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# NOAA Technical Memorandum EDS BM-82

U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
Environmental Data Service

## An Annotated Bibliography of Climatic Maps of Thailand

ANNIE E. GRIMES

SILVER SPRING, MD.

August 1971



BIBLIOGRAPHY OF CLIMATIC MAPS FOR:

<u>1958</u>		<u>1963</u>	
<u>WB/BM</u>		<u>WB/BM</u>	
1	Eastern Mediterranean	49	Yugoslavia
2	British Isles	50	Angola
3	Ireland	51	Iran
4	Germany	52	Norway (updates #25)
5	Iraq	53	U.A.R. (Egypt) (updates #9)
7	Southwest Pacific Ocean	54	Korea (updates #36)
8	Western Pacific Ocean		
	<u>1959</u>	55	Spain
10	France	56	Mozambique
	<u>1960</u>	57	Syria
14	Lebanon	58	Japan
15	Arabian Peninsula	59	Mexico (updates #6)
16	Australia	60	Burma
17	Ethiopia, Eritrea and the Somalilands	61	Cape Verde Is. (updates #20)
18	Indochina	62	Rumania
19	Morocco	63	Poland (updates #31)
21	Tunisia	64	Portugal (updates #20)
22	Finland		<u>1964</u>
23	Formosa, Hong Kong and Macao I (also #41)	65	India
24	Nigeria and British Cameroons	66	Madeira Islands
	<u>1961</u>	67	Azores
26	Belgium and Luxembourg	68	New Zealand (updates #11)
27	Cuba	69	Hungary
28	Libya		<u>1965</u>
29	Netherlands	70	Paraguay
30	China (mainland)	71	Pakistan
32	Sweden (updates #13)	72	Ceylon
33	Switzerland		<u>1968</u>
34	Austria	73	North Vietnam
35	Jordan		<u>1969</u>
37	Greece	74	Republic of Vietnam
	<u>1962</u>	75	Laos
38	Colombia	76	Cambodia
39	Indonesia	77	Burma (Supplement)
40	Fed. of Rhodesia & Nyasaland	78	Ceylon (Supplement)
41	China (Formosa), Hong Kong and Macao II (also #23)		<u>1970</u>
42	Republic of South Africa	<u>EDS/BM</u>	
43	Sudan	79	Atlases & Charts of the World Volume I & Volume II
44	Tanganyika	80	Pakistan (Supplement)
45	Pakistan (updates #12)	81	India
46	Nicaragua		
47	Bolivia		
48	Denmark		

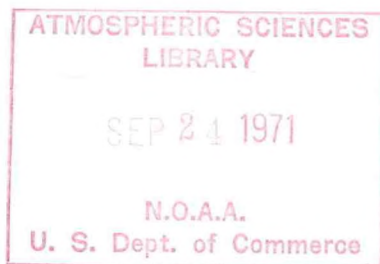
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U. S. DEPARTMENT OF COMMERCE  
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NOAA Technical Memorandum EDSTM-BM 82

AN ANNOTATED BIBLIOGRAPHY OF CLIMATIC MAPS OF THAILAND

Annie E. Grimes  
Atmospheric Sciences Library  
Libraries Division  
Environmental Science Information Center



Silver Spring, Md.

August 1971

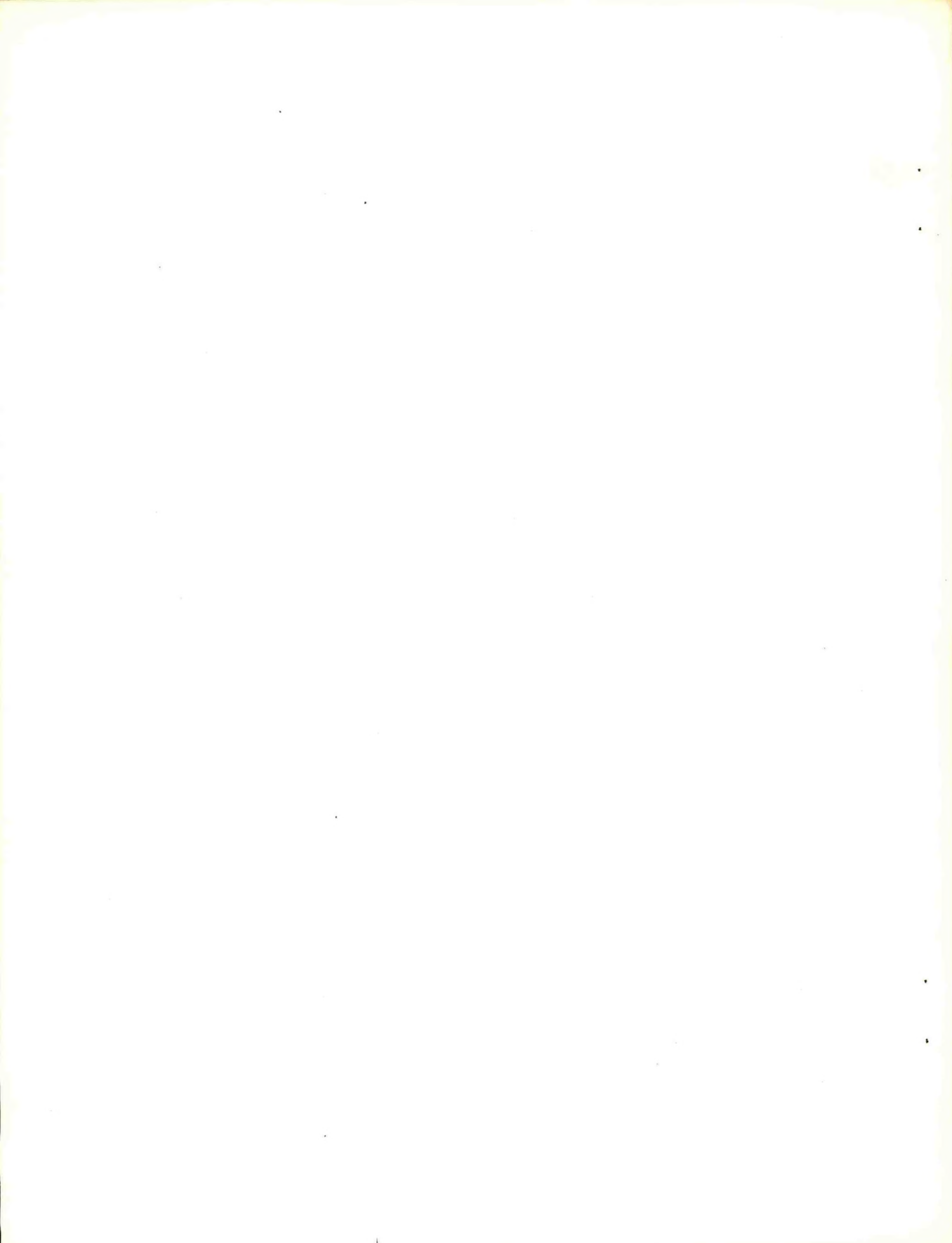
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UDC 016:551.582.3(593)

016	Subject bibliographies
551.5	Meteorology
.582.3	Maps of climatology of particular places
(593)	Thailand

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## INTRODUCTION

This bibliography is one of a continuing series prepared at irregular intervals by the Foreign Branch, Climatology Division, Environmental Data Service. Earlier titles in this series are listed on the inside of the front cover.

This bibliography of climatic maps includes all available sources in the Atmospheric Sciences Library and the Library of Congress with maps of Thailand, the Indochinese Peninsula and southeast Asia. Some sources may be in both libraries; however, the call number for each source is recorded in the abstract for only one of them in the following order:

