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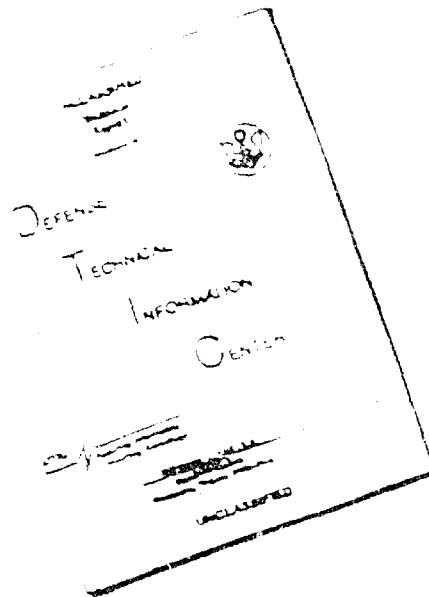
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# NATIONAL INTELLIGENCE SURVEY

MALAYSIA  
SINGAPORE

ADB951873

WEATHER and CLIMATE

AUGUST 1969



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## TABLE OF CONTENTS

*This Section 23 and Section 23 on NIS 44B, dated  
March 1962, supersede Section 23 on NIS 44A, dated  
January 1960, copies of which should be destroyed.*

	<i>Page</i>
A. General weather and climate .....	1
B. Climatic controls .....	2
1. General circulation and air masses .....	2
a. Major semipermanent pressure systems .....	2
b. Intertropical convergence zone .....	3
c. Air masses .....	3
2. Migratory pressure systems and fronts .....	3
a. Extratropical cyclones and fronts .....	3
b. Tropical cyclones .....	3
c. Easterly waves .....	3
3. Other controls .....	6
a. Topographic .....	6
b. Latitudinal and oceanic .....	6
C. Special phenomena .....	6
1. Local winds .....	6
a. Foehn winds .....	6
b. Jet-effect winds .....	6
2. Squalls .....	6
a. Sumatra .....	6
b. Barat .....	7
3. Floods .....	7
4. Haze .....	7
D. Weather elements and climatic conditions .....	7
1. Temperature .....	7
a. Surface .....	7
b. Upper-air .....	7
2. Humidity .....	8
3. Precipitation .....	9
4. Cloudiness .....	10
5. Aircraft icing .....	15
6. Visibility .....	15
7. Winds .....	19
a. Surface .....	19
b. Upper-air .....	20
8. Thunderstorms and turbulence .....	21
9. Combinations of weather elements .....	24
E. Climatic data tables .....	24
F. Bibliography .....	57

~~TOP SECRET - SECURITY INFORMATION~~

## FIGURES

	<i>Page</i>
Fig. 1 Mean sea-level pressure, January and July ( <i>maps</i> )	2
Fig. 2 Generalized surface airflow, January-June ( <i>maps</i> )	4
Fig. 3 Generalized surface airflow, July-December ( <i>maps</i> )	5
Fig. 4 Temperatures ( <i>map</i> )	8
Fig. 5 Upper-air temperature and pressure at Singapore Airport ( <i>chart</i> )	9
Fig. 6 Relative humidity in morning and afternoon ( <i>map</i> )	10
Fig. 7 Mean precipitation, West Malaysia and Singapore ( <i>map</i> )	11
Fig. 8 Mean precipitation, East Malaysia and Brunei ( <i>map</i> )	12
Fig. 9 Diurnal and monthly mean precipitation, West Malaysia and Singapore ( <i>map</i> )	13
Fig. 10 Diurnal and monthly mean precipitation, East Malaysia and Brunei ( <i>map</i> )	14
Fig. 11 Days with precipitation $\geq 0.01$ inch ( <i>map</i> )	15
Fig. 12 Mean cloudiness ( <i>map</i> )	16
Fig. 13 Frequency of ceiling $< 3,300$ feet ( <i>map</i> )	17
Fig. 14 Frequency of visibility $< 6$ miles ( <i>map</i> )	18
Fig. 15 Morning and afternoon surface wind roses, January ( <i>map</i> )	19
Fig. 16 Morning and afternoon surface wind roses, April ( <i>map</i> )	20
Fig. 17 Morning and afternoon surface wind roses, July ( <i>map</i> )	21
Fig. 18 Morning and afternoon surface wind roses, October ( <i>map</i> )	22
Fig. 19 Upper-air wind roses, Singapore Airport ( <i>chart</i> )	23
Fig. 20 Days with thunderstorms ( <i>map</i> )	24
Fig. 21 Mean daily maximum temperature ( <i>table</i> )	26
Fig. 22 Mean daily minimum temperature ( <i>table</i> )	27
Fig. 23 Absolute maximum temperature ( <i>table</i> )	28
Fig. 24 Absolute minimum temperature ( <i>table</i> )	29
Fig. 25 Days with maximum temperature $90^{\circ}$ F. or higher ( <i>table</i> )	30
Fig. 26 Mean relative humidity at specified hours ( <i>table</i> )	30
Fig. 27 Mean precipitation ( <i>table</i> )	32
Fig. 28 Greatest and least precipitation ( <i>table</i> )	33
Fig. 29 Days with precipitation $\geq 0.01$ inch ( <i>table</i> )	36
Fig. 30 Maximum 24-hour precipitation ( <i>table</i> )	37
Fig. 31 Mean cloudiness at specified hours ( <i>table</i> )	38
Fig. 32 Days with total cloud cover $\frac{1}{8}$ or less at specified hours ( <i>table</i> )	40
Fig. 33 Days with total cloud cover $\frac{1}{4}$ or more at specified hours ( <i>table</i> )	41
Fig. 34 Frequency of ceiling $< 2,000$ feet at specified hours ( <i>table</i> )	43
Fig. 35 Frequency of ceiling $< 3,300$ feet at specified hours ( <i>table</i> )	44
Fig. 36 Frequency of visibility $< 2\frac{1}{2}$ miles at specified hours ( <i>table</i> )	46
Fig. 37 Frequency of visibility $< 6$ miles at specified hours ( <i>table</i> )	48
Fig. 38 Days with thunderstorms ( <i>table</i> )	50
Fig. 39 Days with total cloud cover $\frac{1}{8}$ or less and visibility $2\frac{1}{2}$ miles or greater, at specified hours ( <i>table</i> )	50
Fig. 40 Frequency of specified ceiling and visibility combinations at specified hours ( <i>table</i> )	51
Fig. 41 Days with low cloud amount 0 to $\frac{1}{8}$ or ceiling 1,000 feet or greater, visibility $2\frac{1}{2}$ miles or greater, and surface wind speed 10 knots or less, at specified hours ( <i>table</i> )	54
Fig. 42 Days with surface wind speed 4 to 10 knots, temperature $> 32^{\circ}$ F. but $< 90^{\circ}$ F., and no precipitation, at specified hours ( <i>table</i> )	55
Fig. 43 Station locations ( <i>map</i> )	<i>follows</i> 57

*This section was prepared for the NIS by the  
Defense Intelligence Agency.*

## Weather and Climate<sup>1</sup>

### A. General weather and climate

Malaysia and Singapore have a tropical monsoon climate with considerable cloudiness and precipitation, remarkable uniformity of temperature, and high humidity. Semipermanent pressure systems over the oceans and continents to the north and south regulate the persistent wind systems, the northeast and southwest monsoons, which dominate the climate of the Area. Variations in meteorological elements result from perturbations within and convergence of these systems. The surrounding tropical waters produce intense broad-scale modification and uniformity of invading air masses, whereas topographic irregularities cause noticeable differences in climatic elements over short distances.

Like most places that lie deep within the Tropics the Area is warm and humid throughout the year. In all months in the lowlands the afternoon temperatures are usually in the 80's (°F.) or low 90's, and early morning temperatures are generally in the 70's. Extreme temperatures rarely reach 100°F. or less than 60°F. At elevations near 5,000 feet temperature means and extremes are 15 to 25 Fahrenheit degrees cooler. Relative humidity is persistently high throughout the year, fluctuating between early morning values near 90% and early afternoon values generally in the 60's or 70's. The abundance of rainfall is reflected in the mean annual amounts, which range between about 70 and 235 inches. Although seasonal rainfall is markedly varied areally, the majority of places record a primary maximum during the period October through January. Secondary maximums are in evidence at many of these places during the spring transition. June through August is generally the primary period of minimum rainfall, with a secondary minimum often appearing in February. Mean monthly precipitation at most places varies from about 3 to 8 inches during the driest months to 10 to 25 inches during the wettest months. As in most of the wet tropics, precipitation is in the form of brief, frequent, usually heavy rain showers. The torrential showers are associated most often with thunderstorms, which occur throughout the year. They are most frequent in April or May, when about 15 to 25 thunderstorm days per month are recorded. Annual flooding along the rivers and streams may be expected during the autumn transition and the early

part of the northeast monsoon, whereas flash floods caused by torrential rain showers may occur at any time. There is considerable cloudiness throughout the year with very little areal variation. Most places have 65% to 85% mean cloud cover each month. Cumulus clouds dominate the daytime skies, whereas during the night the tendency is toward middle and high clouds. Although intense rainfall and early morning fog and stratus are restrictive for short periods, ceilings and visibilities are generally adequate for most air operations. The variability of surface wind directions reflects the weak character of the monsoonal flows, especially that of the southwest monsoon. Land and sea breezes and local topography often exert strong influences which either mask or divert the general flow. Wind speeds are normally light, and there is a high frequency of calms, especially in the early morning. Strong wind speeds are reported primarily during thunderstorms or squalls. On rare occasions intense tropical cyclones have affected the eastern coastal sections of East Malaysia.

The climatic seasons are based on the two monsoonal wind systems. Four seasons can be identified, although the time of occurrence of each varies from region to region and from one year to the next. The two major seasons are the northeast monsoon and the southwest monsoon. The northeast monsoon begins in November and continues through March. The southwest monsoon begins about mid-May and continues through September. Separating these major seasons are two rather short transitional periods of about 4 to 6 weeks in length. They are the spring transition (April to mid-May) and the autumn transition (October).

Although the climate is somewhat homogeneous, the Area consists of two geographic regions separated by nearly 400 miles of open water. This division groups West Malaysia, the island of Singapore, and a few smaller offshore islands in the west into one region and East Malaysia, Brunei, and a few offshore islands in the east into the other region. The total area extends from about 7°N. to 1°N. and from 99°E. to 119°E. For convenience in discussion two geographic regions (Figure 43) have been designated: 1) West Malaysia and Singapore and 2) East Malaysia and Brunei.

The West Malaysia and Singapore Region is approximately 460 statute miles long and extends southward to within 90 miles of the Equator. Its maximum width is close to 200 miles. The southern third of the

<sup>1</sup> The entire content of this section is UNCLASSIFIED



region is composed mostly of lowlands with a few isolated peaks. Lowlands also extend northward along the east and west coast, as well as up the river valleys in the central portion. The northern two-thirds of West Malaysia is quite mountainous in the interior, with mountain ranges generally trending north-south or northwest-southeast. There are many places above 3,000 feet, and a few peaks are near 7,000 feet. The highest peak is in the north-central part of the region and is at an elevation of 7,186 feet.

The East Malaysia and Brunei Region occupies the northern part of the island of Borneo. This region is approximately 700 statute miles long and extends southward to within 60 miles of the Equator. Its maximum width is about 200 miles. The region consists of high, rugged, densely forested mountains bordered by discontinuous coastal lowlands and interrupted by a few small interior valley plains. Hills and mountains comprise about two-thirds of the region, with the major mountain ranges generally trending northeast-southwest. The mountains consist of broken lines of high ranges and isolated peaks and are crossed by many low passes. There are a few summits over 7,000 feet, and the highest mountain peak, located in the northern part of the region, is over 13,000 feet.

## B. Climatic controls

The climate of Malaysia and Singapore is influenced primarily by the monsoon circulation and by the convergence of—and disturbances within—the two great airstreams. Other important influences include topography, the tropical latitude, and the adjacent warm ocean waters.

### 1. General circulation and air masses

The atmospheric circulation over the Area is strongly controlled by the semipermanent pressure systems over the Pacific and Indian Oceans and over the Asian and Australian landmasses (Figure 1). The

resulting large-scale airstreams, the northeast and southwest monsoons, have a pronounced effect on the climate of the Area. The generalized surface airflow during the 12 months of the year and the strategic location of the Area with respect to the influencing airstreams are illustrated in Figures 2 and 3.

### a. MAJOR SEMIPERMANENT PRESSURE SYSTEMS —

During late September and October, with the reduction of insolation and consequent cooling in the Northern Hemisphere, a gradual replacement of the summer thermal low by the winter cold high occurs over the Asian Continent, and the North Pacific high shrinks in size and retreats equatorward. Concurrently the heating of the Australian Continent produces a low-pressure cell which invites or enhances the flow of air out of the Asian and North Pacific highs. The result is a high prevalence of northeasterly winds that reach Malaysia and Singapore by November. This great airstream, the northeast monsoon, grows in strength through the January and February peaks before starting to subside in March. The net effect is a period of maximum precipitation along windward coasts and slopes.

During April and May, with increasing insolation and consequent heating in the Northern Hemisphere, the cold high over the Asian Continent is replaced by a thermal low, while over the Australian Continent the thermal low is replaced by a developing high. At the same time the strengthening North Pacific high expands westward and advances poleward. This allows the air from Australia, the Indian Ocean, and the South Pacific to move over and dominate Malaysia and Singapore in subsequent months. These southerly component winds, the southwest monsoon, reach their peak of intensity and northernmost advance in July and August before beginning their equatorward retreat in September. Because of the sheltering effect of Sumatra and Borneo, this is the period of minimum precipitation over much of the Area. However, a few

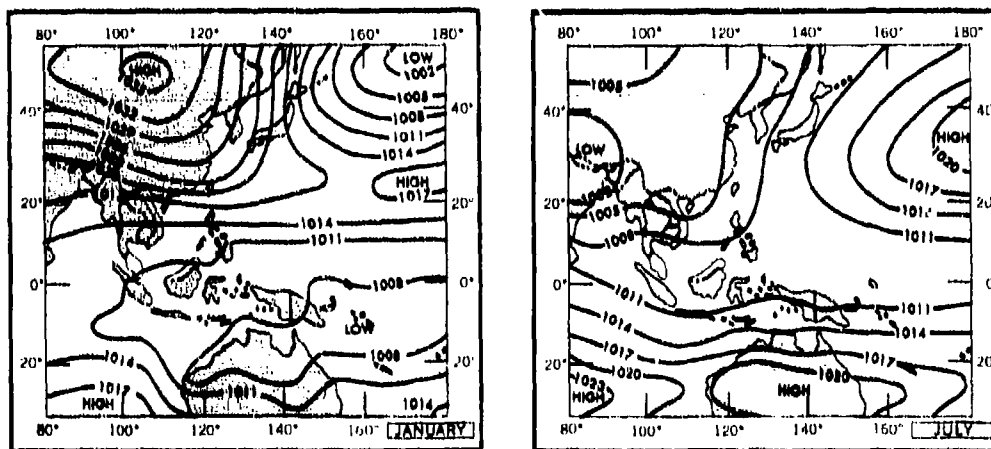


FIGURE 1. MEAN SEA-LEVEL PRESSURE (MILLIBARS), JANUARY AND JULY

isolated coastal regions directly exposed to this airstream receive their maximum rainfall at this time.

During the transitional seasons the monsoonal flows are reversing, and the intertropical convergence zone, which separates the monsoons, is passing through the Area. Winds are light and variable, and showers and thunderstorms increase. As a result, most of the interior stations not exposed to the monsoons receive their maximum rainfall during these intermonsoon periods.

**b. INTERTROPICAL CONVERGENCE ZONE** — "The zone of discontinuity in the wind field between an airstream from the Northern Hemisphere and one from the Southern Hemisphere" defines the intertropical convergence zone (ICZ). This zone of light, converging winds is at times well marked and continuous, but at other times is ill defined and discontinuous. The northward and southward interplay of monsoonal surges are superimposed on a daily basis upon the overall gradual advance and retreat of the ICZ. The structure of the ICZ and its various movements result in mean monthly positions for it throughout the year (Figures 2 and 3). During the northeast monsoon, the ICZ is south of the Equator, but in late March it begins a northward movement and is north of the Area by June. During September the ICZ begins its southward movement and is south of the Area by November. It should be emphasized, however, that these mean positions are of value only for long-range planning because the daily and yearly variations from the mean may be quite large.

**c. AIR MASSES** — The air masses that comprise the northeast monsoon originate in the Siberian high and the North Pacific high. During the Northern Hemisphere winter (December through February) monsoonal surges of cold, dry, stable polar continental air stream out of the Siberian high, generally follow a path eastward and southeastward over the warm western Pacific, and arrive over this Area as a northwesterly flow. Along its trajectory, the addition of heat and moisture from the underlying ocean rapidly transforms the polar air into tropical maritime, which is characterized by high temperature and humidity and pronounced instability. At the same time, tropical maritime air emanating from the North Pacific high flows southwestward toward the Area. It also is strongly heated and quickly moistened by the warm equatorial waters and attains characteristics practically identical to the modified air from the Siberian high with which it merges. Thick banks of clouds and frequent rain are found on the windward coasts and mountain slopes lying across the prevailing airflow. There is less cloudiness and precipitation towards the lee of the mountains.

The air masses that comprise the southwest monsoon originate in the semipermanent high-pressure belt over the Indian Ocean, Australia, and the South Pacific. During the height of the Southern Hemisphere winter (June through August), tropical air flowing west and northwest from the Australian high is warm,

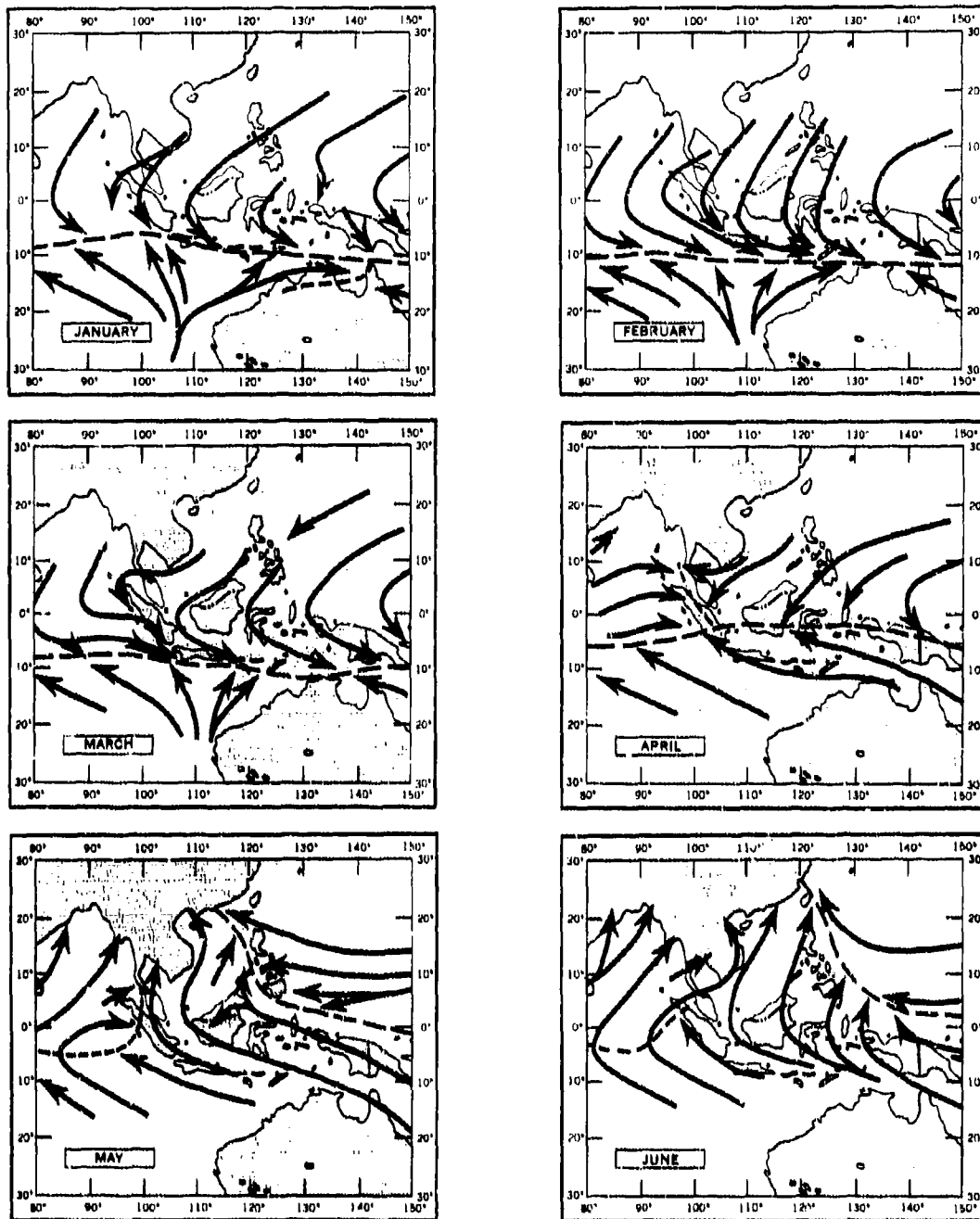
stable, and exceedingly dry. The lowest layers are rapidly modified in the passage over the warm equatorial waters. As the air moves farther away from its source, it becomes increasingly moist and unstable. It merges with air from the South Pacific high that has become warm and moist, turns to the northeast, and arrives over the Area as a southwesterly flow of tropical maritime air. However, because much of the moisture content is depleted during passage over the mountains of Sumatra and Borneo, rainfall and cloudiness are not as heavy as would ordinarily be expected with this air mass. Occasionally, tropical maritime air from the Indian Ocean high affects primarily the northwest coastal sections of West Malaysia. This air mass is moist and unstable, sometimes producing torrential showers. As much as 0.5 inch of rain may fall in 5 minutes, and this rate may continue up to one-half hour.

## 2. Migratory pressure systems and fronts

**a. EXTRATROPICAL CYCLONES AND FRONTS** — Malaysia and Singapore are too far removed from the mid-latitudes to be appreciably affected by extratropical cyclones and associated frontal systems. Although these pressure systems do not penetrate the Area, on rare occasions a strong polar surge moving southward across the South China Sea may retain enough density difference along the leading edge to produce a line of instability over exposed sections.

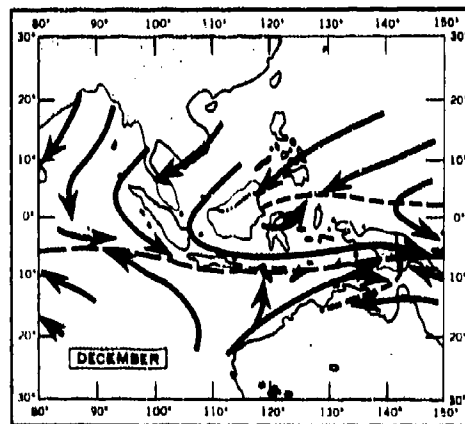
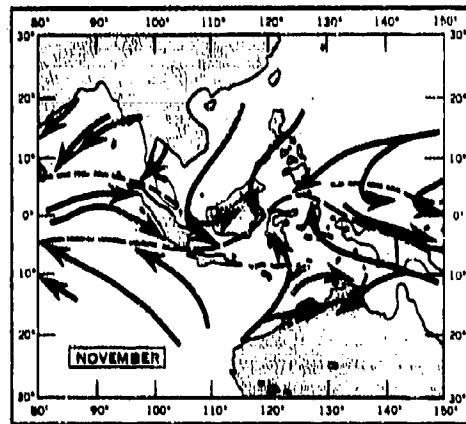
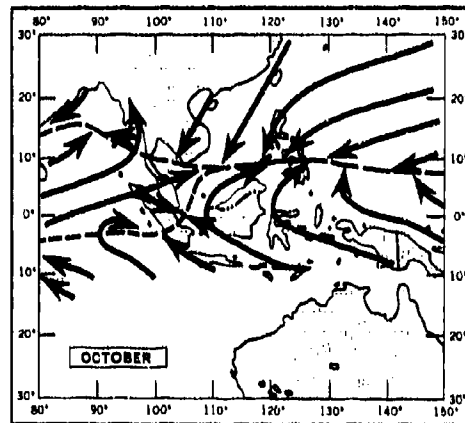
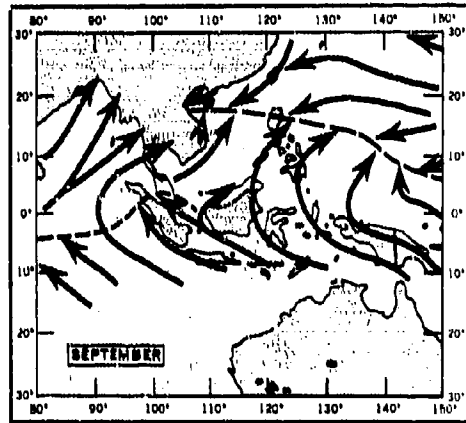
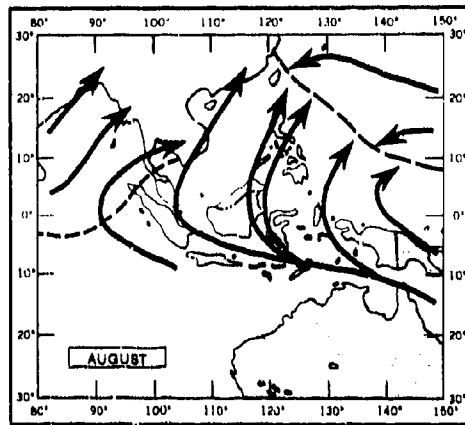
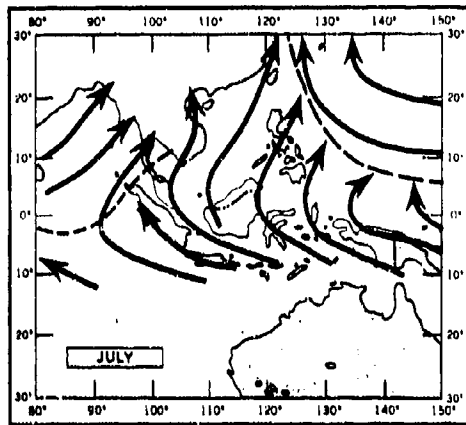
**b. TROPICAL CYCLONES** — The Area is also too close to the Equator to experience the full force of a mature tropical cyclone. During a 70-year period of record (1884-1953), only three tropical storms (wind speeds 35 through 64 knots) and one typhoon (wind speeds 65 knots or greater) passed through the Balabac Strait on a westward or northwestward track. The tropical storms occurred in November, December, and January, while the typhoon passed on the 30th of April and 1st of May. Normally only the eastern coastal sections of East Malaysia are affected by cyclones of these intensities. Tropical depressions (wind speeds less than 35 knots), however, periodically affect the eastern sections of both East and West Malaysia, occurring most often during the transition periods and the northeast monsoon. Although destructive winds are not expected, thick low clouds, heavy rainfall, and high seas may occur at exposed locations.

**c. EASTERLY WAVES** — The most important transitory disturbance is the "easterly wave." It is a weak trough of low pressure or line of convergence within the broad easterly or northeasterly current. It moves from east to west, but usually slower than the current in which it is imbedded. Unusually fine weather often precedes the wave. Near and to the east of the trough line, intense convergence produces a solid line of cumulonimbus and severe turbulence, several layers of overcast middle and high clouds, and heavy rain. However, this condition seldom continues for more



— — — — — MEAN AXIS OF INTERTROPICAL CONVERGENCE ZONE (SURFACE FLOW FROM 2 HEMISPHERES)  
 - - - - - CONVERGENCE LINE (SURFACE FLOW WITHIN 1 HEMISPHERE)

FIGURE 2. GENERALIZED SURFACE AIRFLOW AND CONVERGENCE ZONES, JANUARY-JUNE



----- MEAN AXIS OF INTERTROPICAL CONVERGENCE ZONE (SURFACE FLOW FROM 2 HEMISPHERES)

———— CONVERGENCE LINE (SURFACE FLOW WITHIN 1 HEMISPHERE)

FIGURE 3. GENERALIZED SURFACE AIRFLOW AND CONVERGENCE ZONES, JULY-DECEMBER

than 2 or 3 hours over any one location and is often followed by a renewal of good weather. The effects of these waves are normally confined to the eastern sections of both East and West Malaysia. Nevertheless, because of the strength of the northeast monsoon, they may move well into the interior before losing their identity. At times an intensifying easterly wave develops into a closed circulation and becomes a tropical depression.

### 3. Other controls

a. **TOPOGRAPHIC** — Local topography is one of the important influences on the climate. Because of the instability of the tropical maritime air, very little lift is needed in most cases to produce cloudiness and rainfall. Consequently, the form, orientation, height, and extent of the topographic features become very significant. Monsoonal flow directly against mountain ridges produces persistent banks of clouds on the windward slopes and often over the peaks. Conversely, downslope airflow produces a clearing tendency on the leeward slopes. This effect is most noticeable in West Malaysia. During the northeast monsoon eastern sections of the peninsula are exposed to the moist onshore flow and experience considerable cloudiness and precipitation, whereas in the leeward northwestern portion of the peninsula, downslope flow causes a minimum of low cloudiness and much less precipitation. During the southwest monsoon, these same regions experience a reversed pattern; the exposed northwestern portion of the peninsula receives its maximum precipitation, and the sheltered east receives its minimum.

In addition, mountain and valley breezes and *foehn* and *jet-effect* winds result from the configuration of land surfaces. Temperatures also are somewhat regulated by elevation. With an increase in elevation there is a corresponding decrease in temperature amounting to about 3 Fahrenheit degrees per 1,000 feet. Consequently, at elevations of 3,000 to 4,000 feet, temperatures are about 10 Fahrenheit degrees colder than the adjoining lowlands.

b. **LATITUDINAL AND OCEANIC** — The Area, with its northernmost point only about 7 degrees north of the Equator, is exposed to a high angle of incidence of the sun's rays during a large portion of the daylight hours. This results in a large delivery of solar radiation to the Area. Temperatures remain high throughout the year except at the higher locations, and ample surface heating is always available for generation of convective cloudiness. Much of this radiation is retained by the surrounding oceans and seas, which normally maintain a temperature above 80°F. all year. These warm waters extend their influence far beyond the Area limits and foster an important control of the climate of Malaysia and Singapore. Because air must pass over these waters to reach the Area, rapid modification of polar air invasions are such that continental influences have practically no effect on temperatures.

The total effect of the surrounding waters is to equalize the air temperature, increase the humidity to high values, and warm the air from temperate regions. One noticeable product of tropical waters is convective cloud formation over the sea at night. Here, the lower layers of the air are heated by the warm water while the cloud tops are cooled by radiation. The steepened lapse rate results in a nocturnal maximum of cloudiness and thunderstorms over the water.

## C. Special phenomena

### 1. Local winds

Because much of this Area is mountainous, various types of locally produced winds may occur. The two major types are the *foehn* and the *jet-effect* winds.

a. **FOEHN WINDS** — The *foehn* is a warm, dry wind that occurs on the lee side of a mountain range, when the circulation is sufficiently strong and deep to force the air completely across the range. It is most pronounced in the northwestern lowlands of West Malaysia during the northeast monsoon and, to a lesser extent, on the northeast coast during the southwest monsoon. In East Malaysia and Brunei the topography and airflow suggest that it can occur during either monsoon, but probably on a much smaller scale. Although the abnormal warmth and dryness of the *foehn* wind are not overly pronounced in any section, it may reduce the humidity to such an extent that crops are severely withered or, on rare occasions, destroyed.

b. **JET-EFFECT WINDS** — The presence and orientation of long, narrow valleys, especially in East Malaysia, indicates that *jet-effect* winds are produced. The *jet-effect* wind is one that is increased in speed by the channeling of the airflow through a narrow mountain pass or valley. These winds probably are more often encountered during the relatively strong northeast monsoon.

### 2. Squalls

A squall is a strong wind characterized by a sudden onset, a short duration, and a rather sudden decrease in speed. Squalls usually are associated with an active band of thunderstorms (*squall line*), a convergence line, or an isolated severe thunderstorm. The squalls which are locally produced from nearly stationary thunderstorms occur most often in the afternoon or early evening. Those that form over water normally do not penetrate far inland. Squalls which accompany a convergence line that is imbedded in the monsoonal flow are more pronounced and consequently penetrate farther inland. These two types have acquired local names—the *sumatra* and the *barat*.

a. **SUMATRA** — Although squalls occur along the entire west coast of West Malaysia during the southwest monsoon, those that move onshore between Port Swettenham (3°00'N., 101°24'E.) and Singapore are called *sumatras*. Because they approach from the

direction of Sumatra, they bear that island's name. Sumatras form in the Strait of Malacca between 2100 LST and 0400 LST. They may be generated by cool air from the mountains of Sumatra or from the west coast of West Malaysia moving over the relatively warm water or by the converging of these two opposing local winds. Sumatras usually consist of a continuous line of towering cumulus and cumulonimbus clouds, which extends between 100 and 200 miles in length. The line of clouds is oriented northwest-southeast and moves to the northeast. Heavy rain and thunder are usually associated with the passage of a sumatra, and wind speeds during a well-developed squall may be 40 to 50 knots. Temperatures decrease by about 5 Fahrenheit degrees in 5 minutes and have been known to fall as much as 15 degrees. After crossing the coast there is a rapid decrease in the intensity as the squall moves inland. The duration of any one sumatra may be from 1 to 4 hours. There are about 6 to 8 such storms per month in July and August and 3 or 4 per month in May, June, and September.

b. **BARAT** — The barat is experienced along the east coast of East Malaysia in December through February. It is a strong, squally west or northwest wind and is associated with a tropical depression moving westward from the southern Philippine Islands. It may occur at any time of day and is most intense along the windward sections of the coast. Considerable cloudiness and heavy precipitation generally accompany the passage of these squalls.

### 3. Floods

The abundant precipitation causes annual flooding along the rivers and streams, which is of major concern in military operations. Overland movements may be confined to the drier periods because at other times many roads are impassable. Roads, railroads, and other facilities are sometimes washed away, causing considerable interruption to normal operations. Annual flooding and high water for most places normally occur during the autumn transition and the early part of the northeast monsoon. A few locations have a secondary high-water period in April and May. At these times flooding causes widespread inundation and destruction as well as the expansion of swamps and marshes. Flooding can be excessive near coastal sections when very heavy rain coincides with the spring tides. Flash flooding from torrential rain showers is common throughout the year. However, the flood waters subside quickly and muddy roads rapidly return to a dry state.

### 4. Haze

During June or July through October a distinctive dry haze is reported over the Area. Formed of salt particles from the sea, dust from Australia, and smoke from brush fires, the haze imparts a whitish or bluish tint to the air. The greatest haze density is usually between 3,000 and 6,000 feet, with an increase in

density as the period progresses. Haze is particularly prominent around Kuala Lumpur and Singapore, where local industries add considerable impurities to the atmosphere. The first general rains at the beginning of the northeast monsoon usually clean the air of haze.

## D. Weather elements and climatic conditions

### 1. Temperature

a. **SURFACE** — The location in tropical latitudes, the moderating influence of the surrounding warm seas, and the tempering influence of the fairly steady monsoons are all reflected in the remarkably uniform and relatively high temperatures in Malaysia and Singapore throughout the year (Figures 4, and 21 through 25). In fact, the annual ranges of mean daily maximum and mean daily minimum temperatures everywhere are less than the mean diurnal range. Places along the coasts generally have a smaller diurnal variation than inland locations because of the moderating effect of the water. The greatest temperature differences between locations are caused primarily by differences in elevation or cloud cover. Temperatures are generally cooler at higher elevations and during periods of increased cloudiness.

At the lower elevations throughout the year mean daily maximum temperatures are mostly in the 80's (°F) and low 90's, and mean daily minimums are usually in the 70's. At mountain locations near 5,000 feet mean daily maximums are usually in the 70's and mean daily minimums range from the mid 50's to the mid 60's. Extreme temperatures exhibit a similar uniformity through the year. Absolute maximum temperatures in the lowlands are mostly in the 90's, and in the mountains near 5,000 feet they range from the high 70's to the mid 80's. Only two stations have recorded temperatures of 100°F, or more, and the highest was 103°F. Absolute minimum temperatures are generally in the 60's and low 70's except in the mountains, where the 40's and 50's have been reported. The lowest recorded temperature was 36°F, at Cameron Highlands in January.

