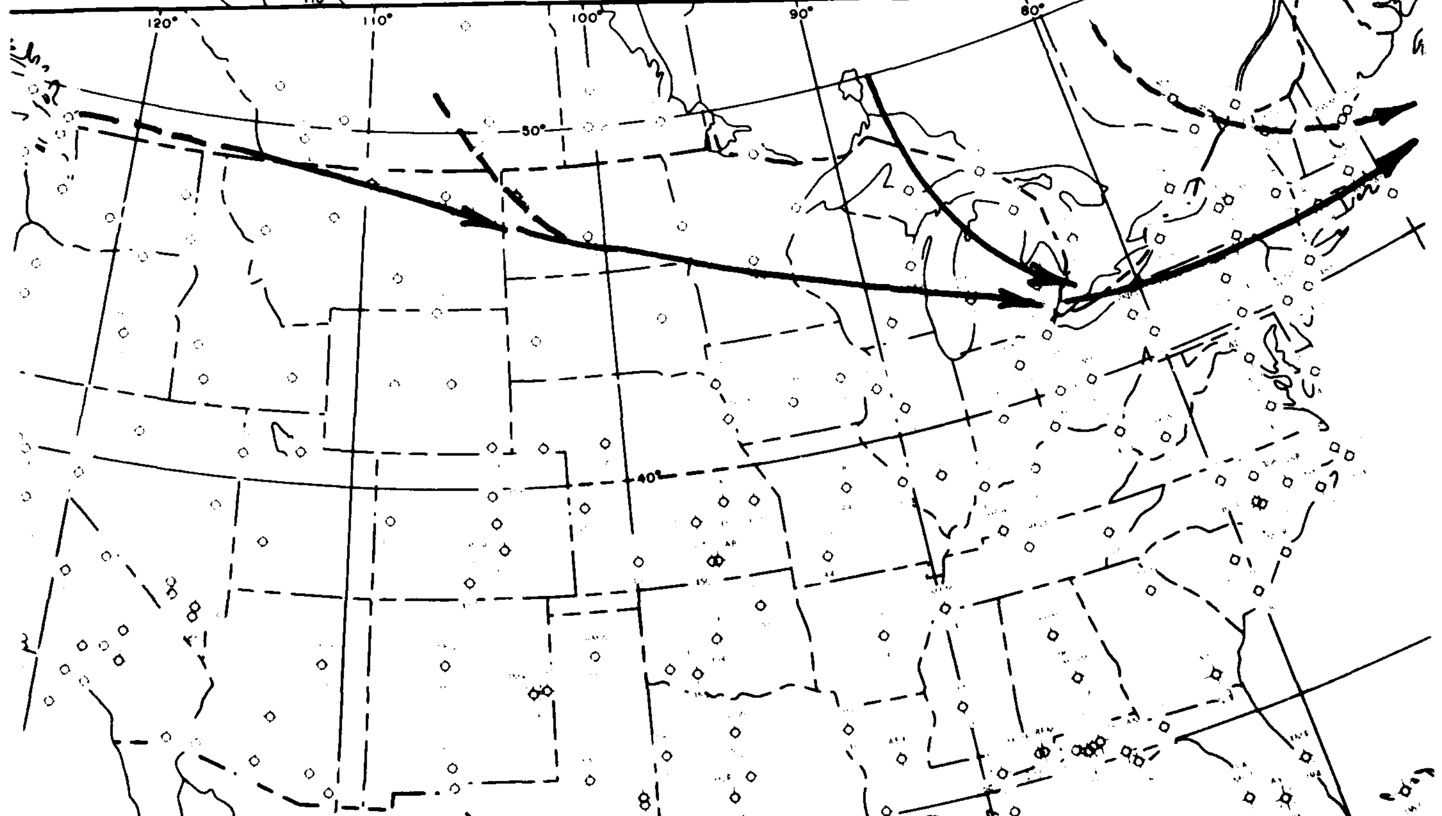
HIGHS
FIG 6B



PRINCIPAL TRACKS OF PRESSURE SYSTEMS JUNE

LOWS

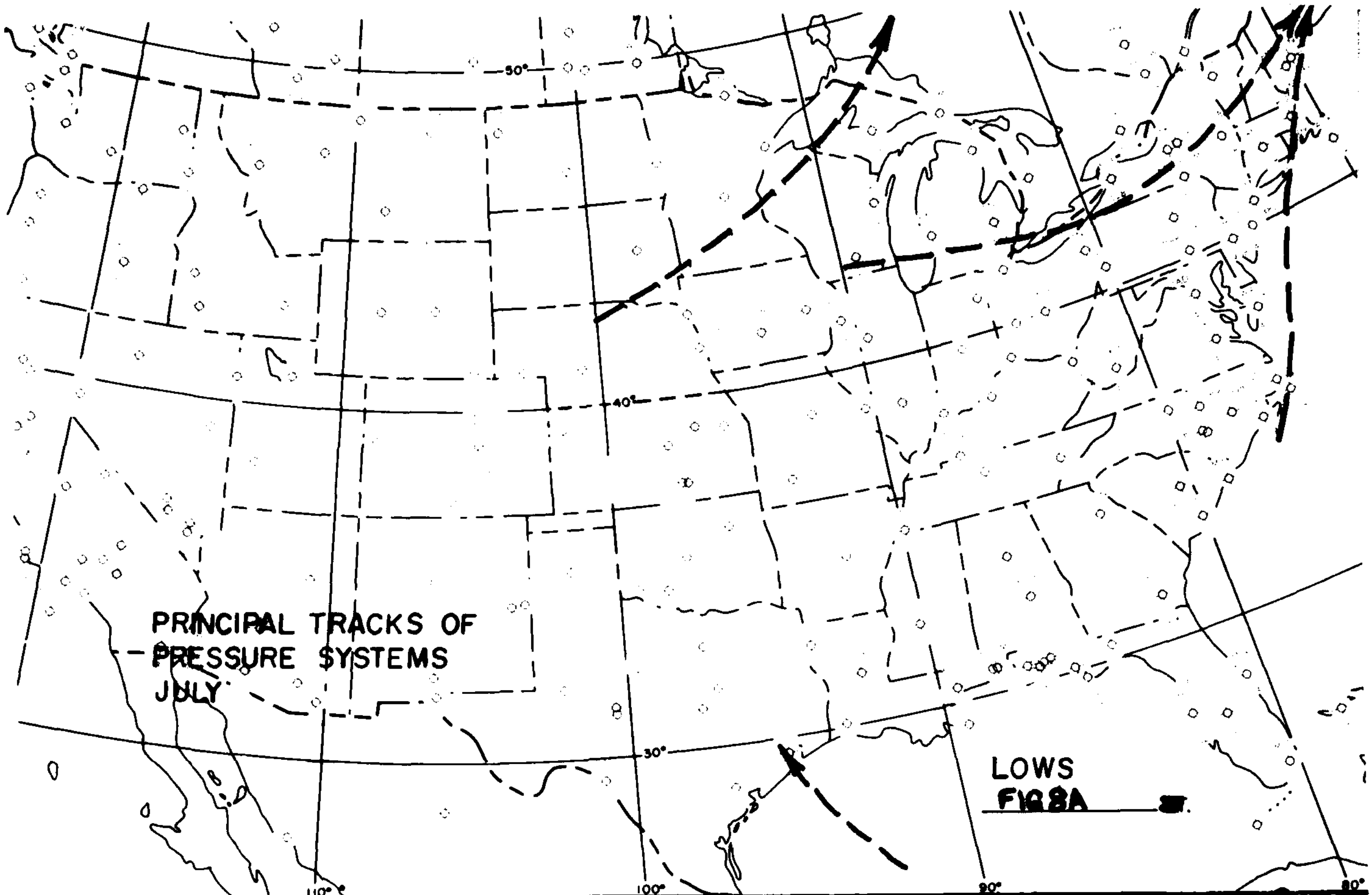
FIG 7A



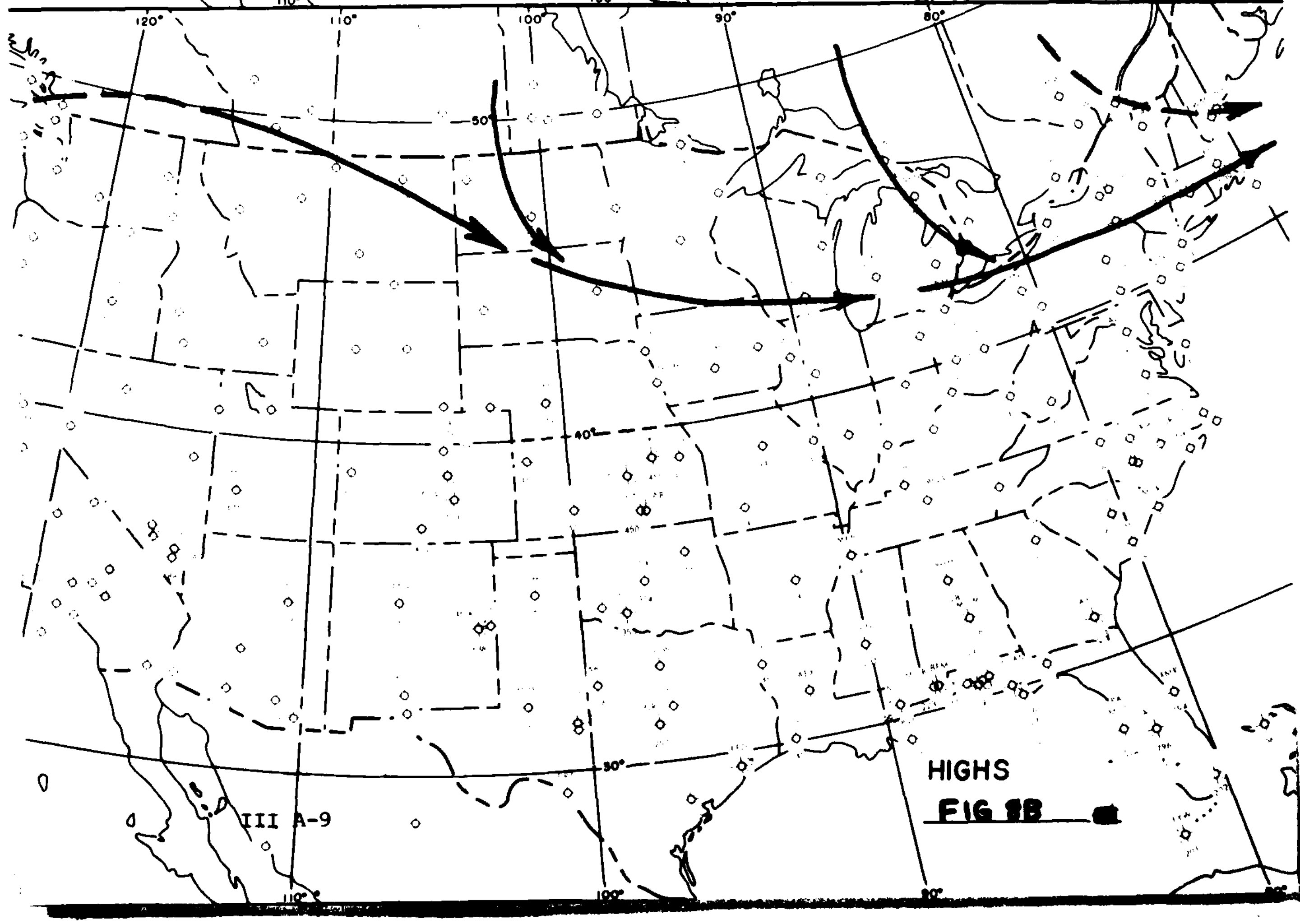
HIGHS

FIG 7B

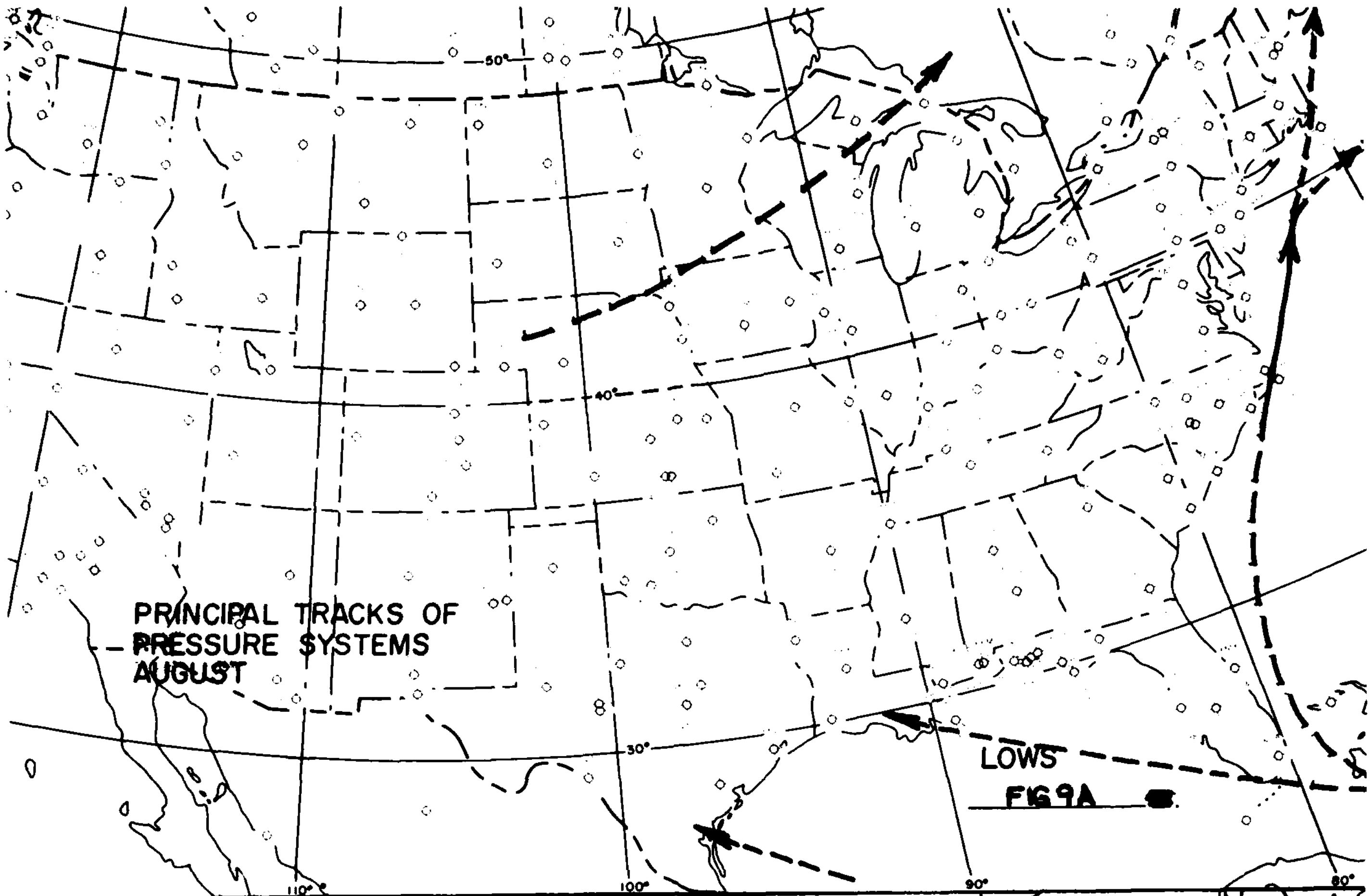
PRINCIPAL TRACKS OF PRESSURE SYSTEMS JULY

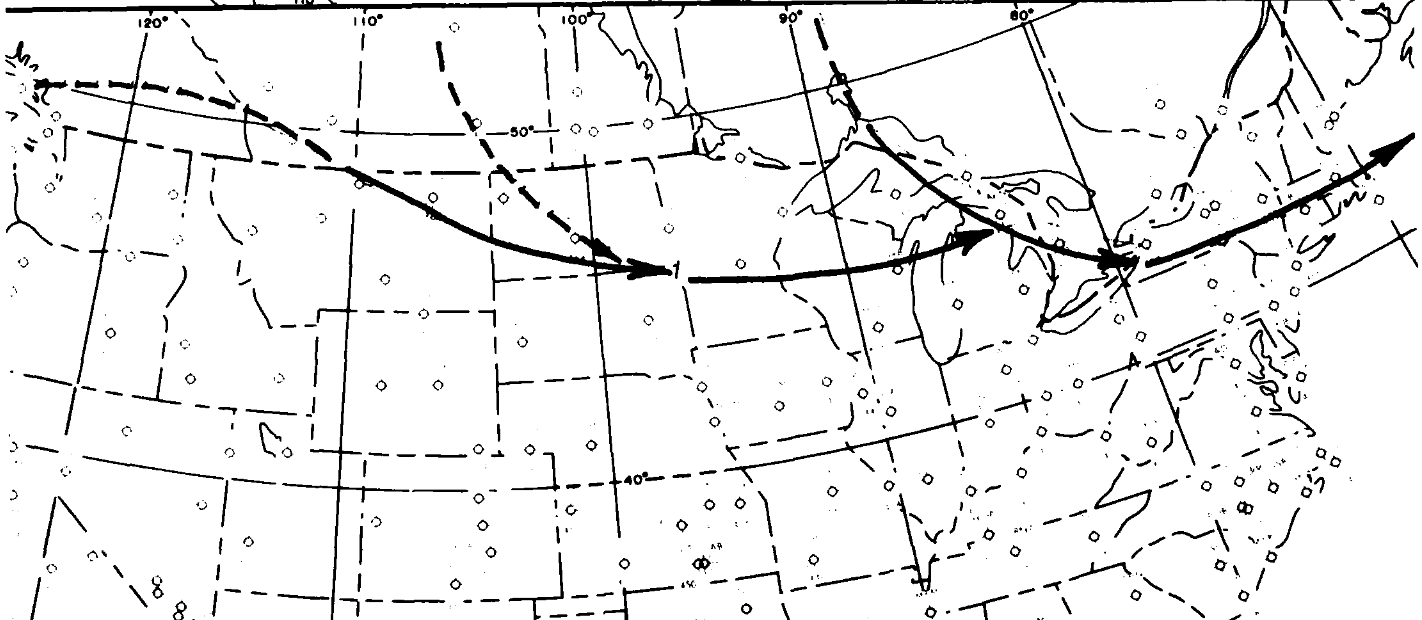


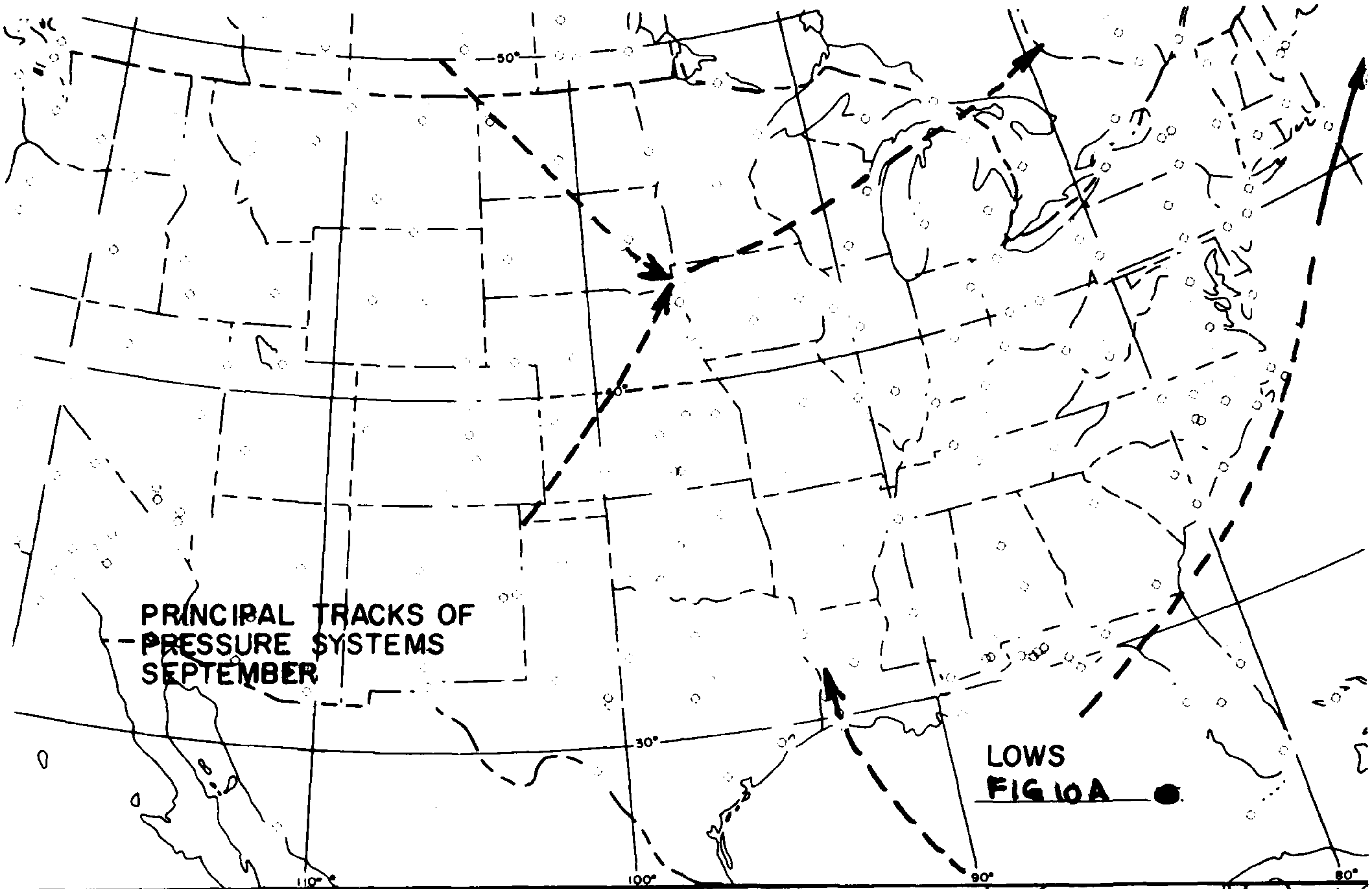
LOWS
FIG 8A

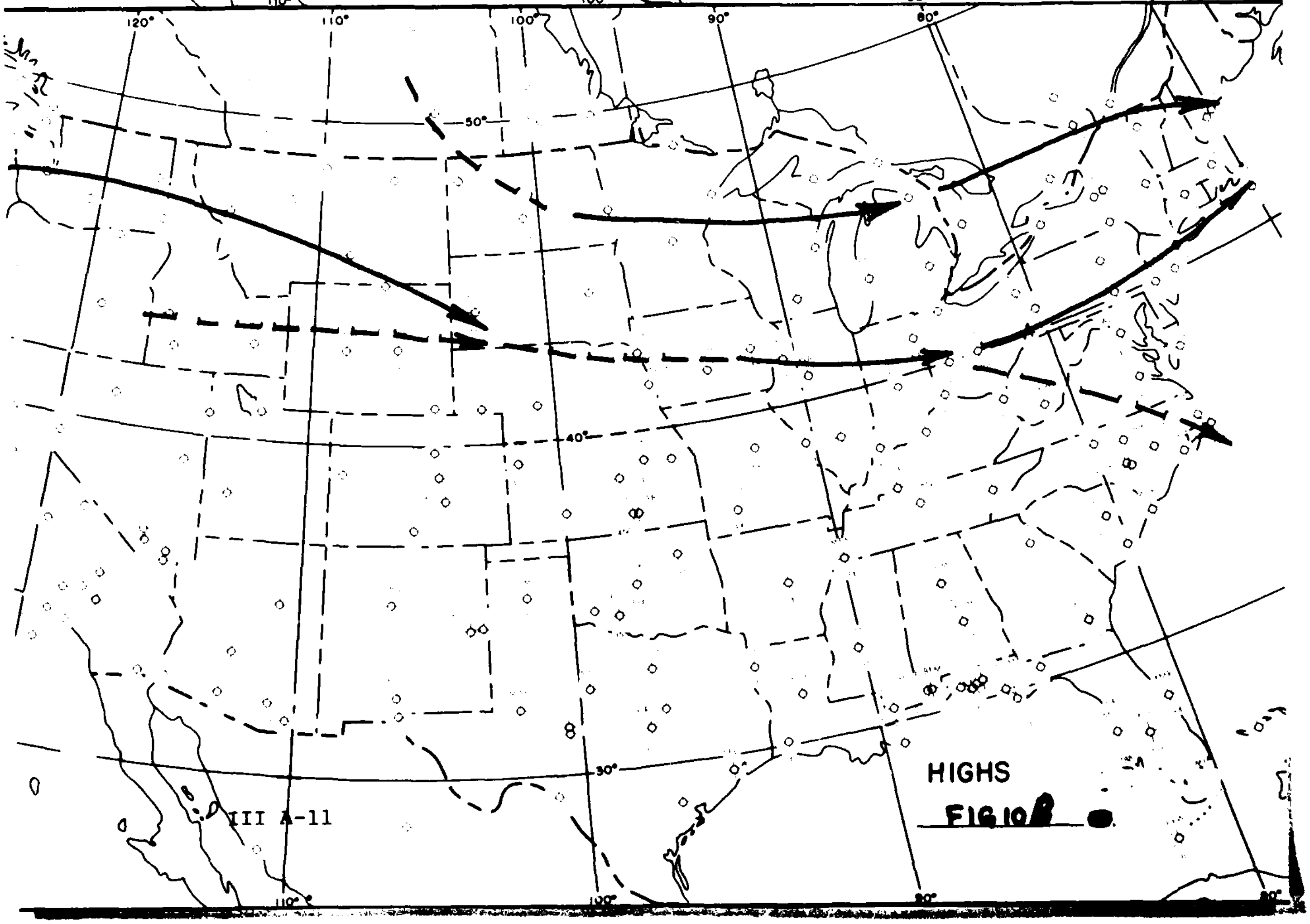


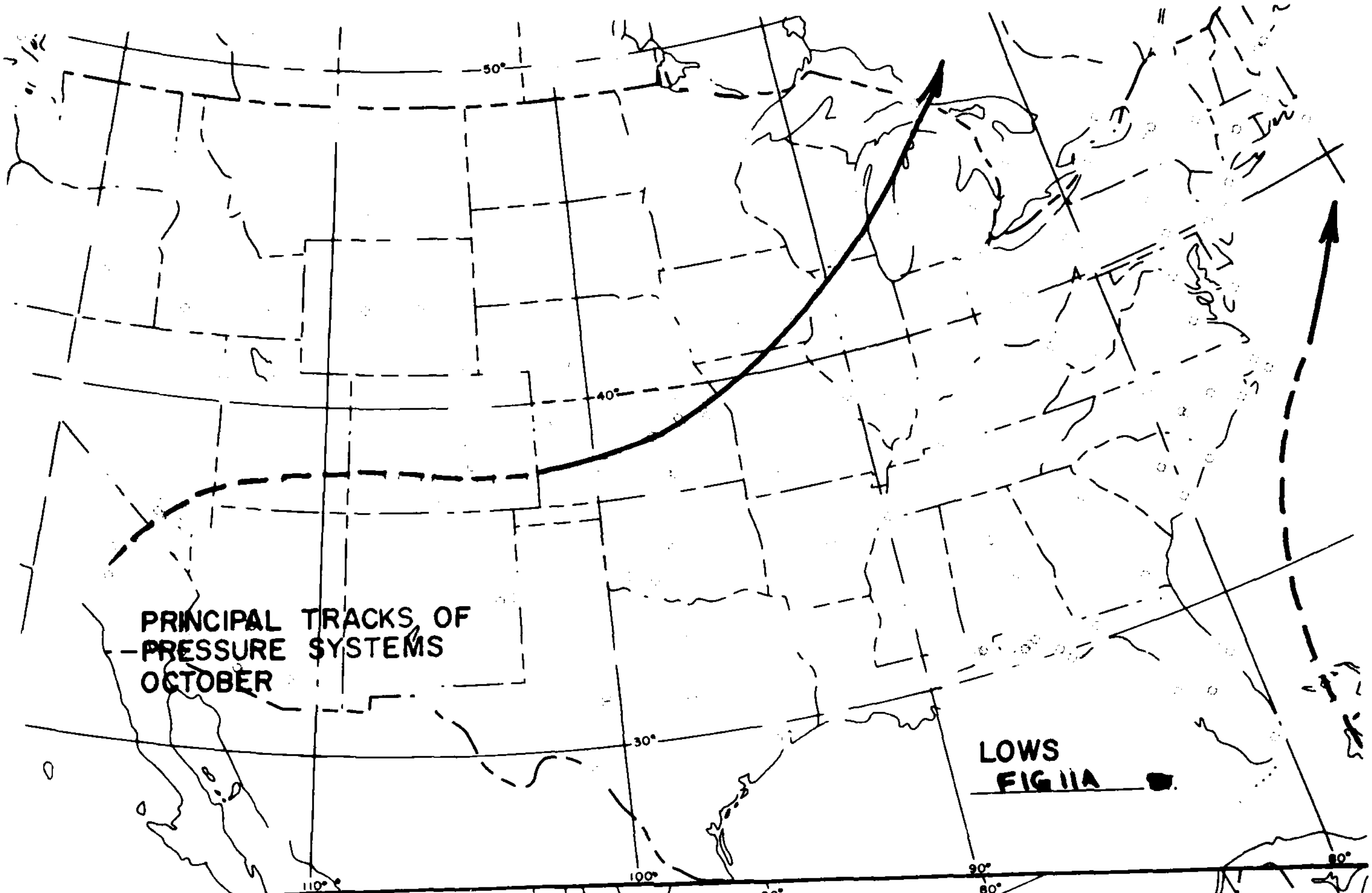
HIGHS
FIG 8B

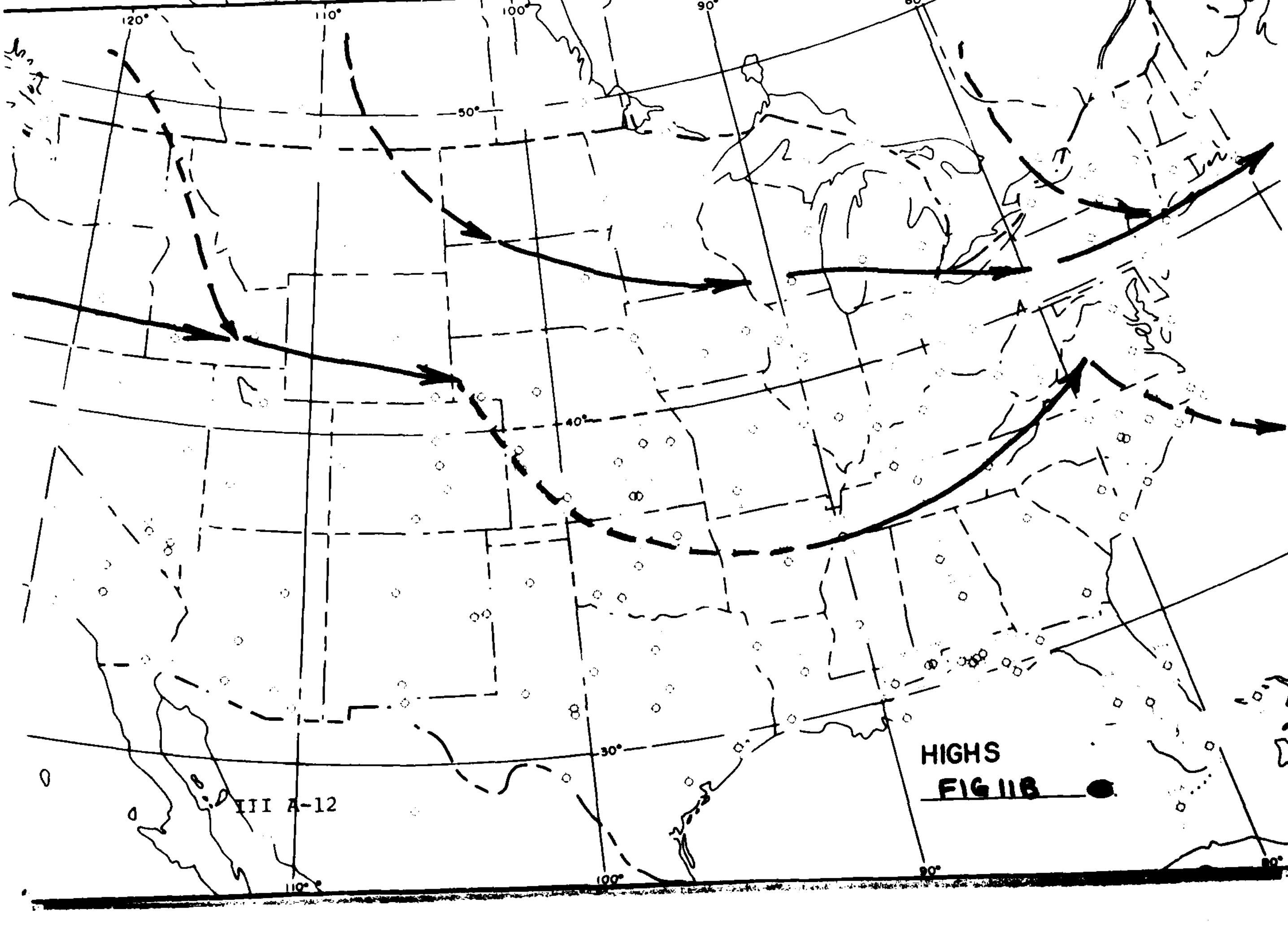

PRINCIPAL TRACKS OF
PRESSURE SYSTEMS
AUGUST
50°
40°
30°
LOWS
FIG9A
110°
100°
90°
80°


120°
110°
100°
90°
80°
50°
40°
30°
HIGHS
FIG 9B

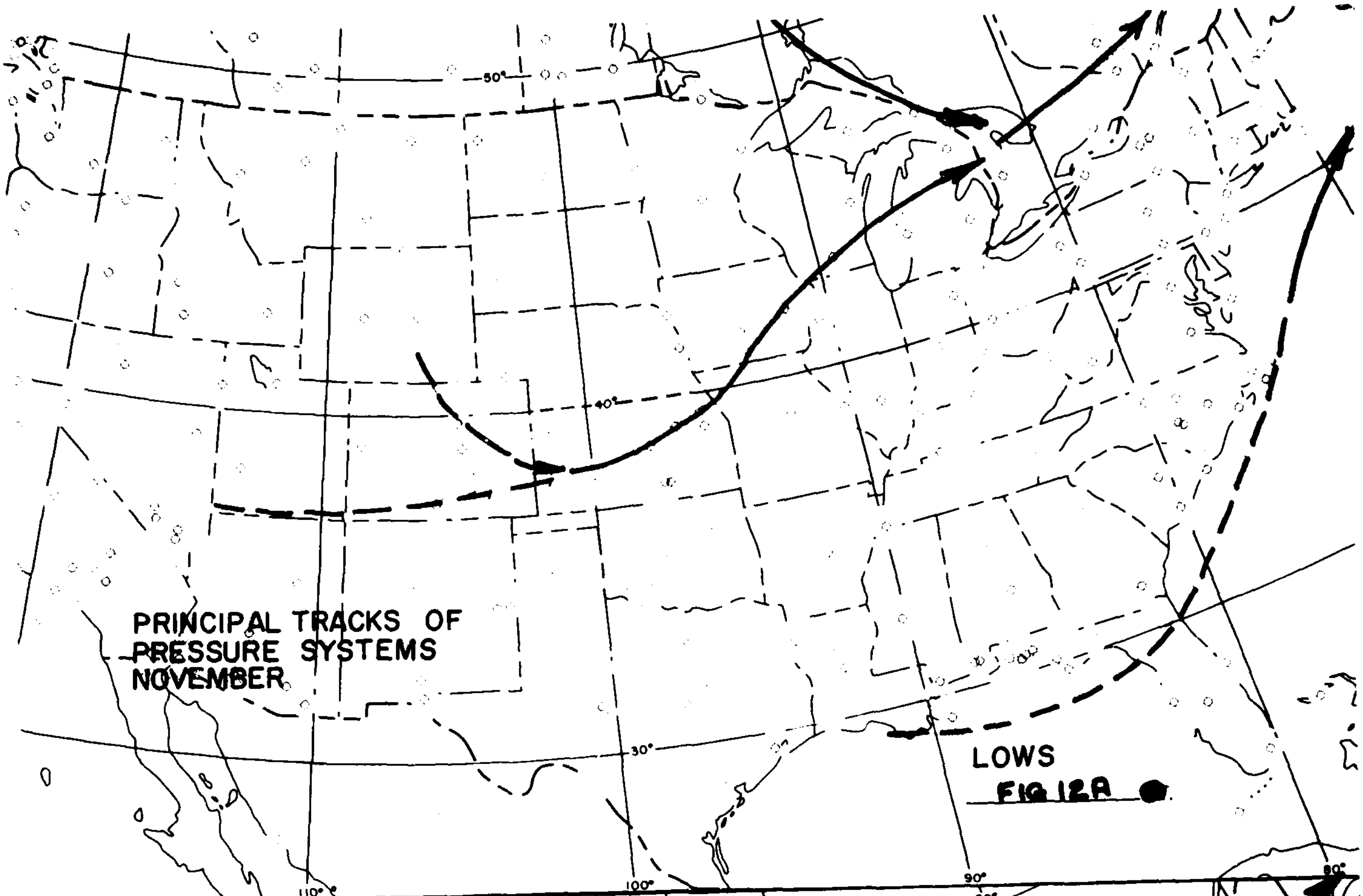

PRINCIPAL TRACKS OF
PRESSURE SYSTEMS
SEPTEMBER
LOWS
FIG 10A


HIGHS
FIG 10B


PRINCIPAL TRACKS OF
PRESSURE SYSTEMS
OCTOBER
LOWS
FIG 11A
50°
40°
30°
110°
100°
90°
80°

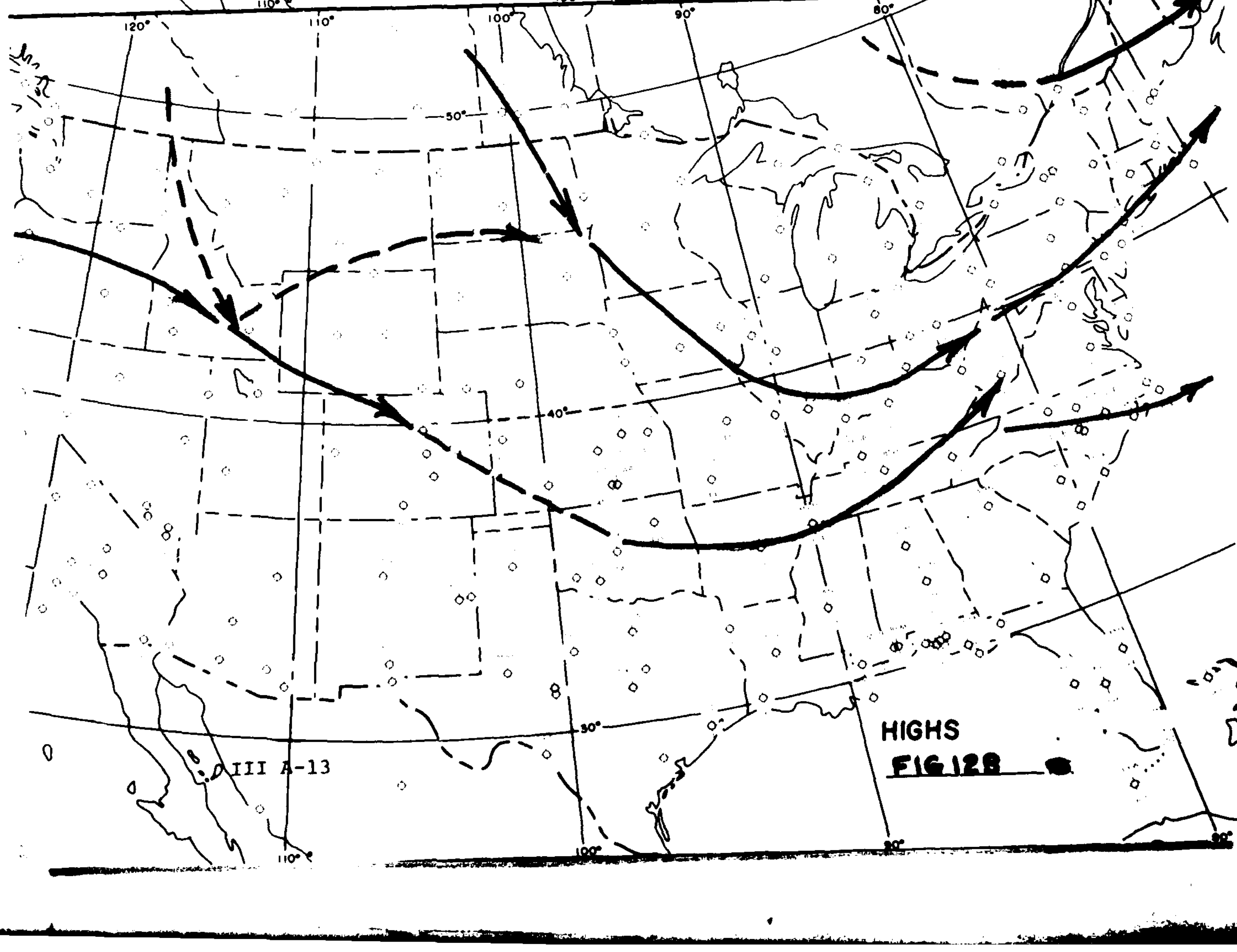

HIGHS
FIG 11B
120°
110°
100°