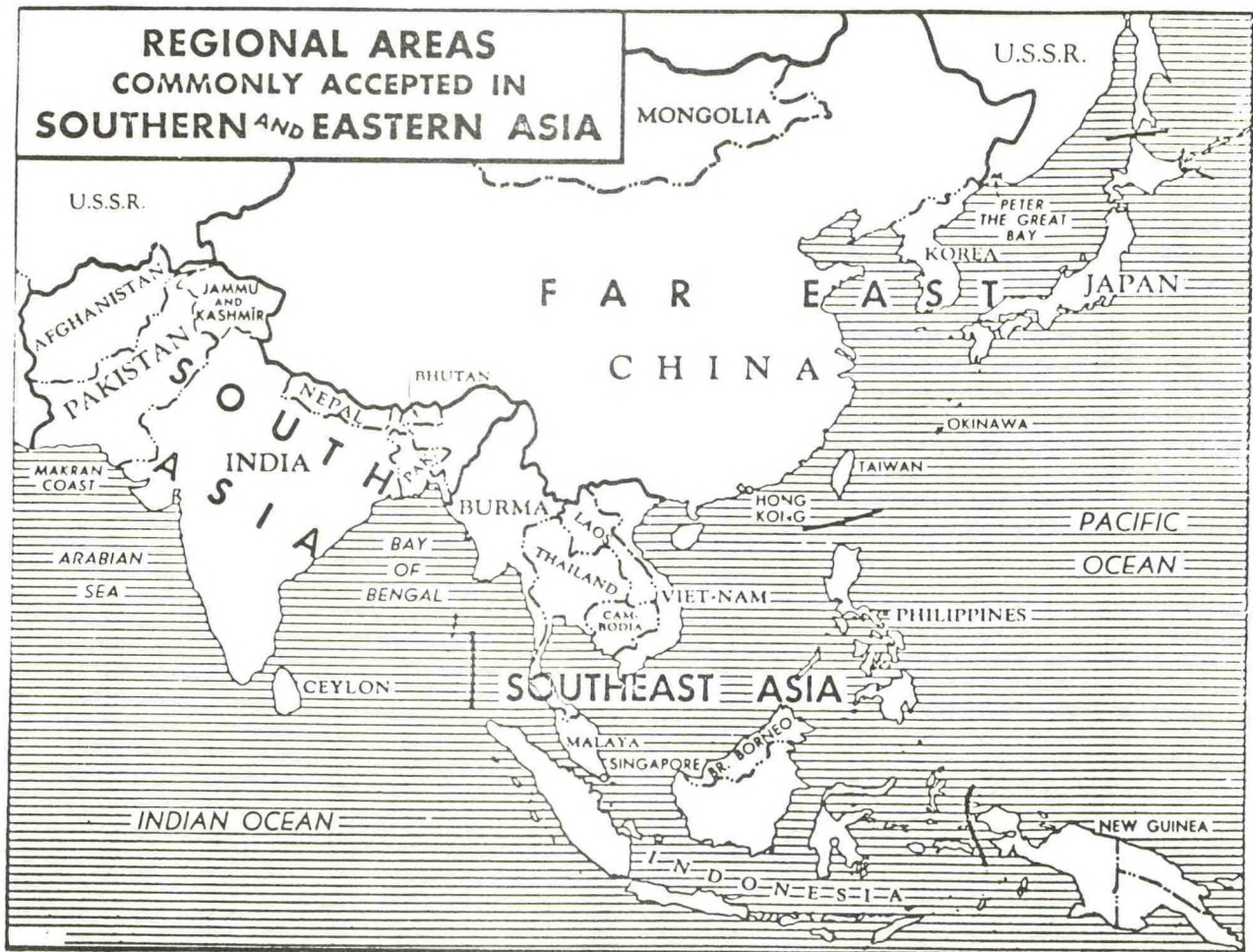
DAS Atmospheric Sciences Library

DLC Library of Congress

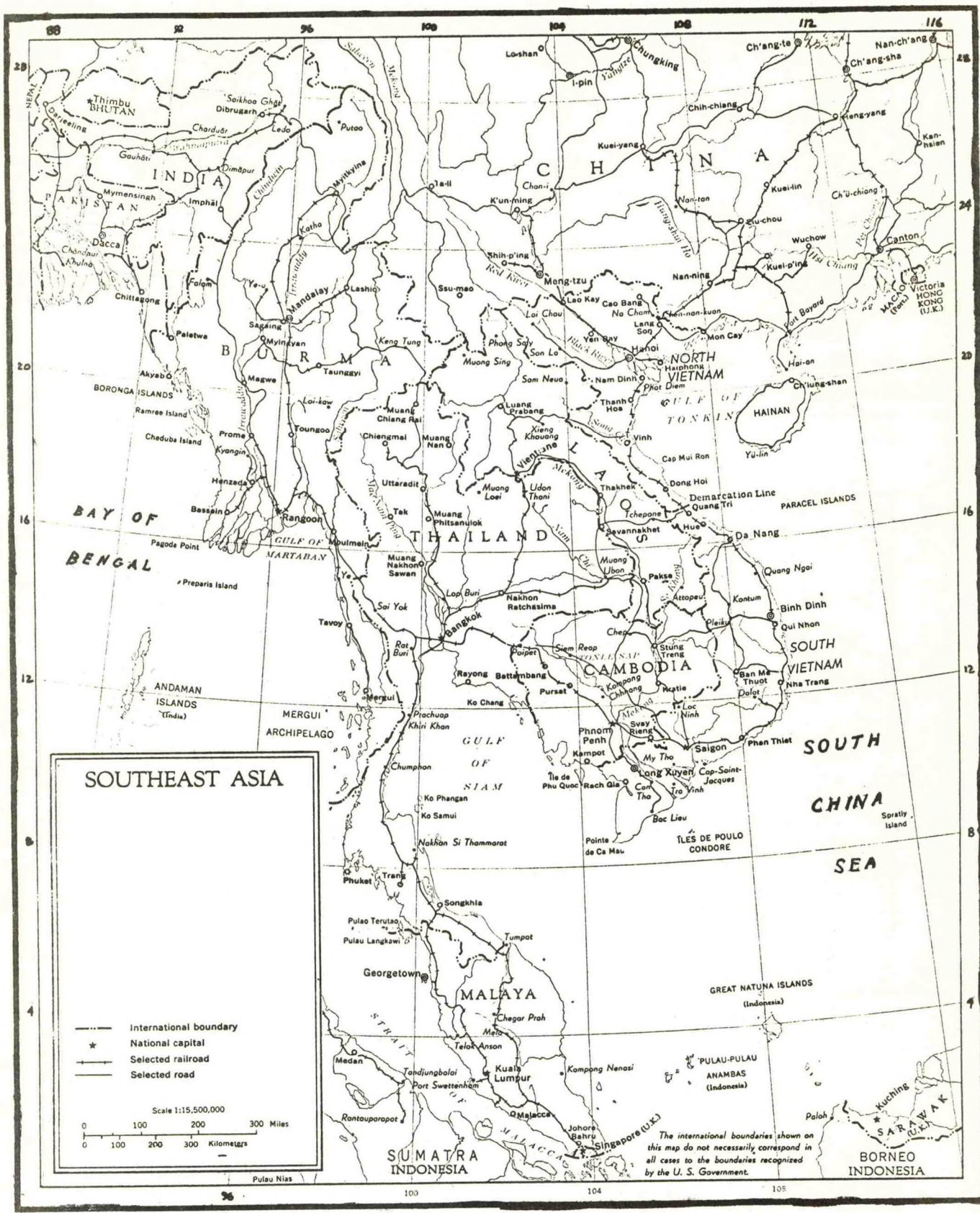
Map scales are presented in the abstracts. In the absence of printed information the scales have been determined by a natural scale indicator prepared by S. W. Boggs, Chief, Division of Geography and Cartography, Department of State between 1924-1954. These approximate values have been enclosed in sub-brackets, as  $\approx 1:3\ 000\ 000$ , if they were ascertained from maps having graticules or distance scales. However, maps with no graticules or distance scales require the estimation of distances; the values obtained from these estimated distances are recorded as follows, "scale is not indicated (about 1:13 500 000)."

The initials VTR appearing at the end of the abstract for some sources indicate that the abstract was written by Virgilio Torres-Rentas; the initials MGA appearing at the end of the abstract for source number 83 indicate that this abstract was taken from the "Meteorological and Geostrophysical Abstracts" of the American Meteorological Society.

Translations of foreign titles to English are recorded.







**SOUTHEAST ASIA**

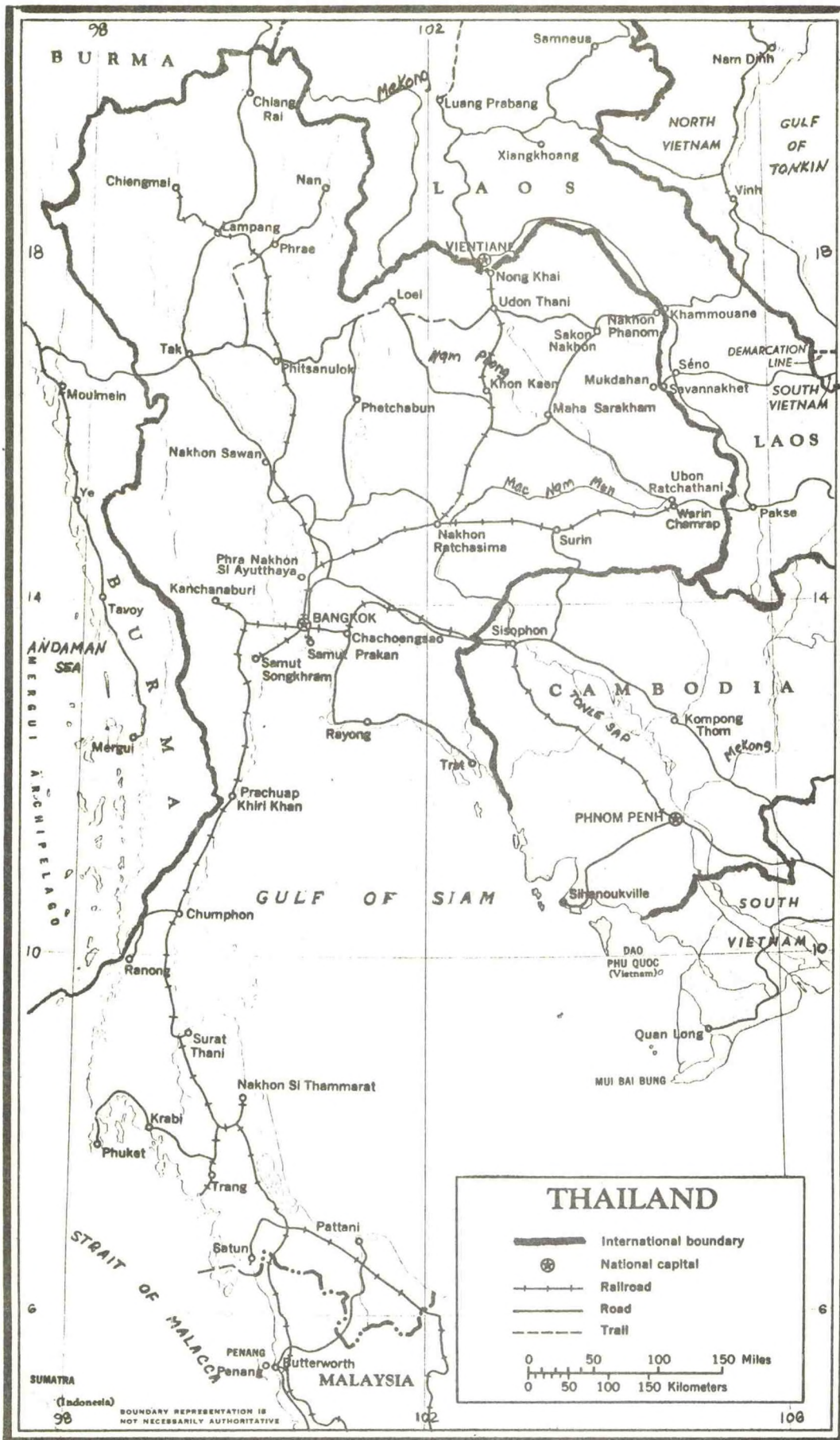
- International boundary
- ★ National capital
- Selected railroad
- Selected road