The temperature regime is chiefly remarkable for its uniformity over widely separated regions and for its sustained high temperatures. The principal result is the debilitating effect upon humans. When combined with the high humidity and low wind speeds, these temperatures make physical exertion of any kind an effort for those that are unacclimated.

b. **UPPER-AIR** — The mean monthly upper-air temperature, pressure, and tropopause height for Singapore Airport (Figure 5) are considered representative of most of this Area. The uniformity of the surface temperatures is mirrored in the temperatures of the troposphere. The mean temperature at any given level in the troposphere remains essentially constant throughout the year, and temperature decreases uniformly with height up to the tropopause. Above the

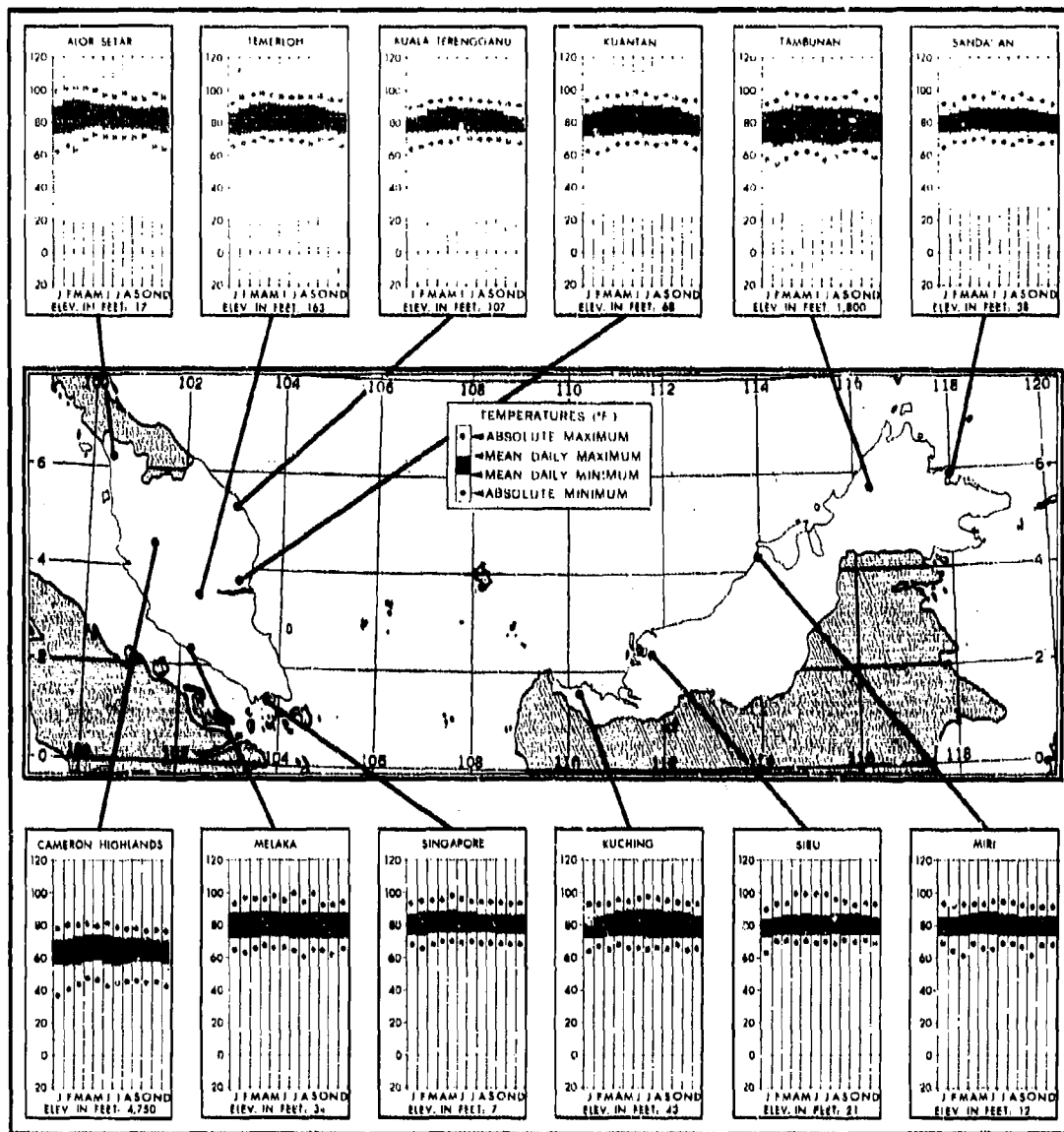


FIGURE 4. TEMPERATURES (°F.). (For tabular data see Figures 21 through 24)

tropopause, temperature increases gradually with height. The greatest annual variations of upper-air temperature are at and above the tropopause, where mean monthly temperatures are coldest in November through April and warmest in July through September.

The mean height of the freezing level is near 15,000 feet throughout the year. Month-to-month variations and diurnal variations from this mean probably do not exceed 1,000 feet. The mean height of the tropopause ranges from a low of about 52,000 feet in July through September to a high near 54,000 feet in December through April. Latitudinal variation in tropopause height is insignificant.

## 2. Humidity

The persistently high relative humidity is probably the most irritating feature of the climate. Because surface winds are usually light, little relief is obtained by evaporation, and the prevalence of high humidities and high temperatures produces a very oppressive climatic condition. The high humidity also creates serious maintenance problems on equipment of all types, clothing, and structures because of corrosion, mildew, and wood rot. These problems are magnified by the effect of salt particles, which are brought inland when ocean spray is carried by the wind.

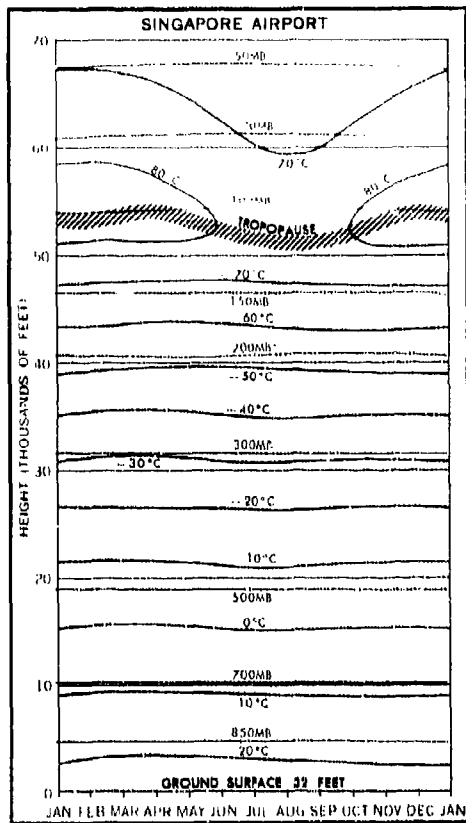


FIGURE 5. MEAN MONTHLY UPPER-AIR TEMPERATURE AND PRESSURE AT SINGAPORE AIRPORT

Early morning humidities are unusually high throughout the year, with very little variation from one month to the next (Figures 6 and 26). With few exceptions, humidity values at this time of day are generally above 90%. Although early afternoon values of 60% to 80% are common everywhere, and still considered high, a slight seasonal variation of afternoon humidity is apparent in coastal regions exposed to one monsoon but sheltered from the other. Examples of this variation can be seen at Alor Setar in West Malaysia and Kuching in East Malaysia.

### 3. Precipitation

Precipitation in Malaysia and Singapore exhibits a sharp departure from the general uniformity characteristic of some of the other climatic elements. Marked variations in rainfall occur regionally, locally, seasonally, diurnally, in duration and intensity, and from one year to another. It is this variability of rainfall that offers most relief from the usual monotony and oppressiveness of the warm and humid climate. Rainfall is an extremely important factor in ground operations. Many roads are made impassable by mud.

Roads, railroads, and encampments are flooded or washed away, airfields are eroded or flooded, and all operations are made more difficult. The tremendous amounts of rain that normally fall in this Area are seldom seen in the middle latitudes.

Mean annual rainfall varies from about 70 inches at sheltered locations to over 200 inches at some exposed mountain locations, and at least one place averages nearly 235 inches annually (Figures 7, 8, and 27). Overall, East Malaysia receives more precipitation than West Malaysia. One probable cause is the orientation of the mountain ranges. They more directly oppose the monsoonal flows in West Malaysia and result in exposure during one monsoon and sheltering during the other over large areas, whereas in East Malaysia the alignment of the mountain ranges is along the monsoonal flows, and only the narrow interior valleys and parts of the coast benefit from the sheltering effect. The topographic influence is also reflected in the variations of seasonal rainfall within each region. In spite of these variations most locations have a primary wet period in October through January and a secondary maximum during the spring transition. Mean monthly amounts of 10 to 25 inches are common during the months of heaviest rainfall, and a few locations receive over 25 inches. For much of the Area a primary minimum is recorded during June through August, and a secondary minimum in February. However, the months of minimum precipitation are not necessarily "dry" months. In fact, most of the locations receive an average of 3 to 8 inches per month during the periods of minimum rainfall. In the tropics, rainfall can be excessive or deficient in any month or any year. As a consequence, monthly or annual precipitation may vary considerably from one year to the next. To emphasize, at least 8 locations in Figure 28 have recorded a difference of 100 inches or more between the greatest and least annual precipitation received.

Even though every locality has an individual precipitation regime based on local topography and exposure, the general pattern of diurnal rainfall in a particular section is somewhat homogeneous (Figures 9 and 10). The diurnal distribution of precipitation is well marked over most of the interior. Because much of the rain falls in heavy convective showers, late afternoon and early evening tend to be the wettest parts of the day, and mid-to-late morning hours tend to be the driest. This pattern persists through the year. However, along the coasts exposed to one monsoon but sheltered from the other, diurnal variations conform rather closely to two principal seasonal patterns. Coasts experiencing onshore monsoonal winds show a diurnal minimum of precipitation in late afternoon or evening and fairly heavy precipitation during night and early morning. Coasts sheltered from a monsoon (and therefore experiencing down-slope and offshore winds) have a diurnal pattern similar to the interior, with minimum precipitation



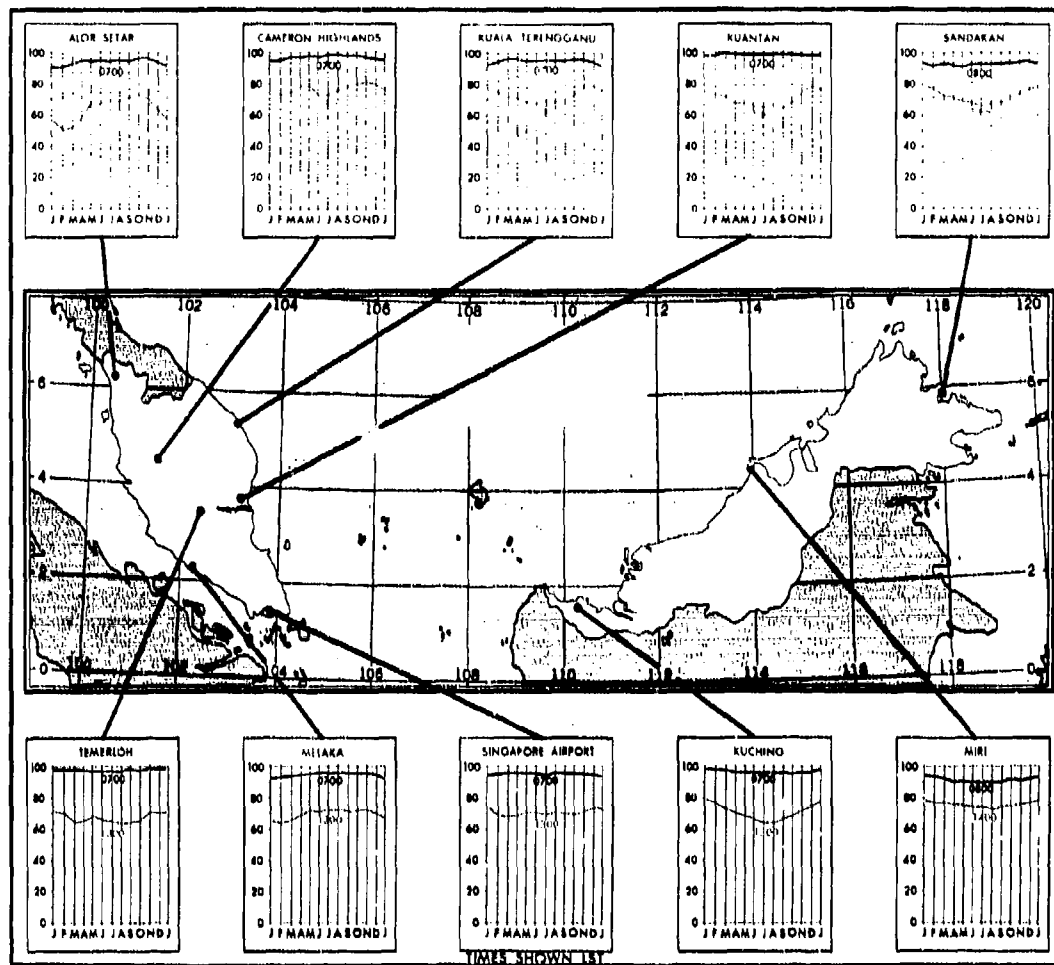


FIGURE 6. MEAN RELATIVE HUMIDITY (%) IN MORNING AND AFTERNOON. (For tabular data see Figure 26.)

during the first half of the day and a maximum in the afternoon and evening. The two patterns are most evident on the coasts of West Malaysia and the north-east coast of East Malaysia, where the coasts are aligned more directly at right angles to the monsoonal flows.

Rainfall is frequent throughout the Area. Very few locations have less than 120 rainy days per year, and a great many have 200 or more annually (Figures 11 and 29). Everywhere the number of days per month with rain usually exceeds 5, even in the driest months, and ranges as high as 20 to 25 in the wettest months. Most places normally record between 10 and 20 rainy days in each month throughout the year.

As in most tropical countries, rainfall is in the form of brief, frequent showers, even in the wettest months.

Because of the high water vapor content of the air and the strong ascending air currents, the rain showers are usually heavy and often torrential. Rainfall amounts in excess of 10 inches in 24 hours have been recorded at many locations (Figure 30). Falls of 1 to 2 inches per hour are common. In general, daily rainfall amounts of 2 inches can be expected on 10 to 15 days per year on the east coast of West Malaysia, and on 6 to 9 days per year on the west coast. Along the coasts of East Malaysia, 2 inches of rain in 24 hours can be expected on 10 to 20 days per year. Although similar data for inland locations are not available, large amounts of rain in short periods are the rule, especially on windward slopes of mountains.

#### 4. Cloudiness

Because the Area is almost continually overlain by moist, tropical air, clouds form readily, and con-

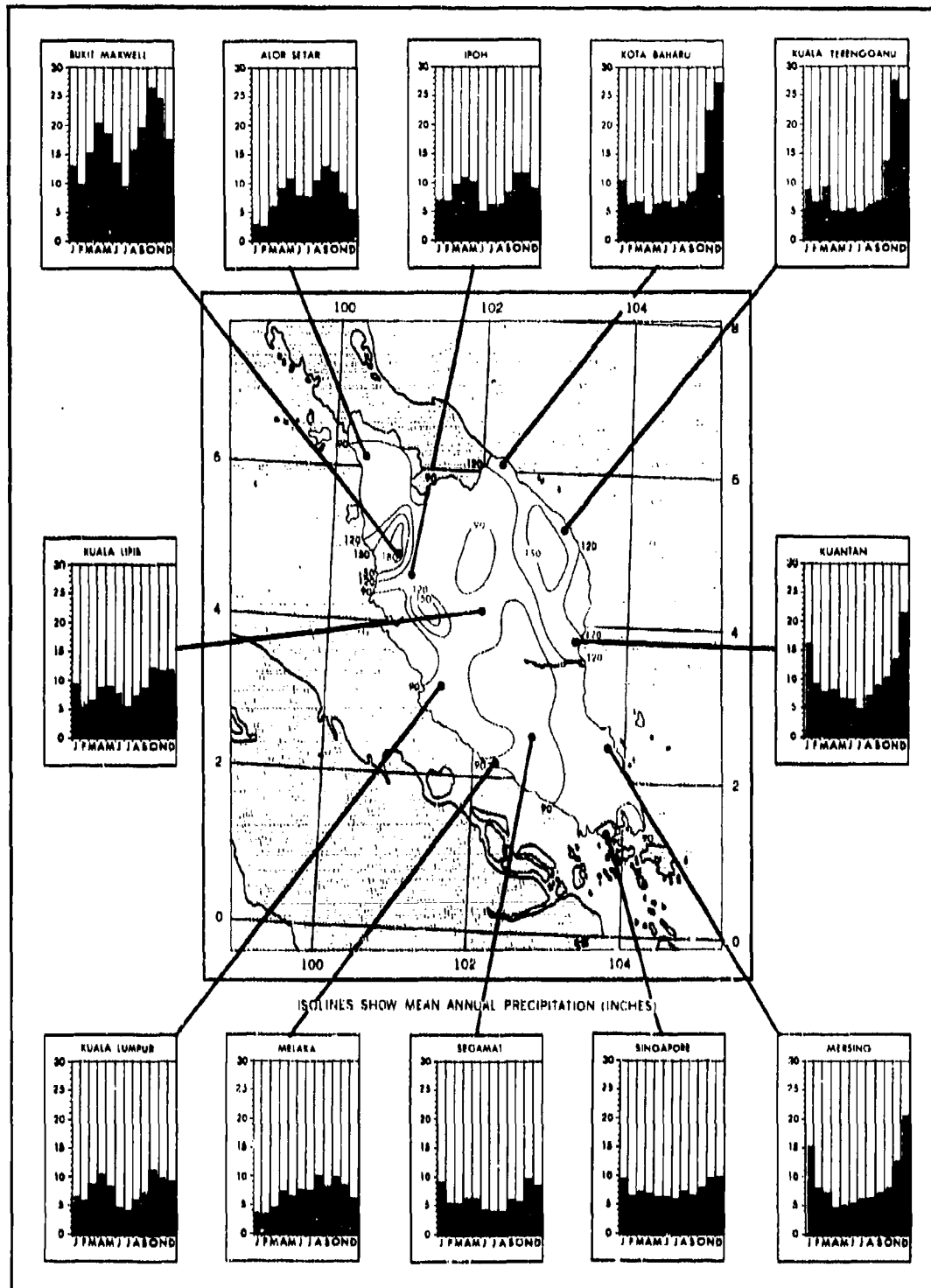


FIGURE 7. MEAN PRECIPITATION (INCHES), WEST MALAYSIA AND SINGAPORE. (For tabular data see Figure 27.)

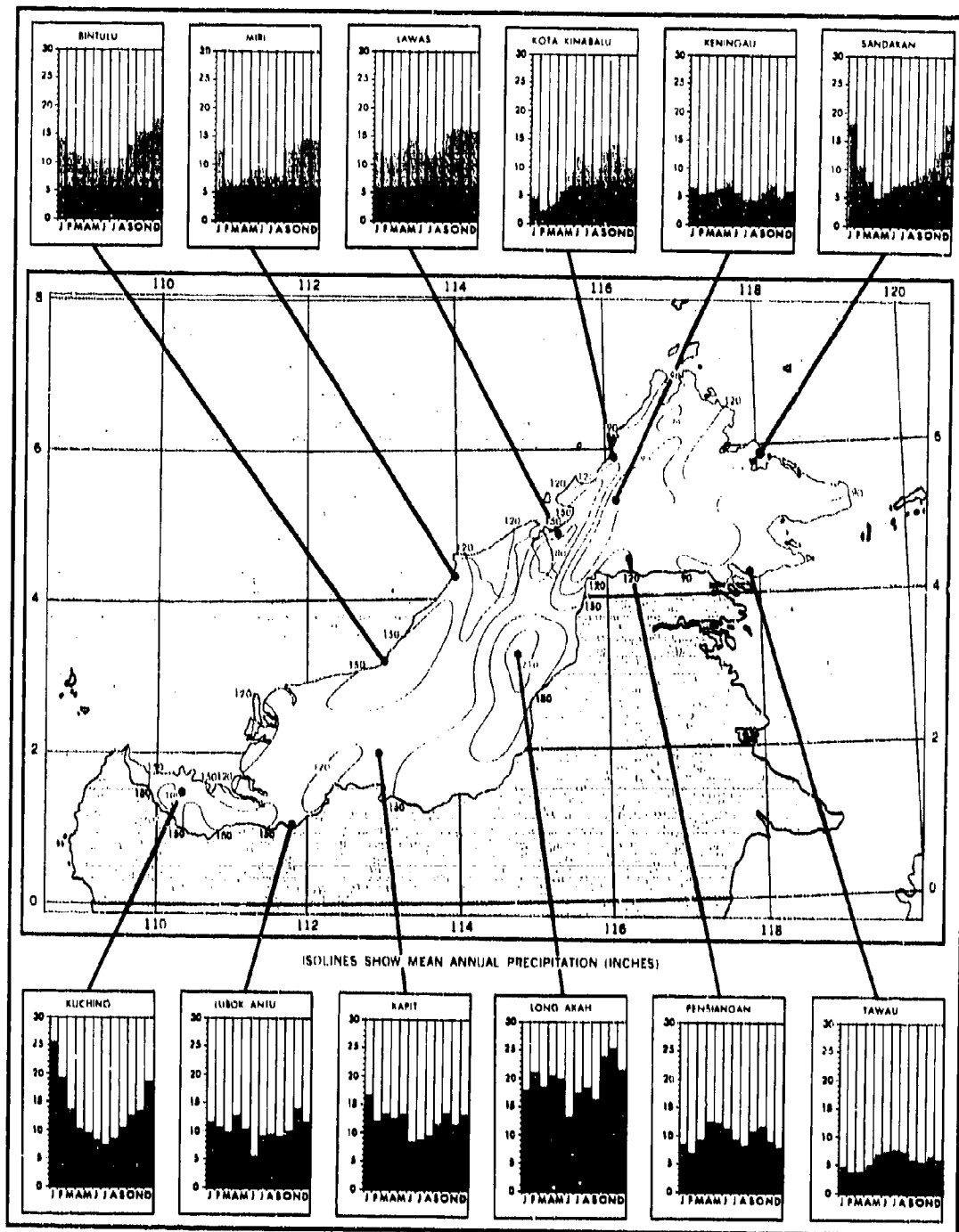


FIGURE 8. MEAN PRECIPITATION (INCHES), EAST MALAYSIA AND BRUNEI. (For tabular data see Figure 27.)

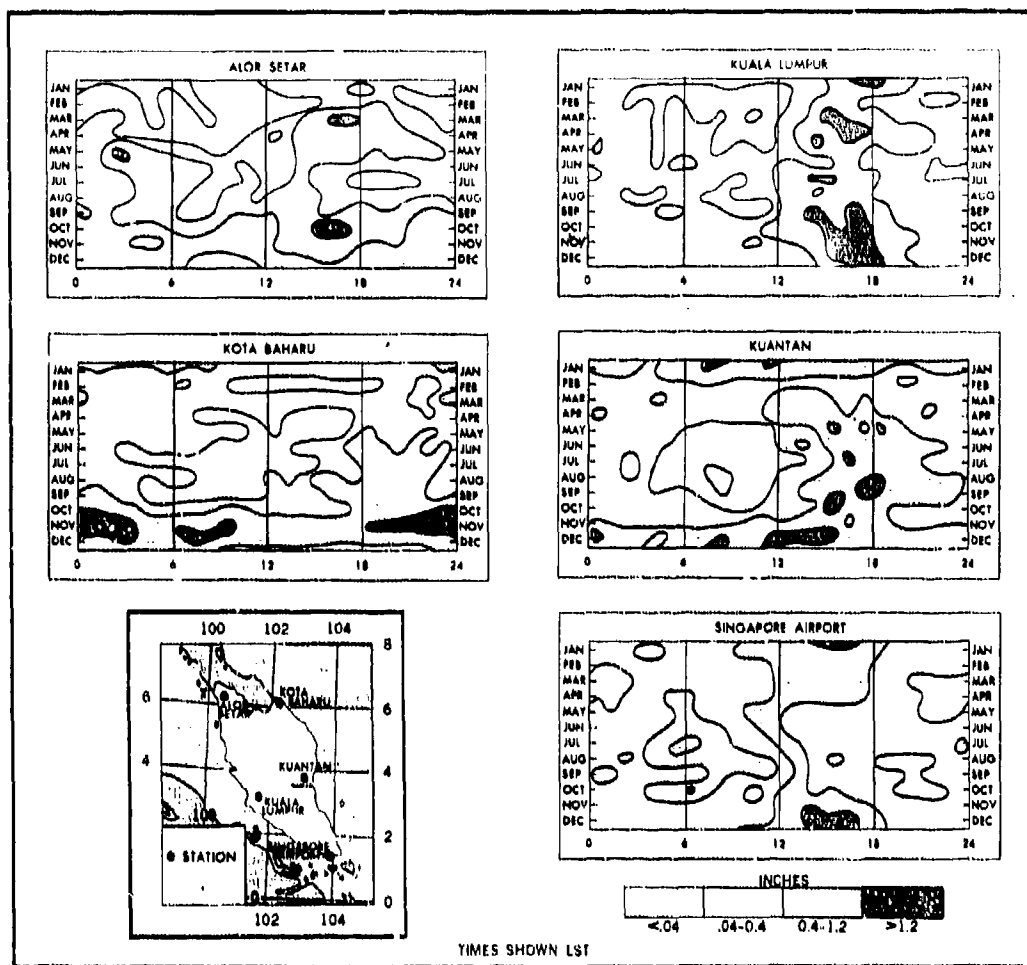


FIGURE 9. DIURNAL AND MONTHLY MEAN PRECIPITATION (INCHES), WEST MALAYSIA AND SINGAPORE

siderable cloudiness is a characteristic feature throughout the year (Figures 12 and 31). Most places have a mean annual cloudiness of 65% to 85%. Variations in mean cloudiness from month to month, season to season, and region to region are not large. In general, however, cloudiness is more profuse during the afternoon or early evening and on the windward slopes of mountainous terrain and is less voluminous during most of the morning hours and on leeward slopes. Cumulus clouds occur frequently and often develop into towering cumulus or cumulonimbus in the afternoon, with shower or thunderstorm activity. Cirrus, cirrostratus, altostratus, and altocumulus also occur almost every day but are much less significant than cumulus.

The diurnal cloud pattern occurs with notable regularity. Sheets of thin stratus often form near the

ground surface after midnight over swampy valleys, sometimes covering the lower mountain slopes. These clouds usually dissipate shortly after sunrise, and cumulus clouds begin forming over the interior, particularly on windward mountain slopes, and somewhat later near the coast. Between late morning and early afternoon the cumulus clouds build and expand rapidly. By mid-to-late afternoon, they often mushroom into towering cumulus, with tops between 20,000 and 30,000 feet, or into cumulonimbus, which may extend above 50,000 feet. Over mountain slopes and ridges as well as coastal sections, convective type cloudiness may persist through the night when winds remain upslope and onshore, but more often the towering cumulus and cumulonimbus flatten out during the evening and form thick and extensive layers of altocumulus, altostratus, cirrus, and cirrostratus at several levels. These middle and high layers are fre-

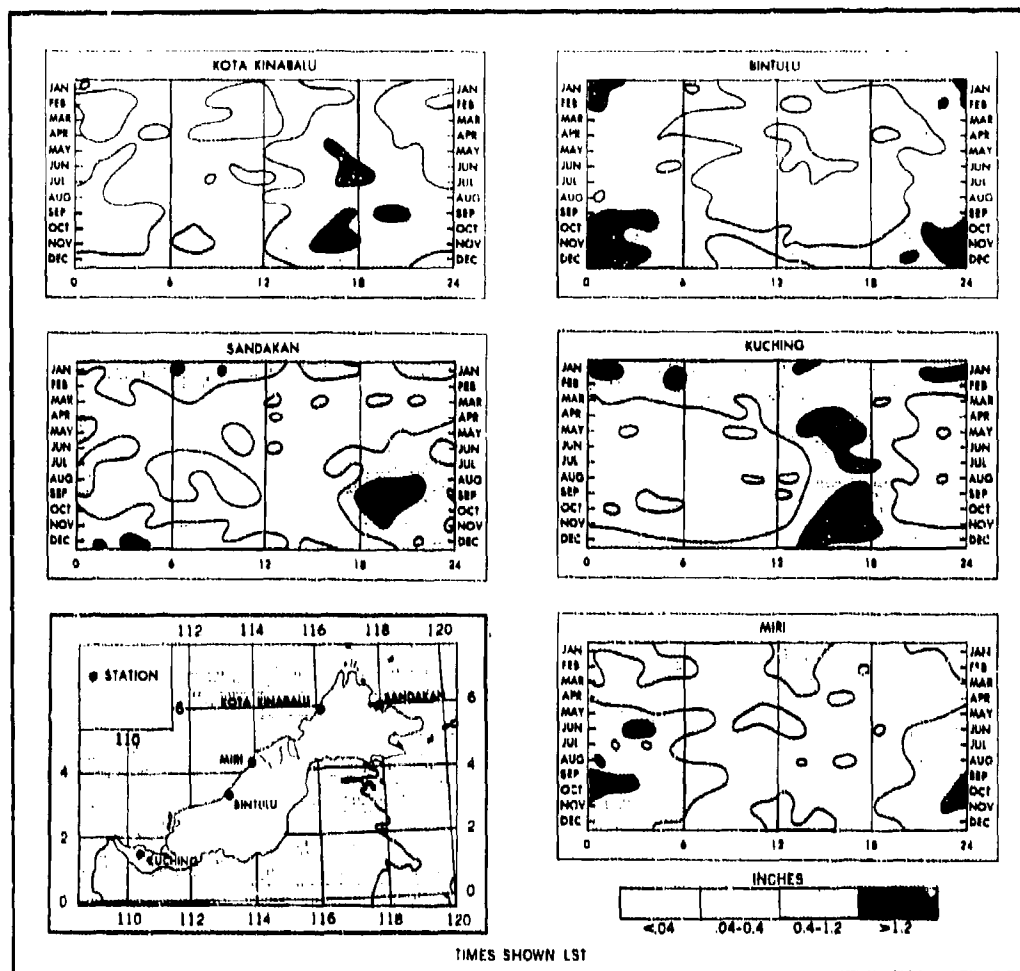


FIGURE 10. DIURNAL AND MONTHLY MEAN PRECIPITATION (INCHES), EAST MALAYSIA AND BRUNEI

quently broken to overcast and usually dissipate before sunrise.

The persistent cloudiness is manifest in the frequency of clear ( $\frac{3}{4}$  or less cloud cover) and cloudy ( $\frac{3}{4}$  or more cloud cover) conditions (Figures 32 and 33). At any specified hour, most locations report clear skies on fewer than 40 days per year. Clear skies are most likely to occur between midnight and sunrise and are somewhat more frequent in East Malaysia than elsewhere. Conversely, cloudy skies are very common, and at any specified hour most places report this condition on 250 to 325 days per year. Diurnally, cloudy skies are most frequent from early afternoon to early evening.

In aircraft operations requiring visual contact with the ground, an important consideration is the height of the cloud base above the terrain. This factor may

be of great importance when considering missions in and around the rough terrain of this Area. Data on cloud ceiling in the lower layers are limited, especially in the interior of East Malaysia (Figure 13, 34, and 35). Cloud ceilings are generally adequate for aircraft operations. Ceilings less than 3,300 feet are most frequent between sunrise and sunset, on the windward slopes of mountains, during the northeast monsoon. They are least frequent at night, on leeward slopes, during the southwest monsoon. The early-to-midmorning stratus produces the lowest ceilings. These occur most often at valley locations, such as at Kuala Lipis. However, the widespread abundance of cumuliform cloudiness constitutes the major source of low ceilings. In the formative stages, cumulus clouds generally have bases between approximately 1,500 and 3,000 feet. In the later stages of development, during

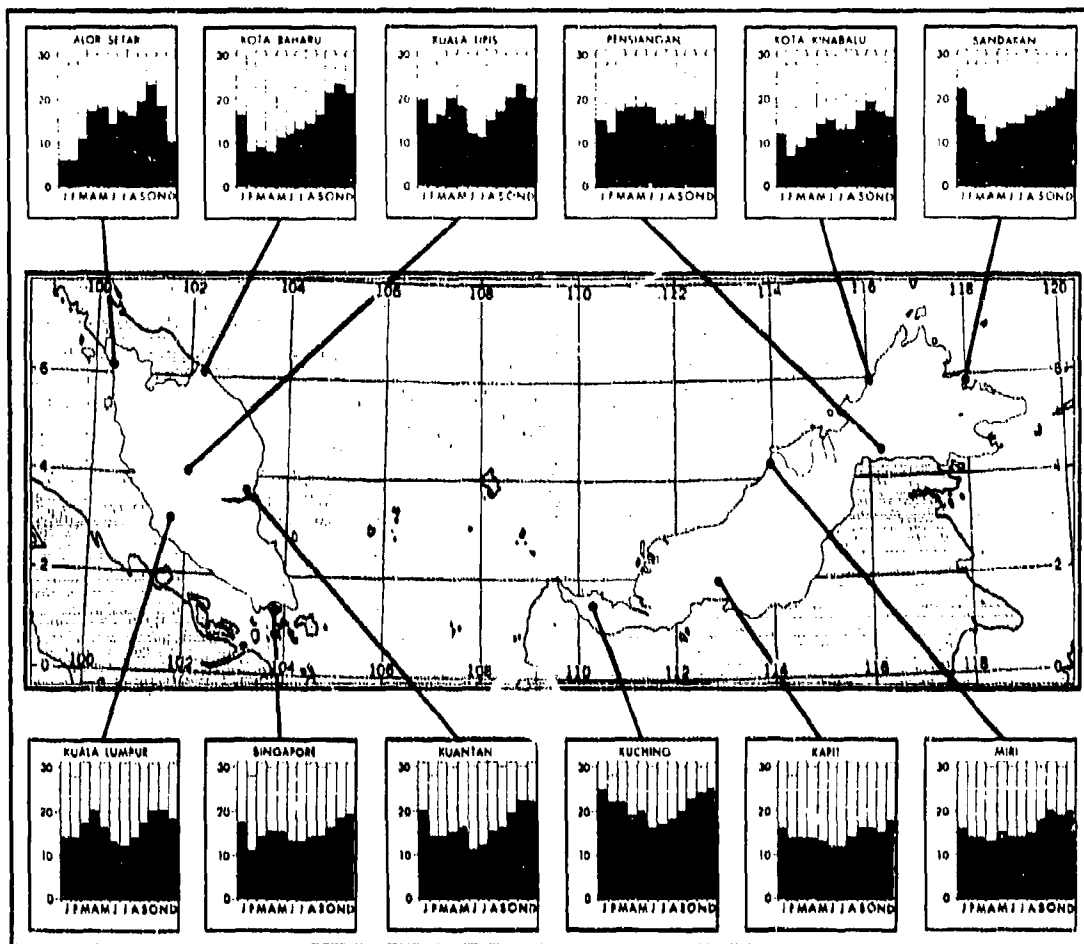


FIGURE 11. MEAN NUMBER OF DAYS WITH PRECIPITATION  $\geq 0.01$  INCH. (For tabular data see Figure 29.)

the afternoon showers and thunderstorms, most ceilings drop to 1,000 feet and sometimes briefly to 500 feet. Finally, ceilings lift at night during the dissipating stages. On windward slopes, cloud bases often contact the ground, and low ceilings may even remain through the night. Conditions improve on leeward slopes. Near the peaks of mountain ranges, as exemplified at Bukit Frazer, ceilings are frequently low and may be almost continuous. Because much of the Area is exposed to the moist northeast monsoon, low ceilings are most frequent at this time of year. However, some west coast sections of West Malaysia which are sheltered from this flow have low ceilings more often during the southwest monsoon or during the two transition seasons.

#### 5. Aircraft icing

Aircraft icing normally does not constitute a major hazard in air operations in this Area. Icing is very unlikely below about 15,000 feet, the mean height

of the freezing level. At higher levels, however, conditions conducive to icing may occur. The heaviest icing is generally found in thick clouds where temperatures are at or slightly below freezing. The rate of accretion decreases with the temperature, and when the temperature approaches  $-20^{\circ}\text{C}$ ., the icing rate becomes negligible. Temperatures of  $-20^{\circ}\text{C}$ . in this Area are normally near 25,000 feet. However, within towering cumulus and cumulonimbus, even above the freezing level, large supercooled water droplets may be carried to great heights, and significant icing may occur above 25,000 feet. Consequently, passage through a line or zone of towering convective clouds at sub-freezing levels would be hazardous and should be avoided.

#### 6. Visibility

Surface visibility, like ceiling, is generally adequate, yet marked differences occur within regional and diurnal limits (Figures 14, 36, and 37). On the coast,

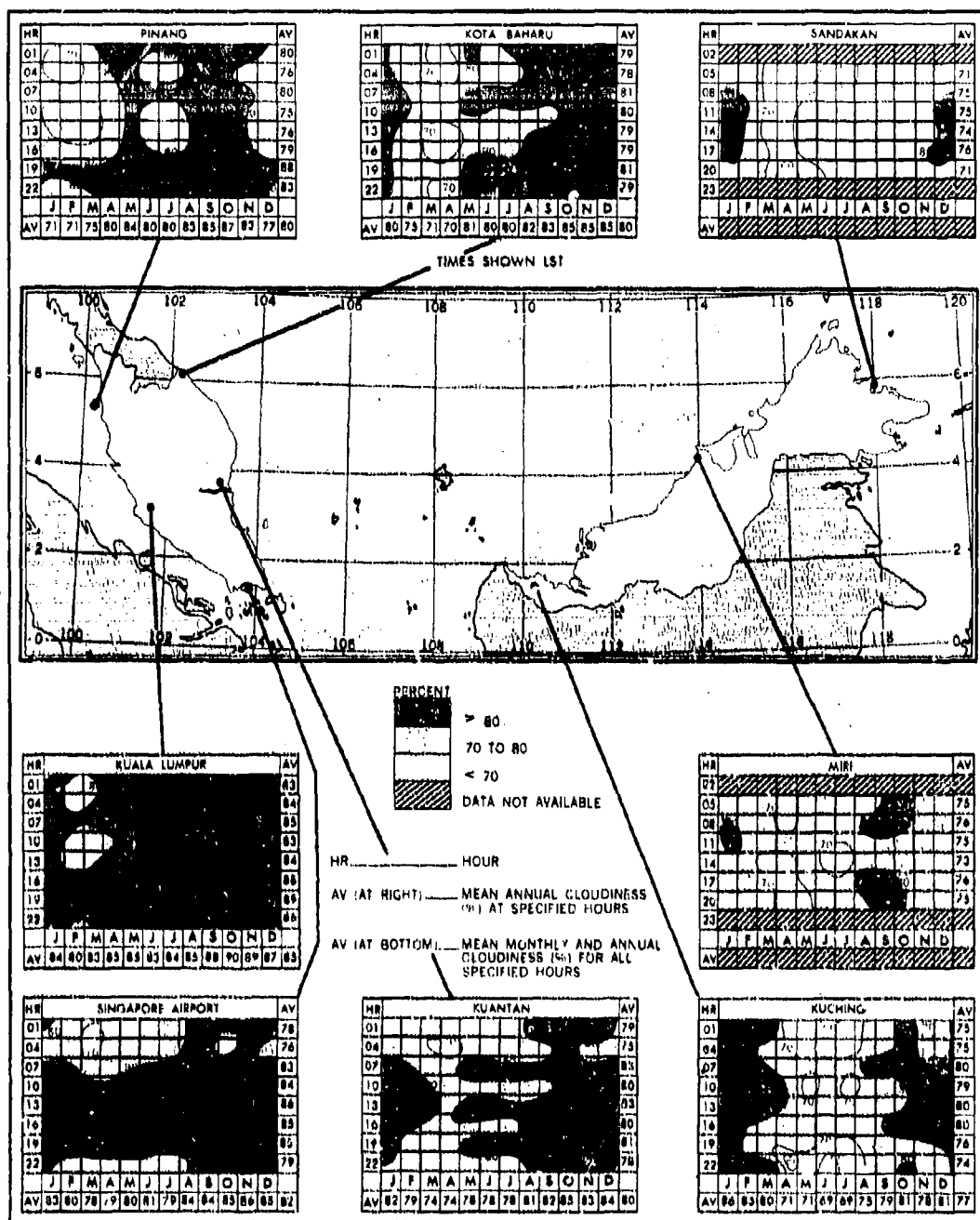


FIGURE 14. MEAN CLOUDINESS (%). (For tabular data see Figure 31.)