90°
80°
50°
40°
30°

PRINCIPAL TRACKS OF PRESSURE SYSTEMS NOVEMBER



LOWS

FIG 12A



HIGHS

FIG 12B

WEATHER RELATIONSHIPS

WINTER

Lows which develop or redevelop on the lee side of the Rockies (Colorado - Kansas) and move eastnortheast with their associated frontal systems may be forecast with considerable accuracy. Of particular interest are the lows which form in the Gulf off Southern Texas and move northeast, west of the Appalachian Mountains. These systems present more of a challenge. Although the onset of low ceilings and visibilities may be forecast with a fair degree of accuracy, there has been a strong tendency among forecasters to forecast clearing skies too soon after the systems pass Blytheville Air Force Base, AR, on their northerly track. Better verification will result if the cloud conditions are forecast to persist for 24 to 48 hours after frontal passage.

In some instances, rapidly moving lows across the northern great plains will trail a cold front in an east-west line north of this station. If caution is not used in forecasting cloud cover and precipitation, the forecaster has a tendency to forecast the frontal conditions early. In many cases of this type, there will be wave formation west of Blytheville and a frontal passage will not occur until as many as five days after the low and the original frontal system have passed through the Great Lakes area.

SPRING

During March, April and May, frontal passages are fewer in winter, and cold fronts which approach or pass the station, frequently become stationary within 200 miles north or south of Blytheville, with probably wave formation and/or warm front activity. This unstable transitional period from winter to summer coincides with the period of maximum thunderstorm and tornado activity. Accordingly, severe weather forecasting techniques are of prime importance during these months.