Scale 1:15,500,000

0 100 200 300 Miles

0 100 200 300 Kilometers

The international boundaries shown on this map do not necessarily correspond in all cases to the boundaries recognized by the U. S. Government.



AN ANNOTATED BIBLIOGRAPHY OF CLIMATIC MAPS OF THAILAND

1917

1. Indochina. Service Météorologique. Régime pluviométrique de l'Indochine. (Pluviometric regime of Indochina.) 50 pp. (In French). Hanoi-Haiphong, 1917. DAS C/ed AO-R.

...Presents a map (scale 1:3 000 000) of the Indochinese Peninsula showing the distribution of annual mean total rainfall amount by hatched areas based on data for 1906-1915. There are also maps, scale is not indicated (about 1:13 000 000) of the Indochinese Peninsula with monthly mean isohyets (also hatched areas) in mm based on data for 1906-1916.

1927

2. Indochina. L'Observatoire Central. Indochine pluviométrique. (Precipitation in Indochina.) 1 page. (In French). December 1927. DLC Map Division.

...Consists of polychrome maps, scale is not indicated (about 1:13 500 000), of Indochina and Thailand showing the distribution of monthly mean total amount of precipitation (mm) based on data for an unspecified period.

3. Siam. Royal Irrigation Department. Administration report. 1914/15-1925/26. Bangkok, February 1927. DAS C/ec AOa.

...Includes maps, scale is not indicated (about 1:25 000 000) of Thailand showing the monthly distribution of mean total amount of precipitation for the period 1901-1921.

1928

4. Carton, P. Note sur le climat de l'Indochine. (Note on the climate of Indochina.) Extracted from La Feuille Mensuelle de Renseignements, Février 1928. 45 pp. (In French). Hanoi, 1928. DAS M82/596 C328n.

...Contains a polychrome map (scale 1:4 000 000) of North Vietnam, South Vietnam, Cambodia, Laos, and Thailand showing the distribution of annual mean total precipitation amount (mean of 18 years: 1907-1924) in mm.

5. Indochina. Service Météorologique. Bulletin pluviométrique. Tableaux mensuels, annuels et cartes. (Rainfall bulletin. Monthly and annual tables and maps.) 1914-1928. (In French). Phu-Lien. DAS C/ed AO.

...Presents maps (scale 1:3 000 000) of Indochina (approximately 8°-24°N, 98°-108°E) for each year 1913-1925 and polychrome maps (scale 1:3 200 000) for each year 1926-1928 showing the distribution of total rainfall amount.

6. Sion, Jules. Asie des moussons. (Monsoon Asia.) Géographie Universelle, IX(1):1-272. (In French). Paris, 1928. DAS C/e S618.

Source No. 6 continued.

...Includes the following for Monsoon Asia (India, Pakistan, Burma, Thailand, Cambodia, Laos, North Vietnam, South Vietnam, China, Korea, Japan, Taiwan, the Philippine Islands, Java, Sumatra, Borneo, and the Celebes): maps (scale 1:55 000 000) with mean isobars (mm) and wind by arrows for January and June, annual mean total rainfall amount (mm) by hatched areas and climatic regions by hatched areas; maps (scale 1:85 000 000) showing continental depression and typhoon trajectories in January and June. Period of record is not specified.

1929

7. Indochina. Service Météorologique. Annales. (Yearbooks.) 1928-1929. DAS C/ed AO-a.

...Contains a polychrome map (scale 1:3 200 000) for 1928 and a polychrome map (scale 1:4 000 000) for 1929 showing distribution of total amount of precipitation in Indochina (approximately 8°-24° N., 98°-108° E.). There are also polychrome maps, scale is not indicated (about 1:12 800 000) of the Indo-chinese Peninsula showing the monthly distribution of mean total amount of precipitation based on data for the period 1907-1926.

1930

8. Brändli, H. Climate. Siam, Bureau of Communications, Siam: Nature and Industry, pp. 21-26. Bangkok, 1930. DAS C/ee AO-n.

...Presents maps, scale is not indicated (about 1:25 000 000), of Thailand showing the monthly distribution of mean total rainfall amount (mm) by hatched areas based on data for the period 1901-1921.

9. Bruzon, E. and Carton, P. Le climat de l'Indochine et les typhons de la Mer de Chine. (The climate of Indochina and the typhoons of the China Sea.) 310 pp. (In French). Hanoi, 1930. DAS M82/596 B914cl.

...Includes polychrome maps, scale is not indicated (about 1:9 600 000), of Indochina and Thailand east of 100° E. longitude showing the monthly distribution of rainfall amount in mm and number of days with measurable rain for the period 1907-1929; polychrome maps, scale is not indicated (about 1:7 000 000), of Indochina and Thailand east of 100° E. longitude showing the annual distribution of rainfall amount in mm and number of days with measurable rainfall for the period 1907-1929.

10. Indochina, French. Service Météorologique. Atlas (Atlas.) 42 pp. (In French). Hanoi, 1930. DAS M82.3/596 I51at.

...Contains polychrome maps, scale is not indicated (about 1:9 600 000), of North Vietnam, Laos, Cambodia, Republic of Vietnam, and Thailand east of 100° E. longitude showing the distribution of monthly mean total amount of precipitation (mm) and mean number of days with measurable rain based on data summarized over the period 1907-1929; polychrome maps, scale is not

Source No. 10 continued.

indicated (about 1:7 000 000), of North Vietnam, Republic of Vietnam, Laos, Cambodia and Thailand east of 100°E longitude showing the distribution of annual mean total amount of precipitation (mm) and mean number of days with measurable rain based on data summarized over the period 1907-1929.

1931

11. Braak, C. Klimakunde von Hinterindien und Insulinde. (Climate of the East India Islands and Southeast Asia.) Handbuch der Klimatologie, Band IV, Teil R. 125 pp. (In German). Berlin, 1931. DAS M8 H236h Bd. 4 Teil R. Translated into English by Weather Information Branch, Headquarters, Army Air Forces, March 1943, and issued as a U. S. Navy reprint in January 1944. DAS M8 H236h Bd. 4 TR trans.

...Presents maps (scale 1:41 500 000) of Southeast Asia and East India Islands with climatic regions classified according to Köppen, bimonthly (January-November) and annual mean isohyets (also hatched areas), January and July mean isonephs, and the distribution of months with maximum amount and minimum amount of rainfall; maps (scale 1:65 000 000) of Southeast Asia and East India Islands with mean isobars and wind direction for sea areas for January, May, April, and November and bimonthly (January-November) mean sea-level temperature.

12. Iyer, V. Doraiswamy. Rainfall of Siam. Its normal distribution and relation to Indian rainfall; possibility of forecasting monsoon rains. India Meteorological Department. Scientific Notes, IV(38):69-85. Calcutta, 1931. DAS M(055) I39s.

...Includes maps (scale 1:16 000 000) of Thailand with seasonal (May-October and November-April) mean isohyets (inches) and mean number of rainy days by isolines, the distribution of months with maximum rainfall, and mean daily intensity of rainfall on a rainy day by isolines.

1934

13. Carton, P. Le climat de l'Indochine. (The climate of Indochina.) Extracted from Bulletin général de l'Instruction publique, no. 2, October 1934. 31 pp. DAS M82/596 C328c.

...Contains a map (scale 1:8 750 000) of the Indochinese Peninsula with prevailing winds by arrows for summer and winter.

1937

14. Great Britain. Meteorological Office. Weather in the China Seas and in the western part of the North Pacific Ocean. Volume II. Local information, Part 2A. China Sea south of latitude 10°N. including the Gulf of Siam, the east coast of the Malay Peninsula, the coast of Siam, and the south-west coast of Indo-China. pp. 71-110, 120-130. London, 1937. DAS M82/512.3 G786w.

Source No. 14 continued.