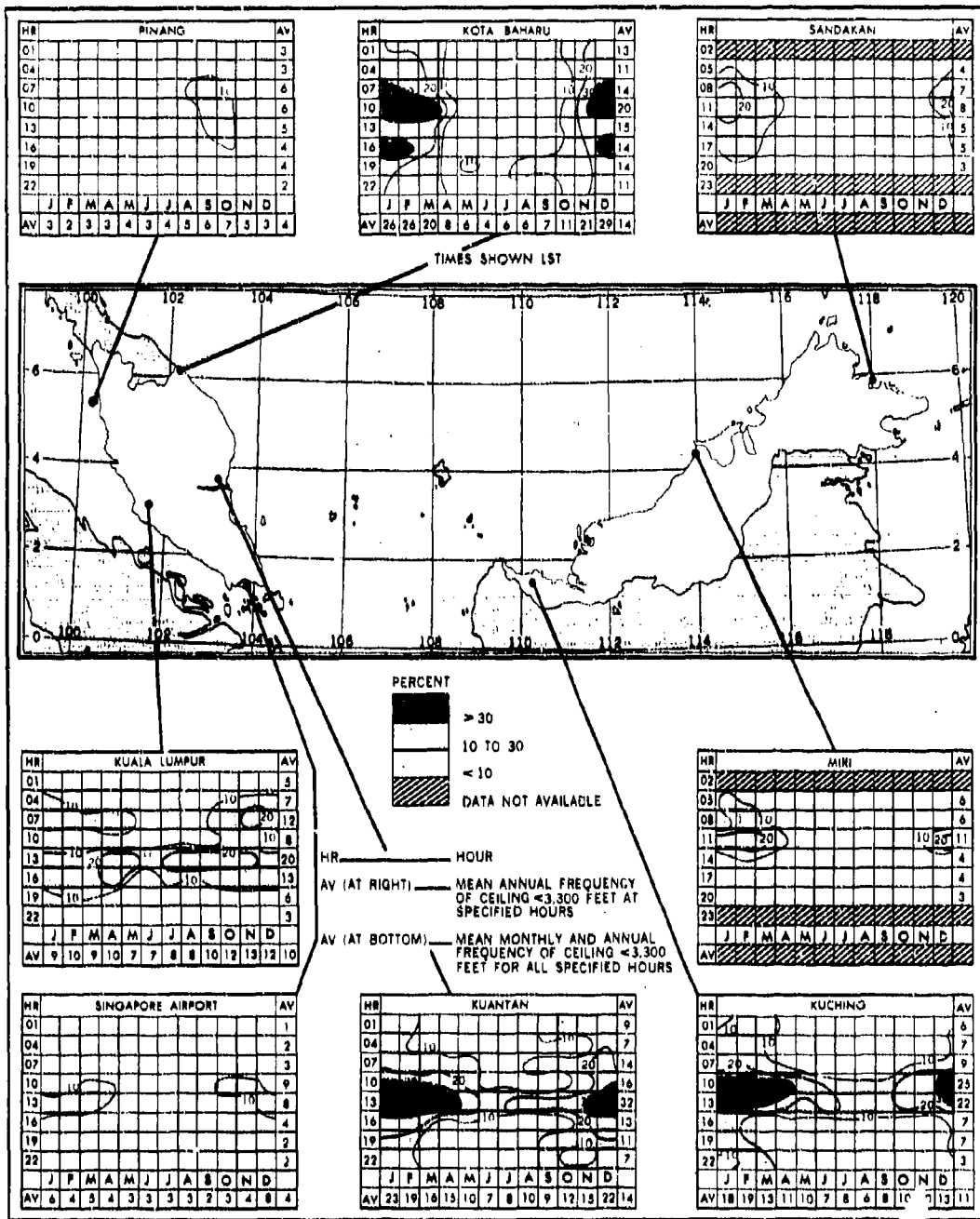


FIGURE 13. PERCENTAGE FREQUENCY OF CEILING < 3,300 FEET. (For tabular data see Figure 35.)



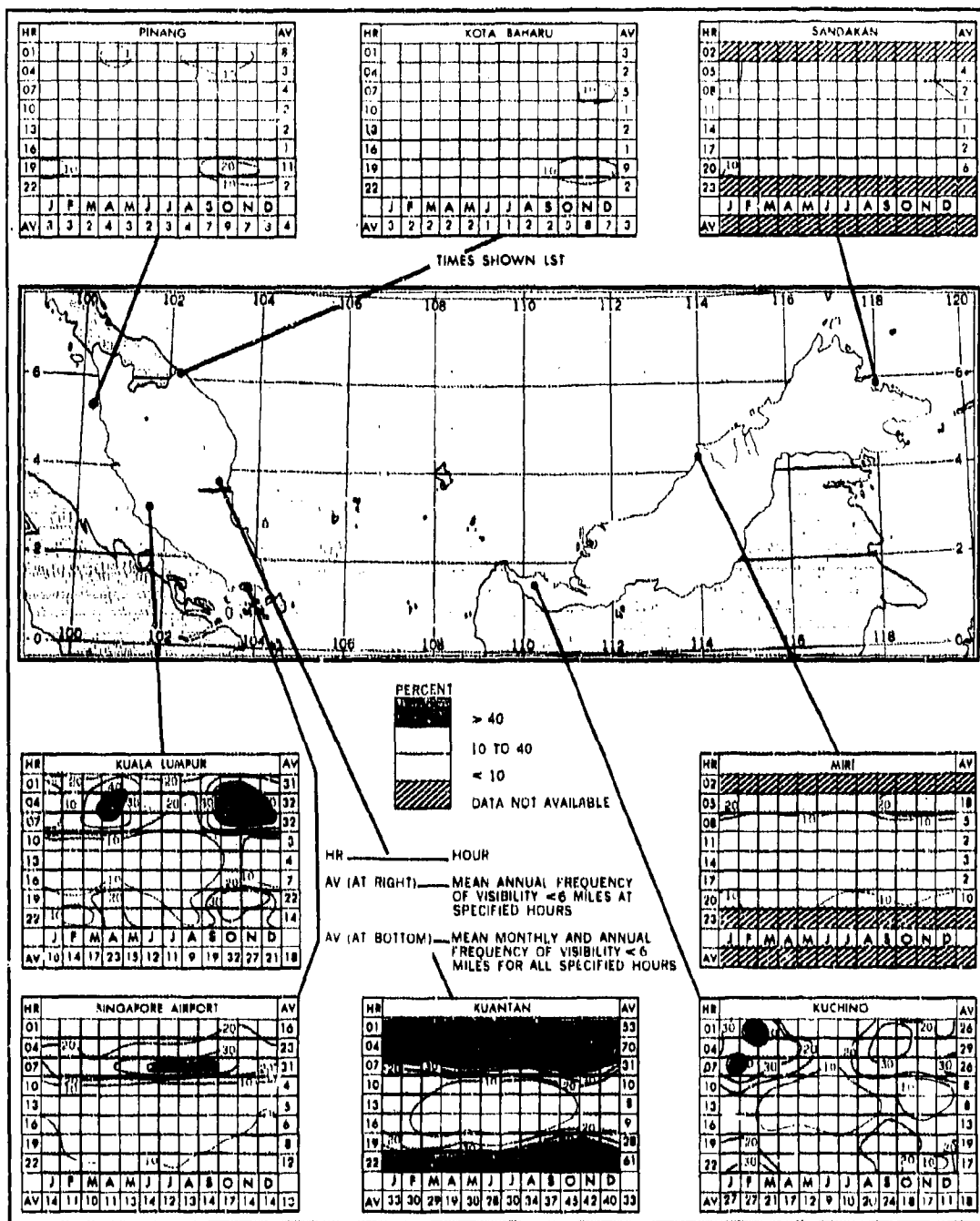


FIGURE 14. PERCENTAGE FREQUENCY OF VISIBILITY < 6 MILES. (For tabular data see Figure 37.)

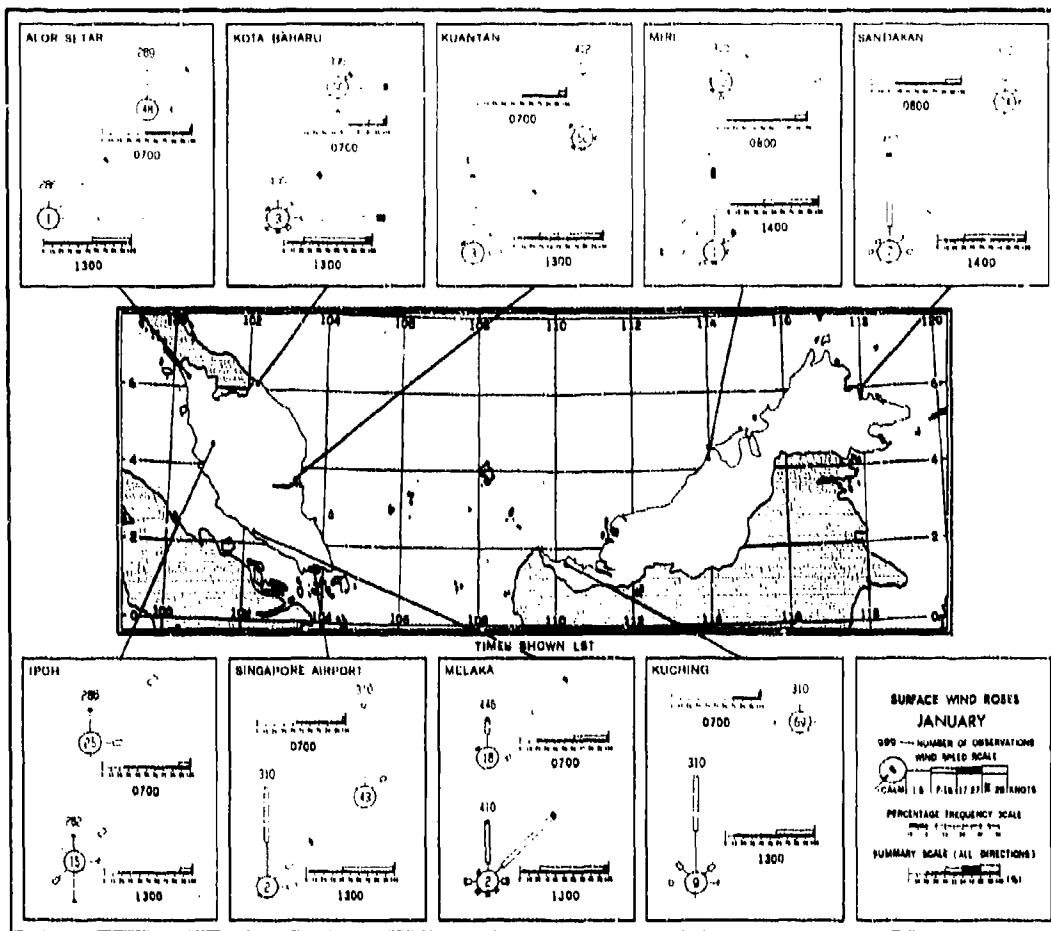


FIGURE 15. MORNING AND AFTERNOON SURFACE WIND ROSES, JANUARY

visibility less than  $2\frac{1}{2}$  miles seldom occurs. Even visibility less than 6 miles is infrequent. As a result visual operations on the coast are rarely prohibited by poor surface visibility. When operations are prohibited the chief restrictions are a heavy rain shower or an early morning ground fog which disperses soon after sunrise.

The frequency of restricted visibility increases sharply toward the interior in the lowlands, as exhibited at Kuantan, Kuala Lumpur, and Kuching, and the inland diurnal pattern is strikingly different from that on the coast. Most of the daylight hours are relatively free of restricted visibilities throughout the year. Brief rain showers are the chief restriction. However, visibility is frequently reduced to less than 6 miles between sunset and sunrise, and remains low continuously throughout this part of the day. The main causes probably are haze and low stratus or fog, especially in the swampy areas.

In the mountainous regions visibility is restricted in two types of areas. Radiation fogs frequently form in river valleys in early morning. Secondly, low cloud extends to the ground at any time of day, especially on ridges and slopes exposed to the monsoonal flow.

#### 7. Winds

a. SURFACE — The complex topography and the strong effect of the land and sea breeze produce endless deflections and deviations of the surface wind. On the coast the major influence is the land and sea breeze. Only during the northeast monsoon is the general flow strong enough at a few coastal locations to overcome this local diurnal effect (Figure 15). During the remainder of the year, the land and sea breezes provide almost daily interruptions of the broad-scale but weak monsoonal flow (Figures 16, 17, and 18). The sea breeze usually begins about mid-morning and blows inland from the sea until it subsides around sunset. The land breeze, usually weaker

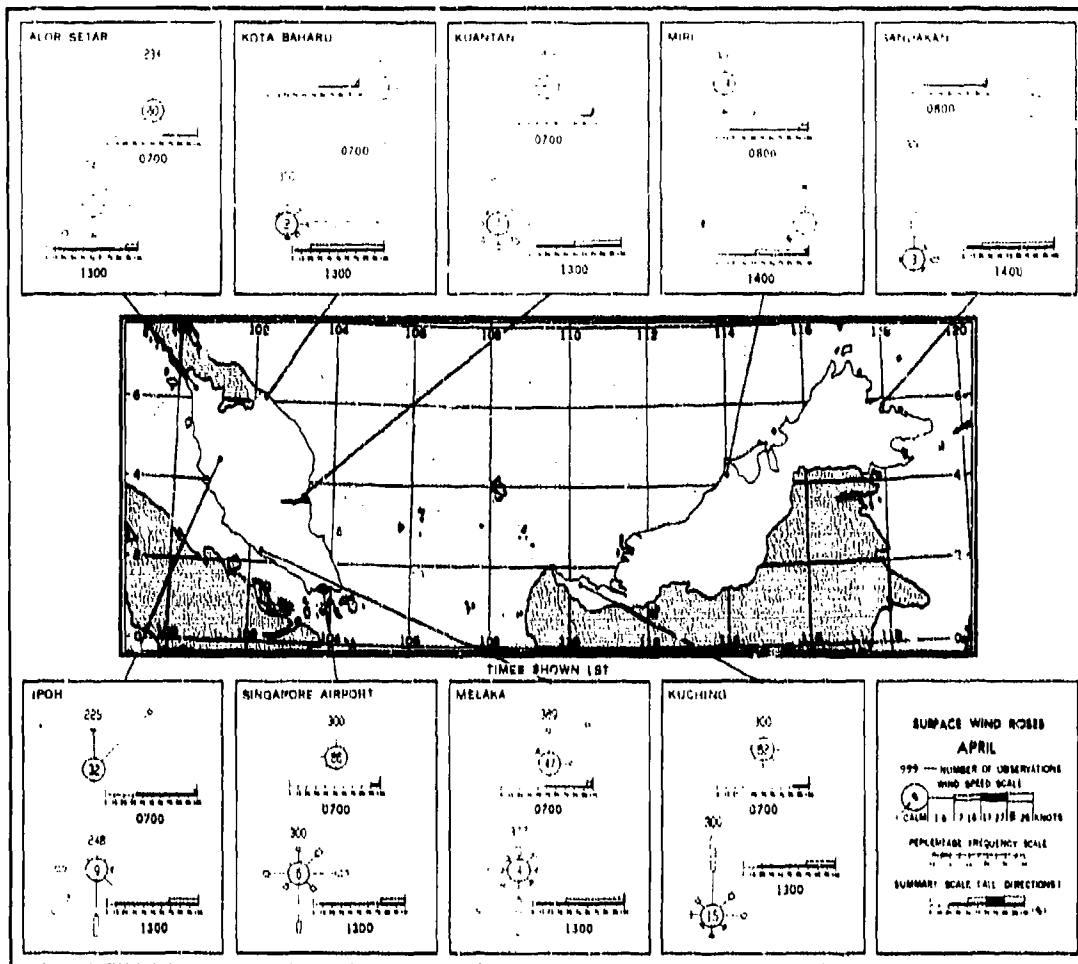


FIGURE 18. MORNING AND AFTERNOON SURFACE WIND ROSES, APRIL.

than the sea breeze, begins about 1 to 2 hours after sunset and continues until daybreak. Although data for the mountainous interior are sparse, undoubtedly the local terrain exerts an important influence, and wind directions should show considerable variation, particularly during the southwest monsoon and the two transition seasons. The orientation of the mountain range is instrumental as well because such barriers divert the general airflow. In the rugged interiors mountain and valley winds probably are common and are diurnal in nature. The valley wind blows during the day as the warm air rises along the slope of the mountain. The mountain wind blows at night as the cool air sinks to the valley floor.

Wind speeds are usually light, especially in the early morning. Figures 15 through 18 show calms occurring more than 50% of the time at 0700 LST at several places. Conversely, calms occur infrequently during the afternoon because the sea breeze is a

stronger and more reliable daily feature. At inland locations wind speeds normally are lighter and calms more frequent, even in the afternoon. The strongest winds generally occur during thunderstorms or squalls. Wind speeds of 20 to 30 knots are to be expected, and speeds between 30 and 60 knots have been recorded on occasion. Speeds greater than 60 knots are rare.

b. UPPER-AIR -- Detailed upper-wind statistics for Singapore Airport (Figure 19) are considered fairly representative for the Area with the single exception that wind speeds at the higher levels are somewhat stronger in the north than around Singapore.

Malaysia and Singapore are overlain by 3 nearly independent wind systems. The lowest of these are the monsoon currents. During December through February, the northeast monsoon prevails to about 8,000 to 10,000 feet. The northerly component winds become more northeasterly north of Singapore. Mean

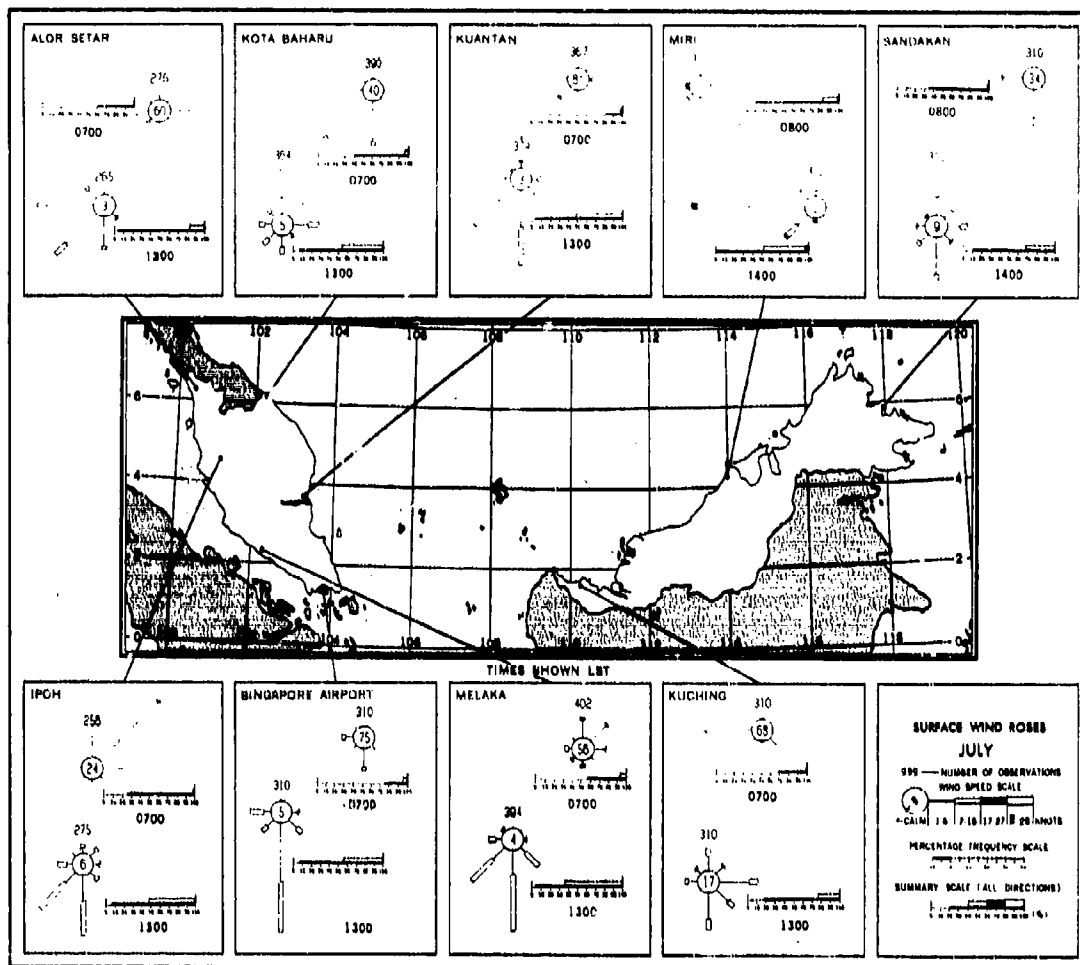


FIGURE 17. MORNING AND AFTERNOON SURFACE WIND ROSES, JULY

wind speeds do not normally exceed 15 knots, and winds in excess of 30 knots are confined to the northernmost sections. During June through September, the southwest monsoon extends to about 10,000 feet in the south and to about 15,000 feet in the north. Wind components vary between south and west, and mean speeds are less than 20 knots. Maximum speeds infrequently exceed 30 knots.

Above the monsoons and extending up to the tropopause, which is generally between 52,000 and 54,000 feet, are the persistent tropical easterlies. The easterlies are present throughout the year, and mean speeds increase with height to average maximums ranging between about 25 knots in March through May and 40 to 55 knots in June through August at about 45,000 to 50,000 feet. On rare occasions speeds in excess of 75 knots have been recorded, especially during the June through August period.

The third major windfield is situated above the tropopause. Alternate layers of persistent easterlies,

often called the *Krakatoa* easterlies, and persistent westerlies, generally referred to as the *Von Berson* westerlies, dominate the high levels with an unusual mean cycle. The layers progress slowly toward the tropopause, where they weaken and disappear while new layers successively appear at the higher levels. The whole sequence takes about 26 months. The oscillation is strongest over the Equator near 80,000 feet, where wind speeds vary by as much as 80 knots over the course of the cycle. With increasing latitude this oscillation is believed to weaken.

#### 8. Thunderstorms and turbulence

Thunderstorms are a prominent feature of the climate and, because of their high frequency of occurrence and severity, are a potential hazard to military operations. Both the tropical location and the mountainous terrain contribute to the high frequency of thunderstorm activity in Malaysia and Singapore. The mean annual number of days with thunderstorms

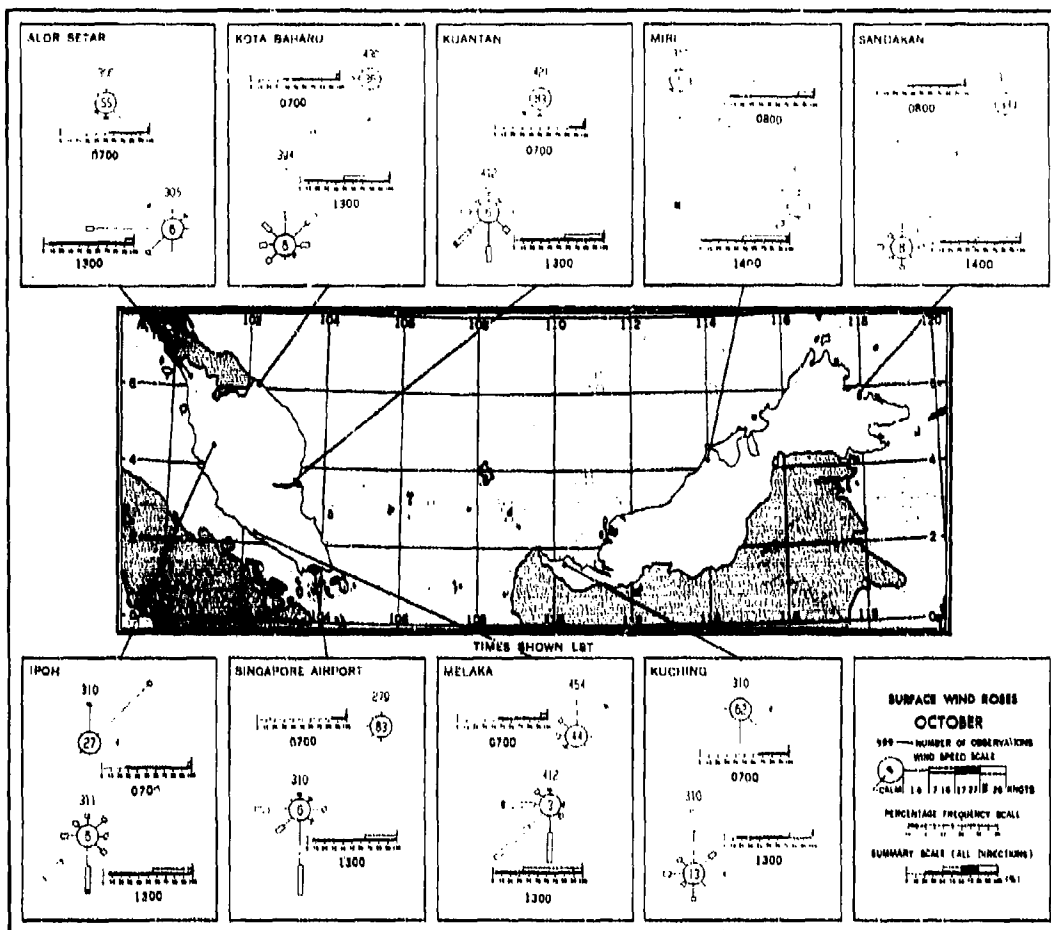


FIGURE 18. MORNING AND AFTERNOON SURFACE WIND ROSES, OCTOBER

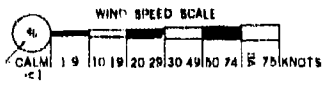
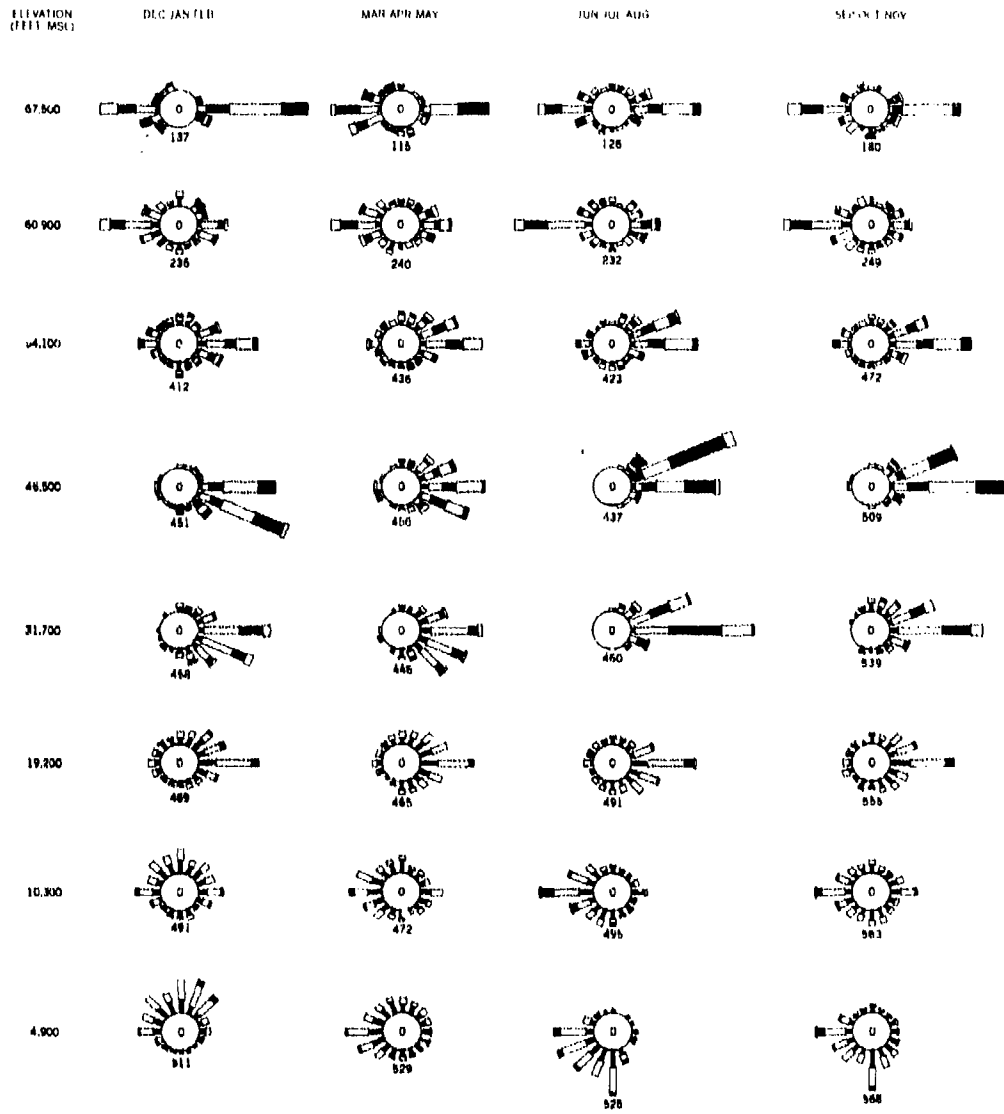
ranges between about 95 and 180 (Figures 20 and 38). Most places record thunderstorms on 100 to 150 days per year, but at least 8 locations have more than 150 days. Seasonally, thunderstorm activity is generally at a minimum in January and February. Most localities experience 1 to 5 thunderstorm days per month at this time except at some places near the west coast of West Malaysia, where frequencies may be as high as 8 to 12 days per month. In March, thunderstorm activity increases everywhere, and most places have a maximum in April or May, when about 15 to 25 thunderstorm days per month are recorded. The high incidence continues until a secondary maximum occurs during the autumn transition. Thunderstorms are also fairly frequent in November but show a sharp decrease in number in December. Thunderstorms may occur at any hour of the day, but they are by far most common during the late afternoon or early evening. Minimum activity is noted around

sunrise. The west coast of West Malaysia, however, has a secondary maximum between 0000 LST and 0600 LST during the southwest monsoon, when sumatras form over water at night and move onto the coast in the early morning.

In the tropics, thunderstorms tower to great heights, sometimes over 50,000 feet. Surface wind gusts in severe thunderstorms may reach 50 to 60 knots and cause local damage to housing and storage facilities. Although moderate to heavy rain is observed in large cumulus clouds, the heaviest rainfall generally occurs in thunderstorms and often is torrential. Hail is very rare at the surface and is believed to be infrequent aloft.

Turbulence is often severe in cumulonimbus clouds as well as in towering cumulus that are approaching the cumulonimbus stage. Vertical air movements of 2,000 feet per minute are common. Because thunderstorms are often isolated, they may be circumnavi-

UPPER-AIR WIND ROSES  
SINGAPORE AIRPORT



NUMBER OF OBSERVATIONS  
INDICATED BELOW EACH ROSE

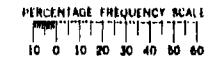


FIGURE 10. UPPER-AIR WIND ROSES, SINGAPORE AIRPORT

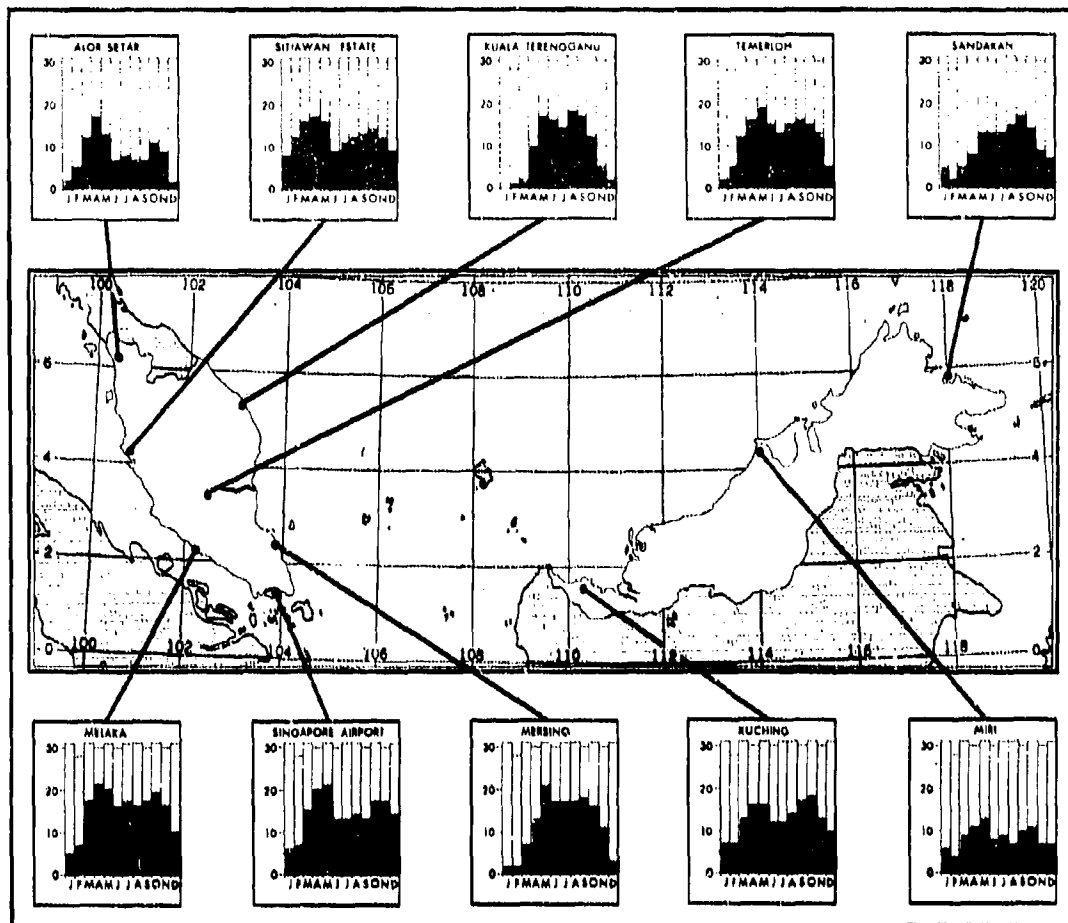


FIGURE 20. MEAN NUMBER OF DAYS WITH THUNDERSTORMS. (For tabular data see Figure 35.)

gated, and every effort should be made to avoid them. Turbulence and strong updrafts and downdrafts are commonly found near the crest of ridges and may be found along the lee side of mountains during strong flow across the mountains. Thermal turbulence is also likely to be encountered during the day, even at considerable heights, and may be severe at times.

#### 9. Combinations of weather elements

The success or failure of several types of operations may be dependent upon the simultaneous occurrence of two or three weather elements. Operations such as high-level visual bombing and aerial photography, as well as takeoff and landing, are generally concerned with sky conditions or ceiling and visibility. The success of other operations such as chemical warfare, incendiary bombing, and parachute operations depends upon the strength of the surface wind in combinations with various other weather elements. Four such combinations have been included to facilitate

the planning of these operations. They include cloud cover or ceiling and visibility (Figures 39 and 40), ceiling, visibility, and surface wind speed (Figure 41), and surface wind speed, precipitation, and temperature (Figure 42).

#### E. Climatic data tables

This subsection contains the climatological data tables referred to in the previous subsections. Data coverage for the entire Area is generally fair. Tabular data by specified hours were taken from machine summaries and are based on observations mostly during the period 1949 through 1967. The areal coverage of these data is good along the coasts but sparse or nonexistent in the interior. Data from other sources are based on observations covering a wide variety of years of record. However, the short-period records should be used with caution. In all cases the data presented are the best available and are considered

reliable. All of the data given in the tables were carefully selected to best portray the climate of Malaysia and Singapore. The annual values in some tables may differ slightly from the sums or means of the monthly values because of the rounding of fractions.

In order to provide as much information as possible about the tabular data base, there are 3 notations concerning the number of years of record used throughout Subsection E. On those machine processed tables that were derived from 3-hourly and 6-hourly observations averaged over a number of years, the notations POR (period of record) and CYR (composite years of record) appear under the Data Base Information column. The POR is the time span, expressed in years, during which the observations

were taken and represents the total number of years considered in the data base. The CYR is obtained by totaling the observations taken at sporadic intervals during the POR and converting this total to the number of years it would have covered if the period of record had been unbroken. In other words, the CYR is an imaginary number of years of record containing the same number of observations as the broken period of record that covered a longer span of years. For stations for which the data were obtained from several sources, only the notation YRS REC (years of record) is used because the POR and CYR usually could not be accurately determined.

A map of station locations (Figure 43), with an accompanying list giving latitude, longitude, and elevation of stations appears at the end of this section.



FIGURE 21. MEAN DAILY MAXIMUM TEMPERATURE (°F.)