During this period, the lagging fronts again becomes a problem as in winter, but warm frontal weather and warm frontal passages become the major problem rather than cold frontal situations. Moisture pattern, stability, and precipitable moisture charts must be more closely monitored during this season, as systems generally develop and move faster than during other seasons.

SUMMER

With the advent of summer, frontal passages become fewer and less intense. The rapid development and fast movement experienced in the spring is replaced by slow-moving systems with an average of only four frontal passages per month. Squall line activity and tornado possibility are greatly reduced. Wave formations are still experienced, but are for the most part much farther north. Airmass thunderstorm forecasting comes to the fore and severe weather forecasting techniques must be employed daily. Because of widespread convective activity, local area weather must be closely monitored as many thunderstorms form in close proximity to the base and move into or through the local area. Persistent high pressure with moist warm flow from the Gulf of Mexico will induce haze into the area with visibilities lowering 4-6 miles, but stratus and/or fog are exceptions and do not constitute a problem.

FALL

In the months of September, October, and November, the number of frontal passages begin to increase to an average of six per month, with passage characterized by little cloudiness and rapid clearing. This period of the year has the greatest percentage of clear weather. In this season we once more have the problem of forecasting passage and associated weather with fronts which lag or become stationary west of Blytheville; usually in the western half of Oklahoma, or north central Texas. In some instances, frontolysis will occur and can be forecast if moisture, divergence and stability patterns are closely monitored.