... Includes maps (scale 1:18 000 000) of the area 0°-15°N latitude and 95°E-120°E longitude with monthly wind roses and diminutive graphs showing monthly mean number of days with rain and mean cloud amount for individual stations (Bangkok in Thailand); map (scale 1:17 000 000) of area 0°-25°N latitude and 90°E-110°E longitude with diminutive graphs showing monthly mean rainfall amount for selected stations (Bangkok in Thailand).

1938

15. Great Britain. Meteorological Office. Weather in the China Seas and in the western part of the North Pacific Ocean. Volume I, Part 1. General information. 165 pp. London, 1938. DAS M82/512.3 G786w.

... Presents maps (scale 1:60 000 000) of the area 0°-45°N latitude and 100°E-140°E longitude with seasonal wind roses at specified heights (1500, 3000, 6000, and 10,000 feet) for individual stations (Bangkok in Thailand), maps (scale 1:87 500 000) of area 0°-55°N latitude and 95°E-180° longitude with February and August mean isotherms (°F) and mean isonephs (tenths); maps (scale 1:280 000 000) of the area 20°S-80°N latitude and 95°E-165°W longitude with monthly mean isobars (mb); maps (scale 1:45 000 000) of the area 0°-45°N latitude and 95°E-180° longitude with diminutive graphs showing monthly mean total rainfall amounts (mm) and mean number of days with rain for individual stations (Bangkok in Thailand); map (scale 1:50 000 000) of the area 0°-55°N latitude and 95°E-145°E longitude with diminutive graphs showing monthly mean number of days with thunderstorms for individual stations (Bangkok in Thailand).

1939

16. Iyer, V. Doraiswamy. Typhoons and Indian weather. India Meteorological Department, Memoirs, 26(6):93-130. Delhi, 1939. DAS M(055) I39m v. 26.

... Contains maps (scale 1:40 000 000) of South Asia and the western North Pacific (0°-30°N, 60°-140°E) with tracks of typhoons which struck the east coast of Indochina or south China and moved westward redeveloping into storms or depressions in India for each month (July-November) during the period 1884-1930. Some of the tracks crossed Thailand.

1940

17. Carton, P. Le climat de l'Indochine. (The climate of Indochina.) Le Climat de l'Indochine et les typhons de la Mer de Chine par E. Bruzon, P. Carton, et A. Romer, Tome I. 211 pp. (In French). Hanoi, 1940. DAS M82/596 B914cl.

... Includes polychrome maps, scale is not indicated (about 1:20 000 000), of Indochina and Thailand east of 100°E longitude showing the distribution of monthly rainfall amount (mm) based on data for an unspecified period; a polychrome map (scale 1:4 000 000) of Indochina and Thailand east of 100°E longitude with annual rainfall amount (mm) based on data for the period 1907-1934.

18. Deppermann, Charles E. Upper air circulation (1-6 km) over the Philippines and adjacent regions. 85 pp. Manila, 1940. DAS M57/914 P552u.

... Contains maps (scale 1:43 000 000) of area between 15°S and 23°N latitude and 90°E and 146°E longitude showing the mean extent, mean direction, and mean force of each air stream (Northerly, North Pacific Trade, South Pacific Trade, North Indian Westerlies, South Indian Westerlies, and Temp. Zone Westerlies) by symbols at surface and aloft (1-6 km) for January, April, July, and October. Period of record is not specified. --VTR.

1941

19. Taiwan (Formosa). Weather Bureau. Flight weather report for French Indochina, Thailand, and Dutch Indies. Vol. 1 and 2. (In Japanese). Taihoku, January 1941. DAS M82.2/596 T135f.

... Volume one contains maps (scale 1:12 000 000) of eastern Thailand, Cambodia, Laos, North Vietnam, and South Vietnam with monthly and annual mean isobars (mm), mean isotherms (°C), mean isohumes (%), mean isonephs (tenths), mean isohyets (mm), and mean number of days with precipitation by isolines. In volume two, there are also maps (scale 1:12 000 000) of the same area based on data summarized over an unspecified period at 0900 and 1500 with monthly prevailing wind direction by arrows; monthly and annual mean wind speed by isolines; monthly and annual mean isonephs (total and low clouds); monthly and annual mean low cloud heights by isolines; monthly and annual number of clear and overcast days by isolines; monthly and annual number of days with fog, haze, and thunderstorms by isolines; monthly and annual mean visibility by isolines.

1942

20. Thailand. Meteorological Department. Monthly meteorological bulletin. April 1937-1942. Issued by Siam, Hydrographic Service. Section of Meteorology, Bangkok, 1937-1942. DAS M06.1/593 T364.

... Presents maps (scale 1:9 000 000) of Thailand showing the distribution of total rainfall amount by shaded areas for each month (August 1939-August 1942).

21. U. S. Weather Bureau. Southeastern Asia, India, Farther India, and the East Indies. Preliminary Report 5. 264 pp. Washington, 1942. DAS M82 U587p No. 5.

... Includes the following: map (scale 1:8 750 000) of Indochinese Peninsula showing the prevailing wind direction by arrows for summer and winter; maps (scale 1:40 000 000) of Southeast Asia and East Indies with mean isonephs (tenths) for January and July; maps (scale 1:89 000 000) of Southeast Asia, East Indies, and northern Australia with January and July mean isobars, prevailing wind direction by arrows and mean position of Intertropic Front; maps (scale 1:89 000 000) of Southeast Asia, East Indies, and northern Australia with January and July streamlines at 10,000 feet and the mean position of the Intertropic Front; map (scale 1:89 000 000) of Southeast Asia, East Indies, and northern Australia showing the monthly mean positions of the Intertropic Front.

1943

22. India. Meteorological Department. Climatological atlas for airmen. 100 pp. Poona, 1943. DAS M82.3/54 I39ca.

... Contains a map (scale 1:28 000 000) of India and adjacent areas with annual mean isohyets (also hatched and stippled area) in inches; maps (scale 1:40 000 000) of India and adjacent areas with monthly mean isobars (mb and in.) and prevailing wind direction by arrows, monthly normal mean isohyets (also hatched and stippled areas) in inches and mean tracks of storms and depressions, monthly mean number of rainy days by isolines (also hatched and stippled areas), monthly mean number of days with thunder and fog by numerical values in Thailand; maps (scale 1:40 000 000) of India and adjacent areas with monthly resultant wind direction and velocity and streamlines at specified heights (0.5, 1.0, 2.0, 4.0, 6.0, and 8.0 km). The above maps include data for Thailand.

23. Miller, L. C. Flying conditions in Indo China. U. S. Weather Bureau, Special Report No. 313. 68 pp. 1943. DAS M82.2 U587s.

... Presents maps (scale 1:43 000 000) of the China Sea area, which includes the Indochinese Peninsula, showing the prevailing wind direction and speed by arrows and barbs for January, April, July, and October at surface and heights of 1, 2, 3, 4, 5, and 6 kilometers.

24. U. S. Army Air Forces. Preliminary climatic atlas of the world. Special Series, No. 1 (Revised). July 1943. DAS M82.3 U585s No. 1 1943.

... Includes maps (scale 1:18 000 000) of the Far East (15°S-50°N 75°E-145°E) with mean isobars (mb) and wind roses for January, April, July, and October; graphs presenting monthly values of mean total amount of precipitation (in.) for selected stations (Kanburi in Thailand), mean number of days with precipitation for individual stations (Phre and Rangsit in Thailand), mean temperature (°F) and absolute and mean extreme temperatures (°F) for selected stations (Bangkok in Thailand), and mean cloud amount (%) for individual stations (Rangsit in Thailand).

25. U. S. Army Air Forces. Preliminary climatic atlas of the world. Special Series, No. 1 (Supplement). July 1943. DAS M82.3 U585s.

... Contains maps (scale 1:18 500 000) of the Far East (10°S-50°N, 85°E-140°E) with graphs showing monthly values of mean daily maximum and minimum and absolute maximum and minimum temperatures (°F) based on data for an unspecified period at individual stations (Bangkok in Thailand).

26. U. S. Department of the Air Force. Weather conditions affecting the target area of Indo-China, Thailand, Burma, Malay States, and occupied southern China. Air Weather Service Special Study No. 16. 10 pp. Washington, November 1943. DAS M(055) U58s no. 16.



Source No. 26 continued.

...Includes maps (scale 1:35 000 000) of the area 5°S-30°N, 80°E-125°E with dates of onset of NE and SW monsoons; general prevailing weather conditions for January and July; showing topography of area.

1944

27. Eilertsen, Ernest B., and Banta, George S. The climate of Siam. Prepared under the Direction of Howard C. Davidson, Commanding General, Tenth U.S. Army Air Force. Calcutta, 1944? DAS M82.1/593 U581cl.

...Presents maps (scale 1:25 000 000) of Thailand showing the distribution of monthly cloud cover within specified limits (0-3, 3-5, 5-7, and 7-9 tenths) based on data for an unspecified period.

28. Gherzi, Ernest. Zikawei Observatory. Climatological atlas of East Asia. 175 pp. Shanghai, 1944. DAS M82.3/5 Z68.

...Contains maps (scale 1:12 000 000) of east Asia with monthly and annual mean isotherms (°C), annual absolute extreme isotherms (°C), annual mean range of temperature by isolines, monthly and annual mean isohumes, monthly and annual mean isohyets, monthly and annual mean number of rainy days by isolines, monthly and annual mean isobars (mm) and wind direction by arrows, selected tracks of typhoons which give a rather good idea of the possible and probable yearly distribution of these dangerous tropical centers, typical weather maps for each season and main climatic regions. East Asia includes Indochina, Thailand, China, Mongolia, southern Siberia, Formosa (Taiwan), Korea, Japan, and the Philippines.