REGION AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
<b>West Malaysia and Singapore:</b>														
Alor Setar.....	80	82	83	82	80	80	80	88	87	87	88	88	80	17-18
Baling.....	80	80	82	81	81	80	80	80	80	88	88	80	80	14
Bukit Fraser.....	80	72	73	74	75	74	74	74	74	73	72	70	73	12
Bukit Jeram.....	87	80	80	80	80	80	80	80	80	88	87	87	80	10
Bukit Maxwell.....	75	75	76	76	75	70	76	70	75	75	74	74	75	12-13
Butterworth.....	88	80	80	80	80	88	87	87	87	86	86	87	88	7
Cameron Highlands.....	71	72	73	74	74	74	73	72	72	72	71	71	72	20
Dungun.....	85	80	87	88	80	80	88	88	88	88	87	86	87	9-10
Ipo.....	81	83	83	83	82	82	82	82	81	80	80	80	82	17-18
Jerangau Estate.....	85	80	80	81	82	82	82	82	82	80	80	80	80	4
Kajang.....	80	82	82	82	82	81	81	81	80	80	80	80	81	17
Kampar.....	80	80	81	81	81	81	81	81	80	80	80	80	80	17
Kampung Kemaman.....	84	80	88	80	80	80	80	88	80	88	80	85	88	10-11
Kangar.....	80	82	83	83	81	80	80	80	88	88	80	80	80	16-17
Kelang.....	85	88	80	80	80	88	87	88	88	88	87	86	88	10
Kota Baharu.....	84	80	88	80	80	80	80	80	88	86	84	84	87	14-15
Kota Tinggi.....	80	88	80	80	80	80	80	80	80	80	80	87	80	15-16
Kuala Kelawang.....	88	80	80	81	80	80	80	80	80	80	80	88	80	10-17
Kuala Kerau.....	80	88	80	81	81	81	80	80	80	80	80	87	80	12-13
Kuala Lipis.....	85	88	80	80	80	80	80	80	80	88	87	85	88	8
Kuala Lumpur.....	80	82	82	81	81	81	80	80	80	80	80	80	80	10
Kuala Pahang.....	82	84	80	87	88	87	87	87	87	86	85	83	80	10
Kuala Terengganu.....	83	84	87	80	80	80	80	88	88	87	84	83	87	15-17
Kuantan.....	84	80	88	80	80	80	80	80	80	80	86	84	88	18
Melaka.....	88	80	80	80	80	88	88	88	88	88	88	88	88	48
Meruing.....	82	83	86	88	80	88	87	87	88	87	85	83	80	17-18
Pinang.....	80	81	82	81	80	80	80	80	88	80	88	80	80	40
Pontian Kochil.....	86	87	87	87	87	88	87	88	80	80	86	86	87	12
Port Dickson.....	88	88	88	88	88	88	88	88	88	88	88	88	88	16-17
Pulau Langkawi.....	80	80	80	80	88	88	87	87	87	88	87	80	88	13-14
Sagamat.....	87	80	82	83	82	82	81	81	81	81	80	88	80	13-14
Singapore.....	80	88	88	88	80	88	88	87	87	87	87	87	87	30
Singapore Airport.....	80	87	80	80	80	88	87	87	88	88	87	86	88	10
Sitiawan Estate.....	88	80	80	80	80	80	80	80	80	88	88	88	80	18
Taiping.....	80	80	80	80	81	81	81	80	80	80	88	80	80	13-14
Temerloh.....	85	88	80	81	81	80	80	80	80	80	87	86	88	10
<b>East Malaysia and Brunei:</b>														
Beaufort.....	80	80	81	81	81	81	81	81	81	80	80	80	80	13
Bintulu.....	86	85	87	88	80	80	88	88	88	87	87	87	88	14
Brunei.....	85	85	86	87	87	87	87	87	87	86	86	86	86	8
Konjau.....	80	81	82	82	82	80	80	81	81	80	80	80	81	12
Kota Kinabalu.....	80	80	87	88	80	88	88	89	88	87	87	86	87	20
Kuching.....	85	85	87	80	80	80	80	80	80	80	88	86	88	14
Kudat.....	80	87	80	81	81	81	80	80	80	80	88	87	80	13-15
Miri.....	80	80	87	88	80	80	88	88	87	87	87	87	87	14
Sandakan.....	85	80	87	80	80	80	80	80	80	88	87	86	88	45
Sibu.....	84	85	86	86	87	86	86	87	87	87	86	85	86	8
Tambunan.....	86	87	80	80	80	80	80	80	80	88	87	86	88	9-10
Tawau.....	80	80	80	80	80	88	80	88	80	80	80	80	80	13
Toton.....	80	81	82	82	82	80	80	81	81	80	80	80	81	12
Victoria.....	80	86	87	80	80	88	88	88	87	87	87	86	87	21

FIGURE 22. MEAN DAILY MINIMUM TEMPERATURE (°F.)

REGION AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
West Malaysia and Singa-														
pore:														
Alor Setar.....	71	71	73	74	75	74	74	74	74	74	73	72	73	17-18
Baling.....	71	71	72	73	73	73	72	72	72	72	71	71	72	14
Bukit Fraser.....	60	61	62	63	64	63	62	62	62	62	62	61	62	12
Bukit Jeram.....	70	72	73	73	74	72	73	72	73	72	72	72	73	10
Bukit Maxwell.....	63	64	64	65	64	64	64	64	64	64	64	64	64	12-13
Butterworth.....	72	73	74	75	75	74	74	74	74	74	73	73	74	7
Cameron Highlands.....	56	55	55	57	58	56	55	55	57	57	57	56	56	26
Dungun.....	73	73	74	74	75	74	74	74	74	74	74	73	74	9
Ipoh.....	71	72	73	74	74	73	72	73	73	73	72	72	73	17-18
Jerangau Estate.....	71	70	71	72	73	73	72	72	72	72	72	71	72	4
Kajang.....	70	70	71	72	73	71	71	71	71	71	71	71	71	13-14
Kampar.....	71	72	72	72	73	73	72	72	71	72	71	71	72	12-13
Kampung Kemaman.....	72	71	72	73	74	74	73	73	73	73	72	72	73	13
Kangar.....	72	72	73	74	75	74	74	74	74	74	73	73	73	15-16
Keluang.....	71	71	72	72	72	72	71	71	71	71	71	71	71	10
Kota Bharu.....	73	73	73	75	75	75	74	74	74	74	74	73	74	16
Kota Tinggi.....	72	71	71	72	72	72	71	71	71	71	72	72	72	15-16
Kuala Kelawang.....	70	70	71	72	72	70	70	70	70	71	71	70	71	17
Kuala Keral.....	71	70	71	72	72	72	72	72	72	72	72	71	72	12-13
Kuala Lipis.....	70	71	72	72	73	72	72	71	71	72	71	71	71	8
Kuala Lumpur.....	72	72	73	74	74	73	72	73	73	73	73	72	73	19
Kuala Pahang.....	74	75	75	75	75	74	74	74	74	74	74	74	74	10
Kuala Terengganu.....	73	73	73	74	74	74	73	73	73	73	73	73	73	17-18
Kuantan.....	71	71	71	72	73	73	72	72	72	72	72	71	72	18
Melaka.....	72	72	72	73	73	73	72	72	72	72	72	72	72	48
Mersing.....	74	74	73	73	73	73	72	72	72	72	72	73	73	17-18
Pinang.....	73	73	74	75	74	74	74	73	73	73	73	73	74	49
Pontian Keoh.....	71	71	72	72	72	73	72	72	72	72	72	72	72	11
Port Dickson.....	74	74	75	75	75	75	75	74	74	74	74	74	74	16-17
Pulau Langkawi.....	73	73	74	74	74	74	73	73	73	73	73	73	73	13-14
Selangor.....	72	72	73	73	74	73	72	72	72	72	72	72	72	13-14
Singapore.....	73	73	75	75	75	75	75	75	75	74	74	74	74	39
Singapore Airport.....	74	74	74	75	75	75	75	75	75	74	74	74	75	16
Sitiawan Estate.....	72	72	73	74	74	73	72	73	73	73	73	72	73	18
Taiping.....	71	71	73	73	74	73	72	72	72	72	72	72	72	14
Temerloh.....	71	71	72	73	73	73	72	72	72	73	73	72	72	10
East Malaysia and Brunei:														
Beaufort.....	73	73	74	74	74	74	74	74	73	74	73	73	74	13
Bintulu.....	73	73	73	74	74	73	73	73	73	73	73	73	73	14
Brunei.....	76	76	76	77	77	77	76	76	77	77	77	77	77	5
Keningau.....	71	71	72	73	72	72	71	71	71	71	71	71	71	17
Kota Kinabalu.....	71	71	71	72	72	72	71	71	71	71	71	71	71	20
Kuching.....	72	72	73	73	73	73	72	72	72	72	72	72	72	14
Kudat.....	74	74	75	75	75	75	74	75	74	74	75	74	75	11-13
Miri.....	74	74	74	75	75	75	74	74	74	74	74	74	74	14
Sandakan.....	74	74	75	75	75	75	75	75	75	75	75	74	75	45
Sibu.....	73	74	74	74	74	74	74	75	74	74	74	74	74	5
Tambunan.....	67	68	66	67	68	67	66	66	67	67	67	68	67	9-10
Tawau.....	71	71	71	72	71	71	71	71	71	71	71	71	71	13
Tenom.....	71	71	72	73	72	72	71	71	71	71	71	71	71	13
Victoria.....	76	76	76	76	76	76	77	76	76	76	76	76	76	21

FIGURE 23. ABSOLUTE MAXIMUM TEMPERATURE (°F.)

REGION AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
<b>West Malaysia and Singapore</b>														
Alor Setar.....	87	89	89	100	90	86	84	87	83	83	85	84	100	18-19
Baling.....	95	96	97	98	96	94	94	93	92	93	93	93	98	14
Bukit Fraser.....	76	80	81	81	80	80	79	80	79	80	79	78	81	12
Bukit Jeram.....	93	94	96	98	93	94	93	93	94	93	92	91	98	11
Bukit Maxwell.....	82	81	82	83	85	83	83	83	82	82	83	81	85	13-14
Butterworth.....	75	80	85	94	92	91	91	91	92	91	91	90	96	7
Cameron Highlands.....	77	79	79	80	79	80	79	78	78	77	78	77	80	26
Dungun.....	90	90	91	93	93	94	94	91	91	93	91	91	94	9-10
Ipoh.....	98	99	99	97	99	98	87	98	97	98	96	97	99	18-19
Jerangau Estate.....	90	92	94	94	95	96	95	95	95	95	92	92	95	4
Kajang.....	96	96	97	97	96	97	97	96	97	95	95	95	97	17
Kampar.....	95	97	97	95	96	98	97	97	96	96	96	94	98	17
Kampong Kemaman.....	90	90	93	95	94	95	93	93	94	94	92	91	95	10-11
Kangar.....	96	99	99	99	98	96	95	98	96	95	96	94	99	17-18
Keluang.....	91	95	96	95	94	94	93	93	94	93	92	94	96	10
Kota Baharu.....	90	91	94	96	96	94	93	95	93	95	91	90	96	15-16
Kota Tinggi.....	93	94	94	94	95	94	94	94	94	94	94	92	95	15-16
Kuala Kelawang.....	92	95	95	96	95	94	94	94	93	92	93	92	96	16-17
Kuala Keral.....	94	96	97	98	96	95	95	97	94	96	95	92	98	12-13
Kuala Lipis.....	91	94	95	95	95	93	96	94	95	95	91	93	96	8
Kuala Lumpur.....	96	99	98	96	97	97	96	96	95	95	95	95	99	20
Kuala Pahang.....	87	89	92	91	93	92	93	91	92	93	92	89	93	10
Kuala Terengganu.....	89	90	92	93	95	95	94	93	93	92	91	89	95	16-18
Kuantan.....	92	94	94	95	97	95	97	95	96	94	93	93	98	19
Melaka.....	93	95	96	96	98	96	99	94	99	92	93	94	99	35
Moring.....	88	95	93	93	96	96	99	93	92	94	93	90	99	18-19
Pinang.....	98	97	98	98	96	97	95	96	98	94	95	95	98	48
Pontian Kechil.....	92	91	93	92	91	92	92	91	90	92	90	92	93	12
Port Dickson.....	95	93	94	94	92	95	93	93	92	92	93	93	95	16-17
Pulau Langkawi.....	99	98	97	98	95	95	95	96	95	96	97	97	99	13-14
Sagamat.....	95	96	98	100	99	98	103	96	100	96	96	94	103	13-14
Singapore.....	93	94	94	95	97	95	93	93	93	93	92	93	97	39
Singapore Airport.....	92	93	94	94	95	92	93	92	93	93	92	93	95	17
Sitiawan Estate.....	93	95	96	94	96	96	95	94	95	94	93	92	96	19
Taiping.....	94	95	95	96	97	96	97	98	95	94	94	93	97	13-14
Temerloh.....	91	95	96	97	96	95	95	95	95	95	93	92	97	10
<b>East Malaysia and Brunei</b>														
Beaufort.....	97	98	98	99	95	96	97	97	96	98	96	95	99	12
Bintulu.....	92	92	92	93	95	99	93	96	93	93	92	92	99	15
Brunei.....	92	90	91	92	92	92	92	92	91	89	89	89	92	5
Keningau.....	95	96	97	97	95	95	95	96	97	96	95	96	97	11
Kota Kinabalu.....	92	93	93	93	97	94	98	94	92	92	94	92	98	24
Kuching.....	93	93	93	96	95	96	97	96	94	94	93	93	97	15
Kudat.....	93	93	94	96	96	95	96	95	96	94	94	94	96	12-14
Miri.....	93	91	93	93	93	95	95	94	93	92	92	92	95	14
Bandakan.....	91	91	94	95	95	99	96	95	97	94	93	92	99	35
Sibu.....	90	92	92	99	99	99	99	99	93	92	93	93	99	8
Tambunan.....	91	94	97	96	95	95	95	95	95	98	93	96	98	10
Tawau.....	94	96	95	94	94	94	95	93	97	95	93	95	97	12
Tenom.....	95	96	97	97	95	95	95	96	97	96	95	96	97	11
Victoria.....	94	93	93	95	99	94	93	99	92	94	93	95	99	22

FIGURE 24. ABSOLUTE MINIMUM TEMPERATURE (°F.)

REGION AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
<b>West Malaysia and Singa- pore:</b>														
Alor Setar.....	61	64	63	68	71	70	70	70	69	70	64	63	61	18-19
Baling.....	63	64	63	70	69	68	68	69	68	68	65	65	63	14
Bukit Fraser.....	53	56	56	59	59	58	58	58	59	58	59	53	53	12
Bukit Jeram.....	66	69	69	70	69	69	67	69	69	69	69	68	66	10
Bukit Maxwell.....	56	58	59	60	52	56	59	58	52	52	59	53	52	13-14
Butterworth.....	65	69	70	72	72	70	69	71	70	71	70	68	65	7
Cameron Highlands.....	36	40	43	47	45	41	44	45	46	44	44	42	36	26
Dungun.....	69	70	70	70	69	71	69	70	71	71	70	68	68	9
Ipoh.....	64	64	64	65	67	67	66	67	68	68	65	65	64	18-19
Jarangan Estate.....	64	64	66	67	70	68	68	68	68	68	68	68	64	4
Kajang.....	65	65	67	69	68	66	66	67	67	67	66	65	65	13-14
Kampar.....	68	68	68	68	68	68	68	66	66	65	67	64	64	12-13
Kampong Kemaman.....	66	66	66	69	68	70	69	68	68	69	68	67	66	13
Kangar.....	63	61	61	69	70	68	68	66	69	70	66	66	61	18-19
Keluang.....	64	66	66	68	69	67	67	67	67	68	69	66	64	10
Kota Baharu.....	62	64	64	65	71	70	70	70	69	69	69	66	62	17
Kota Tinggi.....	66	66	66	66	67	66	65	65	66	66	67	65	65	17-18
Kuala Kelwang.....	64	63	65	66	63	63	63	66	65	66	66	66	63	17
Kuala Keral.....	61	65	65	65	69	69	68	67	68	69	69	65	61	12-13
Kuala Lipis.....	63	65	66	69	68	67	67	67	67	68	68	66	63	8
Kuala Lumpur.....	64	66	66	70	69	68	67	68	68	69	69	66	64	20
Kuala Pahang.....	65	67	69	71	70	70	69	70	69	71	71	69	65	10
Kuala Terengganu.....	63	65	66	68	68	69	69	68	68	69	67	67	63	18-19
Kuantan.....	62	61	62	66	66	67	66	66	67	68	66	64	61	19
Melaka.....	65	63	65	67	67	67	64	61	65	64	62	65	61	35
Merang.....	64	65	67	68	68	69	67	66	67	68	69	66	64	18-19
Pinang.....	66	66	67	67	67	68	69	69	68	67	65	67	65	48
Pontian Kecil.....	67	66	67	68	70	70	68	69	70	70	69	69	66	12
Port Dickson.....	70	70	71	72	72	70	70	69	70	71	71	70	69	16-17
Pulau Langkawi.....	64	68	68	70	69	69	69	70	69	70	68	69	64	13-14
Segamat.....	66	67	68	70	68	68	68	67	66	69	68	69	66	13-14
Singapore.....	68	66	67	70	70	70	70	69	69	69	69	69	66	39
Singapore Airport.....	69	67	70	71	71	69	70	70	70	69	70	69	67	17
Sitiawan Estate.....	62	64	66	70	68	67	67	69	68	68	65	66	62	19
Taiping.....	64	66	65	70	70	69	68	69	68	68	65	65	64	14
Temerloh.....	64	66	67	69	68	68	68	67	66	69	69	65	64	10
<b>East Malaysia and Brunei:</b>														
Beaufort.....	67	69	68	70	71	70	70	70	69	70	68	69	67	12
Bintulu.....	63	68	67	70	70	68	69	68	70	69	70	68	63	15
Brunei.....	72	71	70	72	70	72	72	73	74	73	74	72	70	5
Keningau.....	63	62	63	65	66	64	64	64	64	64	62	60	62	13
Kota Kinabalu.....	64	62	64	64	65	65	63	61	62	67	65	64	61	24
Kuching.....	65	67	65	68	66	66	66	67	65	68	64	66	64	15
Kudat.....	65	62	65	63	65	65	65	67	65	66	68	66	62	10-13
Miri.....	69	69	64	66	65	65	70	70	69	63	68	69	63	74
Bandakan.....	65	69	68	70	70	69	69	67	69	69	68	69	65	35
Sibu.....	63	70	70	69	70	69	70	68	71	69	71	69	63	7
Tambunan.....	58	54	58	61	61	60	57	59	61	63	61	58	54	10
Tawau.....	61	65	66	67	64	67	65	65	66	68	68	65	61	12
Tenom.....	63	62	63	65	66	64	64	64	66	65	69	66	62	19
Victoria.....	68	68	63	60	59	60	68	68	64	63	69	69	60	22

FIGURE 25. MEAN NUMBER OF DAYS WITH MAXIMUM TEMPERATURE 90°F. OR HIGHER

REGION AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	DATA BASE INFO	
														FOR	CYR
<b>West Malaysia and Singapore:</b>															
Alor Setar.....	20	26	30	27	21	19	15	12	9	7	12	13	210	11-14	6-8
Ipoh.....	23	20	20	20	20	27	26	25	23	20	20	20	206	11-14	6-7
Kota Bharu.....	*	*	5	20	24	20	16	11	12	4	1	*	112	11-15	6-7
Kuala Lumpur.....	21	23	27	26	26	23	21	21	19	17	16	18	257	13-17	7-8
Kuala Terengganu.....	0	*	2	15	22	19	17	11	7	3	*	0	85	9-13	6-7
Kuantan.....	1	1	10	19	23	21	19	21	18	13	5	1	151	11-16	6-7
Melaka.....	9	13	12	13	13	7	4	3	4	5	6	4	90	13-16	7-8
Mersing.....	0	1	3	15	21	14	8	6	5	7	3	*	82	11-13	5-7
Pinang.....	14	17	15	15	15	11	5	6	5	3	5	6	116	6-10	6-8
Singapore Airport.....	1	3	13	16	16	9	8	4	7	11	5	1	92	10	10
<b>East Malaysia and Brunei:</b>															
Kota Kinabalu.....	*	*	1	5	7	6	3	3	2	*	*	*	27	9-10	9-10
Kuching.....	1	2	6	14	20	18	17	16	13	12	6	3	127	9-10	9-10
Miri.....	1	1	3	5	9	10	6	6	4	3	3	2	51	10	10
Bandakan.....	*	*	*	5	16	16	17	16	15	10	3	*	98	9-10	9-10

\* < 0.5 day.

FIGURE 26. MEAN RELATIVE HUMIDITY (%) AT SPECIFIED HOURS

REGION AND STATION	HOUR (LST)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	DATA BASE INFO	
															FOR	CYR
<b>West Malaysia and Singapore:</b>																
Kota Bharu.....	0100	87	88	89	91	91	93	93	93	93	94	94	95	91	19-20	8-9
Kuala Lumpur.....	0100	93	92	94	95	94	93	94	94	94	95	95	95	94	19-20	9-11
Kuantan.....	0100	96	97	97	97	97	97	97	97	97	98	98	97	97	19-20	8-10
Melaka.....	0100	92	92	93	95	95	96	96	96	96	96	96	95	95	19-20	9-11
Pinang.....	0100	85	88	92	93	93	93	94	94	94	94	93	88	92	19-20	9-10
Singapore Airport.....	0100	93	93	94	95	94	93	93	93	94	95	95	94	94	10	9-10
<b>East Malaysia and Brunei:</b>																
Kuching.....	0100	97	97	96	95	96	95	94	94	95	96	96	96	96	9-10	1-3
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	0700	91	91	93	95	94	95	94	95	95	96	96	94	94	15-16	7-10
Bukit Fraser.....	07:30	99	97	98	96	93	92	92	91	93	93	95	98	95	8	5
Cameron Highlands.....	0700	95	95	97	97	98	97	98	98	98	98	97	99	97	na	11
Ipoh.....	0700	93	94	95	96	95	94	95	95	95	96	96	95	95	15-16	7-10
Kota Bharu.....	0700	92	93	95	94	93	93	93	95	94	95	96	93	94	19-20	12-14
Kuala Lipis.....	0700	100	100	100	100	100	100	100	100	100	100	100	100	100	5	5
Kuala Lumpur.....	0700	96	95	96	96	95	95	96	96	96	96	96	97	96	19-20	13-14
Kuala Terengganu.....	0700	92	94	96	96	95	95	95	95	95	96	96	94	95	15-16	8-10
Kuantan.....	0700	97	97	98	98	98	98	98	98	98	98	98	97	98	19-20	11-14
Melaka.....	0700	92	93	94	95	96	96	96	96	96	96	96	95	95	19-20	13-14
Mersing.....	0700	88	88	91	95	96	96	96	96	96	96	95	93	94	15-16	7-10
Pinang.....	0700	84	88	93	95	95	95	96	95	95	95	94	88	93	19-20	11-14
Singapore Airport.....	0700	94	94	95	95	95	95	94	95	95	95	95	95	95	10	9-10
Temerloh.....	0700	98	98	98	98	97	97	97	97	98	97	98	98	98	5	5
<b>East Malaysia and Brunei:</b>																
Bintulu.....	0800	96	96	95	93	93	94	94	94	94	94	92	95	94	na	3-5
Kota Kinabalu.....	0800	87	87	84	82	83	82	81	82	83	83	85	85	84	9-10	9-10
Kuching.....	0700	97	97	97	96	96	96	96	96	96	96	96	96	96	9-10	9-10
Miri.....	0800	94	93	92	90	90	90	90	90	90	91	91	92	91	10	8-10
Bandakan.....	0800	93	91	92	91	91	92	92	92	92	92	93	94	92	9-10	9-10
Victoria.....	0900	81	82	82	82	82	82	83	82	82	82	82	82	82	na	15-17

Footnote at end of table.

FIGURE 26. MEAN RELATIVE HUMIDITY (Continued)

REGION AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
<b>West Malaysia and Singapore:</b>																
Alor Setar	1300	57	51	53	59	68	67	69	69	71	73	70	63	64	15-16	8-10
Bukit Fraser	1300	90	84	83	84	84	79	78	78	80	81	87	89	83	8	5
Cameron Highlands	1300	76	73	75	78	70	73	73	76	78	80	81	79	77	na	11
Ipoh	1300	59	56	58	60	62	59	60	61	65	65	63	61	61	15-16	8-10
Kota Baharu	1300	73	70	67	65	66	66	66	67	67	71	78	77	69	19-20	11-13
Kuala Lipis	1300	72	69	64	65	69	68	68	68	67	67	72	71	68	5	5
Kuala Lumpur	1300	60	57	59	62	64	63	64	64	64	67	67	64	63	19-20	12-14
Kuala Terengganu	1300	78	75	72	71	69	68	69	69	69	73	79	79	72	15-16	8-10
Kuantan	1300	75	73	71	68	68	66	65	66	65	68	75	78	70	19-20	11-13
Melaka	1300	65	64	66	70	73	71	72	72	71	72	73	70	70	19-20	11-14
Mersing	1300	78	77	74	73	72	72	74	74	74	73	77	81	75	15-16	8-10
Pinang	1300	60	62	60	72	72	70	71	71	73	74	72	66	69	19-20	11-14
Singapore Airport	1300	73	68	68	69	71	71	70	71	70	70	72	75	71	10	10
Temerloh	1300	71	70	65	66	68	65	65	64	64	66	71	70	67	5	5
<b>East Malaysia and Brunei:</b>																
Bintulu	1400	76	77	74	74	74	72	70	73	73	74	73	75	74	na	3-4
Kota Kinabalu	1400	74	73	72	71	72	70	69	70	71	73	74	73	72	9-10	9-10
Kuching	1300	78	76	73	69	68	66	64	64	67	68	72	75	70	9-10	9-10
Miri	1400	78	77	75	74	73	73	73	72	74	75	75	76	75	10	9-10
Sandakan	1400	78	76	72	71	69	68	66	67	68	71	74	77	71	9-10	9-10
Victoria	1800	76	76	75	74	74	74	73	73	74	75	76	77	75	na	15-17
<b>West Malaysia and Singapore:</b>																
Alor Setar	1900	73	69	74	81	83	81	82	81	85	86	88	81	81	15-16	9-11
Bukit Fraser	1900	96	94	93	94	94	94	93	93	94	93	96	96	94	8	5
Cameron Highlands	1900	91	90	93	94	94	92	92	93	94	95	96	93	93	na	11
Ipoh	1900	83	82	83	86	85	81	82	83	86	89	90	88	85	15-16	9-11
Kota Baharu	1900	80	80	79	80	82	81	83	84	86	87	84	82	82	19-20	12-15
Kuala Lumpur	1900	83	81	83	87	84	82	82	82	84	87	89	87	84	19-20	14-16
Kuala Terengganu	1900	83	88	82	82	83	82	84	84	86	87	85	83	83	15-16	9-11
Kuantan	1900	60	88	87	84	89	88	87	88	89	91	94	92	89	19-20	12-14
Melaka	1900	83	82	84	86	86	83	85	84	85	87	99	87	85	19-20	14-16
Mersing	1900	83	82	83	84	86	87	87	88	88	88	88	87	86	15-16	9-10
Pinang	1900	78	77	79	82	83	82	83	83	84	87	87	83	82	19-20	15-16
Singapore Airport	1900	85	82	84	85	85	83	83	83	83	85	88	89	85	10	10
Temerloh	1900	89	87	85	87	88	85	86	84	87	90	93	90	88	5	5
<b>East Malaysia and Brunei:</b>																
Bintulu	2000	89	89	87	89	89	88	87	89	89	89	91	91	89	na	3-4
Kota Kinabalu	2000	89	87	87	87	88	87	86	87	88	89	90	89	88	9-10	9-10
Kuching	1900	91	91	90	91	91	89	88	88	90	92	92	93	90	9-10	9-10
Miri	2000	91	91	90	87	86	85	84	85	86	87	88	90	87	10	9-10
Sandakan	2000	87	84	84	84	87	88	87	87	89	88	89	88	87	9-10	9-10
Victoria	2000	80	87	85	85	85	85	85	85	83	87	87	86	86	na	4-5

na Data not available.

FIGURE 27. MEAN PRECIPITATION (INCHES)

DIRECTION AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
<b>West Malaysia and Singapore:</b>														
Alor Setar.....	2.5	2.2	5.8	9.0	10.7	7.8	7.7	10.4	12.8	11.0	8.1	5.2	94.1	28
Baling.....	2.0	3.8	5.3	9.9	10.0	6.2	7.5	6.4	9.3	13.7	11.9	3.7	90.5	14
Bukit Fraser.....	11.0	7.1	9.8	10.6	8.6	4.8	4.4	5.1	7.3	11.3	14.5	12.1	107.1	36
Bukit Jeram.....	7.2	2.7	6.3	6.3	6.2	3.6	2.4	5.3	4.0	7.5	8.7	7.4	67.8	10
Bukit Maxwell.....	12.0	9.6	15.0	20.1	18.3	13.2	9.3	15.6	10.4	26.3	24.5	17.3	201.5	27
Butterworth.....	4.2	4.1	6.3	8.1	7.2	7.9	5.8	8.7	11.5	14.7	11.9	5.4	95.6	7
Cameron Highlands.....	6.6	5.2	8.5	11.7	9.7	5.5	4.8	6.4	10.3	13.4	13.0	9.0	104.1	26
Dungun.....	7.0	4.6	5.1	4.5	4.3	4.3	4.2	6.8	7.1	8.8	20.3	22.4	99.4	14
Ipoh.....	6.8	6.6	9.5	10.6	10.0	4.8	6.0	6.0	8.0	11.2	11.2	8.7	99.4	18
Jerangan Estate.....	10.3	4.9	4.6	8.5	8.1	0.8	6.0	11.1	14.4	13.6	21.3	41.3	157.5	4
Kajang.....	5.5	6.7	11.8	10.9	8.8	4.9	5.6	6.5	6.8	11.2	10.8	9.3	98.8	18
Kampar.....	10.2	12.3	16.7	17.0	13.2	5.7	8.0	9.4	11.1	16.5	10.0	13.6	149.7	18
Kampong Kemaman.....	13.1	7.5	6.2	5.6	4.6	4.7	5.7	6.4	6.1	9.6	15.2	22.6	107.2	13
Kangar.....	1.0	1.6	4.6	6.2	6.6	6.6	7.7	8.1	12.3	11.0	7.5	1.8	76.0	18
Keluang.....	9.2	4.3	10.5	8.0	10.7	6.0	3.6	6.4	6.9	8.7	9.1	7.9	92.0	10
Kota Bharu.....	10.5	6.1	6.4	4.3	6.1	6.6	5.6	6.4	8.4	11.5	22.3	27.1	121.3	28
Kota Tinggi.....	53.7	6.6	7.0	9.7	9.7	6.9	7.6	10.3	8.5	9.7	13.0	11.7	114.3	16
Kuala Kolawang.....	4.0	4.4	6.6	7.4	6.4	3.0	3.9	4.0	4.7	7.6	8.1	6.8	87.0	17
Kuala Korai.....	12.4	4.3	7.1	4.5	6.9	6.4	6.3	7.5	9.1	11.0	15.5	10.5	110.4	20
Kuala Lipis.....	3.1	5.4	6.2	8.4	8.9	7.6	5.2	7.3	8.4	12.0	11.3	11.5	101.3	33
Kuala Lumpur.....	6.6	6.0	8.8	10.7	8.4	4.9	4.2	6.2	7.3	11.1	10.0	9.6	93.8	51
Kuala Pahang.....	14.8	9.3	8.8	8.8	6.6	4.7	4.7	4.0	6.8	12.2	12.1	22.6	116.5	11
Kuala Terengganu.....	8.6	6.5	9.2	4.0	4.8	5.2	4.8	6.0	6.0	13.8	27.7	24.1	122.5	19
Kuantan.....	16.2	9.2	7.9	8.1	6.7	6.3	4.9	7.1	9.0	10.5	13.8	21.7	121.4	10
Melaka.....	3.0	3.7	4.0	7.4	6.8	7.9	7.8	10.3	9.8	10.1	8.7	6.5	86.8	48
Mersing.....	15.5	8.2	7.5	4.9	5.2	5.5	6.3	6.4	7.3	8.2	12.9	21.6	108.3	18
Pinang.....	3.7	3.1	5.6	7.4	10.7	7.7	7.5	11.6	15.8	16.0	11.9	5.8	107.7	50
Pontian Kochil.....	9.4	5.4	8.3	7.7	8.8	7.3	7.8	8.5	7.3	8.9	9.4	9.1	97.8	14
Port Dikson.....	4.4	3.8	5.7	7.6	7.8	7.9	7.8	9.2	9.4	10.7	9.4	8.5	92.7	18
Pulau Langkawi.....	1.7	1.2	3.7	7.7	9.5	10.1	10.4	11.6	12.9	14.1	9.9	1.3	94.0	13
Sagamat.....	9.1	5.6	5.6	6.3	6.3	4.3	4.1	4.1	6.1	5.9	10.0	8.6	75.0	14
Singapore.....	9.9	6.8	7.8	7.4	6.8	6.8	6.7	7.7	7.0	8.2	10.0	10.1	95.0	64
Singapore Airport.....	11.0	6.0	6.7	6.6	5.9	6.5	6.6	6.8	4.8	6.8	9.3	12.5	89.5	16
Silawan Estate.....	6.6	6.0	5.3	7.4	4.3	3.2	3.6	5.1	6.4	8.6	9.0	7.7	72.9	18
Talping.....	19.9	13.5	17.9	19.8	13.5	6.3	8.7	8.2	12.0	20.8	19.9	13.9	165.5	14
Tanjung.....	7.8	3.9	6.0	7.9	6.6	4.3	3.4	5.6	6.5	9.3	9.7	10.1	80.8	30
<b>East Malaysia and Brunei:</b>														
Beaufort.....	9.5	7.4	10.5	14.1	14.2	12.2	11.5	12.6	15.2	17.9	15.0	14.1	154.0	26
Belaga.....	11.3	13.7	11.2	14.4	11.7	9.3	12.1	7.2	9.8	13.9	12.6	15.2	142.2	8
Beluran.....	20.5	13.0	10.5	4.9	7.5	9.8	8.1	9.2	10.1	9.5	9.1	16.1	129.1	27
Betong.....	14.0	12.9	10.4	10.7	9.7	5.8	10.2	10.2	11.3	18.9	14.6	17.9	146.1	8
Bintulu.....	14.4	11.8	11.4	10.8	10.3	10.9	9.2	10.8	13.2	15.5	15.8	17.7	151.9	33
Brunei.....	14.6	7.6	7.8	9.8	10.9	9.5	9.0	7.3	11.8	14.5	15.2	13.0	131.0	12
Kolabakan.....	8.9	6.3	5.8	7.8	8.9	7.7	6.4	8.2	9.6	7.2	11.1	8.5	95.3	5
Kampung Litang.....	13.6	16.0	6.7	6.9	10.8	6.6	8.6	6.1	9.4	10.3	8.9	10.1	113.3	7
Kampung Matang.....	33.8	21.4	12.1	10.8	10.8	6.7	7.8	8.9	10.0	12.0	14.1	20.7	168.9	32
Kampung Tangkulap.....	10.0	12.5	3.5	4.5	7.0	7.7	7.4	7.8	13.0	8.4	10.7	8.6	100.9	5
Kanowit.....	12.0	14.8	8.0	10.0	11.7	6.5	8.3	13.0	11.0	13.8	13.1	12.0	134.9	8
Kapit.....	16.9	12.1	13.3	12.5	13.4	8.4	8.9	9.6	11.8	13.6	11.7	13.4	145.0	15
Kemahong.....	7.7	5.3	7.2	8.2	7.9	5.0	4.8	6.4	5.0	6.8	7.5	5.9	77.7	16
Keningau.....	6.6	5.4	5.9	6.6	8.1	5.8	4.7	4.4	5.9	7.5	5.2	6.2	72.0	36
Kota Belud.....	5.9	3.2	4.0	5.7	8.7	8.4	7.0	6.0	8.8	10.4	7.7	10.4	86.3	30
Kota Kinabalu.....	4.8	2.3	3.4	5.9	9.3	12.0	10.5	10.0	13.1	14.2	12.1	10.2	107.6	42
Kuching.....	26.8	19.2	13.7	10.1	9.5	8.4	7.6	8.5	10.2	12.8	13.5	19.9	158.1	71
Kudat.....	12.2	6.1	6.5	3.2	4.4	5.0	4.3	4.7	4.8	7.2	11.5	19.6	89.5	34
Labu Bassar.....	23.1	10.3	15.3	16.0	16.3	16.0	12.2	10.6	18.1	22.0	23.8	18.2	200.9	12
Lahad Datu.....	8.4	6.9	6.4	4.3	6.3	6.3	4.7	5.6	5.0	5.9	6.5	8.3	74.5	25
Lamag.....	13.0	7.6	8.6	4.7	7.8	8.8	7.6	9.8	10.3	8.7	9.4	13.4	110.5	29
Langkon.....	16.2	7.8	7.5	5.3	5.8	5.7	3.9	4.9	4.8	6.6	7.0	16.2	91.1	23
Lawas.....	12.3	11.3	12.3	13.0	14.8	12.9	11.8	12.7	15.0	16.7	16.6	16.3	169.1	26
Limbang.....	14.3	10.5	9.8	11.2	12.6	11.4	9.3	11.2	13.2	13.7	13.3	14.0	144.2	21
Long Akah.....	18.0	21.0	15.5	20.6	20.0	13.2	17.5	18.5	16.3	24.0	25.3	21.6	234.0	6
Longnawan.....	12.5	10.9	14.0	15.3	15.0	10.6	10.2	11.1	15.4	16.0	16.5	12.1	160.4	24
Long Semado.....	6.4	7.4	8.3	10.4	8.9	5.9	8.1	6.7	7.5	9.2	8.7	6.8	94.2	5
Lubok Antu.....	11.4	10.8	9.8	12.9	10.4	5.6	9.4	9.7	9.1	10.1	14.2	11.6	124.9	7
Lundu.....	21.6	18.5	13.9	6.9	8.0	7.6	5.6	5.0	7.4	8.6	11.4	10.6	131.0	20

FIGURE 27. MEAN PRECIPITATION (Continued)