This being the season of maximum hurricane occurrence, it must be realized that Blytheville will experience moderate to heavy continuous rain with a northward movement of a low pressure area which has formed after a Gulf Hurricane has entered the mainland. Of particular significance is the fact that this precipitation will not commence at Blytheville until the northward moving low center is abeam the station.

LOW CEILINGS & LOW VISIBILITY

There are three general situations which cause the majority of low ceiling and low-visibility weather. Either it is the usual restricted heating situation leading to radiation fog, or migratory stratus, or a general low-weather situation caused by a frontal system. Pre-warm-frontal weather is by far the most important both in frequency and duration. Low ceiling weather connected with a cold front or occluded front passage is of short duration and strictly of minor significance.

PRE-WARM-FRONTAL (December, January, February)

Practically all cases of pre-warm-frontal ceilings and fog occur with the surface wind and the pressure gradient oriented east of south. In some cases where precipitation starts with the surface wind and gradient wind south to southwest, the ceiling does not lower below 500 ft and 1 mile until backing of the wind occurs. This backing is caused by the approach of a low center from the southwest or west.

Almost every low-pressure system that moves through the United States south of Iowa, and all warm fronts which have air in excess of a 24-hr trajectory over the Atlantic or Gulf of Mexico on the southern side, produce weather below 500 ft and 1 mile in the winter months. An average of 1 case per week of pre-warm-frontal weather can be expected.

Pre-warm-frontal weather can be divided into four general synoptic situations. A few may be borderline, and fall into 2 of the categories.

Group A Map Situations (Page III B-6)

These cases are characterized by a dominating high pressure between north and west of the low pressure system that is causing the weather or precipitation at St Louis. Any high pressure in the east is minor or oftentimes is no more than a ridge extending southeastward across the Great Lakes.

Group A is a predominantly snow type or rain changing to snow. Cold air aloft is generally present or in the case of rain changing to snow, the advection of cold air toward the station is active. Duration of low ceilings is from 2 to 8 hours.

Group B Map Situations (Page III B-6)

This group is characterized by two highs, both near equal in intensity, with the low pressure or wave low between. The average axis of the eastern high is oriented from Maine to the Carolinas, while the western high has an average from Manitoba to Colorado. The lows or waves originate in the Panhandle area of Texas and Oklahoma or lower plains and move eastnortheastward to northeastward with an average speed of 30 mph.

Group B cases are predominantly rain. The duration of these types is erratic, being anywhere from 2 to 32 hours in length.

Group C Map Situations (Page III B-7)

This group contains the familiar Gulf low pressures that move north or northeastward west of the Appalachians. In some cases the low forms in northern Alabama or Mississippi, while the parent low remains south and west of the Appalachians. In this type, the induced low moves northeastward west of the mountains with its own separate precipitation area and weather. The high pressure in this group of cases shows marked north-south axis from the low Hudson Bay to Virginia or eastern North Carolina. This high dominates the situation but does not preclude the presence of another weaker one further west. The average movement of the low after it has taken shape is 30-35 mph. Many times 12-24 hours are taken up from the time precipitation starts until the low pressure takes shape and moves into a regular fashion. These latter cases account for the longer duration cases.

Group C situations were extremely erratic with regard to precipitation types. Generally in these cases warmer air is present between 3,000 and 8,000 feet. This explains to some extent why the precipitation is variable. Sometimes, a quite small change in the vertical relationship of temperature when warmer air is found above colder air will completely change the precipitation type. Duration of this type is also very erratic.

Group D Map Situations (Page III B-7)

This group brings us back again to lows originating in the southern plains states, and in this respect resembles groups, A and B. The distinguishing characteristics are in the position and orientation of the eastern high pressure and in the fact that the lows originate in the southern or southwestern end of a low-pressure trough. In both the A and B groups the trough, if any, is oriented northeast-southwest, whereas in the D group the trough is oriented north-south or northwest-southeast. Another differing feature is the highs; in the D group the eastern high is a lake-region high with an orientation of north-south or northwest-southeast. Also in this type, the western high, if any, is much farther west and southwest than in the other groups. The eastern high is sometimes split into two centers, one in the lake region, the other in the southeastern states connected by a ridge. The average movement of the waves or lows is 20-25 mph, except when the high is broken into two centers in the east; then the movement is close to 30 mph.

Group D cases are predominantly rain, and in this respect resemble Group B situations. The average duration for this type is 5 hours.

PRE-Warm-Frontal (March-November)

True pre-warm frontal weather is relatively rare in July and August; and in June, September, and October there is only about one case a year per month. Sometimes, with a weak front, generally of east-west orientation, pre-warm-frontal weather might be anticipated, but actually the weather that ensues resembles radiation phenomena. For example, a weak front south of the station in midsummer will often produce cloudiness and showers throughout the day, but within an hour or two after sunset, clearing takes place and the fog or stratus has all the characteristics as to time of formation and breaking, of true radiation fog. Due to the sluggishness of the circulation during May, August, and September, these situations are of fairly long duration.

Frontal Passages

A primary cold front will produce a short duration of ceilings below 500 feet if almost all of the following conditions are present:

1. Warm, moist air with moderate trajectory over the Atlantic Ocean or the Gulf of Mexico.

2. There should be a well-organized band or area of precipitation, at least part of which should extend to the rear of the front.

3. If the front crosses the station in such a way that the station lies within the cold area during the frontal passage, a low ceiling is favored. This is an additive, not a necessary condition.

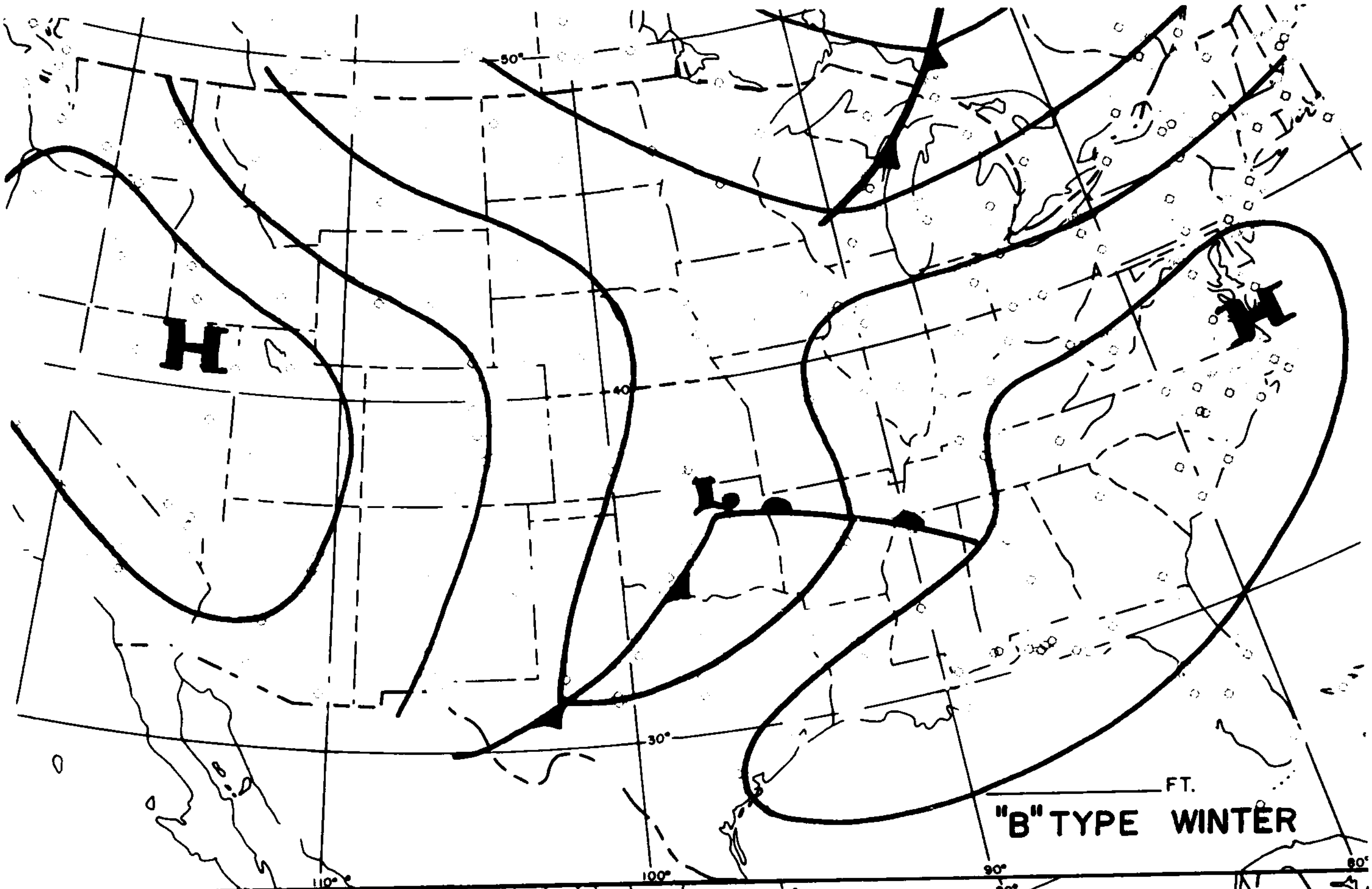
Difficulty may be experienced in separating cases of occluded frontal passages from pre-warm-frontal weather. A good rule to follow is based upon the precipitation area. If the precipitation is general, such as occurs with a warm front or action originating at the point of occlusion, it can be considered as a pre-warm-frontal. On the other hand, if the precipitation is bandlike, lined up with the occluded front, it can be considered as a frontal-passage type.