29. India. Meteorological Department. Upper wind roses. Supplement to climatic charts of India and neighbourhood for meteorologists and airmen. Poona, 1944. DAS M82.3/54 I39c suppl.

...Consists of charts (scale 1:20 000 000) of India and adjacent areas with wind roses showing the monthly percentage frequencies of wind direction and velocity at heights of 0.5 and 1 km in the afternoon and at heights of 0.5, 1, 2, 3, 4, and 6 km in the morning for individual stations (possibly 1-5 stations in Thailand -- station names are not designated).

30. McIntosh, D. H. Tropical weather forecasting with particular reference to N. E. India, Burma and the Bay of Bengal. Synoptic Divisions Technical Memorandum No. 123, pt. 3, of Great Britain Meteorological Office. 1944. DAS M(055) G786s.

...Contains charts, scale is not indicated (about 1:100 000 000), of India, Pakistan, Burma, Ceylon, Thailand, and Indochina with normal air flow near surface during NE monsoon season; normal air flow in the lowest layers of the atmosphere in the post monsoon season; typical air flow near surface in premonsoon season; illustration of the formation of a tropical disturbance in the NE monsoon season; distribution of winds and airmasses in a western disturbance.

1945

31. Dobby, E. H. G. Winds and fronts over southeast Asia. The Geographical Review, 35(2):204-218. New York, 1945. DAS P.

...Presents diminutive maps (scale 1:140 000 000) showing monthly wind conditions and monthly positions of the Intertropical Front in southeast Asia.

32. India. Meteorological Department. Climatological charts of Indian monsoon area. Poona. 1945. DAS M82.3/54 I39cl.

...Consists of maps (scale 1:40 000 000) of the Indian Ocean and neighboring land areas (35°S-40°N, 25°E-130°E) with monthly mean isobars and wind roses (sea areas only); wind roses for individual stations (possibly 1 in Thailand--station names are not designated) showing the monthly percentage frequencies of wind direction and speed and streamlines at heights of 0.5, 1, 2, and 3 km.; monthly mean total rainfall amount and percentage number of rain hours over sea areas by hatched or stippled areas; monthly cyclone tracks.

1946

33. John, I. G., and Hare, F. K. Winter circulation over Burma, Thailand and Indo-China. Synoptic Divisions Technical Memorandum No. 120 of Great Britain Meteorological Office. 10 pp. 1946? DAS M(055) G786s.

...Presents synoptic maps (scale 1:16 000 000) of Burma, Assam, Thailand, Indochina, and Tenasserim for selected days at 1000 C. M. T. in January 1938 (data are plotted for individual stations with possibly 1 or more in Thailand--station names are not designated on maps); maps (scale 1:36 000 000) of southeast and east Asia (0°-50°N, 90°-160°E) showing general synoptic situations during the evening for selected days in January 1938.

1947

34. Bunnag, Charoon V., and Dhararaks, Khun Visisht. Climates of Siam. Royal Siamese Navy, Meteorological Department, Scientific Articles, No. 4. 16 pp. Bangkok, August 1947. DAS M82.1/593 B942c.

...Contains maps, scale is not indicated (about 1:6 200 000), of Thailand with January, May, and July wind roses based on data for an unspecified period.

35. Garbell, Maurice A. Tropical and equatorial meteorology. 237 pp. New York-Chicago, 1947. DAS M G213.

...Includes the following: map (scale 1:50 000 000) of eastern Asia (10°-60°N, 100°-130°E) showing the 4 principal modification routes of polar-continental air-masses; maps (scale 1:65 000 000) of Southeast Asia (10°S-25°N, 100°-140°E) showing the general flow patterns at surface and specified heights (1, 2, 3, 4, and 6 km) for January, April, July, and October.

36. Guilmet, Bernard. Le temps en Indochine à l'usage des navigateurs aériens. (Weather in Indochina for the use of aircraft navigators.) 24 pp. (In French). circa 1947. DAS PF2924.

...Presents rough maps. scale is not indicated (about 1:42 000 000) of south-east Asia with wind trajectories at the surface and heights of 1000, 2000, 3000, 4000, and 6000 meters for January, April, July, and October.

1948

37. Kao, Y. S. General circulation of the lower atmosphere over the Far East. Memoirs of the Institute of Meteorology, Academia Sinica. 16(1): 1-7. Nanking, July 1948. DAS M(055) A168m vol. 16 no. 1.

...Contains maps (scale 1:50 000 000) of the area 5°-45°N latitude and 80°-150°E longitude with monthly mean air streams at 10,000-ft. level. Period of record is not specified. -- VTR.

38. Tao, Shih-Yen. The mean surface air circulation over China. Academia Sinica. Institute of Meteorology, Memoirs, 15(4):1-7. Nanking, July 1948. DAS M(055) A168m.

...Includes maps (scale 1:65 000 000) of part of Siberia, China, Japan, the Philippines, Laos, Cambodia, North Vietnam, South Vietnam, Thailand, Burma, and East Pakistan with monthly mean surface streamlines based on observations during the period 1931-1936.

1949

39. India. Meteorological Department. Meteorology for airmen in India. Part I. General meteorological features. 58 pp. Bombay, 1949. DAS M82.1/59 I39m pt. 1.

...Contains a map (scale 1:36 500 000) of South Asia (5°-40°N, 45°E-115°E) with annual mean isohyets in inches based on data for an unspecified period; maps (scale 1:40 000 000) of South Asia (0°-40°N, 40°E-110°E) with streamlines and wind roses for individual stations (station names are not recorded--several stations are in Thailand) at heights of 1 and 3 km for January, April, July, and October based on data for an unspecified period.

1950

40. United Nations. Economic Commission for Asia and the Far East. Flood damage and flood control activities in Asia and the Far East. Flood Control Series No. 1. 81 pp. Bangkok, October 1950. DAS M79.7 U58f.

...Presents maps (scale 1:55 000 000) with mean sea-level isobars (mb) and surface wind by arrows for January and July based on data for an unspecified period.

41. Venkiteshwaran, S. P. Winds at 10 kms. and above over India and its neighbourhood. India Meteorological Department, Memoirs, 28(2):55-120. Delhi, 1950. DAS M(055) I39m.

...Includes maps (scale 1:29 000 000) of India and adjacent areas extending from 0° to 35°N. and from 45°E to 110°E with lines showing the general flow of air and plotted winds at the different pilot balloon stations at specified heights (10, 12, 14, 16, 18, and 20 kms ) for each month. The maps do not present plotted wind data for Thailand.

1951

42. Strahler, Arthur N. Physical geography. 442 pp. New York-London, 1951. DAS 551.4 S896p.

...Contains maps (scale 1:100 000 000) of South and Southeast Asia illustrating one interpretation of the airmass source regions and circulation patterns which govern the equatorial and tropical climates for 2 seasons (Dec.-Feb and June-August).

43. Thompson, B.W. An essay on the general circulation of the atmosphere over South-East Asia and the West Pacific. Quarterly Journal of the Royal Meteorological Society, 77(334):569-597. London, October 1951. DAS M(05) R888q.

...Includes maps (scale 1:75 000 000) of area between Japan and the Equator and longitudes 80°E to 150°E showing the following: most common flow patterns at 2,000 and at 10,000 ft. from November to March; airflows of May and their interrelationship at 2,000 and at 10,000 ft ; general flow pattern in June at 2,000 and at 10,000 ft ; most common flow pattern at 10,000 ft. during late July and in September. -- VTR.

1952

44. Ramage, C. S. Relationship of general circulation to normal weather over southern Asia and the western Pacific during the cool season. Journal of Meteorology, 9:403-408, Boston, December 1952. DAS M(05) A512j.

...Presents a map (scale 1:60 000 000) of tropical Pacific, China Sea, Southeast Asia, and Bay of Bengal showing the distribution of the frequency of the formation of depressions by isopleths.

1953

45. U.S. Quartermaster Research and Development Center, Natick, Mass. Environment of Southeast Asia. Environmental Protection Division, Report No. 219. 45 pp. August 1953. DAS M86 U585r no. 219.

...Includes maps (scale 1:14 250 000) of Southeast Asia (Burma, Thailand, Laos, Cambodia, Vietnam, and Malaya) with seasonal (June-August and December-February) mean total amount of precipitation (in ) and prevailing wind direction; graphs presenting monthly values of mean, mean daily maximum, and mean daily minimum temperatures (°F) for selected stations (Bangkok, Nakhon Ratchasima, and Phuket in Thailand).

1955

46. Thailand. Meteorological Department. An account of the droughts experienced in certain parts of Thailand during the year 1954. 1 p. Bangkok, November 7, 1955. In its [Miscellaneous Papers]. DAS M06.2/593 T364mi.

... Contains a map (scale [1:11 000 000]) of Thailand showing the distribution of the annual rainfall amount (mm ) by hatched and stippled areas.

47. Watts, I. E. M. Equatorial weather with particular reference to southeast Asia. 224 pp. New York, 1955. DAS M82 W349e.