REGION AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
East Malaysia and Brunei (Con.):														
Marudi.....	10.2	8.1	0.4	8.7	8.7	7.8	7.4	8.4	10.3	11.0	9.5	12.8	112.8	22
Matu.....	15.5	13.3	6.7	0.3	7.3	6.2	6.4	8.3	0.0	10.0	12.9	17.5	120.5	9
Miri.....	12.4	7.3	6.4	7.4	9.0	9.7	8.0	8.2	12.0	13.0	14.0	14.4	124.2	31
Mukah.....	20.8	17.8	13.0	5.7	7.5	7.0	5.0	0.3	11.3	11.5	10.5	19.4	130.2	14
Papar.....	6.0	3.2	4.3	7.8	10.7	12.0	11.0	10.8	13.8	15.0	12.4	10.9	119.0	26
Pensilangan.....	8.9	0.9	0.5	12.5	12.3	11.0	9.0	8.0	11.0	11.9	9.4	8.4	120.4	19
Pitas.....	10.4	11.4	0.5	5.5	8.2	6.5	5.5	4.3	5.0	7.2	8.7	21.0	112.0	10
Putussibau.....	15.3	14.6	14.8	17.0	13.9	10.7	8.0	10.4	11.7	17.0	19.0	17.3	170.9	40
Ranau.....	11.5	4.6	5.3	5.0	0.5	7.3	5.1	6.6	7.4	6.2	7.1	9.0	84.0	4
Rundum.....	12.7	7.1	8.7	9.5	12.2	10.9	7.6	10.0	8.0	9.2	8.4	8.4	114.2	4
Sandakan.....	18.3	10.9	8.2	5.0	0.1	7.4	7.0	8.5	0.5	10.7	13.0	18.3	123.0	46
Sapulut.....	6.0	6.2	8.8	11.7	12.0	11.8	5.7	8.6	10.2	9.8	8.5	8.5	107.8	12
Sarikel.....	13.0	10.7	11.0	10.0	7.9	6.2	7.0	8.6	11.0	10.0	10.1	13.2	110.0	13
Selalang.....	14.2	12.2	9.0	7.7	7.6	5.8	5.9	6.7	9.4	9.7	13.2	14.7	116.1	7-10
Semporna.....	6.8	5.0	5.0	7.1	8.1	7.7	9.7	7.1	6.8	7.4	7.9	8.0	87.0	10
Serai.....	9.0	5.7	6.3	8.2	8.1	7.9	7.8	7.1	11.4	12.4	11.0	13.0	110.7	11
Sibu.....	13.0	11.0	12.1	10.4	9.2	7.5	8.2	9.2	9.9	11.1	11.3	12.0	120.1	22
Simbangang.....	16.5	13.5	13.0	15.2	12.0	9.0	0.5	10.9	11.1	15.5	17.3	16.6	160.0	18
Simunjan.....	23.0	15.7	13.7	8.6	11.0	7.4	7.0	8.1	11.1	13.4	12.5	21.5	155.1	3.5
Tambunan.....	5.8	3.7	5.8	7.5	8.2	7.3	5.1	4.9	0.4	7.0	6.8	6.0	74.4	29
Tarut Basuar.....	20.7	14.8	11.1	12.1	9.5	0.0	7.5	7.1	11.0	11.3	15.1	13.5	139.1	8
Tawau.....	4.8	3.8	3.9	5.0	7.0	7.4	7.7	7.0	0.0	5.8	6.7	0.2	71.8	33
Tenom.....	0.2	4.5	6.5	5.2	7.1	5.9	4.1	4.7	0.0	6.4	5.1	7.7	69.4	21
Victoria.....	7.0	5.1	5.5	11.3	13.7	14.3	12.8	12.8	15.4	18.4	16.0	13.2	148.2	30

FIGURE 28. GREATEST AND LEAST PRECIPITATION (INCHES)

REGION AND STATION	GREAT- EST														YRS REC	
	LEAST		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		ANN
West Malaysia and Singapore:																
Alor Star.....	G	6.8	0.3	10.3	10.3	16.6	18.9	20.1	17.4	17.0	23.7	18.0	16.2	105.8	10-20	
	L	0.1	*	*	2.6	2.2	2.6	2.3	3.5	3.3	5.3	4.2	*	68.2		
Baling.....	G	7.8	9.5	9.5	15.3	14.9	10.5	13.5	9.9	17.0	26.0	20.4	6.6	113.2	14	
	L	0.0	0.0	1.6	7.4	4.4	3.2	1.8	2.2	5.3	2.0	6.1	0.5	67.3		
Bukit Fraser.....	G	23.6	17.4	20.9	16.3	16.2	10.0	10.4	10.4	45.3	20.1	29.9	28.1	137.9	37	
	L	3.3	1.8	0.7	2.7	2.1	0.6	0.1	0.7	1.8	3.4	4.1	3.9	32.9		
Bukit Jeram.....	G	12.0	5.4	12.9	13.9	20.1	7.0	5.4	10.2	6.3	12.4	13.0	12.2	87.6	10	
	L	4.6	0.2	2.0	2.4	1.9	0.4	0.9	1.7	2.4	5.0	5.9	3.5	57.4		
Bukit Maxwell.....	G	16.6	11.8	31.8	35.5	30.0	15.9	20.8	23.9	31.5	30.3	30.2	18.1	224.8	14	
	L	2.1	3.4	9.2	3.5	12.6	7.9	3.5	6.0	5.6	15.7	11.7	4.1	161.2		
Butterworth.....	G	7.4	12.1	8.1	14.4	11.7	12.1	8.8	14.3	21.7	22.8	17.8	9.8	111.7	7	
	L	0.9	0.2	1.5	4.4	1.0	3.0	2.0	5.2	3.7	9.9	6.8	1.5	79.9		
Cameron Highlands.....	G	10.8	9.4	13.3	10.9	13.7	9.2	5.1	14.3	13.3	23.9	15.4	23.5	112.5	12	
	L	0.7	0.9	0.9	3.9	1.8	0.9	0.7	1.5	2.0	4.9	3.0	1.9	30.8		
Dungun.....	G	12.8	10.9	13.2	12.4	8.0	7.1	7.7	14.5	13.8	14.9	34.1	40.1	131.1	14	
	L	2.7	0.4	0.7	*	1.0	2.0	2.1	2.0	1.8	4.1	6.4	7.4	74.7		
Ipoh.....	G	11.8	14.5	16.1			5	8.0	13.5	10.3	15.0	16.8	19.1	14.0	130.9	19
	L	3.1	0.8	4.0	6.7	3	2.1	3.3	1.9	3.9	6.4	6.7	2.7	80.7		
Jerangau Estate.....	G	22.6	7.1	9.2	20.1	13.2	11.2	11.1	18.0	19.0	15.1	20.4	37.2	197.5	4	
	L	11.3	2.4	0.7	2.3	3.2	3.3	3.8	5.5	8.0	11.9	13.8	25.1	136.5		
Kajang.....	G	14.9	21.1	16.7	19.5	17.9	9.9	11.0	16.7	10.7	16.2	19.7	16.9	117.8	18	
	L	0.8	0.5	5.7	4.0	2.3	1.5	1.2	1.7	2.7	1.7	2.0	1.7	79.1		
Kampar.....	G	16.8	23.9	25.5	25.2	27.3	10.4	15.3	18.0	16.0	29.2	33.7	23.2	175.4	18	
	L	3.5	4.4	10.8	9.3	3.0	1.0	2.0	3.0	2.9	5.1	7.0	9.2	123.3		
Kampung Kemaman.....	G	22.5	21.2	13.7	11.3	0.7	11.1	12.7	10.1	12.0	16.1	35.7	47.2	136.0	13	
	L	7.0	1.6	0.0	0.5	0.9	2.9	1.0	3.3	2.9	5.4	3.8	4.1	77.3		
Kangar.....	G	4.7	5.3	14.4	11.2	11.9	12.1	15.0	10.1	23.3	19.7	12.2	3.7	96.9	16	
	L	0.0	0.0	0.7	1.4	1.0	1.3	2.0	3.7	7.8	3.4	1.4	0.0	58.3		

Footnotes are at end of table.



FIGURE 28. GREATEST AND LEAST PRECIPITATION (Continued)

REGION AND STATION	GREAT- EST LEAST	GREAT- EST												YRS REC	
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		ANN
<b>West Malaysia and Singapore</b> (Continued):															
Keluang.....	G	25.4	8.0	15.6	15.4	16.2	11.5	6.2	11.4	9.9	18.0	18.1	11.8	107.2	10
	L	1.9	0.9	3.8	7.3	2.8	2.6	2.0	3.0	2.1	3.4	4.4	2.6	79.4	
Kota Baharu.....	G	22.8	10.5	10.4	11.2	9.8	11.1	12.7	12.7	15.9	20.7	51.5	49.3	157.0	18
	L	0.8	*	0.4	0.2	0.1	1.9	1.7	2.1	3.6	3.1	8.9	3.5	71.3	
Kota Tinggi.....	G	20.6	15.9	13.4	17.6	23.6	14.7	13.1	17.0	12.8	18.2	33.8	25.4	151.1	16
	L	0.8	0.6	1.1	1.4	4.0	2.9	3.3	3.0	4.4	4.0	3.8	3.1	87.7	
Kuala Kelawang.....	G	11.3	12.1	12.3	12.9	10.7	6.5	6.7	8.3	9.3	15.1	12.5	15.1	88.8	17
	L	1.2	1.2	2.2	0.5	3.8	1.0	0.6	1.2	1.3	2.0	3.5	0.5	53.1	
Kuala Lipis.....	G	16.3	6.2	10.2	11.2	12.2	12.8	12.9	13.7	17.1	21.7	17.8	17.3	103.5	9
	L	5.7	2.0	3.6	4.8	3.5	1.4	1.3	2.2	3.2	0.3	8.1	4.0	83.5	
Kuala Lumpur.....	G	12.5	17.0	16.2	17.1	16.8	11.0	14.4	13.1	15.0	18.4	22.3	15.7	124.0	18
	L	0.8	1.1	3.3	3.9	1.9	0.6	1.1	1.7	1.3	5.2	3.8	2.5	30.1	
Kuala Pahang.....	G	39.6	24.9	20.5	20.4	10.9	7.0	7.3	6.3	7.9	24.1	34.8	51.4	184.0	10
	L	4.3	1.8	3.9	3.4	2.0	2.1	1.3	2.2	1.0	5.2	10.2	4.2	90.1	
Kuala Terengganu.....	G	21.4	25.2	21.4	24.3	9.2	9.7	16.5	12.8	12.0	32.2	54.0	67.0	184.0	20
	L	1.4	0.4	0.4	0.4	0.7	0.5	1.5	2.1	1.9	3.3	0.6	2.2	81.9	
Kuantan.....	G	43.0	24.3	21.7	14.2	11.8	12.6	15.0	12.5	13.5	22.0	27.4	49.2	145.3	19
	L	1.4	1.3	0.6	0.8	2.5	2.0	0.5	2.2	3.0	6.2	7.4	4.5	74.9	
Melaka.....	G	8.5	11.7	16.2	12.8	14.5	15.2	15.7	14.0	17.2	17.1	19.4	12.2	107.2	20
	L	0.5	0.7	1.1	1.3	1.5	2.3	2.3	3.9	2.7	2.3	3.2	1.5	56.8	
Mersing.....	G	27.1	25.9	21.9	9.2	10.7	10.9	15.0	9.6	14.0	24.2	24.6	40.4	147.3	20
	L	1.8	0.0	0.7	0.7	1.9	1.2	3.2	1.7	3.0	3.7	4.9	0.8	69.1	
Pinang.....	G	8.9	14.4	13.8	16.7	10.9	12.2	17.1	17.8	30.8	34.6	10.3	7.9	133.7	20
	L	*	1.0	1.6	0.6	5.5	2.0	2.5	3.6	6.5	5.0	3.3	0.8	74.6	
Pontian Kechil.....	G	26.3	9.8	15.2	12.6	23.1	11.7	13.7	10.4	14.4	15.2	14.6	13.9	122.3	14
	L	4.2	1.2	3.2	4.4	2.4	2.8	2.8	1.6	1.1	3.3	2.3	2.4	75.0	
Port Dickson.....	G	12.4	8.2	12.6	17.2	16.1	13.6	20.0	15.5	23.9	16.0	19.7	20.7	126.0	18
	L	0.3	0.4	0.0	0.5	2.7	1.3	2.1	2.1	4.1	4.0	0.9	2.0	70.0	
Pulau Langkawi.....	G	6.7	3.0	8.0	13.1	10.6	16.0	21.3	23.2	20.3	21.5	15.1	2.6	119.2	13
	L	0.0	0.0	0.4	3.9	5.0	3.9	2.1	0.4	0.4	4.3	2.8	0.0	65.4	
Segamat.....	G	26.2	16.7	21.2	11.8	10.7	8.0	7.4	7.1	11.3	9.7	18.6	24.6	100.7	14
	L	1.0	1.4	1.2	0.9	0.9	2.0	1.7	1.0	2.2	2.9	4.6	2.0	49.7	
Singapore.....	G	18.9	7.6	11.0	10.7	12.8	12.1	10.2	9.4	9.8	11.6	12.5	11.9	107.1	10
	L	3.7	1.1	5.2	1.5	0.2	3.7	1.5	1.8	4.0	3.5	4.5	2.8	72.8	
Singapore Airport.....	G	24.1	17.1	13.2	15.8	9.8	14.0	11.5	14.3	7.1	15.1	16.3	26.8	120.1	17
	L	4.2	2.3	1.8	1.7	2.6	2.8	1.0	2.1	1.6	2.0	4.0	4.3	61.6	
Sitiawan Estate.....	G	15.9	14.7	14.1	15.8	7.6	9.9	7.5	11.2	14.3	14.2	15.4	15.2	93.5	19
	L	2.5	1.3	1.0	0.3	1.5	0.7	*	1.0	2.4	2.4	5.2	3.3	57.3	
Taiping.....	G	15.3	23.8	23.5	28.7	21.7	13.3	10.3	10.8	18.2	28.7	20.2	21.0	104.3	14
	L	0.3	0.0	8.4	5.0	3.2	2.3	3.4	4.8	4.1	8.8	11.5	9.1	150.8	
Temerloh.....	G	17.7	5.2	15.7	10.4	13.2	8.3	6.1	6.9	12.6	24.2	15.4	18.0	95.4	10
	L	2.0	0.9	2.0	2.0	2.5	2.5	0.9	2.7	3.9	3.5	3.9	1.7	62.4	
<b>East Malaysia and Brunei:</b>															
Beaufort.....	G	20.5	17.3	21.7	26.0	27.2	18.0	18.0	32.4	27.8	35.0	26.5	26.8	107.9	26
	L	1.7	1.2	2.3	5.0	3.7	6.3	3.3	2.0	4.4	6.6	1.7	4.3	100.0	
Belaga.....	G	14.8	18.2	19.9	18.2	15.7	16.8	15.6	12.1	10.5	20.7	19.5	17.2	158.2	8
	L	5.8	8.0	6.0	8.0	8.5	3.4	4.5	2.4	0.6	4.2	8.3	12.8	129.8	
Boluran.....	G	40.3	31.2	26.9	15.2	13.3	19.1	25.2	22.0	19.4	19.2	19.5	20.3	177.7	28
	L	6.7	3.2	2.4	1.2	2.1	4.0	2.0	1.3	3.1	2.3	3.3	5.2	92.4	
Betong.....	G	19.2	19.7	13.5	16.0	21.8	11.4	13.6	21.8	14.0	52.2	21.7	28.8	109.1	10
	L	7.0	3.3	8.1	5.6	4.5	2.5	2.9	1.9	6.4	7.4	8.3	9.7	121.9	
Bintulu.....	G	50.4	32.7	25.6	19.9	19.3	20.8	21.9	21.4	27.5	29.5	25.9	35.7	201.2	34
	L	3.8	1.0	3.1	3.2	2.0	3.7	1.0	1.2	4.8	7.1	0.9	3.0	122.2	
Kalabakan.....	G	13.6	8.9	8.6	15.7	12.4	9.8	8.1	12.3	17.5	10.2	14.4	11.7	104.4	5
	L	3.5	4.7	3.9	3.7	3.3	5.8	5.2	5.9	5.4	3.5	7.5	5.5	87.4	
Kampung Litang.....	G	22.7	23.0	10.7	10.9	12.7	8.7	12.2	10.3	12.6	13.0	12.8	12.6	152.2	7
	L	6.1	3.0	3.0	4.8	7.0	2.8	4.0	2.3	6.3	7.0	5.0	6.4	99.9	
Kampung Matang.....	G	86.0	55.7	25.0	19.6	20.3	12.4	15.2	18.4	16.2	19.4	22.5	43.7	248.7	32
	L	12.0	6.3	3.1	5.1	5.0	2.1	3.2	2.2	3.3	5.9	0.2	10.7	119.1	
Kampung Tangkulap.....	G	22.8	18.7	4.6	7.9	11.5	11.2	12.2	16.0	16.0	13.2	18.6	15.8	130.0	5
	L	3.2	5.9	2.0	2.1	0.3	5.9	2.5	1.0	7.8	5.5	3.1	1.1	81.1	

Footnotes are at end of table.

FIGURE 28. GREATEST AND LEAST PRECIPITATION (Continued)

REGION AND STATION	GREATEST LEAST												YRS RECD		
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		ANN	
East Malaysia and Brunei (Con.):															
Kanowit.....	G	16.3	17.0	14.4	17.8	21.2	11.5	14.7	14.2	14.9	10.1	18.5	18.5	181.6	0
	L	3.5	13.1	4.5	5.0	4.2	2.5	3.7	6.7	6.5	10.2	8.7	6.2	110.3	
Kapit.....	G	59.1	18.5	21.4	18.4	20.3	15.4	18.9	19.4	20.3	24.0	16.7	19.7	170.4	16
	L	7.1	5.2	6.1	4.8	7.6	4.2	3.1	1.1	6.2	6.3	5.4	8.5	118.2	
Kemabong.....	G	10.8	10.1	13.0	13.4	13.0	10.0	9.4	11.9	11.2	10.9	11.6	9.6	86.2	0-10
	L	2.4	1.6	2.7	6.1	2.5	1.2	2.9	2.5	1.5	2.1	3.2	0.7	54.4	
Keningau.....	G	18.5	31.5	14.3	10.1	18.2	19.8	15.5	9.8	12.9	27.3	10.1	15.8	168.8	36
	L	1.8	0.5	1.3	2.6	1.4	0.8	0.3	1.0	1.0	1.7	1.1	1.3	35.0	
Kota Belud.....	G	16.7	8.5	13.5	15.5	18.1	23.8	13.8	15.4	17.4	24.1	18.0	23.0	129.8	31
	L	0.7	0.0	0.0	0.0	1.1	1.1	0.4	0.3	2.5	3.6	1.4	1.4	58.0	
Kota Kinabalu.....	G	24.5	10.0	13.9	15.4	18.5	27.1	24.0	26.0	22.3	27.4	21.2	24.3	140.7	43
	L	0.2	0.0	0.0	0.3	2.8	3.6	2.8	2.0	2.7	6.6	3.8	0.9	69.0	
Kuching.....	G	69.3	61.4	45.1	17.4	17.1	19.3	17.5	16.2	22.6	31.1	25.0	52.4	226.0	73
	L	8.4	3.9	4.0	3.0	3.8	1.5	1.1	0.7	2.2	4.6	4.4	6.0	106.5	
Kudat.....	G	36.0	21.0	29.8	11.0	10.0	12.2	8.5	15.0	14.4	15.5	22.6	40.7	137.0	35
	L	2.3	0.2	0.0	0.1	0.2	0.9	0.3	0.4	0.9	1.0	5.0	6.7	52.3	
Lahad Datu.....	G	14.0	15.2	12.1	12.0	19.2	11.8	8.5	9.2	11.4	13.5	11.3	22.8	101.1	26
	L	2.8	1.4	1.6	1.1	0.5	1.8	1.1	1.1	1.1	1.1	2.6	3.2	52.8	
Lamag.....	G	31.2	19.9	19.4	14.4	19.8	19.1	17.2	30.1	28.9	23.3	10.4	27.2	168.7	29
	L	0.1	0.0	1.5	0.2	2.6	3.8	2.1	0.8	4.1	1.0	3.4	3.6	71.9	
Langkon.....	G	46.2	28.9	27.1	14.2	10.7	17.3	8.8	12.9	8.7	10.7	12.6	40.3	146.7	24
	L	2.8	0.8	0.0	0.0	0.6	1.0	0.7	0.0	1.0	1.6	2.2	3.5	54.6	
Lawas.....	G	28.6	22.8	29.2	32.3	28.2	21.8	25.7	26.0	26.7	29.5	35.9	29.0	223.3	26
	L	3.6	1.5	2.0	5.1	4.8	5.2	3.8	2.5	2.0	5.0	6.7	7.9	120.7	
Limbang.....	G	36.0	30.3	24.1	22.9	19.3	21.8	18.2	24.0	17.6	27.4	25.0	26.1	181.8	22
	L	0.2	0.7	4.6	4.1	6.0	4.7	2.2	3.7	5.0	6.9	5.0	3.2	107.7	
Long Akah.....	G	23.9	26.8	29.4	32.2	31.8	21.2	26.1	31.1	26.0	32.2	33.1	23.9	277.0	7
	L	7.1	12.1	7.3	13.0	13.0	6.3	9.0	7.2	9.9	16.0	21.2	19.1	201.3	
Long Semado.....	G	12.2	9.0	17.9	14.5	11.3	11.3	12.0	9.3	9.2	11.9	9.8	13.0	94.7	5
	L	1.7	5.3	2.8	6.7	6.0	3.0	6.1	2.6	6.1	5.9	8.1	3.0	89.8	
Lubok Antu.....	G	21.4	15.4	12.9	17.4	17.3	12.5	15.4	18.5	11.0	14.9	21.5	15.2	138.4	8
	L	2.1	3.9	6.1	7.7	4.3	2.8	3.3	5.2	6.7	5.8	6.1	6.1	115.6	
Lundu.....	G	55.6	40.9	46.8	14.6	17.1	41.1	11.6	13.1	23.7	16.1	29.7	36.4	181.5	20
	L	6.0	5.3	3.4	3.7	2.5	0.9	0.7	2.6	2.0	3.8	4.0	5.3	101.3	
Marudi.....	G	23.6	14.8	22.7	18.3	14.2	19.4	15.2	28.9	33.4	21.9	16.2	20.0	175.6	23
	L	2.6	1.1	3.5	0.0	4.1	3.7	2.2	2.3	3.6	4.7	5.6	3.5	80.6	
Matu.....	G	25.3	26.5	15.6	12.9	11.1	12.9	18.7	14.2	18.2	14.9	22.4	23.5	147.2	11
	L	0.7	4.1	3.2	0.7	2.9	3.4	1.4	4.5	1.8	0.8	4.3	0.5	92.0	
Miri.....	G	68.3	20.1	15.3	19.2	21.6	23.6	22.2	26.4	20.3	21.6	28.0	38.0	167.5	34
	L	1.8	0.1	1.5	0.3	2.3	1.4	0.4	0.2	4.4	4.8	2.1	4.0	89.6	
Mukah.....	G	47.2	36.2	23.1	12.6	14.9	17.2	8.5	10.6	30.7	15.9	17.5	35.0	199.3	15
	L	5.1	5.9	4.9	1.7	1.0	1.4	1.2	3.4	4.3	6.3	2.8	11.2	107.0	
Papar.....	G	14.4	14.5	11.5	14.6	19.9	20.5	22.2	18.1	23.0	24.1	30.5	22.9	147.6	26
	L	0.3	0.0	0.0	1.7	3.2	3.8	1.7	1.8	4.5	5.6	1.4	2.2	68.5	
Penalangan.....	G	17.5	15.9	18.7	23.4	23.6	21.5	17.1	13.3	20.6	19.1	19.3	15.1	152.2	20
	L	4.8	0.7	4.1	4.1	6.0	6.0	2.5	3.5	5.5	5.0	5.6	2.3	90.8	
Pitas.....	G	32.3	24.6	17.5	16.1	18.1	13.2	7.6	9.6	9.7	11.9	15.4	33.3	140.6	10
	L	9.4	4.5	2.0	1.0	1.3	1.4	3.0	1.0	1.4	3.0	4.1	2.8	80.2	
Putussibau**.....	G	26.0	29.0	23.0	38.0	28.0	21.0	24.0	26.0	41.0	39.0	31.0	24.0	na	31
	L	3.0	5.0	4.0	4.0	1.0	1.0	2.0	2.0	3.0	5.0	7.0	4.0	na	
Sandakan.....	G	61.1	34.5	24.9	12.1	16.7	17.1	14.9	18.1	20.4	18.1	31.4	43.9	177.6	34
	L	0.3	0.0	0.0	0.3	0.6	2.5	2.2	1.5	2.1	2.3	3.8	5.8	58.4	
Supulut.....	G	8.7	17.1	20.7	22.7	22.4	22.4	11.0	17.9	16.8	16.3	13.2	15.5	173.2	13
	L	2.2	0.6	1.9	6.2	5.3	2.4	1.3	2.1	5.4	3.0	2.6	3.0	80.2	
Sarikel.....	G	22.2	20.1	18.4	18.9	14.9	12.6	13.1	16.0	15.7	13.2	13.2	22.2	145.0	13
	L	7.8	3.7	6.1	6.0	1.2	2.1	2.5	3.8	4.8	6.9	7.7	7.8	97.8	
Selalang.....	G	19.8	22.5	14.7	13.5	10.9	10.5	9.4	12.2	17.2	12.7	18.8	22.2	145.3	7-10
	L	9.9	3.9	4.6	3.4	3.9	4.0	1.5	2.2	2.5	7.3	10.6	3.5	na	
Semporna.....	G	14.7	9.9	10.6	13.4	13.2	12.0	19.8	14.7	10.6	12.4	11.3	16.3	103.5	16
	L	2.1	0.9	0.6	2.6	4.1	4.0	2.4	4.3	2.7	4.1	4.5	3.5	51.0	
Seria.....	G	20.0	9.7	9.9	14.8	15.8	15.5	13.2	15.3	19.0	17.2	21.2	32.7	140.3	11
	L	1.0	3.7	2.5	1.8	3.0	2.8	3.8	1.7	6.8	7.2	7.1	6.0	90.6	

Footnotes are at end of table.

FIGURE 28. GREATEST AND LEAST PRECIPITATION (Continued)

REGION AND STATION	GREAT- EST LEAST	GREAT-EST												ANN	YRS REC
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
East Malaysia and Brunei (Con.):															
Sibu.....	G	23.0	22.8	30.8	20.8	15.0	15.0	15.0	23.0	17.0	20.8	17.9	18.0	64.3	22
	L	4.3	4.5	5.0	2.8	4.5	3.1	1.0	3.0	4.4	5.1	6.2	8.8	94.7	
Simanggang.....	G	30.8	25.8	20.2	28.0	21.7	15.2	16.0	19.0	19.0	20.8	28.4	28.8	187.1	18
	L	7.7	5.2	7.5	7.0	7.0	3.0	4.0	5.3	5.7	9.7	3.0	7.0	125.1	
Simunjan.....	G	30.1	22.5	19.5	12.3	12.0	12.3	14.5	10.0	12.4	10.8	17.0	27.2	na	3-5
	L	14.1	13.5	6.5	6.1	8.0	5.9	1.0	5.0	6.3	9.7	0.0	10.3	na	
Tambunan.....	G	14.0	18.1	12.2	13.0	13.0	13.4	13.8	8.8	11.2	10.0	19.0	11.8	98.0	30
	L	0.7	0.2	1.8	1.0	3.0	2.7	0.2	0.6	2.1	3.7	3.8	2.0	58.7	
Tarat Basnar.....	G	27.4	18.7	19.0	18.0	13.5	8.8	11.0	9.5	19.7	17.4	22.3	16.5	156.4	8
	L	10.7	8.7	7.0	6.5	5.3	3.0	3.0	3.3	8.0	3.7	8.0	8.2	110.0	
Tawau.....	G	13.0	10.2	9.0	14.2	17.8	18.2	16.8	10.7	11.0	21.1	15.0	12.8	90.1	34
	L	0.7	0.4	0.2	0.3	1.8	1.6	2.0	1.8	1.7	1.2	1.0	2.4	25.4	
Tenom.....	G	11.7	12.3	15.8	11.4	11.5	13.1	7.0	9.0	11.9	9.5	10.8	14.8	83.7	21
	L	1.1	0.9	0.7	1.3	2.1	3.5	1.3	1.2	1.5	2.1	2.3	2.3	55.0	
Victoria.....	G	20.0	11.8	14.8	22.5	22.0	30.7	29.0	40.0	27.8	33.0	31.7	20.6	214.7	31
	L	0.3	0.1	0.1	1.4	4.3	3.0	4.0	3.3	6.4	4.2	8.0	1.2	82.8	

na Data not available.

\* < 0.05 inch.

\*\* Data rounded to nearest whole inch.

FIGURE 29. MEAN NUMBER OF DAYS WITH PRECIPITATION  $\geq 0.01$  INCH

REGION AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	Yrs REC
West Malaysia and Singapore:														
Alor Setar.....	6	6	11	17	18	14	17	16	19	23	18	10	174	17-18
Baling.....	5	6	9	13	13	9	11	11	13	18	10	7	131	14
Bukit Fraser.....	21	15	21	23	21	14	13	18	18	24	24	24	234	12
Bukit Jeram.....	16	9	10	17	12	10	10	14	15	19	21	18	176	10
Bukit Maxwell.....	12	13	18	20	19	12	14	14	17	23	21	16	201	14
Butterworth.....	11	9	13	18	16	15	12	10	20	23	20	12	186	7
Cameron Highlands.....	17	14	10	23	22	16	15	19	22	26	24	21	238	26
Dungun.....	14	8	8	8	9	9	8	11	11	15	19	10	138	14
Ipoh.....	13	12	10	19	18	10	13	14	18	22	21	16	192	18
Jerangau Estate.....	17	8	7	7	9	10	8	14	15	15	16	22	146	4
Kajang.....	12	12	18	18	15	10	11	12	13	18	18	17	172	18
Kampar.....	15	16	20	21	16	10	12	12	16	20	20	18	195	18
Kampung Kemaman.....	20	13	11	11	10	11	12	11	16	19	19	21	167	13
Kangar.....	4	4	7	12	12	11	13	14	16	17	15	6	131	18
Keluang.....	16	10	19	20	18	17	14	17	16	21	22	18	205	10
Kota Baharu.....	10	8	9	8	11	12	13	14	16	21	23	21	171	10
Kota Tinggi.....	15	10	12	15	16	12	14	15	14	16	17	17	171	16
Kuala Kelawang.....	11	10	13	15	13	10	10	11	12	16	16	10	154	17
Kuala Lipis.....	20	14	16	20	18	12	11	15	17	20	23	20	206	10
Kuala Lumpur.....	14	14	17	20	18	13	12	14	17	20	20	18	195	19
Kuala Pahang.....	21	11	16	17	14	11	11	10	14	20	22	22	180	10
Kuala Terengganu.....	19	11	12	9	11	11	11	13	16	19	23	23	178	18
Kuantan.....	20	14	14	15	16	11	12	15	16	19	22	22	198	18
Melaka.....	9	8	10	13	12	12	12	15	14	16	17	14	152	27
Mersing.....	19	12	13	13	15	13	14	16	16	17	22	23	192	18
Pinang.....	8	7	11	14	16	12	12	15	18	21	19	11	164	46
Pontian Kechil.....	14	10	14	14	12	11	12	11	11	13	16	15	154	14
Port Dickson.....	10	7	10	11	12	10	12	13	13	16	17	14	147	18
Pulau Langkawi.....	3	3	8	13	14	12	14	14	16	18	12	4	130	13
Selangor.....	13	12	13	15	14	11	11	12	14	17	19	10	169	14
Singapore.....	17	11	14	15	15	13	13	14	14	16	18	19	179	49
Singapore Airport.....	17	13	14	13	15	13	14	14	13	16	19	20	181	16
Sitiawan Estate.....	15	13	19	16	13	8	10	12	15	19	19	16	172	18
Taiping.....	18	18	23	24	20	11	13	15	18	24	23	20	227	14
Temerloh.....	19	13	14	17	15	10	13	12	16	17	21	19	186	8-10

Footnote at end of table.

FIGURE 29. MEAN PRECIPITATION (Continued)

REGION AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
East Malaysia and Brunei:														
Beaufort	16	11	13	16	15	12	13	14	18	19	17	17	181	12
Beluran	23	16	16	13	15	15	16	15	16	18	17	19	199	0-10
Betong	20	15	14	13	13	9	12	12	15	16	21	23	183	5-10
Bintulu	21	17	17	16	16	14	14	17	17	20	20	22	211	17
Brunei	16	15	14	16	18	15	15	15	18	20	19	18	198	7-11
Kanowit	20	19	15	15	19	12	17	16	16	19	19	21	208	5-9
Kapit	16	14	14	14	13	12	12	14	16	16	15	18	174	7-11
Kemahong	14	10	14	16	18	17	12	15	14	19	15	15	170	0-10
Kota Belud	12	5	9	11	13	14	11	11	13	17	14	15	145	0-10
Kota Kinabalu	12	7	9	11	14	15	13	13	17	19	17	16	163	12
Kuching	25	22	22	19	20	16	17	18	20	23	24	25	251	17
Lahad Datu	13	8	10	7	11	11	9	7	8	10	11	12	117	4-5
Lamag	17	13	12	11	13	15	14	12	14	15	17	19	172	9-10
Langkon	16	7	9	8	9	12	8	9	8	13	11	15	125	8-10
Limbang	16	15	14	15	18	15	15	15	18	20	19	18	198	7-11
Long Akah	19	22	19	18	21	14	17	19	22	23	22	25	241	3-8
Lubok Antu	15	12	11	14	11	7	9	11	10	13	16	14	143	3-8
Marudi	16	18	17	14	18	14	16	12	18	19	21	20	203	0-11
Matu	14	10	8	7	8	7	7	7	9	14	15	17	123	0-10
Miri	10	14	14	13	15	14	14	15	18	20	19	20	192	17
Mukah	21	16	12	9	10	10	9	11	14	16	17	22	167	7-11
Pensiangan	15	12	17	18	18	18	14	14	16	15	17	14	188	0-10
Sandakan	22	16	14	10	13	14	14	16	17	18	20	22	197	17
Sapulut	13	10	12	16	15	14	11	12	15	13	12	12	155	0-10
Selalang	17	14	10	12	12	10	9	10	13	16	18	17	164	0-10
Semporna	10	6	9	13	15	11	12	13	11	13	14	13	140	5-6
Sibu	22	17	17	17	17	13	14	14	16	19	18	22	206	8-12
Simunjan	19	15	14	12	13	12	10	11	13	12	16	19	165	3-8
Tambunan	18	12	18	20	22	23	18	20	19	24	23	20	237	9-10
Tenom	16	11	14	14	17	17	14	16	15	18	17	16	185	10
Victoria	13	12	12	10	10	17	17	17	20	22	22	19	203	17

\*  $\approx$  0.04 inch.

FIGURE 30. MAXIMUM 24-HOUR PRECIPITATION (INCHES)

REGION AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
West Malaysia and Singapore:														
Alor Setar	3.8	3.2	3.2	3.8	3.8	4.0	4.0	5.0	4.6	4.8	6.5	3.4	6.5	10-20
Baling	2.4	2.5	6.4	4.4	5.8	5.1	4.2	5.1	2.9	6.1	4.5	2.6	6.4	14
Bukit Fraser	3.2	2.7	4.1	3.2	4.3	2.4	2.4	1.7	2.4	6.8	3.1	3.2	6.8	12
Bukit Joram	4.3	3.0	3.5	2.9	11.0	3.6	2.0	3.1	2.5	3.3	2.8	4.0	11.0	10
Bukit Maxwell	4.0	4.3	6.0	6.0	5.2	4.9	5.9	5.2	5.4	6.4	7.5	5.4	7.5	14
Butterworth	2.5	4.9	3.3	3.3	3.9	4.3	1.8	4.2	6.8	4.4	8.2	2.3	8.2	7
Cameron Highlands	3.3	2.5	3.1	3.3	2.7	3.4	2.9	4.8	3.8	3.3	4.2	6.3	6.3	26
Dungun	8.3	4.6	4.6	4.1	2.0	2.9	3.0	3.2	3.0	7.3	7.9	12.5	12.5	14
Ipoh	5.1	4.2	4.0	3.9	4.0	3.5	3.6	3.8	3.7	4.4	6.7	4.5	6.7	20
Jerangan Estate	9.9	2.0	2.5	4.9	3.5	3.9	4.0	2.5	3.7	3.7	7.3	8.8	9.0	4
Kajang	3.1	4.1	3.5	4.9	4.5	4.8	4.6	4.2	3.8	4.1	4.8	3.1	4.9	18
Kampar	7.0	4.0	6.0	4.8	6.0	3.5	8.1	5.0	3.9	5.5	5.7	4.0	8.1	18
Kampung Kemaman	9.5	8.2	6.5	3.9	3.2	3.0	4.3	4.4	4.2	3.8	4.6	12.0	12.0	13
Kangar	2.3	3.8	3.6	5.0	6.1	4.5	3.5	4.2	5.5	6.1	3.5	2.0	6.1	18
Keluang	5.9	2.0	7.3	4.0	5.1	4.0	1.9	4.0	2.4	3.2	4.4	4.5	7.3	10
Kota Bharu	9.7	5.2	7.3	7.1	4.3	3.2	2.9	8.3	4.3	6.9	11.1	11.8	11.8	18
Kota Tinggi	5.8	4.6	6.3	5.0	3.5	4.2	3.0	4.2	3.8	5.0	8.4	7.0	8.4	16
Kuala Kelawang	3.3	2.0	4.7	3.9	3.2	1.7	2.8	2.2	3.4	3.0	3.7	3.3	4.7	17
Kuala Lipis	3.5	5.8	5.4	3.9	3.8	1.9	3.3	3.1	2.7	3.7	3.7	2.6	5.8	10-12
Kuala Lumpur	5.1	5.1	4.0	3.5	8.3	3.5	3.9	5.7	11.0	6.3	7.3	5.9	11.0	24
Kuala Pahang	6.7	5.6	5.4	5.2	2.8	2.8	3.1	2.5	3.1	5.6	10.2	11.1	11.1	10
Kuala Terengganu	18.3	4.9	5.5	8.4	3.1	2.5	12.2	4.9	4.8	15.8	18.6	15.0	18.6	20
Kuantan	12.8	8.5	12.0	5.1	4.5	4.8	8.7	3.5	5.6	6.5	8.1	11.0	12.8	19
Melaka	5.0	5.8	7.5	10.6	9.3	6.1	9.3	10.5	10.0	7.9	7.5	10.0	10.6	49
Moring	13.0	5.8	7.5	5.7	5.9	3.6	3.5	2.8	3.3	6.7	5.2	14.0	14.0	30

Footnote at end of table.