The strictly secondary type of cold front seldom produces low ceilings. In midwinter, an hour or two of snow ceilings can be attibuted to the secondary cold-frontal passage.

Migratory Stratus

Migratory stratus is an area of fog or stratus which is prevalent from Texas to the Canadian border and between the two mountain ranges of the Rockies to the Appalachians. To separate migratory conditions from the true pre-warm-frontal situations, the sharpness of the warm front at the time of arrival of the stratus is noted. If the front shows a gradient wind shift of less than 90°, the stratus is classified as migratory stratus. Most migratory stratus conditions have frontal wind shifts far less pronounced than this. Stratus cases where no fronts are in evidence are also classified as migratory stratus.

Migratory stratus may cover western Missouri, Tennessee, and Kentucky in southwest winds, then, if a deep low moves into or forms in northwest Texas or southeast Colorado, the isobars turn to a southerly or southeasterly direction. The source region for subminimum conditions may be in Arkansas, Tennessee, Alabama, Mississippi, or Louisiana, moving north in straight south or south-southeast flow.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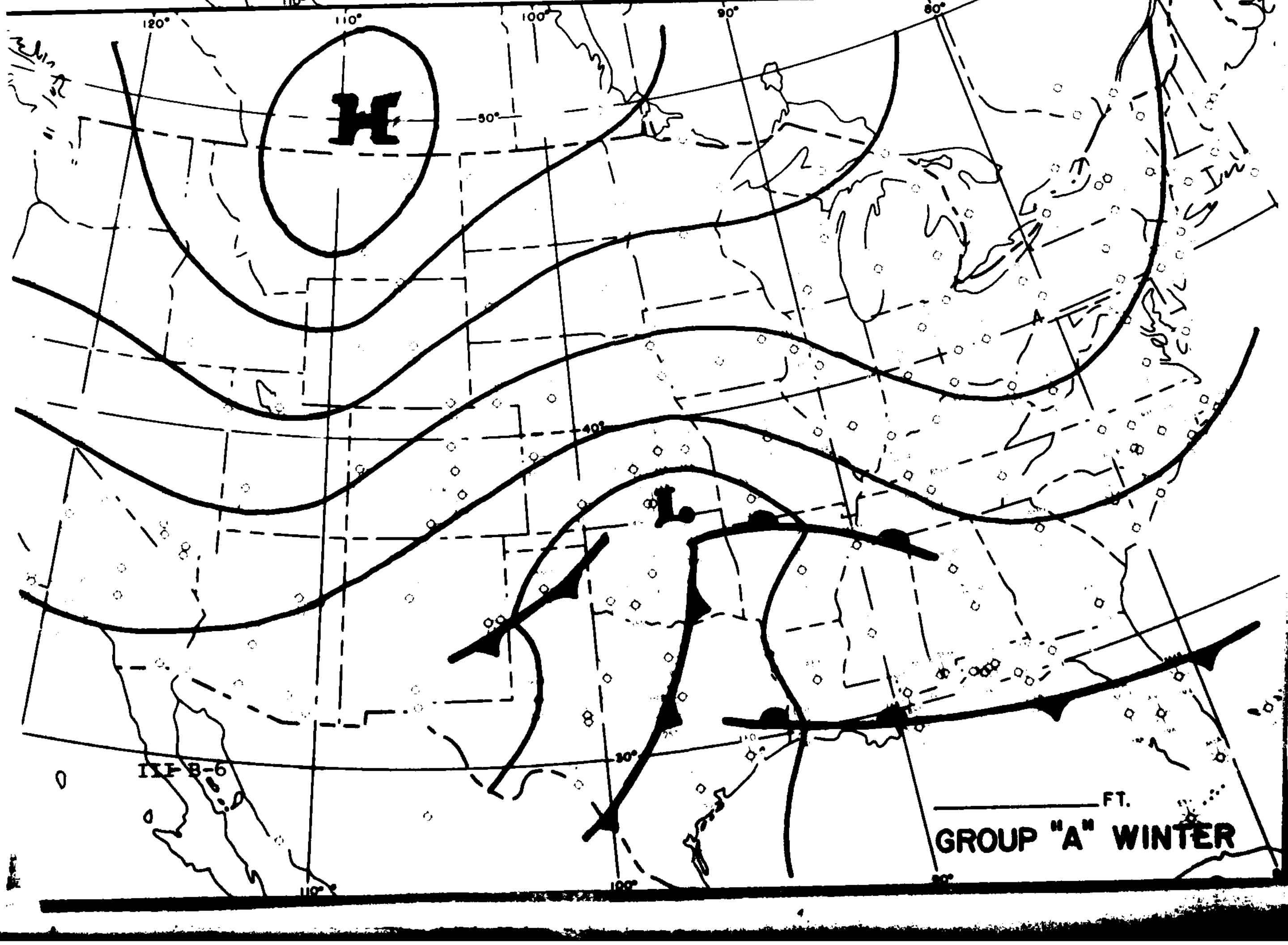
"B" TYPE WINTER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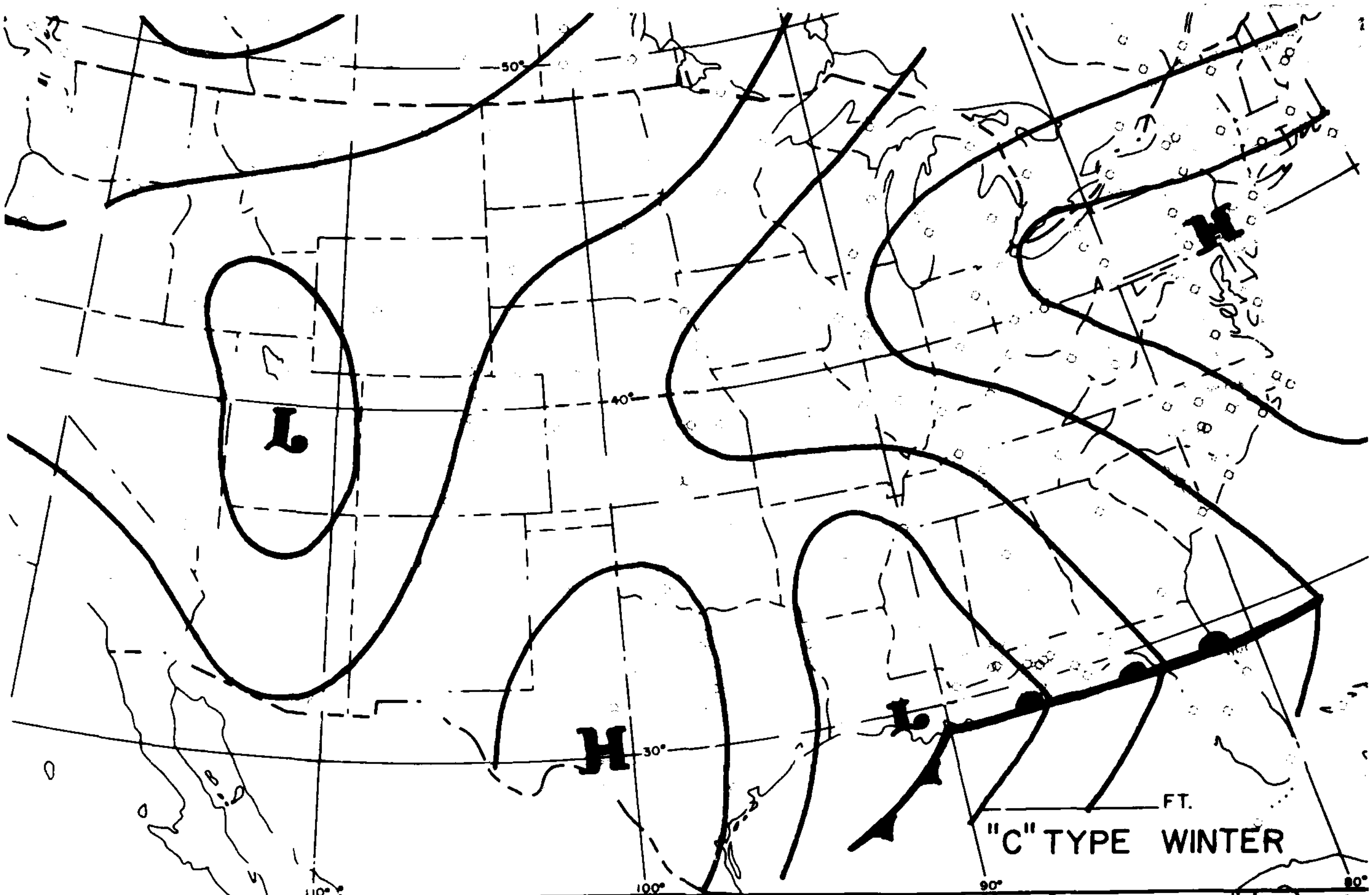
GROUP "A" WINTER