... Includes maps (scale [1:65 000 000]) of Southeast Asia south of approximately 20°N with surface streamlines for January, April, July, and October; maps (scale [1:30 000 000]) of Southeast Asia south of 15°N with mean rainfall amount (inches) by hatched areas for January, April, July, and October; map (scale [1:22 500 000]) of Southeast Asia south of 15°N with annual rainfall amount (inches) by hatched areas; maps (scale [1:55 000 000]) of Southeast Asia south of 15°N with mean wind streams at 20,000 ft for summer and winter and at 30,000 ft for winter. -- VTR.

1956

48. Thailand. Meteorological Department. Monthly and annual rainfall of Thailand. 1953, 1955-1956. Bangkok. DAS M06.1/593 T364mr.

... Presents maps (scale [1:6 000 000]) of Thailand showing the distribution of annual mean rainfall amount (mm ) based on data for the period 1932-1952 in the 1953 report and based on data computed from the entire period of record of individual stations in the 1956 report. There are also maps (scale [1:25 000 000]) of the Southwest Pacific and adjacent land areas with tracks of typhoons and depressions in 1955 and 1956.

1958

49. Thailand. Meteorological Department. Climatological data. 10 year period 1943-1952. Vol. 7. 90 pp. (In Thai and English). Bangkok, 1958? DAS M06.3/593 T364cl v.7 1943-1952.

... Includes polychrome maps (scale [1:17 500 000]) of Thailand showing the distribution of monthly mean total amount of rainfall (mm ) and monthly mean temperature (°C). Period of record is not specified.

50. Thompson, Will F. Analogs of Canal Zone climate in India and Southeast Asia. U. S. Quartermaster Research and Engineering Center. Environmental Protection Research Division. Technical Report EP-91. Natick, 1958. DAS M86 U585t EP-91.

... Contains maps (scale [1:16 800 000]) of area 0°-35°N latitude and 70°E-120°E longitude with numerical values for individual stations of mean temperature for the warmest month, mean daily maximum temperature for the warmest month, mean temperature for the coldest month, mean daily minimum temperature for the coldest month, mean daily temperature range for the warmest

Source No. 50 continued.

month, mean annual amount of precipitation, mean precipitation amount for the wettest month, mean number of wet months, mean relative humidity for the driest month, mean cloudiness for the wettest month, and mean wind speed for the wettest month. Period of record is not specified. -- VTR.

1959

51. Chatterjee, Sujan Bandhaba. Monsoon and its influence on Southeast Asia people. International Geographical Union Regional Conference in Japan, August 28-September 3, 1957, Tokyo and Nara, Proceedings. pp. 582-589. Tokyo, 1959. DAS 910.6 I61pr.

... Presents a map (scale 1:65 000 000) of Southeast Asia and the East Indies with mean isobars (mb), rainfall distribution by hatched area, areas of thunderstorms, and position of Intertropical Front.

52. Thailand. Meteorological Department. An investigation of typhoons and tropical depressions. Bangkok, 1959. DAS M15.23 T364in.

... Consists of charts (scale 1:20 000 000) of monsoon Asia with monthly typhoon tracks for each year (1947-1956) and for the 10-year period (1947-1956).

1960

53. Ramage, C. S. (ed.). Notes on the meteorology of the tropical Pacific and Southeast Asia. U. S. Air Force, Cambridge Research Center, Geophysics Research Directorate. Air Force Surveys in Geophysics no. 126. 174 pp. Bedford, Massachusetts, June 1960. DAS M(055) U58as no. 126.

... Includes the following: map (scale 1:38 000 000) of southeast Asia (5°-40°N, 65°-140°E) showing mean resultant 30,000-ft. winds (direction by arrows; isotachs in knots) and axis of southern jet stream for winter; maps (scale 1:37 000 000) of southeast Asia (0°-35°N, 95°-145°E) with mean isonephs (oktas) for December, March, May, and August. The appendices consists of reprints of articles by C. S. Ramage. Abstracts of these articles, which contain maps of southeast Asia, appear in this bibliography.

54. Ramakrishnan, K. P.; Sreenivasaiah, B. N.; Venkiteshwaran, S. P. Upper air climatology of India and neighbourhood in the monsoon seasons. Symposium on monsoons of the world held at Meteorological Office, New Delhi, 19-21 February 1958. pp. 3-34. Delhi, 1960. DAS M53.21 S989sy.

... Presents maps (scale 1:62 500 000) of India and neighborhood showing the distribution of normal mean temperature (2°A) at levels of 850, 700, 500, 300, 200, and 100 mb. for May, June, July, and November and streamlines and isotachs at heights of 1.5, 3.0, 6.0, 9.0, 12.0, and 16.0 km. for May, June, July, and November.

55. U. S. International Cooperation Administration. An air system requirements plan and survey for the Kingdom of Thailand. 116 pp. December 1960. DAS M:629.13 U584air.

... Contains a map (scale 1:3 750 000) with the location of the proposed and existing meteorological stations of Thailand.

56. Vitvitskii, G. N. Klimaty zarubezhnaĭ Azii. (Climates in Asia outside of the U. S. S. R.). 396 pp. (In Russian). Moscow, 1960. DAS M82.1/5 V854kl.

... Includes maps (scale 1:80 000 000) of southeast Asia (5°N-40°N, 80°E-145°E) showing the air currents at the height of 3 km by arrows for June and first half of July, second half of July, and August; map (scale 1:11 200 000) of Thailand showing the annual distribution of total precipitation amount (mm) by hatched areas. These maps are based on data for an unspecified period. Additional maps in the source are for larger areas.

1961

57. Dobby, E. H. G. Monsoon Asia. 381 pp. Chicago, 1961. DAS M53.21 D632mo.

... Presents maps (scale 1:90 000 000) showing airmasses and air movements over Monsoon Asia at the yearend and at midyear.

58. Kendrew, W. G. The climates of the continents. Fifth edition. 608 pp. Oxford, 1961. DAS M8 K33c 1961.

... Contains a map (scale 1:120 000 000) of eastern and southeastern Asia showing the trajectories of dominant airmasses (p. 194) and maps (scale 1:80 000 000) of southeastern Asia and Indonesia with mean isobars (in ) and streamlines (p. 215) for January and July.

59. Sakornratana, Kachit. Observational studies on southwest monsoon weather over Thailand. U. S. -Asian Weather Symposium, John Hay Air Base, Philippine Islands, 13-17 February 1961. U. S. -Asia Weather Symposium; Exchange of Knowledge & Ideas for Increased Understanding. 16 pp. 1st Weather Wing, 1961. DAS M U582uni.

... Presents maps (scale 1:25 000 000) of southeast Asia with streamlines of prevailing wind flow at the surface during summer and mean monthly position of Intertropical Front.

1962

60. Barton, Thomas Frank. Thailand's rainfall distribution by geographic regions. *Journal of Geography*, 61(3):110-118. Chicago, 1962. DAS P.

... Contains maps (scale 1:15 000 000) of Thailand with mean annual rainfall, mean seasonal rainfall (May-October and November-April), mean rainfall during 8 consecutive wettest months and rainfall during 4 consecutive driest months by hatched areas. In addition to the above, a map (scale 1:15 000 000) of Thailand showing the geographic regions is included. All these maps are based on data from 1932-1952.

61. Michigan. University. Department of Geography. Analysis of geographic and climatic factors in coastal southeast Asia. Report No. 04231-1-F. 178 pp.

...Presents the following: maps (scale 1:14 250 000) of southeast Asia with annual mean isohyets (also hatched areas) in inches and prevailing surface wind direction by arrows for 2 seasons (June-August, December-February); map (scale 1:12 125 000) of southeast Asia with graphs of monthly amounts of precipitation and numerical annual amounts in inches for individual stations (Bangkok, Sattahib, and Prachuap Khire Khan in Thailand); map (scale 1:12 125 000) of southeast Asia showing the precipitation regions and the location of weather stations (Bangkok in Thailand).

62. Pendleton, Robert L., with the assistance of Robert C. Kingsbury and others. Thailand; aspects of landscape and life. An American Geographical Society Handbook. 321 pp. New York, 1962. DAS 915.93 P398t. Review by Thomas Frank Barton in Journal of Geography, 61(5):225-226, May 1962. DAS P.

...Presents maps (scale 1:20 000 000) of Thailand showing the distribution of mean total amount of rainfall (inches) and mean temperature (°C and °F) based on data for an unspecified period for January, April, July, and October.

63. Sternstein, Lawrence. The rainfall of Thailand. This study was supported by the U. S. Army Quartermaster Corps, Research and Engineering Command. Contract No. DA19-129-QM-1582 (OI 5101). 149 pp. Indiana University Foundation Research Division. Bloomington, Indiana, August 15, 1962. DAS M77.2 S839ra.

...Includes maps (scale 1:9 600 000) of Thailand with (1) generalized depression and typhoon tracks, winds generally associated with rainfall and generalized position of the Intertropical Convergence Zone, (2) annual mean isohyets (in. and mm), (3) rainfall regions, (4) graphs showing the monthly mean total rainfall amounts for 23 stations, (5) annual mean number of rainy days by isolines, (6) annual mean intensity of rainfall by isolines and (7) annual relative variability of rainfall by isolines. There are also maps (scale 1:19 800 000) of Thailand with monthly mean isohyets (mm).