FIGURE 30. MAXIMUM 24-HOUR PRECIPITATION (Continued)

REGION AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
<b>West Malaysia and Singapore (Con.):</b>														
Pinang.....	2.8	5.0	5.2	6.2	5.3	5.7	6.2	6.0	9.1	9.8	9.5	7.7	9.8	49
Pontian Kochil.....	3.0	4.5	3.0	3.4	3.8	5.1	5.2	5.1	3.7	5.8	4.3	5.3	5.8	14
Port Dickson.....	3.7	3.5	4.0	3.7	6.0	3.7	4.7	4.1	4.3	4.3	4.3	3.5	6.0	18
Pulau Langkawi.....	3.1	1.2	5.0	4.0	4.1	4.4	4.7	5.4	5.4	4.1	4.4	1.3	5.0	13
Selangor.....	10.2	3.3	6.0	4.4	3.2	2.3	2.5	3.8	4.8	2.5	5.3	7.8	10.2	14
Singapore.....	8.6	5.5	6.0	5.3	5.5	3.0	7.3	4.2	3.0	5.0	7.2	9.3	9.3	50
Singapore Airport.....	5.8	4.2	4.7	3.0	2.7	4.2	4.2	3.0	3.0	9.5	3.2	8.7	9.5	16
Sitiawan Estate.....	3.4	4.1	3.1	4.5	5.3	2.7	3.2	4.0	4.3	7.0	4.4	4.3	7.0	19
Taiping.....	6.5	5.5	4.0	5.0	6.0	6.2	5.5	3.0	4.6	5.4	5.2	5.1	6.0	15
Temerloh.....	3.8	4.7	2.3	3.3	5.1	2.6	3.2	na	3.0	3.0	4.1	3.5	na	9-11
<b>East Malaysia and Brunei:</b>														
Beaufort.....	8.3	9.8	3.8	4.2	5.1	5.5	4.0	4.1	4.0	4.3	7.0	4.1	9.8	12
Betong.....	4.2	4.7	7.0	4.0	5.0	4.0	3.3	4.5	3.0	3.2	3.8	3.0	7.0	5-12
Bintulu.....	9.0	6.8	5.0	4.8	4.2	6.7	4.9	4.2	4.0	5.3	6.3	6.5	9.0	18
Kanowit.....	2.0	3.0	6.0	3.5	5.0	2.9	4.6	4.7	7.4	3.4	3.0	3.3	7.4	5-7
Kapit.....	3.8	3.0	4.0	6.1	3.6	3.1	2.4	2.0	3.2	3.2	4.4	2.0	5.1	7-11
Kota Kinabalu.....	6.3	2.8	5.5	5.5	4.8	10.5	5.8	11.7	7.5	7.0	5.8	9.7	11.7	18
Kuching.....	12.5	16.3	8.3	4.3	4.1	3.9	7.1	4.3	4.1	4.5	10.0	7.3	16.3	20
Kudat.....	7.1	4.7	4.0	2.1	3.2	2.0	3.0	4.0	2.4	3.4	3.8	7.0	7.0	11
Limbang.....	3.2	13.0	3.4	4.6	3.1	5.8	3.2	5.3	3.7	3.7	3.3	4.5	13.0	7-10
Long Akah.....	3.9	6.5	5.6	4.1	3.0	5.5	6.3	2.3	6.5	5.0	5.0	4.2	6.5	3-7
Lubok Antu.....	4.8	4.6	2.0	3.9	4.7	2.4	1.7	2.0	3.5	2.8	4.2	2.5	4.8	3-6
Marudi.....	4.5	2.8	3.7	2.7	3.0	5.6	2.0	2.5	3.1	3.0	5.0	3.0	6.0	6-9
Matu.....	5.8	3.9	2.0	2.0	5.3	3.0	5.8	5.8	5.8	5.8	7.7	6.8	7.7	4-9
Miri.....	12.0	7.4	4.0	3.5	4.2	6.2	8.0	6.3	7.7	7.1	9.0	6.1	12.0	19
Mukah.....	7.8	8.5	7.3	2.4	3.5	5.5	2.6	2.0	4.0	4.8	3.3	6.1	8.5	7-11
Sandakan.....	14.5	7.8	6.0	4.5	5.5	4.7	4.8	3.0	4.8	5.6	5.1	12.5	14.5	20
Selangor.....	4.7	3.6	5.1	5.7	3.0	2.5	3.7	4.3	3.3	3.5	5.3	4.3	5.7	5-11
Sibu.....	4.7	5.5	4.6	5.5	3.4	3.3	2.3	6.4	4.0	4.2	4.3	3.7	6.4	9-12
Simunjan.....	6.4	7.1	4.5	2.5	2.8	5.1	6.0	4.3	3.0	5.0	2.8	7.4	7.4	3-5
Taunbanan.....	8.1	2.3	3.8	2.3	2.1	2.3	2.2	2.0	2.7	2.2	2.2	2.4	3.8	10
Tawau.....	2.3	2.8	2.6	5.0	4.5	5.5	4.4	4.8	3.0	2.5	2.0	3.5	5.5	11
Tenom.....	2.4	3.4	6.3	2.4	2.2	2.2	3.1	2.2	2.1	2.0	3.2	4.8	6.3	10
Victoria.....	5.1	4.1	5.0	6.1	6.5	11.0	6.9	7.3	14.5	6.3	10.0	4.0	14.5	22

na Data not available.

FIGURE 31. MEAN CLOUDINESS (%) AT SPECIFIED HOURS

REGION AND STATION	HOUR (LMT)													DATA RANGE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CVR
<b>West Malaysia and Singapore:</b>																
Kota Baharu.....	0100	76	71	69	70	80	79	79	84	84	86	86	83	79	13-14	8-9
Kuala Lumpur.....	0100	80	78	79	84	84	81	81	84	88	90	86	84	83	14-17	9-11
Kuantan.....	0100	76	74	71	75	78	78	78	81	84	85	83	83	79	13-14	9-10
Melaka.....	0100	73	71	70	78	74	71	69	74	76	81	80	78	75	14-17	9-11
Pinang.....	0100	68	71	70	84	84	80	80	83	86	88	83	76	80	14-17	9-11
Singapore Airport.....	0100	79	75	69	73	73	76	74	81	81	80	81	81	78	10	10
<b>East Malaysia and Brunei:</b>																
Kuching.....	0100	85	91	85	65	69	60	64	75	75	83	69	74	75	2-3	2-3
<b>West Malaysia and Singapore:</b>																
Alor Star.....	0700	68	65	66	71	81	79	79	84	84	83	79	69	75	15-16	8-10
Bukit Fraser.....	0700	73	70	70	69	66	66	70	65	68	70	73	74	70	8	5
Cameron Highlands.....	0700	60	62	64	62	62	66	67	69	68	67	65	68	64	5	5
Ipoh.....	0700	74	70	73	80	83	81	81	84	85	85	83	78	80	15-16	8-10
Kota Baharu.....	0700	83	78	73	73	81	84	81	83	84	85	86	86	81	18-19	12-14
Kuala Lipis.....	0700	78	70	78	78	79	77	79	79	70	80	80	76	79	5	5
Kuala Lumpur.....	0700	85	80	81	85	86	84	85	86	88	89	89	86	85	19-20	13-15

Footnote at end of table.

FIGURE 31. MEAN CLOUDINESS (Continued)

REGION AND STATION	HOUR (LST)	DATA BASE 1950														POB	CYR
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN			
<b>West Malaysia and Singapore (Continued):</b>																	
Kuala Terengganu	0700	90	88	81	78	84	84	82	84	86	89	90	80	85	15-16	8-11	
Kuantan	0700	83	79	75	79	81	80	80	84	85	86	85	86	83	10-20	12-14	
Melaka	0700	80	76	78	80	83	81	80	83	83	85	84	83	81	10-20	13-15	
Mersing	0700	80	78	73	68	70	68	68	73	75	78	78	83	74	15-16	8-10	
Pinang	0700	74	75	74	79	85	81	81	85	85	84	81	78	80	10-20	12-14	
Singapore Airport	0700	84	83	78	78	80	83	81	86	85	80	88	83	83	10	10	
Temerloh	0700	69	74	69	73	75	70	72	71	72	76	78	70	72	5	5	
<b>East Malaysia and Brunei:</b>																	
Bintulu	0800	90	89	85	80	78	79	81	80	80	88	88	80	80	na	3-5	
Kota Kinabalu	0800	74	71	63	61	76	78	75	83	80	76	75	74	74	0-10	0-10	
Kuching	0700	80	80	81	73	70	75	73	80	81	83	80	83	80	10	10	
Miri	0800	80	78	71	69	76	78	74	80	81	80	76	78	76	0-10	0-10	
Sandakan	0800	83	79	69	64	71	74	70	78	78	75	78	79	75	10	10	
Victoria	0800	78	72	65	70	72	80	80	81	84	72	81	76	76	na	2-3	
<b>West Malaysia and Singapore:</b>																	
Alor Setar	1300	69	68	66	69	80	76	79	80	81	81	78	71	75	15-16	8-10	
Bukit Fraser	1300	73	70	68	70	71	66	69	69	71	74	75	73	71	5	5	
Cameron Highlands	1300	70	69	68	71	71	66	70	70	71	73	75	72	71	5	5	
Ipoh	1300	71	69	69	71	70	73	75	78	81	85	83	75	75	15-16	8-10	
Kota Bharu	1300	79	75	69	68	79	78	79	81	81	83	80	84	79	18-20	12-14	
Kuala Lipis	1300	69	66	61	61	61	61	63	69	67	70	68	64	64	5	5	
Kuala Lumpur	1300	81	79	80	83	83	83	84	84	85	88	86	85	84	18-20	12-14	
Kuala Terengganu	1300	83	79	71	70	76	76	78	79	80	84	85	84	79	15-16	8-10	
Kuantan	1300	86	83	81	79	81	81	80	81	84	85	86	88	83	18-20	12-14	
Melaka	1300	80	79	76	78	76	75	78	79	78	80	83	83	79	18-20	12-14	
Mersing	1300	79	75	66	64	69	73	73	75	75	76	79	81	74	15-16	8-10	
Pinang	1300	79	69	69	74	80	76	76	80	81	83	80	74	76	18-20	12-14	
Singapore Airport	1300	88	85	84	83	84	85	83	80	88	88	89	90	86	10	10	
Temerloh	1300	64	64	67	80	89	61	63	68	68	64	66	66	62	5	5	
<b>East Malaysia and Brunei:</b>																	
Bintulu	1400	80	84	74	74	76	78	75	79	82	80	79	81	79	na	3-4	
Kota Kinabalu	1400	76	75	68	65	78	78	76	80	79	80	79	79	76	0-10	0-10	
Kuching	1300	88	86	81	79	76	74	73	76	79	81	83	84	80	10	10	
Miri	1400	78	74	69	65	71	68	69	74	75	76	76	73	73	0-10	0-10	
Sandakan	1400	81	78	66	64	71	73	73	76	75	75	78	80	74	10	10	
Victoria	1400	79	66	59	62	69	74	69	70	72	69	74	71	69	na	2-4	
<b>West Malaysia and Singapore:</b>																	
Alor Setar	1900	66	73	78	86	90	84	89	88	90	93	88	73	83	15-16	10-12	
Bukit Fraser	1900	72	73	71	75	75	74	72	71	74	76	77	72	74	5	4-5	
Cameron Highlands	1900	67	68	67	70	73	71	73	74	74	76	74	73	72	5	5	
Ipoh	1900	86	86	89	93	91	89	90	93	93	94	93	90	90	15-16	8-10	
Kota Bharu	1900	79	74	70	74	85	80	84	86	86	85	86	84	81	17-19	13-15	
Kuala Lumpur	1900	89	86	90	91	89	86	86	88	90	93	91	90	89	19-20	15-16	
Kuala Terengganu	1900	88	84	78	79	85	88	88	88	88	88	88	88	86	15-16	9-11	
Kuantan	1900	81	78	74	76	83	80	81	84	84	86	85	86	81	19-20	13-14	
Melaka	1900	81	81	81	84	81	81	81	83	83	88	88	85	83	19-20	14-16	
Mersing	1900	79	73	66	66	73	75	75	71	74	74	79	79	74	15-16	9-11	
Pinang	1900	81	83	81	80	89	88	89	90	91	93	90	84	88	10-20	15-16	
Singapore Airport	1900	85	83	83	84	83	84	80	85	84	86	89	89	85	10	10	
Temerloh	1900	75	70	68	72	72	71	71	71	75	74	76	69	72	5	5	
<b>East Malaysia and Brunei:</b>																	
Bintulu	2000	85	89	80	75	78	69	76	82	86	85	84	80	81	na	3-5	
Kota Kinabalu	2000	76	74	70	73	83	85	83	86	88	84	80	78	80	0-10	0-10	
Kuching	1900	84	78	71	74	74	68	68	75	78	79	81	83	76	10	10	
Miri	2000	78	76	71	68	69	74	74	79	81	79	78	79	75	0-10	0-10	
Sandakan	2000	76	74	64	58	69	71	74	76	76	74	74	73	71	10	10	
Victoria	2000	79	71	64	74	74	72	75	79	79	84	72	79	74	na	3-5	

na Data not available.

FIGURE 32. MEAN NUMBER OF DAYS WITH TOTAL CLOUD COVER  $\frac{1}{8}$  OR LESS AT SPECIFIED HOURS

REGION AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	PER	CYR
<b>West Malaysia and Singapore:</b>																
Kota Baharu.....	0100	1	2	2	2	1	*	1	*	1	1	0	1	10	13-14	8-0
Kuala Lumpur.....	0100	1	1	1	*	*	*	*	0	0	1	*	5	14-17	0-11	
Kuantan.....	0100	2	2	3	1	1	1	*	1	*	1	1	11	13-14	0-10	
Melaka.....	0100	3	3	2	1	2	2	3	2	1	1	*	2	23	14-17	0-11
Pinang.....	0100	3	2	1	*	*	1	1	1	*	*	1	2	12	14-17	0-11
Singapore Airport.....	0100	1	2	2	1	1	1	1	0	0	0	*	1	8	10	10
<b>East Malaysia and Brunei:</b>																
Kuching.....	0100	1	0	1	6	7	7	6	3	1	1	4	4	40	2-3	2-3
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	0700	5	4	5	2	*	1	1	1	1	2	5	27	15-16	8-10	
Bukit Fraser.....	0700	1	1	1	*	1	2	1	2	1	*	1	*	11	8	5
Cameron Highlands.....	0700	5	3	5	2	1	1	2	*	1	1	2	1	25	5	5
Ipo.....	0700	3	3	3	1	1	2	1	1	*	*	1	2	17	15-16	8-10
Kota Baharu.....	0700	1	1	2	1	1	*	1	1	1	*	*	1	8	18-19	12-14
Kuala Lipis.....	0700	*	0	0	0	0	*	0	0	0	0	0	*	1	5	5
Kuala Lumpur.....	0700	*	1	1	*	*	1	*	0	*	*	*	*	4	10-20	13-15
Kuala Terengganu.....	0700	0	*	*	1	1	1	1	*	0	*	*	*	4	15-16	8-11
Kuantan.....	0700	1	1	2	1	1	1	1	*	*	*	1	8	10-20	12-14	
Melaka.....	0700	1	1	1	1	1	1	2	1	1	1	*	1	11	10-20	13-15
Mersing.....	0700	*	*	1	3	2	2	3	2	1	1	1	1	10	15-16	8-10
Pinang.....	0700	2	1	2	*	*	1	1	*	*	*	1	1	9	10-20	12-14
Singapore Airport.....	0700	1	1	1	*	1	*	*	*	0	*	1	4	10	10	
Tererloh.....	0700	1	*	2	1	0	*	1	1	1	0	0	1	7	5	5
<b>East Malaysia and Brunei:</b>																
Bintulu.....	0800	0	1	*	1	3	3	2	1	*	1	1	1	14	na	3-5
Kota Kinabalu.....	0800	3	3	5	5	2	2	2	*	1	1	2	1	28	0-10	0-10
Kuching.....	0700	1	*	1	3	3	2	4	2	2	1	1	1	20	10	10
Miri.....	0800	1	2	4	4	3	2	3	2	2	1	2	2	27	0-10	0-10
Sandakan.....	0800	1	1	2	3	2	3	2	2	2	1	1	1	22	10	10
Victoria.....	0800	3	2	3	4	3	*	1	2	1	2	1	2	24	na	2-3
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1300	2	2	2	1	*	1	1	1	*	*	1	2	13	15-16	8-10
Bukit Fraser.....	1300	*	0	*	0	0	0	1	0	0	0	0	0	1	8	5
Cameron Highlands.....	1300	*	1	*	0	*	*	*	*	*	0	1	3	5	5	
Ipo.....	1300	2	2	2	1	1	1	1	1	*	*	*	2	13	15-16	8-10
Kota Baharu.....	1300	*	1	2	2	*	1	1	*	*	*	*	1	8	18-20	12-14
Kuala Lipis.....	1300	*	*	1	*	1	1	*	*	*	*	*	*	7	5	5
Kuala Lumpur.....	1300	*	1	*	0	*	*	*	0	0	0	*	1	18-20	12-14	
Kuala Terengganu.....	1300	0	1	1	1	*	*	*	*	0	0	*	5	15-16	8-10	
Kuantan.....	1300	0	*	*	*	*	0	*	*	*	0	0	1	18-20	12-14	
Melaka.....	1300	1	1	1	1	2	1	1	1	1	1	0	*	9	18-20	12-14
Mersing.....	1300	*	*	1	2	1	1	1	1	*	*	*	8	15-16	8-10	
Pinang.....	1300	3	2	2	1	1	1	*	*	0	*	2	13	18-20	12-14	
Singapore Airport.....	1300	0	*	*	*	*	*	1	0	0	*	0	0	1	10	10
Tererloh.....	1300	*	1	1	1	2	1	1	2	*	0	*	9	5	5	
<b>East Malaysia and Brunei:</b>																
Bintulu.....	1400	1	*	1	2	2	2	2	1	0	1	1	1	14	na	3-4
Kota Kinabalu.....	1400	2	2	3	4	1	1	1	1	1	*	1	1	18	0-10	0-10
Kuching.....	1300	0	0	*	*	*	1	1	1	*	*	0	0	3	10	10
Miri.....	1400	1	1	3	4	2	5	3	2	3	2	1	1	28	0-10	0-10
Sandakan.....	1400	*	1	3	3	1	1	1	1	*	*	1	*	12	10	10
Victoria.....	1400	3	4	5	5	2	2	4	3	1	3	1	1	34	na	2-4
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1900	4	3	2	1	1	1	1	1	*	*	1	5	10	15-16	10-12
Bukit Fraser.....	1900	2	1	1	*	*	*	1	1	0	0	0	1	7	8	4-5
Cameron Highlands.....	1900	3	2	2	*	*	1	1	*	1	*	1	1	11	5	5
Ipo.....	1900	1	1	1	*	*	1	*	*	*	*	1	4	15-16	0-11	

Footnotes are at end of table.

FIGURE 32. DAYS WITH TOTAL CLOUD COVER % OR LESS (Continued)

REGION AND STATION	HOUR (LAT)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
<b>West Malaysia and Singapore</b>																
<i>(Continued):</i>																
Kota Baharu.....	1000	1	2	3	2	1	*	1	1	1	1	*	1	12	17-19	13-15
Kuala Lumpur.....	1000	*	*	*	*	*	*	*	*	*	*	*	*	2	19-20	15-16
Kuala Terengganu.....	1000	*	1	2	1	1	*	*	*	*	*	*	1	0	15-18	9-11
Kuantan.....	1000	1	1	2	1	1	1	1	*	*	*	1	*	0	19-20	13-14
Melaka.....	1000	1	1	1	1	1	1	1	1	1	1	*	1	10	19-20	14-16
Mersing.....	1000	1	1	3	2	2	1	1	2	1	1	1	1	10	15-18	9-11
Pinang.....	1000	1	1	1	*	*	*	1	*	*	*	*	1	7	19-20	15-16
Singapore Airport.....	1000	*	1	*	*	*	*	1	*	*	0	0	*	3	10	10
Temerloh.....	1000	0	2	3	1	1	1	1	1	1	1	1	2	13	5	5
<b>East Malaysia and Brunei:</b>																
Bintulu.....	2000	2	1	3	4	3	6	3	1	2	1	1	1	28	na	3-4
Kota Kinabalu.....	2000	3	4	3	2	1	1	1	1	1	1	2	2	20	9-10	9-10
Kuching.....	1000	1	2	5	3	3	5	0	3	2	2	2	2	34	10	10
Miri.....	2000	3	3	5	5	4	4	3	3	1	2	2	2	37	9-10	9-10
Sandakan.....	2000	1	1	3	5	2	2	1	1	1	1	1	1	19	10	10
Victoria.....	2000	4	4	7	3	3	3	3	3	2	1	3	2	38	na	3-5

na Data not available.

\* < 0.5 day.

FIGURE 33. MEAN NUMBER OF DAYS WITH TOTAL CLOUD COVER % OR MORE AT SPECIFIED HOURS

REGION AND STATION	HOUR (LAT)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
<b>West Malaysia and Singapore:</b>																
Kota Baharu.....	0100	22	17	17	17	24	22	23	27	25	27	25	24	271	13-14	8-9
Kuala Lumpur.....	0100	24	21	25	26	27	25	26	27	28	29	28	26	312	14-17	9-11
Kuantan.....	0100	22	19	20	20	22	22	23	26	26	27	24	26	275	13-14	9-10
Melaka.....	0100	21	19	19	23	22	18	19	22	22	26	25	24	250	14-17	9-11
Pinang.....	0100	17	18	22	25	26	24	24	26	26	27	25	20	280	14-17	9-11
Singapore Airport.....	0100	23	19	17	19	20	21	19	24	24	24	24	25	257	10	10
<b>East Malaysia and Brunei:</b>																
Kuching.....	0100	26	25	26	15	20	14	16	23	19	25	18	20	244	2-3	2-3
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	0700	19	15	18	19	26	23	24	26	25	26	22	19	260	15-16	8-10
Bukit Fraser.....	0700	20	24	25	26	26	24	28	23	25	26	28	29	314	8	5
Cameron Highlands.....	0700	23	21	18	23	22	25	26	26	27	25	27	200	5	5	
Ipoh.....	0700	20	17	20	23	24	24	24	26	26	26	25	22	277	15-16	8-10
Kota Baharu.....	0700	36	22	20	19	26	25	26	26	27	26	27	26	294	18-19	13-14
Kuala Lipis.....	0700	30	28	30	29	31	28	31	30	30	31	30	29	357	5	5
Kuala Lumpur.....	0700	27	22	26	27	28	26	27	28	28	29	28	27	323	19-20	13-15
Kuala Terengganu.....	0700	29	25	25	22	25	24	25	25	26	28	28	28	311	15-16	8-11
Kuantan.....	0700	25	23	22	23	25	24	24	27	26	29	29	27	290	19-20	12-14
Melaka.....	0700	25	21	24	25	27	25	25	27	26	28	27	27	307	19-10	13-15
Mersing.....	0700	24	20	20	17	19	17	18	20	21	22	22	25	244	15-18	8-10
Pinang.....	0700	21	20	22	24	27	24	26	28	27	27	24	24	294	19-20	12-14
Singapore Airport.....	0700	26	24	23	23	25	25	25	28	27	29	28	26	309	10	10
Temerloh.....	0700	26	26	27	27	29	26	27	27	27	29	29	26	326	5	5
<b>East Malaysia and Brunei:</b>																
Bintulu.....	0800	29	25	27	26	23	22	25	28	27	27	26	28	313	na	3-5
Kota Kinabalu.....	0800	21	18	15	14	22	22	21	25	23	21	20	21	242	9-10	9-10
Kuching.....	0700	28	26	24	20	19	21	20	24	23	26	24	26	291	10	10
Miri.....	0800	24	21	21	18	23	21	21	25	24	24	21	23	264	9-10	9-10
Sandakan.....	0800	24	22	18	14	19	20	19	23	22	22	22	23	248	10	10
Victoria.....	0800	22	18	15	17	20	23	24	24	24	20	23	21	251	na	2-3

Footnote at end of table.



FIGURE 33. DAYS WITH TOTAL CLOUD COVER 5/10 OR MORE (Continued)

REGION AND STATION	HOUR (LST)													DATA		BARR		INFO	
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR			
<b>West Malaysia and Singapore:</b>																			
Alor Setar	1300	18	17	17	18	25	20	24	24	24	25	22	10	252	15-16	8	10		
Bukit Fraser	1300	30	25	28	20	30	20	28	28	28	30	30	31	342	8	8	5		
Cameron Highlands	1300	28	25	27	27	28	20	20	28	20	31	20	30	337	5	5	5		
Ipoh	1300	20	17	17	19	21	20	22	22	25	27	26	22	256	15-16	8	10		
Kota Bharu	1300	23	20	17	16	24	22	24	25	25	27	20	26	274	18-20	12	14		
Kuala Lipis	1300	28	22	23	19	21	20	22	20	22	26	27	27	277	5	5	5		
Kuala Lumpur	1300	26	23	25	27	27	26	28	27	28	30	29	28	322	18-20	12	14		
Kuala Terengganu	1300	25	19	17	17	22	20	22	23	23	25	25	25	264	15-16	8	10		
Kuantan	1300	20	24	26	24	26	25	28	26	28	28	27	29	317	18-20	12	14		
Melaka	1300	25	22	23	24	24	22	24	25	24	26	26	27	293	18-20	12	14		
Mersing	1300	23	19	16	15	18	20	20	21	21	22	23	25	243	15-16	8	10		
Pinang	1300	19	17	19	21	26	21	22	25	25	26	24	21	266	18-20	12	14		
Singapore Airport	1300	29	25	27	26	27	26	26	29	28	29	29	30	332	10	10	10		
Temerloh	1300	23	22	19	19	22	21	25	20	24	25	25	26	272	5	5	5		
<b>East Malaysia and Brunei:</b>																			
Bintulu	1400	26	25	22	21	23	23	21	24	24	25	23	26	283	na	na	3-4		
Kota Kinabalu	1400	22	20	18	16	23	22	23	25	23	24	23	23	260	9-10	9	10		
Kuching	1300	29	26	27	24	23	20	21	23	23	27	27	28	298	10	10	10		
Miri	1400	22	19	18	15	20	17	19	21	22	23	21	23	239	9-10	9	10		
Sandakan	1400	24	20	16	13	19	19	19	22	21	21	21	24	237	10	10	10		
Victoria	1400	18	15	12	13	18	19	18	19	18	17	21	18	206	na	na	2-4		
<b>West Malaysia and Singapore:</b>																			
Alor Setar	1900	16	18	23	25	28	25	27	28	27	29	26	20	291	15-16	10	12		
Bukit Fraser	1900	28	26	27	29	30	28	28	27	27	29	29	28	335	8	8	4-5		
Cameron Highlands	1900	35	22	25	25	29	27	29	29	28	30	28	29	328	5	5	5		
Ipoh	1900	36	24	28	29	29	27	28	29	28	29	28	28	334	15-16	9	11		
Kota Bharu	1900	24	19	19	20	26	25	25	27	26	26	26	25	287	17-19	13	15		
Kuala Lumpur	1900	29	26	29	29	29	27	27	28	28	30	29	28	337	19-20	15	16		
Kuala Terengganu	1900	28	23	22	22	26	26	27	27	26	27	26	28	305	15-16	9	11		
Kuantan	1900	25	20	21	22	26	24	25	27	26	27	26	27	295	19-20	13	14		
Melaka	1900	26	23	25	26	26	25	26	27	26	29	28	27	313	19-20	14	16		
Mersing	1900	24	17	16	15	20	20	22	19	19	20	21	24	237	15-16	9	11		
Pinang	1900	25	23	25	27	28	27	28	29	29	30	28	26	324	19-20	15	16		
Singapore Airport	1900	27	23	26	26	27	26	24	27	26	29	29	29	319	10	10	10		
Temerloh	1900	29	24	26	27	27	26	27	28	28	28	29	25	325	5	5	5		
<b>East Malaysia and Brunei:</b>																			
Bintulu	2000	26	25	24	21	22	19	22	24	26	26	25	27	287	na	na	3-4		
Kota Kinabalu	2000	20	19	17	19	24	24	24	26	26	25	22	21	268	9-10	9	10		
Kuching	1900	35	20	20	20	21	18	17	22	21	22	24	24	253	10	10	10		
Miri	2000	22	20	19	17	18	20	21	23	22	22	21	23	248	9-10	9	10		
Sandakan	2000	21	18	14	11	16	18	19	21	20	19	19	18	212	10	10	10		
Victoria	2000	17	17	16	20	20	18	20	21	21	25	19	22	235	na	na	3-5		

na Data not available.

FIGURE 34. PERCENTAGE FREQUENCY OF CEILING <2,000 FEET AT SPECIFIED HOURS  
(Ceiling defined as  $\frac{1}{8}$  or more cloud cover)

REGION AND STATION	HOUR (LST)	MONTHS												DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	PER	CYR
<b>West Malaysia and Singapore:</b>																
Kota Bharu.....	0100	13	10	5	0	2	3	4	5	4	14	17	10	8	13-14	8-9
Kuala Lumpur.....	0100	3	4	4	2	3	3	3	3	3	7	5	4	4	14-17	9-11
Kuantan.....	0100	10	7	3	3	3	2	6	7	7	6	12	6	13-14	8-10	
Melaka.....	0100	2	2	1	1	6	2	3	2	2	6	3	4	3	14-17	9-11
Pinang.....	0100	*	1	3	1	4	1	2	2	3	2	1	2	14-17	9-10	
Singapore Airport.....	0100	2	0	0	0	1	*	*	0	1	1	1	1	9-10	9-10	
<b>East Malaysia and Brunei:</b>																
Kuching.....	0100	10	12	8	2	7	2	2	3	0	2	7	7	5	1-3	1-3
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	0700	1	2	3	4	6	7	5	5	7	9	13	8	6	15-16	7-10
Bukit Fraser.....	0700	76	52	52	37	15	20	25	21	20	16	35	68	37	8	2-3
Cameron Highlands.....	0700	7	6	3	5	5	12	14	20	11	0	0	0	7	5	1-2
Ipoh.....	0700	1	*	0	3	1	2	2	3	2	5	4	2	2	15-16	7-10
Kota Bharu.....	0700	21	17	12	5	3	3	7	3	4	8	10	20	11	18-19	12-14
Kuala Lipis.....	0700	80	64	86	66	62	54	80	62	69	60	64	64	61	8	2-3
Kuala Lumpur.....	0700	11	9	10	10	8	7	6	7	10	15	20	17	11	19-20	13-14
Kuala Terengganu.....	0700	23	22	17	5	4	1	1	4	2	4	15	20	11	15-16	8-10
Kuantan.....	0700	14	11	10	15	11	6	5	11	10	17	20	18	12	19-20	11-14
Melaka.....	0700	5	4	4	5	13	9	10	8	10	13	0	8	2	19-20	13-14
Mersing.....	0700	14	9	7	4	1	*	0	1	1	3	14	5	5	15-16	7-10
Pinang.....	0700	3	2	3	4	5	4	5	9	8	6	3	2	5	19-20	11-14
Singapore Airport.....	0700	3	1	1	2	3	3	2	3	2	4	3	2	2	9-10	9-10
Tererluh.....	0700	41	41	51	56	57	29	48	41	52	52	76	39	49	5	2-3
<b>East Malaysia and Brunei:</b>																
Kota Kinabalu.....	0800	3	0	0	0	1	1	2	1	2	1	1	*	1	9-10	9-10
Kuching.....	0700	17	13	10	5	5	3	4	1	4	9	10	12	8	9-10	9-10
Miri.....	0800	8	10	8	5	5	3	4	3	5	1	7	6	5	9-10	8-10
Handakan.....	0800	22	15	11	3	2	2	*	*	*	2	4	12	6	9-10	9-10
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1000	1	3	2	1	6	3	4	10	13	11	9	6	0	4-6	4-5
Ipoh.....	1000	0	0	3	4	1	1	1	2	5	4	2	3	2	4-6	4-5
Kota Bharu.....	1000	27	30	20	9	3	1	1	3	10	25	37	13	7-8	5-6	
Kuala Lumpur.....	1000	3	2	2	5	6	6	6	7	5	11	11	4	6	7-8	6-7
Kuala Terengganu.....	1000	17	18	16	3	0	0	1	1	5	24	36	10	4-6	4-5	
Kuantan.....	1000	21	14	11	7	6	2	5	3	2	6	10	19	9	7-8	5-6
Melaka.....	1000	10	15	6	20	25	28	33	33	24	27	27	17	22	7-8	5-6
Mersing.....	1000	11	14	7	2	0	1	1	4	0	4	5	19	5	4-6	4-5
Pinang.....	1000	2	1	4	2	3	4	4	5	6	8	7	2	4	7-8	5-7
Singapore Airport.....	1000	6	5	3	3	3	3	2	4	2	5	5	5	4	10	10
<b>East Malaysia and Brunei:</b>																
Kota Kinabalu.....	1100	2	0	0	0	3	3	1	2	2	2	2	1	1	9-10	9-10
Kuching.....	1000	22	19	12	3	3	3	2	5	7	6	11	8	8	9-10	9-10
Miri.....	1100	14	9	9	4	4	3	2	3	3	2	5	11	6	9-10	9-10
Handakan.....	1100	22	13	14	6	3	2	1	3	2	3	5	13	7	9-10	9-10
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1300	2	7	4	2	6	4	7	4	6	8	9	6	5	15-16	8-10
Bukit Fraser.....	1300	70	40	41	31	36	34	12	1	8	11	30	32	29	8	2-3
Cameron Highlands.....	1300	15	32	40	35	34	30	25	25	36	13	7	10	26	5	1-3
Ipoh.....	1300	1	2	2	2	3	3	5	2	5	7	6	4	3	15-16	8-10
Kota Bharu.....	1300	19	16	9	4	3	3	3	4	5	9	21	25	10	18-20	11-13
Kuala Lipis.....	1300	17	5	7	0	1	1	4	5	7	1	2	6	5	8	2-3
Kuala Lumpur.....	1300	5	7	6	9	10	8	12	10	12	14	14	9	10	16-20	12-14
Kuala Terengganu.....	1300	16	14	6	3	*	*	0	1	1	3	13	18	6	15-16	8-10
Kuantan.....	1300	34	28	18	21	12	8	8	10	10	15	24	30	18	18-20	11-13
Melaka.....	1100	12	13	8	12	9	9	11	10	9	10	18	17	11	18-20	11-14
Mersing.....	1300	17	11	9	4	4	4	4	6	7	4	7	22	8	15-16	8-10
Pinang.....	1300	1	1	1	2	3	4	2	4	7	6	4	2	3	18-20	11-14
Singapore Airport.....	1300	6	4	3	2	2	1	4	1	2	2	5	10	3	10	10
Tererluh.....	1300	33	13	11	7	3	9	9	10	9	7	3	12	11	5	2-3

Footnote at end of table.

FIGURE 34. FREQUENCY OF CEILING <2,000 FEET (Continued)

REGION AND STATION	HOUR (LST)	MONTHS												DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
<b>East Malaysia and Brunei:</b>																
Kota Kinabalu.....	1400	3	*	1	2	4	7	3	4	4	4	5	2	3	9-10	9-10
Kuching.....	1300	13	9	4	4	1	4	3	1	2	5	6	7	5	9-10	9-10
Miri.....	1400	7	4	2	2	2	2	2	1	3	3	3	6	3	9-10	9-10
Sandakan.....	1400	16	12	6	4	3	1	2	1	1	1	2	6	5	9-10	9-10
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1600	5	0	4	4	4	4	8	4	13	10	16	16	8	4-5	4-5
Ipoh.....	1600	3	2	5	7	4	8	0	4	6	10	11	11	7	4-5	4-5
Kota Baharu.....	1600	21	10	11	3	6	2	4	3	7	10	18	20	11	7-8	6-7
Kuala Lumpur.....	1600	8	10	10	20	8	0	11	9	9	11	12	10	11	7-8	6-7
Kuala Terengganu.....	1000	24	24	16	5	0	2	5	3	1	6	26	32	12	4-5	4
Kuantan.....	1600	24	13	6	5	9	5	8	3	8	17	20	10	7	7-8	5-7
Melaka.....	1600	15	9	6	6	2	2	4	6	6	7	16	14	8	7-8	6-7
Merang.....	1600	17	3	4	2	0	3	2	4	4	3	2	20	5	4-5	4-5
Pinang.....	1600	1	0	2	1	4	3	3	3	4	7	6	2	3	7-8	6-7
Singapore Airport.....	1600	3	4	4	2	1	1	1	1	1	1	4	7	3	10	10
<b>East Malaysia and Brunei:</b>																
Kota Kinabalu.....	1700	6	2	3	5	6	8	8	4	4	6	7	4	5	9-10	9-10
Kuching.....	1600	8	6	2	7	5	3	6	3	7	4	4	7	5	9-10	9-10
Miri.....	1700	5	3	1	1	1	2	3	2	5	1	5	3	3	9-10	8-10
Sandakan.....	1700	12	12	6	2	1	1	1	2	1	2	2	6	4	9-10	9-10
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1900	2	5	5	7	2	3	4	3	7	6	7	4	5	15-16	9-11
Bukit Fraser.....	1900	00	41	31	22	15	15	13	13	10	10	23	26	24	8	1-3
Cameron Highlands.....	1000	3	6	5	2	3	4	7	12	3	0	0	0	4	5	1-3
Ipoh.....	1900	3	3	5	4	3	2	3	3	4	3	5	6	4	15-16	9-11
Kota Baharu.....	1900	14	11	8	6	9	9	10	11	11	13	18	11	17-19	12-15	
Kuala Lumpur.....	1900	5	7	6	7	2	4	2	2	3	4	6	7	5	10-20	14-16
Kuala Terengganu.....	1900	15	14	9	3	2	1	1	3	5	7	12	20	8	15-16	9-11
Kuantan.....	1900	12	8	5	5	8	8	7	6	10	11	10	14	9	19-20	12-14
Melaka.....	1900	4	6	3	4	2	2	2	5	4	5	6	8	4	19-20	14-16
Merang.....	1900	10	8	5	4	5	2	4	2	2	3	5	9	5	15-16	9-10
Pinang.....	1900	3	2	3	3	3	3	3	3	4	4	3	3	3	19-20	15-16
Singapore Airport.....	1900	3	1	1	1	1	0	1	*	1	1	1	4	1	10	10
Temerloh.....	1900	10	8	6	10	15	1	7	9	13	13	23	5	10	5	2-3
<b>East Malaysia and Brunei:</b>																
Kota Kinabalu.....	2000	6	1	1	1	2	5	4	3	4	3	2	2	3	9-10	9-10
Kuching.....	1000	12	7	3	5	7	3	5	6	5	4	2	5	5	9-10	9-10
Miri.....	2000	5	3	3	1	2	2	2	3	3	2	4	4	3	9-10	9-10
Sandakan.....	2000	5	4	4	1	1	2	2	2	1	2	1	5	2	9-10	9-10

\* <0.5%.