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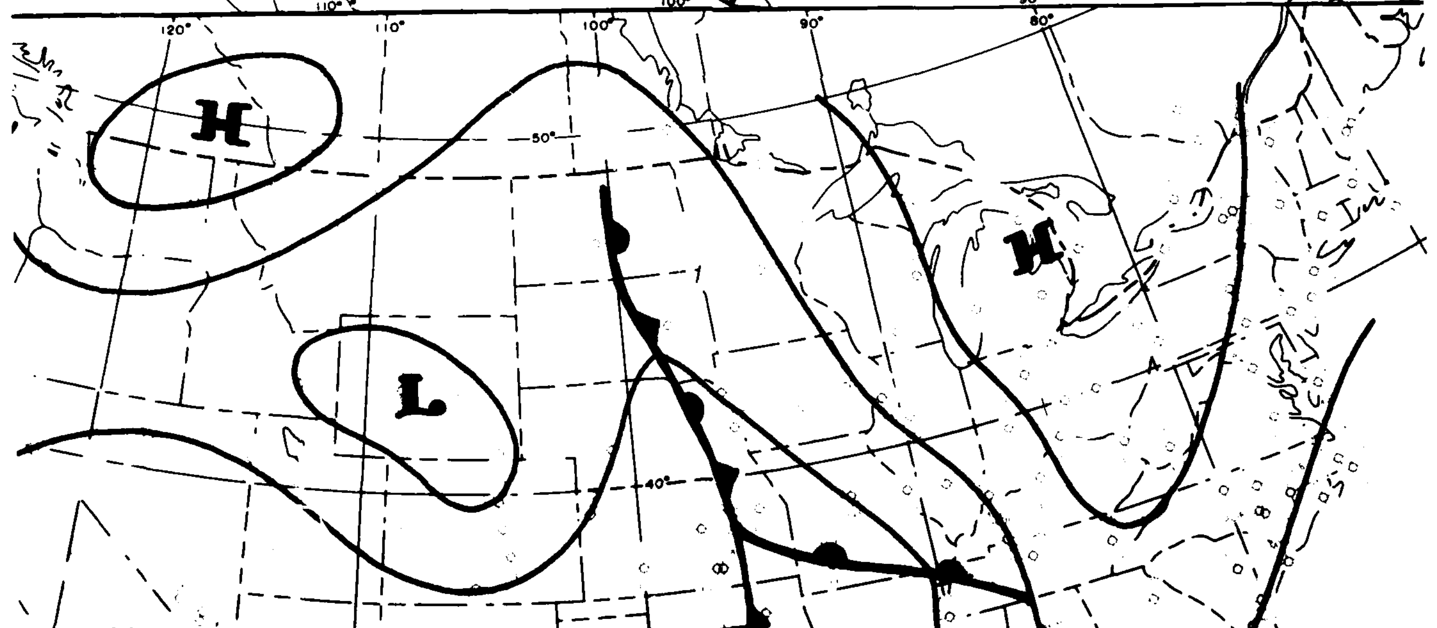
"C" TYPE WINTER



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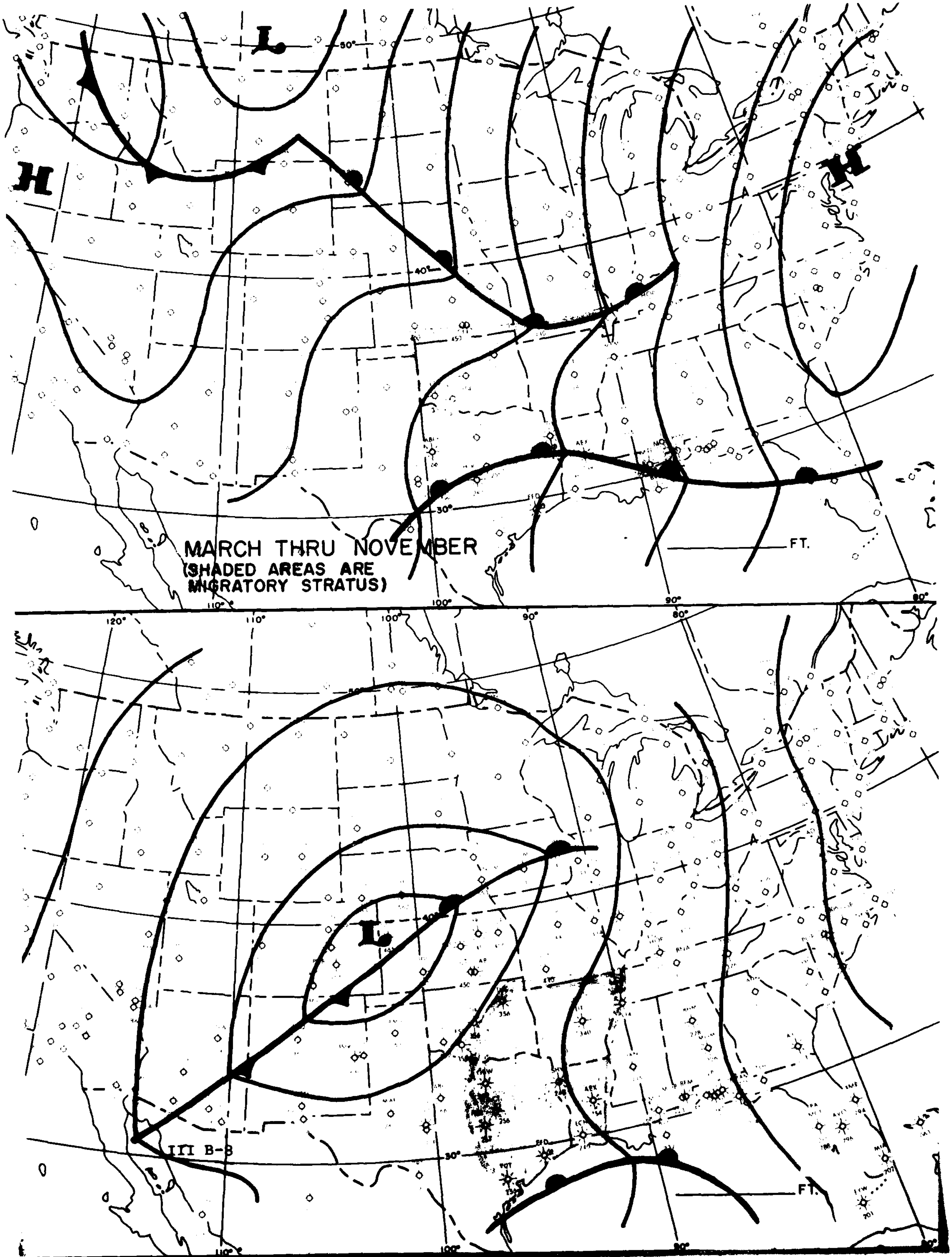

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PART IV LOCAL FORECAST AIDS

FORECAST STUDIES

This unit does not have any approved forecast studies.

RULES-OF-THUMB

This unit does not have any approved Rules-of-Thumb.

FORECAST HINTS FOR BLYTHEVILLE AFB, AR

Winter

W1 (Nov - Apr) Post frontal fog that reduces visibility to less than 1 mile occurs frequently with a northeasterly surface wind.

W2 (Nov - Mar) With a 20 knot gradient wind and anticyclonic curvature from the Gulf of Mexico forecast ceilings and/or visibilities less than 2000/3 within 24 hours.

a. Flow from the Gulf will allow moisture to be advected into our area Wind speeds less than 20 knots result in a longer time period for the moisture to arrive.

b. Anticyclonic curvature allows the moisture to reach our area. When flow is cyclonic there is normally a low pressure or frontal system approaching our area. This hint is for Gulf stratus not associated with a low or front. Be careful when using this hint when a frontal system will be affecting our area within 24 hours.

WARNING: The moisture will be advected to the west of us if the surface pressure ridge builds/intensifies.

FORECAST HINTS FOR BLYTHEVILLE AFB, AR

Summer

S1 (May - Sep) with anticyclonic curvature over Blytheville from surface to 850 MB DO NOT forecast airmass thunderstorms.

S2 (May - Oct) There is a high probability of visibility less than 2 miles in fog near surnrise if:

a. We are in a post cold frontal (cP or mP) airmass with a low pressure area centered to the northeast or

b. High pressure is centered over New England and the surface (low level) wind is from the northeast.

S3 (Feb - Oct) Gusty surface winds:

a. Forecast gusts equal to the speed of the gradient level wind with a level tight SW-NE pressure gradient.

b. Forecast the gusts to occur when the radiation inversion is broken.

S4 (May - Sep) Forecast thunderstorms during the afternoon when a surface pressure trough is located just east of the Boston Mountains on the 1200 Z LAWC.

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