64. Thailand. Meteorological Department. Monthly rainfall. January-April, July 1958; November 1958-July 1959; October 1959-April 1962; June-July 1962. Bangkok. DAS.

...Contains maps (scale 1:6 000 000) of Thailand with mean isohyets (mm.) and departures of rainfall from the normal by isolines for each month January-April, July 1958, November 1958-July 1959, October 1959-April 1962, June-July 1962.

1963

65. Gabites, J. F. The origin of tropical cyclones. Japan Meteorological Agency Technical Report No. 21. Proceedings of the Interregional Seminar on Tropical Cyclones in Tokyo, 18-31 January 1962. pp. 53-58. Tokyo, March 1963. DAS M(055) J35rep.



Source No. 65 continued.

... Presents maps (scale  $\square 1:150\ 000\ 000$ ) of the tropical Pacific and Southeast Asia showing the depths of the main air streams in February and August, constructed from monthly mean data and charts for the 850, 700, 500, 300, and 200 mb surfaces by Wiederanders.

66. U.S. Air Weather Service. Terminal forecast manual for Thailand with emphasis on Don Muang. various pagings. September 1963. DAS M09.3 U581tt.

... Includes a map (scale  $\square 1:7\ 700\ 000$ ) of Thailand showing the network of meteorological stations.

1964

67. Thailand. Meteorological Department. Monthly temperature. Bangkok, 1964. DAS M82.3/593 T364mo.

... Consists of polychrome maps (scale 1:8 000 000) of Thailand showing the monthly distribution of mean temperature ( $^{\circ}\text{C}$ ) based on 24 years of data (1937-1960).

68. U.S. Air Weather Service. Climatic atlas of Indochina (excluding Malaya and Burma). Special Study 105-6. 265 pp. APO San Francisco, December 1964. DAS M(055) U58s 105-6.

... Presents maps (scale  $\square 1:8\ 800\ 000$ ) of Indochina (Cambodia, Laos, South Vietnam, North Vietnam, and Thailand) with monthly mean maximum and mean minimum isotherms ( $^{\circ}\text{F}$ ), mean isohumes (%), mean number of days with precipitation by isolines, maximum and minimum isohyets (inches), mean isohyets (inches), maximum amount of precipitation (inches) in 24 hours by isolines, mean number of days with thunderstorms by isolines, mean number of days with fog by isolines, mean isonephs (%), mean number of days with total cloud cover  $\leq 3/10$  and  $\geq 7/10$  by isolines, mean number of days with total cloud cover  $\leq 3/10$  and visibility  $\geq 2\ 1/2$  miles at 0600 and 1300 LST by isolines, mean number of days with cloud cover below 10,000 feet  $\leq 3/10$  and visibility  $\geq 2\ 1/2$  miles at 0600 and 1300 LST by isolines, mean number of days with ceiling  $\geq 1,000$  ft and visibility  $\geq 2\ 1/2$  miles at 0600 and 1300 LST by isolines, mean number of days with ceiling  $\geq 1,000$  ft and visibility  $\geq 2\ 1/2$  miles and winds  $\leq 10$  knots at 0600 and 1300 LST by isolines and mean isobars (mb). There is also a topography map (scale  $\square 1:9\ 000\ 000$ ) of the same area. The climatic maps are based on data for 2 to over 50 years.

1965

69. Ohman, Howard L. Climatic atlas of Southeast Asia (Temperature, rainfall, temperature-humidity index). U.S. Army Natick Laboratories, Mass., Technical Report ES-19. 94 pp. Natick, December 1965. DAS M(055) U586te.

Source No. 69 continued.

... Consists of polychrome maps (scale 1:6 600 000) of Southeast Asia showing the distribution of monthly mean temperatures (°F), monthly mean daily maximum and mean daily minimum temperatures (°F), monthly absolute maximum temperatures (°F), monthly mean total amount of precipitation (inches), annual mean total amount of precipitation (inches) and mean number of rainy days, monthly mean number of rainy days, and monthly temperature-humidity index. There is also a map (scale 1:6 600 000) of Southeast Asia showing the location of stations.

70. United Nations. Committee for Coordination of Investigations of the Lower Mekong River Basin. Lower Mekong hydrologic yearbook. 1964-1965. 2 vols. Text and legends in English and French. DAS M79/596 U5831o.

... Includes maps (scale 1:4 900 000) of Thailand, Laos, Cambodia, and Republic of Vietnam with annual mean isohyets (cm) for 1964 and 1965.

71. U. S. Air Weather Service, 1st Weather Wing. Climate of Thailand. Special Study 105-10. 127 pp. APO San Francisco, August 1965. DAS M(055) U58s 105-10.

... Presents a map (scale 1:6 200 000) of Thailand showing the location of climatic stations; maps, scale is not indicated (about 1:12 500 000), of Thailand showing the distribution of mean maximum temperatures, mean minimum temperatures, mean relative humidity, mean amount of precipitation (inches), mean number of days with precipitation, mean number of days with thunderstorms and mean number of days with fog by hatched areas for January, April, July, and October; maps, scale is not indicated (about 1:16 500 000), of Thailand, showing the distribution of the (1) number of days with cloud cover  $\leq 3/10$  and visibility  $\geq 2 \frac{1}{2}$  miles at 0700, 1000, 1300, and 1600 LST, (2) number of days with ceiling  $\geq 5000$  ft and visibility  $\geq 5$  miles at 0700, 1000, 1300, and 1600 LST and (3) number of days with ceiling  $\geq 1000$  ft and visibility  $\geq 2 \frac{1}{2}$  miles at 0700, 1000, 1300, and 1600 LST for January, April, July, and October; maps, scale is not indicated (about 1:13 000 000), showing the distribution of the January, April, July, and October prevailing surface streamlines.

72. U. S. Air Weather Service. Climatic summary, Republic of Vietnam, North Vietnam, Laos. March, April, June, July. APO San Francisco, Det 14, 30th Weather Squadron. 1965. DAS M82.2/592 U581cl.

... Contains maps (scale 1:11 000 000) of Thailand, North Vietnam, Republic of Vietnam, Laos, and Cambodia showing the distribution of the % frequency of occurrence of visibility  $\leq 2$  miles at 0700 and 1300 LST by isolines, mean daily maximum isotherms with numerical values of record high temperatures at selected stations and mean daily minimum isotherms with numerical values of record low temperatures for March, April, June, and July at selected stations; maps (scale 1:11 500 000) of Southeast Asia showing mean wind flow at low level (2,000 ft.) and at levels of 850, 700, 500, 400, 300, and 200 mb for March, April, June, and July.

73. U.S. Air Weather Service. Far East climatic atlas. Special Study 105-7. 243 pp. January 1965. DAS M(055) U58s 105-7.

... Consists of maps (scale  $\approx 1:36\ 000\ 000$ ) of the Far East ( $5^{\circ}$ - $60^{\circ}$ N,  $90^{\circ}$ - $165^{\circ}$ E) with monthly mean low-level flow and mean position of the jet stream; monthly mean daily maximum and mean daily minimum temperatures ( $^{\circ}$ F) by isolines; monthly mean number of days with measurable precipitation, snow and snow cover by isolines; monthly mean isohyets (inches); mean number of days with thunderstorms by isolines for the period November through March; monthly predominant type of precipitation; monthly mean altitude (ft) of freezing level by isolines; monthly percent of time total cloud cover  $< 3/10$ , percent of time ceiling  $\geq 5000$  and visibility  $\geq 5$ , percent of time ceiling  $\geq 1000$  and visibility  $\geq 3$ , and percent of time ceiling  $\geq 500$  and visibility  $\geq 2$  by isolines.

1966

74. Fujioka, Yoshikazu. An outline of climate of Southeast Asia. Water Resource Utilization in Southeast Asia, Symposium Series III, pp. 51-54. Kyoto University, 1966. DAS M(055) K99sy.

... Contains maps, scale is not indicated (about  $1:87\ 500\ 000$ ), of Southeast Asia, the Philippines, and the East Indies with January and July mean isobars (mb) and wind direction by arrows; a map, scale is not indicated (about  $1:60\ 000\ 000$ ), of Southeast Asia, northern Australia, East Indies, and the Philippines showing the annual distribution of mean total amount of precipitation; maps, scale is not indicated (about  $1:125\ 000\ 000$ ), of Southeast Asia, northern Australia, East Indies, and the Philippines with January and July mean isotherms ( $^{\circ}$ C).

75. Takenouchi, Toshio. A hydrologic study of the Mekong basin. Water Resource Utilization in Southeast Asia, Symposium Series III, pp. 55-66. Kyoto University, 1966. DAS M(055) K99sy no. 3.

... Includes a map, scale is not indicated (about  $1:9\ 500\ 000$ ), of the lower Mekong basin of the Indochinese Peninsula showing the distribution of annual mean total amount (mm) of precipitation. The lower Mekong basin sprawls across Cambodia, Laos, Thailand, and Vietnam.

76. U.S. Air Weather Service. Ceiling/visibility atlas for Southeast Asia (5000 & 5). Special Study 105-12/2. Various pagings. May 1966. DAS M(055) U58s. 105-12/2.