FIGURE 35. PERCENTAGE FREQUENCY OF CEILING <3,000 FEET AT SPECIFIED HOURS  
(Ceiling defined as 5% or more cloud cover)

REGION AND STATION	HOUR (LST)	MONTHS												DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
<b>West Malaysia and Singapore:</b>																
Kota Baharu.....	0100	20	23	12	9	4	4	8	9	8	17	20	26	13	13-14	8-9
Kuala Lumpur.....	0100	4	6	5	4	4	5	3	4	5	7	6	5	5	14-17	9-11
Kuantan.....	0100	15	12	7	9	4	3	7	10	10	11	15	9	9	13-14	8-10
Melaka.....	0100	3	2	1	2	6	3	3	3	3	6	3	4	3	14-17	9-11
Pinang.....	0100	1	2	3	2	5	2	3	3	2	4	3	2	3	14-17	9-10
Singapore Airport.....	0100	4	1	*	1	1	1	1	1	*	1	1	2	1	9-10	9-10
<b>East Malaysia and Brunei:</b>																
Kuching.....	0100	13	19	10	2	7	2	2	5	0	2	7	8	6	1-3	1-3

Footnote at end of table.

FIGURE 35. FREQUENCY OF CEILING <3,300 FEET (Continued)

REGION AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	POB	CYR
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	0700	4	4	5	4	7	8	5	7	9	11	14	6	7	15-16	7-10
Bukit Fraser.....	0700	77	52	52	37	15	30	28	21	20	15	35	60	37	8	2-3
Cameron Highlands.....	0700	7	6	3	8	5	12	14	20	11	0	0	0	7	5	1-2
Ipoh.....	0700	5	5	5	7	4	5	5	7	6	6	6	7	5	15-16	7-10
Kota Baharu.....	0700	31	27	27	6	4	4	3	5	6	10	22	34	14	18-19	12-14
Kuala Lipis.....	0700	70	97	86	86	64	85	80	92	99	99	98	84	92	5	2-3
Kuala Lumpur.....	0700	12	13	10	11	0	8	7	8	11	15	21	18	12	19-20	13-14
Kuala Terengganu.....	0700	26	26	20	6	4	1	1	5	2	4	19	31	13	15-16	8-10
Kuantan.....	0700	17	14	12	15	12	6	6	12	10	17	21	20	14	19-20	11-14
Melaka.....	0700	5	6	6	5	14	11	10	9	10	13	9	9	9	19-20	13-14
Mersing.....	0700	15	10	7	4	1	*	9	1	1	3	3	15	5	15-15	7-10
Pinang.....	0700	5	3	4	6	6	5	6	10	10	7	6	4	6	19-20	11-14
Singapore Airport.....	0700	5	2	1	2	3	3	2	4	2	2	4	3	3	9-10	9-10
Temerloh.....	0700	41	44	38	37	37	31	48	41	53	52	76	39	30	5	2-3
<b>East Malaysia and Brunei:</b>																
Kota Kinabalu.....	0800	5	1	2	*	2	3	4	5	7	6	7	3	4	9-10	9-10
Kuching.....	0700	20	19	13	7	5	3	4	3	4	10	11	12	9	9-10	9-10
Miri.....	0800	9	11	8	5	6	3	4	3	5	3	8	7	6	9-10	8-10
Sandakan.....	0800	25	15	12	3	2	2	1	1	1	3	6	13	7	9-10	9-10
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1000	2	7	4	2	6	4	4	12	15	12	10	8	7	4-6	4-5
Ipoh.....	1000	1	2	4	5	4	2	1	5	7	6	3	0	4	4-6	4-5
Kota Baharu.....	1000	35	49	39	19	5	2	4	3	4	13	30	43	20	7-8	8-8
Kuala Lumpur.....	1000	4	4	2	5	9	8	9	10	7	14	13	0	8	7-8	6-7
Kuala Terengganu.....	1000	29	27	27	11	2	2	3	1	1	7	25	41	14	4-6	4-5
Kuantan.....	1000	32	28	29	23	12	8	10	7	4	8	14	24	16	7-8	5-6
Melaka.....	1000	12	17	9	22	26	30	35	36	27	30	27	19	24	7-8	5-6
Mersing.....	1000	12	15	7	4	2	2	1	0	1	4	5	19	6	4-6	4-5
Pinang.....	1000	3	1	5	4	6	5	6	7	10	11	8	3	6	7-8	5-7
Singapore Airport.....	1000	7	10	11	10	8	7	6	9	0	10	10	9	9	10	10
<b>East Malaysia and Brunei:</b>																
Kota Kinabalu.....	1100	3	*	0	0	3	4	2	4	3	5	6	2	3	9-10	9-10
Kuching.....	1000	35	38	35	32	21	19	14	10	15	24	25	32	25	9-10	9-10
Miri.....	1100	20	22	19	10	6	4	3	4	4	4	10	21	11	9-10	9-10
Sandakan.....	1100	26	15	14	7	3	2	1	3	2	3	6	14	8	9-10	9-10
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1300	10	19	16	10	11	5	11	9	8	9	12	10	11	15-16	8-10
Bukit Fraser.....	1300	72	48	48	41	40	41	21	13	14	32	42	42	38	8	2-3
Cameron Highlands.....	1300	15	32	40	38	34	30	25	25	30	13	7	10	25	5	1-2
Ipoh.....	1300	5	9	9	10	10	10	13	10	14	18	16	8	12	15-16	8-10
Kota Baharu.....	1300	29	20	19	6	5	4	5	7	0	10	23	29	15	18-20	11-13
Kuala Lipis.....	1300	22	10	14	4	1	1	5	5	8	2	2	8	7	5	2-3
Kuala Lumpur.....	1300	13	17	19	20	21	18	25	25	25	24	21	18	20	18-20	12-14
Kuala Terengganu.....	1300	20	19	11	3	1	1	*	1	3	4	14	20	8	15-16	8-10
Kuantan.....	1300	47	45	44	42	23	19	21	24	22	22	34	40	32	18-20	11-13
Melaka.....	1300	17	17	13	15	10	10	12	10	10	10	17	20	14	18-20	11-14
Mersing.....	1300	19	11	10	5	4	5	5	8	8	5	7	22	9	15-16	8-10
Pinang.....	1300	3	2	1	5	6	5	3	7	10	9	6	3	5	18-20	11-14
Singapore Airport.....	1300	15	11	18	9	8	5	6	5	4	4	7	17	8	10	10
Temerloh.....	1300	33	13	11	7	3	10	12	10	9	7	5	18	12	5	2-3
<b>East Malaysia and Brunei:</b>																
Kota Kinabalu.....	1400	6	2	3	3	5	7	4	5	6	7	8	3	5	9-10	9-10
Kuching.....	1300	31	33	27	25	18	23	16	12	19	24	20	22	22	9-10	9-10
Miri.....	1400	8	10	4	4	3	2	3	3	3	4	3	6	4	9-10	9-10
Sandakan.....	1400	18	13	6	4	3	2	2	1	2	1	2	6	5	9-10	9-10

Footnote at end of table.

FIGURE 35. FREQUENCY OF CEILING <3,300 FEET (Continued)

REGION AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1000	11	17	9	5	5	5	8	4	13	16	10	10		4-5	4-5
Ipo.....	1600	11	12	13	9	6	9	13	6	14	19	13	19	12	4-5	4-5
Kota Baharu.....	1600	34	31	22	4	6	3	4	3	8	10	20	33	14	7-8	6-7
Kuala Lumpur.....	1600	14	17	13	22	9	9	12	9	11	13	12	18	13	7-8	6-7
Kuala Terengganu.....	1600	29	39	25	6	2	2	5	3	1	6	31	37	16	4-5	4
Kuantan.....	1600	28	24	10	8	10	5	6	0	5	9	10	25	13	7-8	5-7
Melaka.....	1600	15	9	6	6	2	2	4	6	6	7	16	14	8	7-8	6-7
Mersing.....	1600	17	3	4	2	1	3	2	4	5	4	2	20	6	4-5	4-5
Pinang.....	1600	3	0	4	1	5	3	5	3	4	10	6	4	4	7-8	6-7
Singapore Airport.....	1600	6	7	7	3	2	2	2	2	1	2	5	9	4	10	10
<b>East Malaysia and Brunei:</b>																
Kota Kinabalu.....	1700	12	7	9	8	7	13	11	10	9	11	15	12	10	0-10	0-10
Kuching.....	1600	11	6	4	9	6	4	9	7	8	7	8	10	7	0-10	0-10
Miri.....	1700	7	4	2	1	2	3	4	3	6	2	7	5	4	0-10	8-10
Sandakan.....	1700	15	14	7	2	1	2	1	2	2	2	2	6	5	0-10	0-10
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1900	4	8	8	8	3	4	4	4	7	7	7	5	6	15-16	0-11
Bukit Fraser.....	1900	63	45	31	23	15	16	13	13	18	10	23	26	25	8	1-3
Cameron Highlands.....	1900	3	6	5	2	3	4	7	12	3	0	0	0	4	5	1-2
Ipo.....	1900	11	10	10	9	6	5	7	8	11	6	9	10	8	15-16	9-11
Kota Baharu.....	1900	21	18	14	7	10	9	10	10	12	12	16	23	14	17-19	12-15
Kuala Lumpur.....	1900	8	10	9	8	2	4	3	3	4	6	8	8	6	10-20	14-16
Kuala Terengganu.....	1900	17	17	12	5	2	1	1	4	7	7	13	20	9	15-16	9-11
Kuantan.....	1900	17	12	7	8	8	9	8	6	11	12	10	18	11	10-20	12-14
Melaka.....	1900	5	7	4	4	3	3	2	5	5	6	7	9	5	10-20	14-16
Mersing.....	1900	10	9	5	4	5	4	4	3	3	3	5	9	5	15-16	0-10
Pinang.....	1900	6	3	4	4	4	3	4	3	4	7	5	5	4	10-20	15-16
Singapore Airport.....	1900	4	2	3	2	2	*	1	1	1	1	2	5	2	10	10
Temerloh.....	1900	10	10	8	10	15	1	7	9	13	13	23	5	10	5	2-3
<b>East Malaysia and Brunei:</b>																
Kota Kinabalu.....	2000	11	6	5	4	7	11	10	10	15	12	10	9	9	9-10	0-10
Kuching.....	1900	14	10	5	7	9	7	7	6	6	5	3	6	7	9-10	0-10
Miri.....	2000	6	3	4	2	2	3	3	4	3	2	5	4	3	9-10	0-10
Sandakan.....	2000	7	5	4	1	1	2	3	4	2	2	2	5	3	0-10	0-10

\* < 0.5%.

FIGURE 36. PERCENTAGE FREQUENCY OF VISIBILITY <2 1/2 MILES AT SPECIFIED HOURS

REGION AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
<b>West Malaysia and Singapore:</b>																
Kota Baharu.....	0100	1	1	*	*	0	1	0	0	1	*	*	0	*	13-14	8-9
Kuala Lumpur.....	0100	3	2	2	2	1	2	1	1	1	5	5	4	2	14-17	0-11
Kuantan.....	0100	1	2	1	2	2	2	3	5	4	7	5	3	3	13-14	8-10
Melaka.....	0100	*	1	2	3	2	1	*	0	*	1	1	*	1	14-17	0-11
Pinang.....	0100	0	0	0	*	0	*	0	0	0	1	*	*	*	14-17	0-10
Singapore Airport.....	0100	*	0	0	*	0	*	0	0	*	1	1	*	*	9-10	0-10
<b>East Malaysia and Brunei:</b>																
Kuching.....	0100	3	14	5	7	10	2	3	3	7	2	12	6	6	1-3	1-3
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	0700	1	1	3	2	2	1	1	2	2	5	6	1	2	15-16	7-10
Bukit Fraser.....	0700	70	52	54	37	18	30	31	21	23	29	37	65	40	8	2-3
Cameron Highlands.....	0700	40	32	13	5	5	0	0	0	5	0	0	3	0	5	1-2
Ipo.....	0700	0	0	0	1	*	*	*	1	1	3	1	*	1	15-16	7-10
Kota Baharu.....	0700	4	2	4	2	1	1	1	1	2	2	3	3	2	18-19	12-14

Footnotes are at end of table.

FIGURE 36. FREQUENCY OF VISIBILITY < 2½ MILES (Continued)

REGION AND STATION	HOUR (LAT)	DATA												BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
<b>West Malaysia and Singapore (Continued):</b>																
Kuala Lipis.....	0700	83	94	82	83	91	82	87	88	93	97	97	79	88	5	2-3
Kuala Lumpur.....	0700	14	13	17	21	11	8	7	5	16	20	25	27	15	10-20	13-14
Kuala Terengganu.....	0700	3	4	7	4	*	*	1	2	1	1	4	4	3	15-16	8-10
Kuantan.....	0700	6	5	8	20	20	9	13	16	20	33	34	11	15	19-20	11-14
Melaka.....	0700	1	1	1	1	1	1	2	1	3	5	1	1	2	10-20	13-14
Mersing.....	0700	0	0	2	1	0	1	0	1	1	1	1	2	1	15-16	7-10
Pinang.....	0700	0	0	*	*	*	1	1	2	2	2	1	0	1	10-20	11-14
Singapore Airport.....	0700	6	3	6	9	10	20	17	20	17	16	7	5	11	9-10	9-10
Temerloh.....	0700	14	23	31	20	21	24	24	16	27	30	22	15	22	5	2-3
<b>East Malaysia and Brunei:</b>																
Bandaru.....	0800	16	17	17	10	12	10	5	11	9	10	9	10	12	na	3-5
Kota Kinabalu.....	0800	2	0	1	0	1	1	1	*	1	1	1	*	1	9-10	9-10
Kuching.....	0700	12	11	14	11	9	3	3	7	7	7	13	14	9	9-10	9-10
Miri.....	0800	2	2	1	1	2	0	1	1	2	1	2	1	1	9-10	8-10
Sandakan.....	0800	3	3	*	1	1	0	0	0	*	1	*	2	1	9-10	9-10
Victoria.....	0800	0	0	1	0	2	1	2	0	0	1	1	2	1	na	2-3
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1000	0	0	0	0	0	1	0	0	1	1	0	0	*	4-6	4-5
Ipoh.....	1000	0	0	1	0	0	0	1	0	0	1	0	0	*	4-6	4-5
Kota Baharu.....	1000	0	0	0	0	0	0	0	0	0	0	2	0	*	7-8	5-6
Kuala Lumpur.....	1000	0	1	1	0	0	0	1	1	1	6	2	1	1	7-8	6-7
Kuala Terengganu.....	1000	0	0	0	0	0	0	0	0	0	1	3	0	*	4-6	4-5
Kuantan.....	1000	8	3	3	2	0	0	1	1	1	3	3	0	2	7-8	5-6
Melaka.....	1000	1	1	0	1	1	1	1	0	1	1	1	0	1	7-8	5-6
Mersing.....	1000	2	0	1	0	0	0	0	0	0	0	0	2	*	4-6	4-5
Pinang.....	1000	1	1	1	0	1	1	1	1	2	1	1	0	1	7-8	5-7
Singapore Airport.....	1000	1	1	0	1	1	2	1	1	1	3	1	2	1	10	10
<b>East Malaysia and Brunei:</b>																
Kota Kinabalu.....	1100	1	0	0	0	*	1	0	1	*	1	1	1	1	9-10	9-10
Kuching.....	1100	5	5	2	1	0	*	1	1	1	0	1	2	2	9-10	9-10
Miri.....	1100	2	1	*	0	1	1	0	*	1	*	1	1	1	9-10	9-10
Sandakan.....	1100	1	1	0	0	0	0	0	*	0	0	*	1	*	9-10	9-10
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1300	0	0	0	*	*	*	*	1	1	*	1	0	*	15-16	8-10
Bukit Fraser.....	1300	36	20	11	2	11	4	4	1	8	8	20	23	13	8	2-3
Cameron Highlands.....	1300	29	28	3	2	5	0	2	0	3	3	0	7	7	5	1-2
Ipoh.....	1300	0	0	*	0	0	0	0	0	1	1	*	1	*	15-16	8-10
Kota Baharu.....	1300	*	*	0	0	0	0	0	0	*	*	2	2	*	18-20	11-15
Kuala Lipis.....	1300	4	2	0	0	0	0	1	0	2	0	0	3	1	5	2-3
Kuala Lumpur.....	1300	1	1	*	1	1	1	1	*	2	4	2	*	1	18-20	12-14
Kuala Terengganu.....	1300	0	0	0	1	0	0	0	1	0	3	2	1	1	15-16	8-10
Kuantan.....	1300	6	3	1	*	1	1	0	*	*	1	2	6	2	18-20	11-13
Melaka.....	1300	1	1	1	*	*	0	1	*	1	2	1	1	1	18-20	11-14
Mersing.....	1300	1	1	0	1	1	*	2	2	0	1	0	2	1	16-18	8-10
Pinang.....	1300	0	0	0	1	*	0	*	1	1	1	1	0	*	18-20	11-14
Singapore Airport.....	1300	3	2	2	1	1	1	1	1	1	2	2	3	2	10	10
Temerloh.....	1300	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2-3
<b>East Malaysia and Brunei:</b>																
Bandaru.....	1400	2	2	2	2	1	1	1	1	1	0	3	1	2	na	3-4
Kota Kinabalu.....	1400	3	*	0	1	1	2	*	2	1	1	3	1	1	9-10	9-10
Kuching.....	1300	4	4	1	1	1	*	1	1	1	2	2	2	2	9-10	9-10
Miri.....	1400	1	*	0	0	0	1	0	*	0	*	1	1	*	9-10	9-10
Sandakan.....	1400	0	*	0	0	0	0	0	0	0	0	0	1	*	9-10	9-10
Victoria.....	1400	0	0	0	0	0	1	0	0	1	0	1	0	*	na	2-3

Footnotes are at end of table.

FIGURE 36. FREQUENCY OF VISIBILITY <2½ MILES (Continued)

REGION AND STATION	HOUR (LST)	MONTHS												DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1900	*	*	2	1	*	0	0	2	*	1	1	1	1	15-16	9-11
Bukit Fraser.....	1900	58	43	31	23	43	32	20	16	29	13	30	30	31	8	1-3
Cameron Highlands.....	1900	47	50	12	9	9	0	3	0	3	3	3	4	12	5	1-2
Ipo.....	1900	1	1	2	2	2	*	*	1	1	5	3	2	2	15-16	9-11
Kota Baharu.....	1900	1	1	1	1	1	1	*	1	1	1	2	3	1	17-19	12-15
Kuala Lumpur.....	1900	2	1	2	2	2	*	0	1	2	3	2	3	2	19-20	14-16
Kuala Terengganu.....	1900	*	*	0	0	*	0	0	1	1	1	2	2	1	15-16	9-11
Kuantan.....	1900	3	1	1	1	1	1	1	2	3	6	4	4	2	19-20	13-14
Melaka.....	1900	1	1	2	2	2	1	1	*	*	2	2	1	1	19-20	14-16
Merang.....	1900	1	0	*	0	0	0	0	0	1	*	1	2	*	15-16	9-10
Pinang.....	1900	*	0	0	1	0	0	*	1	1	1	*	*	*	19-20	15-16
Singapore Airport.....	1900	2	1	0	0	1	*	1	*	1	2	*	1	1	10	10
Temerloh.....	1900	17	7	2	0	1	1	1	1	3	23	40	36	11	5	2-3
<b>East Malaysia and Brunei:</b>																
Bintulu.....	2000	3	4	4	3	3	1	4	5	7	11	5	5	5	na	3-5
Kota Kinabalu.....	2000	11	5	4	3	7	0	8	5	9	6	4	1	6	0-10	0-10
Kuching.....	1900	5	4	1	2	2	0	2	1	3	4	1	3	2	0-10	0-10
Miri.....	2000	2	1	*	0	1	1	2	*	1	1	2	3	1	0-10	0-10
Sandakan.....	2000	3	0	1	*	0	1	2	4	5	1	1	2	2	0-10	0-10
Victoria.....	2000	8	1	3	4	5	0	8	15	18	19	10	10	9	na	3-5

na Data not available.

\* < 0.5%.

FIGURE 37. PERCENTAGE FREQUENCY OF VISIBILITY <6 MILES AT SPECIFIED HOURS

REGION AND STATION	HOUR (LST)	MONTHS												DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
<b>West Malaysia and Singapore:</b>																
Kota Baharu.....	0100	3	1	1	1	2	2	1	1	3	7	9	6	3	13-14	8-9
Kuala Lumpur.....	0100	27	27	31	38	33	24	21	21	32	47	40	33	31	14-17	9-11
Kuantan.....	0100	47	49	44	52	47	51	53	59	59	65	54	51	53	13-14	8-10
Melaka.....	0100	10	12	12	10	8	7	6	10	16	17	14	11	14	14-17	9-11
Pinang.....	0100	6	9	9	12	9	5	0	11	12	12	11	5	9	14-17	9-10
Singapore Airport.....	0100	18	16	12	13	14	17	11	15	16	20	21	18	16	9-10	9-10
<b>East Malaysia and Brunei:</b>																
Kuching.....	0100	36	51	39	18	16	10	12	21	35	29	27	17	26	1-3	1-3
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	0700	1	2	3	3	5	3	3	7	6	11	8	2	5	15-16	7-10
Bukit Fraser.....	0700	77	55	57	39	20	35	39	24	28	29	40	68	43	8	2-3
Cameron Highlands.....	0700	88	92	65	55	45	27	40	33	37	29	54	70	54	5	1-2
Ipo.....	0700	3	2	1	5	*	1	2	3	6	9	6	2	3	15-16	7-10
Kota Baharu.....	0700	8	5	8	4	2	2	1	1	2	4	10	10	5	18-19	12-14
Kuala Lipis.....	0700	88	98	99	89	98	86	91	92	97	99	99	83	93	5	2-3
Kuala Lumpur.....	0700	31	27	34	40	28	21	19	17	31	42	43	43	32	10-20	13-14
Kuala Terengganu.....	0700	6	8	13	6	1	1	1	4	1	2	12	11	6	15-16	8-10
Kuantan.....	0700	17	17	21	35	33	25	28	32	39	50	39	32	31	19-20	11-14
Melaka.....	0700	3	2	4	4	7	9	11	11	17	20	9	9	9	19-20	13-14
Merang.....	0700	11	2	4	3	1	2	1	2	5	5	5	15	5	15-16	7-10
Pinang.....	0700	1	*	3	1	4	3	3	6	9	8	5	1	4	19-20	11-14
Singapore Airport.....	0700	21	21	22	29	39	43	42	46	41	33	21	16	31	9-10	9-10
Temerloh.....	0700	28	44	47	33	36	31	43	32	47	43	29	30	37	5	2-3
<b>East Malaysia and Brunei:</b>																
Bintulu.....	0800	40	43	31	27	26	27	22	40	27	47	23	37	33	na	3-5
Kota Kinabalu.....	0800	3	*	1	1	1	3	2	2	2	3	5	1	2	0-10	0-10
Kuching.....	0700	44	36	30	25	15	9	13	29	28	23	28	30	26	0-10	0-10
Miri.....	0800	6	5	4	6	5	5	2	5	6	3	6	7	5	0-10	8-10
Sandakan.....	0800	9	6	1	2	1	1	*	*	1	1	2	6	3	9-10	0-10
Victoria.....	0800	2	3	1	5	7	4	3	2	6	8	8	7	5	na	2-3

Footnotes are at end of table.

FIGURE 37. FREQUENCY OF VISIBILITY < 6 MILES (Continued)

REGION AND STATION	HOUR (LST)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1000	0	0	0	0	1	1	1	0	2	4	3	1	1	4-6	4-5
Ipoh.....	1000	0	0	2	0	0	0	1	1	2	5	1	0	1	4-6	4-5
Kota Baharu.....	1000	1	0	1	0	0	0	0	0	0	2	6	2	1	7-8	5-6
Kuala Lumpur.....	1000	1	2	2	3	1	1	2	2	7	13	6	2	4	7-8	6-7
Kuala Terengganu.....	1000	2	3	1	0	0	0	0	0	0	1	9	2	1	4-6	4-5
Kuantan.....	1000	19	16	10	5	1	0	1	4	8	17	11	18	9	7-8	5-6
Melaka.....	1000	3	7	5	3	7	5	7	7	13	17	6	3	7	7-8	5-6
Mersing.....	1000	7	1	2	0	1	0	0	1	2	6	2	16	3	4-6	4-5
Pinang.....	1000	2	1	2	0	2	2	2	4	5	7	2	1	2	7-8	5-7
Singapore Airport.....	1000	6	3	3	3	3	7	3	2	5	8	4	4	4	10	10
<b>East Malaysia and Brunei:</b>																
Kota Kinabalu.....	1100	2	0	1	2	2	3	1	2	1	2	3	2	2	9-10	9-10
Kuching.....	1000	22	18	9	3	*	3	4	12	16	4	3	7	8	9-10	9-10
Miri.....	1100	4	1	1	2	3	2	1	2	2	4	4	2	2	9-10	9-10
Sandakan.....	1100	7	2	1	1	0	*	0	*	*	1	2	4	2	9-10	9-10
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1300	*	1	1	1	2	2	3	3	6	4	3	*	2	15-16	8-10
Bukit Fraser.....	1300	49	34	19	9	23	9	14	3	18	19	32	39	22	8	2-3
Cameron Highlands.....	1300	63	56	34	17	29	0	12	8	24	29	73	45	33	5	1-2
Ipoh.....	1300	1	1	1	2	1	1	1	1	3	6	6	2	2	15-16	8-10
Kota Baharu.....	1300	1	1	1	0	0	*	*	0	*	2	9	6	2	18-20	11-13
Kuala Lipis.....	1300	15	5	0	0	1	0	1	0	4	0	3	5	3	5	2-3
Kuala Lumpur.....	1300	2	1	2	4	3	2	3	3	5	11	5	3	4	18-20	12-14
Kuala Terengganu.....	1300	1	1	*	1	0	*	1	0	1	*	7	7	2	15-16	8-10
Kuantan.....	1300	19	13	6	5	3	3	2	1	4	9	15	17	8	18-20	11-13
Melaka.....	1300	3	3	3	3	3	3	4	2	5	8	9	4	4	18-20	11-14
Mersing.....	1300	8	4	2	3	2	2	4	4	4	4	7	14	5	15-16	8-10
Pinang.....	1300	1	*	1	2	1	1	2	2	4	4	2	1	2	18-20	11-14
Singapore Airport.....	1300	7	5	5	1	2	3	4	3	4	8	6	9	5	10	10
Temerloh.....	1300	5	5	1	0	1	0	1	0	0	0	0	5	2	5	2-3
<b>East Malaysia and Brunei:</b>																
Bintulu.....	1400	7	13	7	12	2	4	3	4	7	5	10	5	7	na	3-4
Kota Kinabalu.....	1400	4	1	1	3	6	5	3	5	2	4	8	4	4	9-10	9-10
Kuching.....	1300	16	13	8	5	5	2	4	8	14	5	8	10	8	9-10	9-10
Miri.....	1400	5	2	3	3	3	2	2	4	2	2	3	3	3	9-10	9-10
Sandakan.....	1400	3	2	1	1	1	1	0	*	1	*	1	1	1	9-10	9-10
Victoria.....	1400	0	3	0	3	1	2	1	2	1	2	3	1	2	na	2-3
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1900	1	5	8	7	3	1	2	6	6	12	6	2	5	15-16	9-11
Bukit Fraser.....	1000	71	66	50	53	64	48	49	30	51	52	90	52	66	8	1-3
Cameron Highlands.....	1900	95	89	76	77	88	42	57	38	71	77	93	100	75	5	1-2
Ipoh.....	1900	13	12	11	15	11	4	8	8	17	36	34	24	10	15-16	9-11
Kota Baharu.....	1000	7	5	6	6	8	6	8	9	14	18	18	9	9	17-19	12-15
Kuala Lumpur.....	1900	17	11	20	23	18	12	9	11	25	44	40	30	22	19-20	14-16
Kuala Terengganu.....	1000	8	2	2	4	3	1	1	5	8	11	12	16	6	15-16	9-11
Kuantan.....	1900	26	16	16	15	20	15	18	24	35	47	44	36	27	15-20	12-14
Melaka.....	1900	9	15	15	15	15	10	7	9	19	30	30	22	17	19-20	14-16
Mersing.....	1900	14	4	4	6	8	6	3	6	10	7	9	10	7	15-16	9-10
Pinang.....	1900	10	9	8	9	4	3	4	6	15	25	21	13	11	19-20	15-16
Singapore Airport.....	1900	11	6	5	6	6	7	5	5	7	12	12	14	8	10	10
Temerloh.....	1900	89	70	75	90	88	77	75	72	96	90	82	75	82	5	2-3
<b>East Malaysia and Brunei:</b>																
Bintulu.....	2000	34	22	14	10	9	18	14	28	32	24	30	30	22	na	3-5
Kota Kinabalu.....	2000	26	17	16	17	24	23	28	27	27	21	21	10	22	9-10	9-10
Kuching.....	1900	25	20	13	18	16	12	15	26	26	25	16	20	19	9-10	9-10
Miri.....	2000	13	7	7	9	6	11	12	11	13	8	13	13	10	9-10	9-10
Sandakan.....	2000	10	3	1	2	3	5	5	9	9	8	6	9	6	9-10	9-10
Victoria.....	2000	27	20	18	30	22	16	22	30	33	38	28	34	27	na	3-5

na Data not available.

\* < 0.5%.



FIGURE 38. MEAN NUMBER OF DAYS WITH THUNDERSTORMS

REGION AND STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	YRS REC
West Malaysia and Singapore:														
Alor Setar.....	2	5	12	17	13	7	8	7	7	11	0	2	100	17-18
Bukit Fraser.....	3	6	13	17	16	12	8	12	12	11	10	5	125	10
Bukit Jeram.....	13	12	17	20	17	14	13	15	15	15	10	12	173	10
Butterworth.....	7	8	13	17	13	9	9	12	9	10	11	0	127	6
Cameron Highlands.....	2	6	11	14	13	9	7	11	8	7	6	3	97	10
Ipoh.....	8	9	17	19	16	8	10	10	13	14	13	10	147	18
Keluang.....	3	7	18	22	19	14	13	16	15	18	15	9	167	10
Kota Baharu.....	1	1	2	0	18	18	18	19	18	15	7	2	128	16
Kuala Lipis.....	2	3	11	17	18	14	11	15	15	15	11	3	135	10
Kuala Lumpur.....	8	13	20	21	18	9	9	12	12	16	16	14	165	16
Kuala Pahang.....	1	2	6	10	14	12	9	10	13	10	6	1	94	10
Kuala Terengganu.....	*	1	2	10	17	16	14	18	17	12	5	2	113	18
Kuantan.....	2	2	7	14	20	13	14	16	17	16	11	4	136	18
Melaka.....	5	7	17	21	20	16	17	16	17	19	16	10	181	18
Merang.....	2	2	7	13	21	17	17	17	18	16	11	3	143	18
Pinang.....	8	12	20	23	20	12	13	14	14	17	15	11	180	18
Singapore.....	5	7	15	21	17	13	10	12	13	18	15	11	162	10
Singapore Airport.....	6	7	15	20	21	13	13	14	13	17	17	14	170	10
Sitiawan Estate.....	8	12	16	17	16	9	11	12	13	14	12	9	146	18
Temerloh.....	2	5	12	16	19	15	13	15	16	15	13	5	146	10
East Malaysia and Brunei:														
Blitulu.....	4	4	10	7	9	8	9	9	10	10	7	7	94	11
Kota Kinabalu.....	3	3	7	14	18	11	8	8	9	9	7	5	102	11
Kuching.....	7	7	13	16	16	12	12	14	17	18	13	10	165	11
Miri.....	6	4	9	11	13	8	9	7	10	11	7	7	101	11
Sandakan.....	5	2	5	8	13	13	13	15	17	14	9	7	121	11
Victoria.....	6	4	10	13	15	10	9	8	11	15	8	0	117	11

\* < 0.5 day.

FIGURE 39. MEAN NUMBER OF DAYS WITH TOTAL CLOUD COVER  $\frac{1}{4}$  OR LESS AND VISIBILITY  $2\frac{1}{4}$  MILES OR GREATER, AT SPECIFIED HOURS

REGION AND STATION	HOUR (LMT)													DATA BANK INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
West Malaysia and Singapore:																
Kota Baharu.....	0100	1	2	2	2	1	*	1	*	1	1	0	1	10	13-14	8-9
Kuala Lumpur.....	0100	1	1	1	*	*	*	*	*	0	0	1	*	5	14-17	9-11
Kuantan.....	0100	2	2	3	1	1	*	*	1	*	*	1	1	11	13-14	9-10
Melaka.....	0100	3	3	2	1	2	2	3	2	1	1	*	2	22	14-17	9-11
Pinang.....	0100	3	2	1	*	*	1	1	1	*	*	1	2	12	14-17	9-11
Singapore Airport.....	0100	1	2	2	1	1	1	1	0	0	0	*	1	8	9-10	9-10
East Malaysia and Brunei:																
Kuching.....	0100	1	0	1	6	7	7	6	3	1	1	3	4	38	2-3	2-3
West Malaysia and Singapore:																
Alor Setar.....	0700	5	4	5	2	*	1	1	1	1	1	2	5	27	15-16	8-10
Ipoh.....	0700	3	3	3	1	1	2	1	1	*	*	1	2	17	15-16	7-10
Kota Baharu.....	0700	1	1	2	1	*	*	1	1	1	*	*	1	7	18-19	12-14
Kuala Lumpur.....	0700	*	1	1	*	*	1	*	*	0	*	*	*	3	19-20	13-15
Kuala Terengganu.....	0700	0	*	*	1	1	1	1	*	*	0	*	*	4	15-18	8-10
Kuantan.....	0700	1	1	2	1	1	1	1	*	*	*	*	1	7	19-20	12-14
Melaka.....	0700	1	1	1	1	1	1	2	1	1	1	*	1	11	19-20	13-15
Merang.....	0700	*	*	1	3	2	2	3	2	1	*	1	1	16	15-16	8-10
Pinang.....	0700	2	1	2	*	*	1	1	*	*	1	1	9	19-20	11-14	
Singapore Airport.....	0700	1	1	1	*	1	*	*	*	0	*	1	4	9-10	9-10	
East Malaysia and Brunei:																
Blitulu.....	0800	0	1	1	1	3	3	2	1	*	1	1	1	15	na	3-5
Kota Kinabalu.....	0800	3	3	5	5	2	2	2	*	1	1	2	1	28	0-10	9-10
Kuching.....	0700	1	*	1	2	3	2	4	1	2	1	1	1	10	10	10
Miri.....	0800	1	2	4	4	3	2	3	2	2	1	2	2	27	10	9-10
Sandakan.....	0800	1	1	2	3	2	3	2	2	1	1	1	1	22	10	10
Victoria.....	0800	3	2	3	4	3	*	1	2	5	2	1	2	28	na	4-6

Footnotes are at end of table.