... Consists of maps (scale  $\approx 1:8\ 600\ 000$ ) of Southeast Asia showing the distribution of monthly mean number of days with ceiling  $\geq 5000$  feet and visibility  $\geq 5$  miles at 0700, 1000, 1300, 1600, and 1900 LST by isolines based on data for 2-10 years. Southeast Asia includes North Vietnam, Republic of Vietnam, Laos, Cambodia, and Thailand.

77. U.S. Air Weather Service. Ceiling/visibility atlas for Southeast Asia (1000 & 2 1/2). Special Study 105-12/1. Various pagings. APO San Francisco, April 1966. DAS M(055) U58s 105-12/1.

Source No. 77 continued.

... Consists of maps (scale 1:8 750 000) of Southeast Asia showing the distribution of mean number of days with ceilings  $\geq$  1000 feet and visibility  $\geq$  2 1/2 miles at 0700, 1000, 1300, 1600, and 1900 LST by isolines based on data for 2-10 years. Southeast Asia includes North Vietnam, Republic of Vietnam, Laos, Cambodia and Thailand. This study supersedes the ceiling/visibility portion of U. S. Air Weather Service, Special Study 105-6. "Climatic Atlas of Indo China," December 1964.

78. U. S. Air Weather Service. Climate of Southeast Asia. Special Study 105-11/1-12. 12 volumes. APO San Francisco, 1965-1966. DAS M(055) U58s 105-11/1-12.

... Presents maps (scale 1:9 000 000) of Southeast Asia showing the distribution of monthly mean number of days with precipitation by isolines; monthly mean isohyets (inches); monthly maximum amount of precipitation (inches) in 24 hours by isolines; maximum and minimum monthly amounts of precipitation by isolines; monthly mean number of days with thunderstorms by isolines; mean isonephs (%); monthly mean number of days with total cloud cover  $\leq$  3/10 by isolines; monthly mean frequency of visibility  $\leq$  2 miles at 0700 and 1300 at individual stations (Bangkok, Chiangmai, and Udon Thani in Thailand); monthly mean number of days with fog by isolines; monthly mean maximum and mean minimum temperatures ( $^{\circ}$ F) by isolines; monthly mean isohumes (%); monthly mean position of Polar Front and mean wind flow (knots) at specific heights (2000, 5000, 10,000, 20,000, 30,000, and 40,000 feet); monthly mean number of favorable days for low-level operations (ceiling  $\geq$  2000 feet and visibility  $\geq$  3 miles), mid level operations (ceiling  $\geq$  5000 feet and visibility  $\geq$  5 miles), and high-level operations ( $\leq$  3/8 cloud cover below 10,000 ft and visibility  $\geq$  5 miles); monthly mean surplus deficit rainfall by isolines; mean tractionability; monthly (April-December) prevailing surface streamlines; topography of the area.

79. U. S. Air Weather Service. Sky cover/visibility atlas for Southeast Asia (3/10 & 2 1/2). Special Study 105-12/3. Various pagings. August 1966. DAS M(055) U58s 105-12/3.

... Consists of maps (scale 1:8 800 000) of Southeast Asia with isolines showing the distribution of monthly mean number of days with sky cover  $\leq$  3/10 and visibility  $\geq$  2 1/2 miles at 0700, 1000, 1300, 1600, and 1900 LST based on data for 2-10 years. Southeast Asia includes North Vietnam, Republic of Vietnam, Laos, Cambodia, and Thailand. This study supersedes the sky cover/visibility portion of U. S. Air Weather Service, Special Study 105-6, "Climatic Atlas of Indo China," December 1954.

1967

80. Atkinson, Gary D. Thunderstorms in Southeast Asia. U. S. Air Weather Service, 1st Weather Wing, Technical Study 11. 55 pp. APO San Francisco, Calif., March 1967. DAS M(055) U58tes no. 11.

Source No. 80 continued.

...Presents maps (scale 1:13 500 000) of Southeast Asia (Thailand, Laos, Cambodia, North Vietnam, and Republic of Vietnam) showing the location of stations, the geographical areas with similar thunderstorm regimes, and monthly and annual mean number of days with thunderstorms by isolines.

81. Chang, Jen-hu. The Indian summer monsoon. *The Geographical Review*, 57(3):373-396, New York. July 1967. DAS P.

...Presents maps (scale 1:60 000 000) of Monsoon Asia with mean resultant winds at 700 mb in April and at 200 mb in June; examples of flow patterns at 200 mb at 0300 GMT on August 22 and August 26, 1955; and mean isotherms at 500 mb in July.

82. Maruyama, Eizo. Rice cultivation and water balance in Thailand. *Geophysical Magazine*, 33(4):337-353, Tokyo, 1967. DAS P.

...Contains maps, scale is not indicated (about 1:15 200 000), of Thailand with annual mean isohyets (mm.), annual evapotranspiration (mm) by isolines, and water deficiency and water surplus for rice growing by isolines. There is also a map, scale is not indicated (about 1:20 000 000), of Thailand showing the location of synoptic stations and major rivers in Thailand.

83. Ogino, Kazuhiko. A climatological classification of Thailand with special reference to humidity. *Southeast Asian Studies*, 5(3):500-531. (In Japanese) Kyoto, December 1967.

... Maps showing the regions of Thailand classified according to humidity are presented. -- From MGA 19.11-500.

84. Schutz, C. Monsoonal influences on wind, rain, and cloud throughout Southeast Asia: a study covering the peninsula and archipelago. Research Memorandum RM-5418-PR. 152 pp. The Rand Corporation, Santa Monica, California, October 1967. DAS 507.2 R186r no. 5418-PR.

...Presents maps (scale 1:97 500 000) of Southeast Asia showing the seasonal mean position of the Intertropical Convergence Zone and typical surface streamlines for January, April, July, and October. There are also maps (scale 1:9 300 000) of Southeast Asia (Burma, Thailand, Laos, Cambodia, North Vietnam, and South Vietnam) with seasonal wind roses for individual stations; seasonal cloud clocks showing the frequency (%) of clear days (< 1/8 to 4/8), days with broken sky (5/8-7/8) and overcast (8/8) for morning, midday, and evening for individual stations; seasonal distribution of precipitation by hatched areas and by numerical values for individual stations.

85. U.S. Air Weather Service. Low level persistency analysis for Southeast Asia (2000 a/o 3). Special Study 105-13/2. Various pagings. March 1967. DAS M(055) U58s 105-13/2.

Source No. 85 continued.

... Consists of maps (scale 1:8 750 000) of Southeast Asia with isolines showing the distribution of monthly percent frequency of ceilings < 2000 ft and/or visibility < 3 mi at 0700, 1300, and 1900 LST and monthly probability of ceilings < 2000 ft. and/or visibility < 3 miles continuing from 0700 to 1000 LST, continuing from 0700 to 1300 LST, continuing from 0700 to 1600 LST, continuing from 0700 to 1900 LST, continuing from 0700 to 0700 LST, continuing from 1300 to 1600 LST, continuing from 1300 to 1900 LST, continuing from 1300 to 0700 LST, and continuing from 1900 to 0700 LST based on data for 2-10 years.

86. U.S. Air Weather Service. Sky cover/visibility atlas for Southeast Asia ( $\leq 3/10$  below 10,000 &  $> 5$ ). Special Study 105-12/4. Various pagings. January 1967. DAS M(055) U58s 105-12/4.

... Consists of maps (scale 1:8 800 000) of Southeast Asia with isolines showing the distribution of monthly mean number of days with  $\leq 3/10$  sky cover below 10,000 ft and visibility  $> 5$  miles at 0700, 1000, 1300, 1600, and 1900 LST based on data for 2-10 years. Southeast Asia includes North Vietnam, Republic of Vietnam, Laos, Cambodia, and Thailand. This study supersedes the sky cover/visibility portion of U.S. Air Weather Service, Special Study 105-6, "Climatic Atlas of Indo China," December 1964.

87. Wexler, Ruth L. The relationship between daily and annual rainfall in Thailand. U.S. Air Weather Service. Proceedings of the Technical Exchange Conference, 4-7 April 1967 (Its AWS Technical Report 196). pp. 226-242. July 1967. DAS M(055) U58a 196.

... Presents maps (scale 1:5 000 000) of Thailand showing the location of stations. daily rainfall intensity (mm) attained at 50 percentile and at 95 percentile by isolines and estimated annual average maximum daily rainfall amount (mm) based on annual rainfall for the period 1938-1960.

1969

88. Crutcher, H. L.; Nash, S. Bintasant; Kropp, D. K. A note on climatology of Thailand and Southeast Asia. U.S. Environmental Science Services Administration, Environmental Data Service, ESSA Technical Memorandum EDSTM 10. 166 pp, Silver Spring, May 1969. DAS M(055) U5883 tem EDSTM 10.

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92. Thailand. Meteorological Department. Weekly weather report ... and weather outlook ..., November 1958-... (December 1970). Title varies: Weekly temperature and rainfall...and weather outlook, November 1958-October 1960; Weekly temperature and rainfall of Thailand..., November 1960-July 1962; Weekly rainfall over Thailand..., July-October 1962; Weekly weather report..., October 1962-October 1963. (In Thai and English). Bangkok. DAS M06.1/593 T364we.

... Includes maps (scale 1:6 000 000) of Thailand for November 1958-1962 and maps (scale varying from 1:6 500 000 to 1:7 000 000) of Thailand for 1963-1970 with weekly mean isohyets (mm ).



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