FIGURE 39. DAYS WITH TOTAL CLOUD COVER  $\frac{1}{2}$  OR LESS AND VISIBILITY  $\frac{3}{4}$  MILES OR GREATER (Continued)

REGION AND STATION	HOUR (LST)													DATA BANK INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR
West Malaysia and Singapore:																
Alor Setar	1300	2	2	2	1	*	1	1	1	*	*	1	2	13	15-16	8-10
Ipo	1300	2	2	2	1	1	1	1	1	*	*	*	2	13	15-16	8-10
Kota Baharu	1300	*	1	2	2	*	1	1	*	*	*	1	8	18-20	12-13	
Kuala Lumpur	1300	*	1	*	0	*	*	*	*	*	0	0	*	1	18-20	12-14
Kuala Terengganu	1300	0	1	1	1	*	*	*	*	*	0	0	*	5	15-16	8-10
Kuantan	1300	0	*	*	*	*	0	*	*	*	0	0	1	18-20	11-13	
Melaka	1300	1	1	1	1	1	1	1	1	1	1	0	*	9	18-20	12-14
Mersing	1300	*	*	1	2	1	1	1	*	1	*	*	*	8	15-16	8-10
Pinang	1300	3	2	2	1	1	1	1	*	0	1	2	13	18-20	11-14	
Singapore Airport	1300	0	*	*	*	*	*	1	0	0	*	0	1	10	10	
East Malaysia and Brunei:																
Bintulu	1400	1	0	1	3	2	2	2	1	0	1	1	1	15	na	3-4
Kota Kinabalu	1400	2	2	3	4	1	1	1	1	1	*	1	1	18	9-10	9-10
Kuching	1300	0	0	*	*	*	1	1	1	*	*	0	0	3	10	10
Miri	1400	1	1	3	4	2	5	3	2	3	2	1	1	28	10	9-10
Sandakan	1400	*	1	3	3	1	1	1	1	*	*	1	*	12	10	10
Victoria	1400	3	4	4	5	3	2	4	3	1	3	1	1	34	na	2-4
West Malaysia and Singapore:																
Alor Setar	1900	4	3	2	1	1	1	1	1	*	*	1	4	10	15-16	10-12
Ipo	1900	1	1	1	*	*	1	*	*	*	*	*	1	5	15-16	9-11
Kota Baharu	1900	1	2	3	2	1	*	1	1	1	1	1	12	17-19	13-15	
Kuala Lumpur	1900	*	*	*	*	*	*	*	*	*	*	*	*	2	18-20	14-16
Kuala Terengganu	1900	*	1	2	1	1	*	*	*	*	*	*	1	6	15-16	9-11
Kuantan	1900	1	1	2	1	1	1	1	*	*	*	1	*	9	19-20	13-14
Melaka	1900	1	1	1	1	1	1	1	1	1	1	*	1	10	19-20	14-16
Mersing	1900	2	1	3	2	2	1	1	2	1	1	1	1	16	15-16	9-10
Pinang	1900	1	1	1	*	*	*	1	*	*	*	*	1	7	19-20	15-16
Singapore Airport	1900	*	1	*	*	*	*	1	*	*	0	0	*	3	10	10
East Malaysia and Brunei:																
Bintulu	2000	2	1	3	4	3	6	3	1	2	1	1	1	28	na	3-4
Kota Kinabalu	2000	3	4	3	2	1	1	1	1	1	2	2	2	30	9-10	9-10
Kuching	1900	1	2	5	3	3	5	3	2	2	2	2	2	34	10	10
Miri	2000	3	3	5	5	4	4	3	3	1	2	2	2	37	10	9-10
Sandakan	2000	1	1	3	5	2	2	1	1	1	1	1	1	19	10	10
Victoria	2000	4	4	7	3	3	3	3	2	2	1	3	2	37	na	4-6

na Data not available.

\* < 0.5 day.

FIGURE 40. PERCENTAGE FREQUENCY OF SPECIFIED CEILING AND VISIBILITY COMBINATIONS AT SPECIFIED HOURS  
(Ceiling defined as  $\frac{1}{2}$  or more cloud cover)

REGION AND STATION	HOUR (LST)	COM- HINA- TION*													DATA BANK INFO			
			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CYR	
West Malaysia and Singapore:																		
Kota Baharu	0100	A	98	99	100	100	100	99	99	100	99	99	97	99	99	13-14	8-9	
		B	1	1	**	0	0	**	1	0	**	1	**	0	**			
Kuala Lumpur	0100	A	96	98	97	97	98	97	98	98	98	98	98	98	94	98	14-17	9-11
		B	3	1	2	2	1	2	1	1	1	3	5	4	2			
Kuantan	0100	A	95	97	99	98	98	97	95	96	93	91	93	92	95	13-14	8-10	
		B	**	1	0	2	2	2	1	3	3	5	4	2	2			
Melaka	0100	A	97	98	98	97	95	98	98	99	99	95	98	97	97	14-17	9-11	
		B	**	0	1	1	1	**	0	**	1	0	**	1				
Pinang	0100	A	100	100	100	100	100	100	100	99	99	98	99	100	100	14-17	9-10	
		B	0	0	0	**	0	**	0	**	0	0	**	0	**			
Singapore Airport	0100	A	99	100	100	100	100	100	100	100	99	99	99	100	100	9-10	9-10	
		B	0	0	0	**	0	**	0	0	0	**	0	0	**			

Footnotes are at end of table.

FIGURE 40. FREQUENCY OF SPECIFIED CEILING AND VISIBILITY COMBINATIONS (Continued)

REGION AND STATION	COM- BOUR TION*	MONTHS												DATA BASE INFO			
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	PER	CYR	
<b>East Malaysia and Brunei:</b>																	
Kuching.....	0100	A	97	86	90	93	90	97	97	93	93	97	88	90	93	1-3	1-3
		B	3	0	7	5	10	3	3	5	3	3	12	8	6		
<b>West Malaysia and Singapore:</b>																	
Alor Setar.....	0700	A	99	99	97	97	97	96	99	96	95	92	91	95	96	15-16	7-10
		B	0	**	3	2	3	1	1	1	2	6	6	1	2		
Ipoh.....	0700	A	99	100	100	99	99	99	99	99	99	99	95	96	99	15-16	7-10
		B	1	0	0	1	0	1	1	1	1	2	1	**	1		
Kota Bharu.....	0700	A	94	97	95	98	99	99	100	99	93	97	91	90	96	18-19	12-14
		B	3	1	3	1	1	**	1	2	1	2	3	2	3		
Kuala Lumpur.....	0700	A	83	84	82	78	87	90	91	90	81	75	71	70	82	19-20	13-14
		B	12	11	13	15	10	7	5	6	10	17	23	21	13		
Kuala Terengganu...	0700	A	96	94	92	97	100	100	99	97	99	99	89	91	96	15-16	8-10
		B	2	3	6	3	**	**	1	2	**	1	3	3	2		
Kuantan.....	0700	A	88	90	89	78	78	90	83	82	78	92	72	79	81	10-20	11-14
		B	5	5	6	16	18	7	9	13	13	27	22	10	13		
Melaka.....	0700	A	96	97	97	97	89	94	93	92	92	87	93	94	93	10-20	13-14
		B	1	2	1	1	3	3	2	3	5	4	2	2	2		
Mersing.....	0700	A	98	98	98	99	100	99	100	99	99	98	98	92	98	15-16	7-10
		B	0	0	**	1	0	1	0	1	1	2	0	1	1		
Pinang.....	0700	A	100	100	100	99	98	99	99	96	96	96	97	100	98	10-20	11-14
		B	**	0	0	**	0	**	0	1	1	1	1	0	**		
Singapore Airport...	0700	A	94	97	94	91	90	79	82	80	83	84	91	94	88	9-10	9-10
		B	3	0	2	3	6	9	10	9	7	12	2	3	5		
<b>East Malaysia and Brunei:</b>																	
Bintulu.....	0800	A	73	77	79	81	85	84	80	84	78	65	84	75	80	na	3-5
		B	23	15	18	13	8	13	0	14	18	27	11	19	15		
Kota Kinabalu.....	0800	A	97	100	99	100	99	98	99	100	98	99	99	100	99	9-10	9-10
		B	1	0	**	0	1	1	1	0	1	0	1	0	**		
Kuching.....	0700	A	80	85	85	87	91	97	95	92	92	88	82	82	98	9-10	9-10
		B	14	11	11	9	8	2	4	4	5	10	14	14	0		
Miri.....	0800	A	95	93	95	97	97	99	97	99	96	99	94	98	97	9-10	8-10
		B	4	3	3	1	2	0	1	1	1	1	1	2	2		
Sandakan.....	0800	A	83	91	97	98	98	98	100	100	99	98	96	99	96	9-10	9-10
		B	4	2	**	1	**	**	**	0	1	**	**	3	1		
Victoria.....	0800	A	98	100	97	100	98	93	97	100	98	97	98	92	97	na	2-3
		B	1	0	0	0	0	3	0	0	0	3	0	0	1		
<b>West Malaysia and Singapore:</b>																	
Alor Setar.....	1300	A	100	99	100	100	99	100	99	98	90	98	97	99	99	15-16	8-10
		B	0	0	0	0	0	**	0	0	1	1	0	0	**		
Ipoh.....	1300	A	100	100	100	100	100	100	99	100	98	98	99	99	99	15-16	8-10
		B	0	0	**	0	**	0	**	0	**	0	**	1	**		
Kota Bharu.....	1300	A	98	99	99	100	100	100	100	100	100	98	90	93	98	18-20	11-13
		B	0	0	0	0	0	0	0	0	0	1	1	1	**		
Kuala Lumpur.....	1300	A	99	99	100	98	98	98	99	98	97	94	97	99	98	18-20	12-14
		B	0	1	0	1	1	0	1	1	1	3	1	0	1		
Kuala Terengganu...	1300	A	100	100	100	99	100	100	100	100	99	100	95	94	99	15-16	8-10
		B	0	0	0	**	0	**	0	**	0	**	0	1	1		
Kuantan.....	1300	A	86	91	96	97	98	99	98	99	99	98	92	83	95	18-20	11-13
		B	4	1	1	0	1	**	1	**	0	1	1	5	1		
Melaka.....	1300	A	96	98	98	97	96	97	95	98	97	96	92	94	96	18-20	11-14
		B	1	1	1	0	1	0	**	**	1	**	1	**	**		
Mersing.....	1300	A	96	99	100	99	99	99	98	99	99	98	99	92	98	15-16	8-10
		B	**	**	0	**	**	**	2	0	**	1	0	1	**		
Pinang.....	1300	A	100	100	100	99	99	100	99	98	98	99	99	100	99	18-20	11-14
		B	0	0	0	**	1	0	**	1	**	1	1	0	**		
Singapore Airport...	1300	A	97	98	97	99	99	99	99	99	99	98	97	94	98	10	10
		B	1	1	1	**	0	**	1	**	1	2	1	4	1		

Footnotes are at end of table.

FIGURE 40. FREQUENCY OF SPECIFIED CEILING AND VISIBILITY COMBINATIONS (Continued)

REGION AND STATION	HOUR (LST)	COM- BINA- TION*	MONTHS												DATA BASE INFO		
			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	PER	CYR
<b>East Malaysia and Brunei:</b>																	
Bintulu.....	1400	A	03	80	96	95	97	97	98	96	93	95	91	90	95	na	3-4
		B	2	7	3	1	2	2	2	3	1	2	4	2	3		
Kota Kinabalu.....	1400	A	99	100	100	99	97	96	99	97	98	97	96	98	98	0-10	0-10
		B	1	**	0	1	1	2	**	1	**	0	1	**	1		
Kuching.....	1300	A	92	98	98	98	99	99	99	99	98	98	97	96	97	0-10	0-10
		B	4	3	**	1	**	1	1	0	1	2	2	2	1		
Miri.....	1400	A	99	99	99	100	99	98	99	99	100	98	98	98	99	0-10	0-10
		B	2	1	**	0	1	0	**	0	0	1	1	1	**		
Sandakan.....	1400	A	91	94	99	98	99	99	100	100	100	99	100	98	98	9-10	0-10
		B	1	**	0	**	0	0	0	0	**	0	0	**	**		
Victoria.....	1400	A	100	99	100	100	100	98	100	100	99	99	98	100	99	na	2-3
		B	0	0	0	0	0	1	0	0	0	1	0	0	*		
<b>West Malaysia and Singapore:</b>																	
Alor Setar.....	1900	A	100	99	98	98	99	100	99	97	98	96	96	99	98	15-16	0-11
		B	0	**	1	1	1	0	0	0	0	1	1	**	**		
Ipoh.....	1900	A	99	98	98	98	98	99	99	99	98	95	96	97	98	15-16	0-11
		B	1	1	1	**	1	0	**	**	1	2	1	3	1		
Kota Bharu.....	1900	A	98	99	99	99	99	99	100	98	99	99	95	98	98	17-19	12-16
		B	0	1	1	0	1	**	0	1	**	**	1	1	**		
Kuala Lumpur.....	1900	A	98	98	97	97	98	99	99	98	97	96	97	95	97	19-20	14-16
		B	**	1	1	2	1	1	0	1	1	1	2	1	1		
Kuala Terengganu..	1900	A	99	100	100	100	99	100	100	99	99	98	96	96	99	15-16	0-11
		B	0	0	0	0	0	0	0	**	0	0	0	1	**		
Kuantan.....	1900	A	92	96	98	99	98	98	96	97	95	91	94	90	95	19-20	12-14
		B	2	1	1	0	1	1	1	**	1	3	1	4	1		
Melaka.....	1900	A	97	96	97	97	98	97	98	97	98	96	95	94	97	19-20	14-16
		B	**	1	**	**	**	0	0	0	0	**	1	1	**		
Mersing.....	1900	A	98	99	100	100	100	99	100	99	99	100	99	97	99	15-16	0-10
		B	1	**	**	0	**	0	0	**	1	0	**	1	**		
Pinang.....	1900	A	99	100	100	99	100	100	100	99	99	97	99	99	99	19-20	15-16
		B	**	**	**	1	0	0	0	**	0	**	**	**	**		
Singapore Airport...	1900	A	98	99	100	100	99	100	99	100	99	98	100	98	99	10	10
		B	0	**	0	0	**	**	1	0	**	1	0	1	**		
<b>East Malaysia and Brunei:</b>																	
Bintulu.....	2000	A	90	83	93	94	96	97	95	92	88	86	92	92	92	na	3-8
		B	4	10	2	2	2	1	3	3	7	4	4	3	4		
Kota Kinabalu.....	2000	A	88	95	96	97	94	91	92	94	90	94	96	98	94	0-10	0-10
		B	0	2	1	2	3	8	5	3	5	3	2	1	3		
Kuching.....	1900	A	93	96	99	97	96	98	96	98	97	95	98	96	97	0-10	0-10
		B	4	2	1	**	1	0	1	1	1	2	**	1	1		
Miri.....	2000	A	94	98	99	100	99	98	95	97	98	99	95	98	98	0-10	0-10
		B	3	1	**	**	0	1	1	1	1	1	1	3	1		
Sandakan.....	2000	A	97	99	99	99	100	99	97	96	95	99	99	99	98	0-10	0-10
		B	1	0	0	**	0	**	1	2	2	**	1	1	1		
Victoria.....	2000	A	92	97	97	95	95	92	90	85	83	81	89	89	90	na	3-8
		B	2	1	0	1	2	4	5	7	11	11	6	6	5		

na Data not available.

\*Combination:

A—Ceiling 1,000 feet or greater and visibility  $2\frac{1}{2}$  miles or greater.

B—Ceiling < 850 feet and/or visibility <  $1\frac{1}{2}$  miles.

\*\* < 0.5%.

FIGURE 41. MEAN NUMBER OF DAYS WITH LOW CLOUD AMOUNT 0 TO  $\frac{1}{4}$  OR CEILING 1,000 FEET OR GREATER, VISIBILITY  $\frac{1}{4}$  MILES OR GREATER, AND SURFACE WIND SPEED 10 KNOTS OR LESS, AT SPECIFIED HOURS  
(Ceiling defined as  $\frac{1}{4}$  or more cloud cover)

REGION AND STATION	HOUR (LMT)	DATA												BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CR
<b>West Malaysia and Singapore:</b>																
Kota Baharu.....	0100	28	26	30	30	31	30	31	31	30	30	28	28	350	13-14	8-9
Kuala Lumpur.....	0100	30	27	30	29	30	29	30	30	29	29	28	29	351	14-17	9-11
Kuantan.....	0100	29	27	31	29	30	29	30	30	28	28	28	28	340	13-14	8-10
Melaka.....	0100	28	25	30	29	29	29	30	30	29	29	29	28	342	14-17	9-10
Pinang.....	0100	30	28	31	30	31	29	31	31	29	30	30	30	360	14-17	9-10
Singapore Airport.....	0100	31	28	31	30	31	30	31	31	30	31	30	31	363	9-10	9-10
<b>East Malaysia and Brunei:</b>																
Kuching.....	0100	30	24	28	28	28	28	30	29	28	30	28	28	337	2-3	1-3
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	0700	31	28	30	29	30	29	30	30	28	29	27	30	351	15-16	7-10
Ipoh.....	0700	30	28	31	30	31	29	31	30	30	30	29	31	358	15-16	7-10
Kota Baharu.....	0700	27	25	29	29	30	30	31	31	29	30	27	28	342	18-19	12-14
Kuala Lumpur.....	0700	28	24	28	28	27	27	28	28	24	23	21	22	299	19-20	12-14
Kuala Terengganu.....	0700	27	24	28	28	31	30	31	30	29	31	26	28	330	15-16	8-10
Kuantan.....	0700	27	25	28	28	24	27	27	25	23	19	22	24	294	19-20	11-14
Melaka.....	0700	26	24	30	29	27	28	28	28	27	26	27	28	328	19-20	12-14
Mersing.....	0700	20	17	20	28	21	29	31	30	30	30	29	28	326	15-16	7-10
Pinang.....	0700	30	28	31	30	30	30	31	30	29	30	29	31	356	19-20	11-14
Singapore Airport.....	0700	29	27	29	27	28	24	25	25	25	26	27	29	321	9-10	9-10
<b>East Malaysia and Brunei:</b>																
Bintulu.....	0800	22	20	25	24	25	25	27	26	23	21	24	23	286	na	3-4
Kota Kinabalu.....	0800	30	28	31	30	30	29	30	30	30	30	29	31	358	9-10	9-10
Kuching.....	0700	26	24	26	26	28	29	29	29	28	27	25	25	320	10	9-10
Miri.....	0800	29	26	29	29	30	28	29	30	28	30	27	28	341	10	8-10
Sandakan.....	0800	24	23	30	29	30	30	31	31	30	31	29	28	346	10	9-10
Victoria.....	0800	30	27	30	30	30	27	27	31	28	27	27	341	na	2-3	
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1300	29	26	30	29	30	30	30	30	28	30	29	30	350	15-16	8-10
Ipoh.....	1300	31	28	30	29	29	27	27	29	27	28	24	31	344	15-16	8-10
Kota Baharu.....	1300	30	17	21	25	28	29	30	30	29	29	24	22	303	18-20	11-13
Kuala Lumpur.....	1300	30	26	29	29	30	28	29	29	28	27	28	30	341	18-20	12-14
Kuala Terengganu.....	1300	28	24	26	27	29	29	29	28	28	29	25	23	323	15-16	8-10
Kuantan.....	1300	17	17	23	25	28	28	29	28	28	28	25	22	297	18-20	11-13
Melaka.....	1300	17	16	23	24	25	26	26	26	25	25	23	23	276	18-20	11-14
Mersing.....	1300	9	9	15	23	27	24	23	21	21	25	23	15	235	15-16	8-10
Pinang.....	1300	29	26	29	28	29	28	28	27	28	29	29	30	341	18-20	11-14
Singapore Airport.....	1300	23	21	27	29	30	29	30	30	29	30	28	27	330	10	10
<b>East Malaysia and Brunei:</b>																
Bintulu.....	1400	27	24	28	23	30	29	30	29	27	28	26	29	335	na	3-4
Kota Kinabalu.....	1400	23	18	25	26	28	27	28	28	26	28	27	27	309	9-10	8-10
Kuching.....	1300	25	22	27	28	29	29	30	30	28	29	27	28	329	10	9-10
Miri.....	1400	24	20	23	25	27	27	27	26	25	26	24	27	309	10	9-10
Sandakan.....	1400	21	17	26	27	29	30	30	30	29	30	29	28	320	10	9-10
Victoria.....	1400	25	20	26	27	30	24	27	29	28	28	25	25	311	na	2-4
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1900	31	27	30	29	30	30	31	30	30	29	31	357	15-16	9-11	
Ipoh.....	1900	29	27	29	29	30	30	30	30	29	29	28	29	349	15-16	9-11
Kota Baharu.....	1900	25	24	28	29	30	29	30	30	29	30	27	26	334	17-19	12-15
Kuala Lumpur.....	1900	30	27	30	29	30	30	31	30	29	30	29	29	353	19-20	14-16
Kuala Terengganu.....	1900	28	26	30	30	30	30	29	29	29	30	28	25	341	15-16	9-11
Kuantan.....	1900	28	26	30	29	30	29	29	30	28	28	28	28	344	19-20	12-14
Melaka.....	1900	28	26	30	29	30	29	30	30	29	29	28	28	343	19-20	14-16
Mersing.....	1900	13	14	22	28	30	29	31	30	29	30	28	22	305	15-16	9-10
Pinang.....	1900	30	27	30	29	31	30	31	30	30	30	29	30	357	19-20	15-16
Singapore Airport.....	1900	30	28	31	30	31	30	31	31	30	30	30	30	360	10	10

Note at end of table.

FIGURE 41. DAYS WITH LOW CLOUD AMOUNT 0 TO  $\frac{1}{2}$  OR CEILING 1,000 FEET OR GREATER, VISIBILITY  $\frac{3}{4}$  MILES OR GREATER, AND SURFACE WIND SPEED 10 KNOTS OR LESS (Continued)

REGION AND STATION	HOUR (LMT)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	POH	CYR
<b>East Malaysia and Brunei:</b>																
Bintulu.....	2000	28	23	20	27	30	29	29	28	26	26	28	28	331	na	3-5
Kota Kinabalu.....	2000	25	23	28	20	20	27	28	28	27	28	28	30	328	9-10	9-10
Kuching.....	1800	20	27	31	20	30	29	30	30	29	29	29	29	348	10	9-10
Miri.....	2000	28	26	30	29	29	29	28	28	27	29	27	29	330	10	9-10
Sandakan.....	2000	25	23	20	30	31	30	30	29	28	30	29	28	343	10	9-10
Victoria.....	2000	20	18	24	26	29	26	27	25	24	23	26	23	291	na	3-5

na Data not available.

FIGURE 42. MEAN NUMBER OF DAYS WITH SURFACE WIND SPEED 4 TO 10 KNOTS, TEMPERATURE  $>82^{\circ}\text{F.}$  BUT  $<90^{\circ}\text{F.}$ , AND NO PRECIPITATION, AT SPECIFIED HOURS

REGION AND STATION	HOUR (LMT)													DATA BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	POH	CYR
<b>West Malaysia and Singapore:</b>																
Kota Baharu.....	0100	10	10	8	3	5	4	4	5	5	4	4	8	69	13-14	8-9
Kuala Lumpur.....	0100	2	2	2	1	2	2	1	2	2	2	1	2	18	14-17	9-11
Kuantan.....	0100	10	8	3	1	1	3	3	2	2	2	3	8	44	13-14	8-10
Melaka.....	0100	16	14	13	6	5	3	5	5	4	6	9	13	98	14-17	9-10
Pinang.....	0100	13	7	3	2	3	2	1	2	1	3	5	12	83	14-17	9-11
Singapore Airport.....	0100	8	5	2	1	1	1	1	2	1	*	1	2	22	9-10	9-10
<b>East Malaysia and Brunei:</b>																
Kuching.....	0100	1	0	2	1	2	0	2	1	2	0	1	1	10	2-3	2-3
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	0700	2	1	1	*	1	*	1	1	1	1	*	1	0	15-16	8-10
Ipo.....	0700	15	13	13	14	15	14	15	15	16	15	14	14	171	15-16	7-10
Kota Baharu.....	0700	6	5	3	5	7	9	9	7	10	8	6	6	81	15-19	11-14
Kuala Lumpur.....	0700	1	*	1	2	2	3	2	3	2	2	2	2	20	19-20	13-18
Kuala Terengganu.....	0700	15	12	14	12	14	12	12	13	14	7	11	148	15-16	8-10	
Kuantan.....	0700	8	5	3	1	2	2	2	3	2	2	2	5	38	19-20	12-14
Melaka.....	0700	17	14	14	8	6	6	6	6	5	7	8	12	109	19-20	12-14
Merang.....	0700	14	13	19	22	25	25	27	27	27	26	21	17	262	15-16	7-10
Pinang.....	0700	16	11	6	3	3	3	2	3	3	3	7	13	74	19-20	11-14
Singapore Airport.....	0700	5	2	2	1	1	2	2	2	1	1	2	2	24	9-10	9-10
<b>East Malaysia and Brunei:</b>																
Bintulu.....	0800	3	2	4	4	5	4	7	7	5	3	6	5	55	na	3-5
Kota Kinabalu.....	0800	12	9	12	15	19	20	23	21	19	17	14	16	197	9-10	9-10
Kuching.....	0700	1	1	1	1	1	1	1	2	1	1	2	1	13	10	9-10
Miri.....	0800	10	7	10	12	16	13	14	13	13	14	12	12	146	10	10
Sandakan.....	0800	13	13	13	12	9	10	12	10	12	12	13	12	140	10	9-10
Victoria.....	0800	14	11	15	13	17	14	17	16	15	16	14	13	175	na	2-3
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1300	15	5	2	3	5	8	10	11	11	10	9	15	106	15-16	8-10
Ipo.....	1300	10	6	4	4	5	6	9	10	10	13	13	12	101	15-16	8-10
Kota Baharu.....	1300	17	15	18	14	13	16	18	23	21	22	18	15	208	18-20	11-13
Kuala Lumpur.....	1300	12	7	6	5	7	9	12	13	13	12	13	12	121	18-20	12-14
Kuala Terengganu.....	1300	22	20	23	20	15	14	18	19	23	21	16	17	229	15-16	8-10
Kuantan.....	1200	14	14	15	11	10	14	19	18	17	16	16	16	180	18-20	11-13
Melaka.....	1300	18	11	13	15	19	21	22	22	22	21	18	17	213	18-20	11-14
Merang.....	1300	7	7	12	15	14	18	18	17	17	20	17	11	175	15-16	8-10
Pinang.....	1300	20	16	20	20	18	20	22	21	20	22	23	23	246	18-20	11-13
Singapore Airport.....	1300	17	15	15	14	13	17	19	23	19	17	16	17	203	10	10

Footnotes are at end of table.

FIGURE 42. DAYS WITH SURFACE WIND SPEED 4 TO 10 KNOTS, TEMPERATURE >32°F. BUT <90°F., AND NO PRECIPITATION (Continued)

REGION AND STATION	HOUR (LMT)	DATA												BASE INFO		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	FOR	CRH
<b>East Malaysia and Brunei:</b>																
Bintulu.....	1400	10	17	23	16	11	10	15	12	17	20	15	19	200	na	3-4
Kota Kinabalu.....	1400	20	16	22	23	22	21	24	24	22	23	23	23	263	9-10	9-10
Kuching.....	1300	13	12	16	12	9	9	9	10	10	12	13	14	140	10	9-10
Miri.....	1400	18	17	18	21	19	18	20	20	18	19	18	19	224	10	10
Sandakan.....	1400	18	16	23	24	19	18	14	14	16	21	22	23	225	10	9-10
Victoria.....	1400	31	15	22	19	21	19	23	21	22	23	19	20	246	na	2-3
<b>West Malaysia and Singapore:</b>																
Alor Setar.....	1900	11	11	6	3	2	2	3	2	2	1	2	6	51	15-16	9-11
Ipoh.....	1900	14	16	15	12	9	12	11	12	11	9	9	11	142	15-16	9-11
Kota Baharu.....	1900	17	18	18	13	7	7	8	7	6	7	9	12	128	17-19	12-15
Kuala Lumpur.....	1900	5	6	6	4	3	4	3	4	3	4	3	3	47	19-20	14-16
Kuala Terengganu.....	1900	17	18	15	10	10	11	12	12	11	9	8	15	147	15-16	9-11
Kuantan.....	1900	14	14	10	4	4	3	3	5	4	4	5	9	78	19-20	13-14
Melaka.....	1900	13	10	9	7	6	5	7	6	6	8	8	13	98	19-20	14-16
Meruing.....	1900	11	11	17	20	19	17	20	19	20	19	17	16	206	15-16	9-10
Pinang.....	1900	8	8	8	6	4	5	5	4	3	4	4	6	64	19-20	15-16
Singapore Airport.....	1900	18	19	14	5	2	4	5	7	5	2	2	9	90	10	10
<b>East Malaysia and Brunei:</b>																
Bintulu.....	2000	10	9	9	5	3	4	5	5	4	6	3	6	69	na	3-4
Kota Kinabalu.....	2000	12	9	13	12	13	11	12	10	11	13	12	15	142	9-10	9-10
Kuching.....	1900	2	2	2	2	2	3	4	3	4	4	3	2	33	10	9-10
Miri.....	2000	7	8	8	8	10	9	9	10	10	8	7	7	101	10	10
Sandakan.....	2000	14	18	20	15	7	4	6	5	5	6	7	12	119	10	9-10
Victoria.....	2000	14	11	14	11	9	8	8	8	6	8	9	10	114	na	3-5

na Data not available.

\* < 0.5 day.

LIST OF STATIONS U/OU

REGION AND STATION	COORDINATES*			ELEVA- TION	REGION AND STATION	COORDINATES*			ELEVA- TION		
	°	'N.	°	'E.		Feet	°	'N.	°	'E.	Feet
<b>West Malaysia and Singapore:</b>					<b>East Malaysia and Brunei: (Continued)</b>						
Alor Setar.....	6	12	100	25	17	Kampong Matang.....	1	35	110	11	†2,200
Baling.....	5	41	100	55	170	Kampong Tangkulap.....	5	18	117	17	†500
Bukit Fraser.....	3	43	101	45	4,288	Kanowit.....	2	06	112	09	†250
Bukit Jeram.....	3	15	101	18	196	Kapit.....	2	00	112	56	70
Bukit Maxwell.....	4	52	100	48	3,400	Kemabong.....	4	55	115	56	†650
Butterworth.....	5	25	100	24	6	Keningau.....	5	21	116	09	1,200
Cameron Highlands.....	4	29	101	23	4,750	Kota Belud.....	6	21	116	26	35
Dungun.....	4	46	103	25	10	Kota Kinabalu (formerly Jesselton).....	5	58	116	04	9
Ipoh.....	4	34	101	06	129	Kuching.....	1	33	110	21	43
Jerangau Estate.....	4	59	103	09	97	Kudat.....	6	53	116	50	†0
Kajang.....	3	00	101	47	130	Labu Bazaar.....	4	45	115	1'	†150
Kampar.....	4	18	101	09	128	Lahad Datu.....	5	02	118	19	45
Kar. pong Kemaman.....	4	14	103	25	10	Lamag.....	5	29	117	49	†250
Kangar.....	6	26	100	12	10	Langkon.....	6	32	116	42	†150
Keluang.....	2	02	103	19	213	Lawas.....	4	51	115	24	5
Kota Baharu.....	6	10	102	17	28	Limbang.....	4	44	115	00	100
Kota Tinggi.....	1	44	103	54	33	Long Akah.....	3	19	114	47	300
Kuala Kelawang.....	2	57	102	04	450	Longnawan††.....	1	54	114	53	†1,640
Kuala Kerai.....	5	32	102	12	122	Long Semado.....	4	11	115	35	2,200
Kuala Lipis.....	4	11	102	03	555	Lubok Antu.....	1	03	111	50	†150
Kuala Lumpur.....	3	07	101	42	56	Lundu.....	1	40	109	50	450
Kuala Pahang.....	3	32	103	28	10	Marudi.....	4	10	114	19	103
Kuala Terengganu.....	5	20	103	08	107	Matu.....	2	40	111	31	†10
Kuantan.....	3	46	103	12	68	Miri.....	4	23	113	59	12
Melaka.....	2	16	102	15	34	Mukah.....	2	54	112	06	5
Mersing.....	2	27	103	50	150	Papar.....	5	44	115-	56	†10
Pinang/Bayan Lepas**.....	5	18	100	16	13	Pensiangan.....	4	33	116	19	†550
Pontian Kecil.....	1	29	103	23	15	Pitas.....	6	42	117	04	†50
Port Dickson.....	2	32	101	48	30	Putussibau††.....	0	50	112	56	164
Pulau Langkawi.....	6	19	99	41	12	Ranau.....	5	58	116	41	1,800
Segamat.....	2	30	102	49	95	Rundum.....	4	45	116	06	†2,200
Singapore.....	1	17	103	51	7	Sandakan.....	5	52	118	06	38
Singapore Airport.....	1	21	103	54	32	Sapulut.....	4	42	116	27	800
Sitiawan Estate.....	4	13	100	42	23	Sarikei.....	2	07	111	31	†100
Taiping.....	4	52	100	44	59	Selalang.....	2	02	111	19	40
Temerloh.....	3	27	102	25	163	Semporna.....	4	28	118	36	60
<b>East Malaysia and Brunei:</b>					<b>Seria.....</b>						
Beaufort.....	5	20	115	45	†150	Sibu.....	2	20	111	50	21
Belaga.....	2	42	113	47	†500	Simanggang.....	1	14	111	27	40
Beluran.....	5	54	117	33	†20	Simunjan.....	1	20	110	43	†300
Betong.....	1	25	111	31	279	Tambunan.....	5	40	116	22	†1,800
Bintulu.....	3	12	113	02	10	Tarat Bazaar.....	1	12	110	32	60
Brunei.....	4	53	114	56	10	Tawau.....	4	14	117	54	58
Jesselton (see Kota Kinabalu)***.....	5	58	116	04	9	Tenom.....	5	07	115	57	†750
Kalabakan.....	4	25	117	29	460	Victoria.....	5	17	115	16	98
Kampong Litang.....	5	19	118	29	†150						

\*Coordinates give location of weather stations and do not necessarily correspond to those for populated places.

\*\*Listed as Pinang in charts and tables.

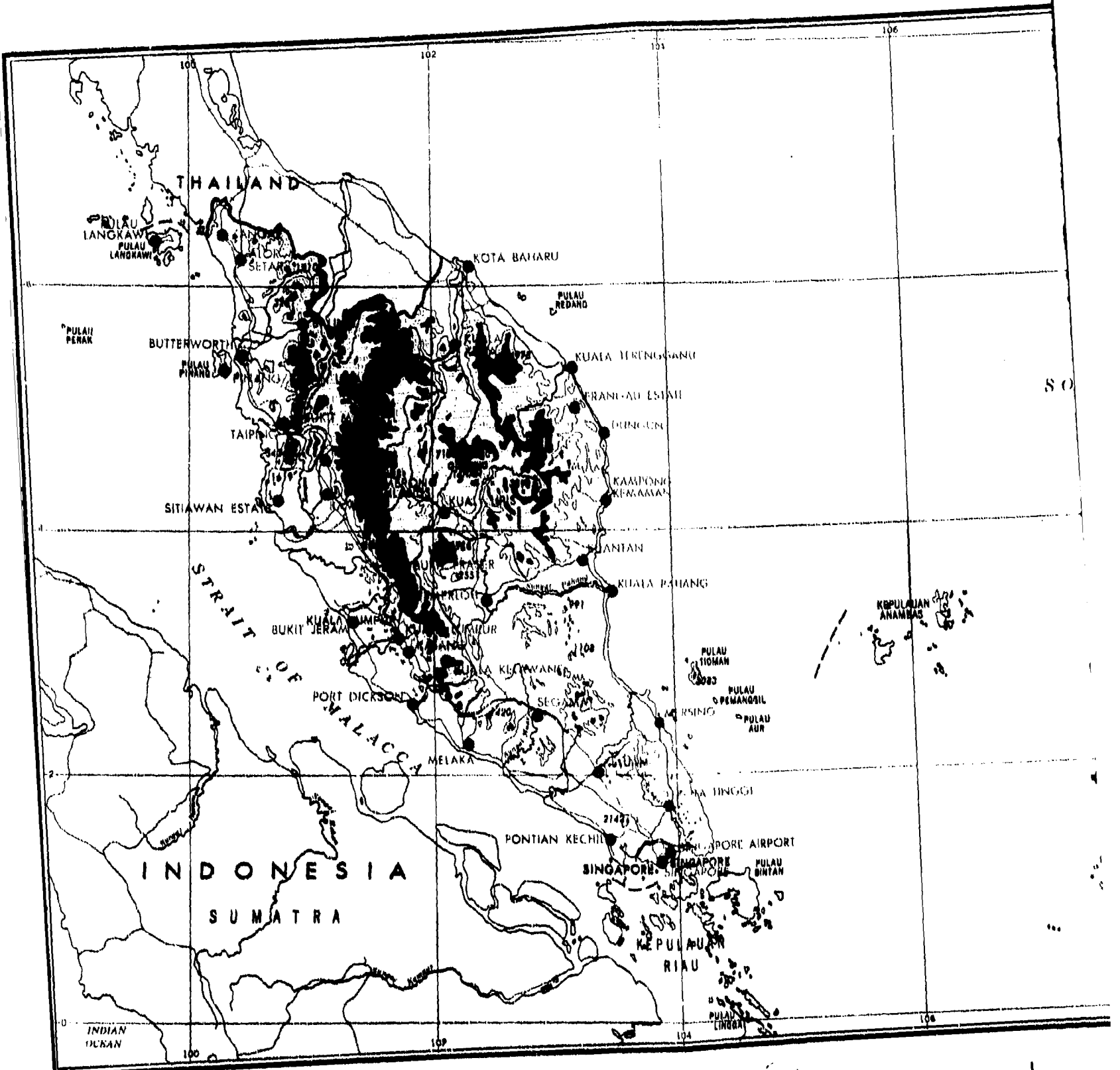
\*\*\*Listed as Kota Kinabalu in charts and tables.

†Estimated elevation.

††Near but outside East Malaysia.

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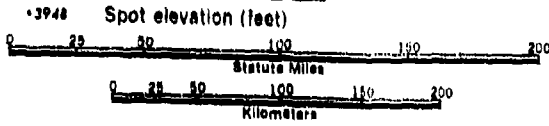




**MALAYSIA/SINGAPORE  
STATION LOCATIONS**

- METEOROLOGICAL STATION
- I WEST MALAYSIA AND SINGAPORE REGION
- II EAST MALAYSIA AND BRUNEI REGION

Meters	Feet
500	1640
100	328
0	0



SOUTH CHINA SEA

BRUNEI (British Protectorate) BRUNEI

NATUNA ISLANDS

INDONESIA

PULAU NAYURA  
PULAU SEBAR

PULAU BUMI  
PULAU SEBARAN

KEMULAUAN  
TAMBELAN

TANJONG DATU

LUNYU  
KAMPONG MANTANG  
KUCHING  
TARAI BANGSANG  
MUKAH

TANJONG MIRIK

MUKAH

TANJONG KIDURONG  
BINTULU

TANJONG BARAM

MIRI

ARIDI

1984

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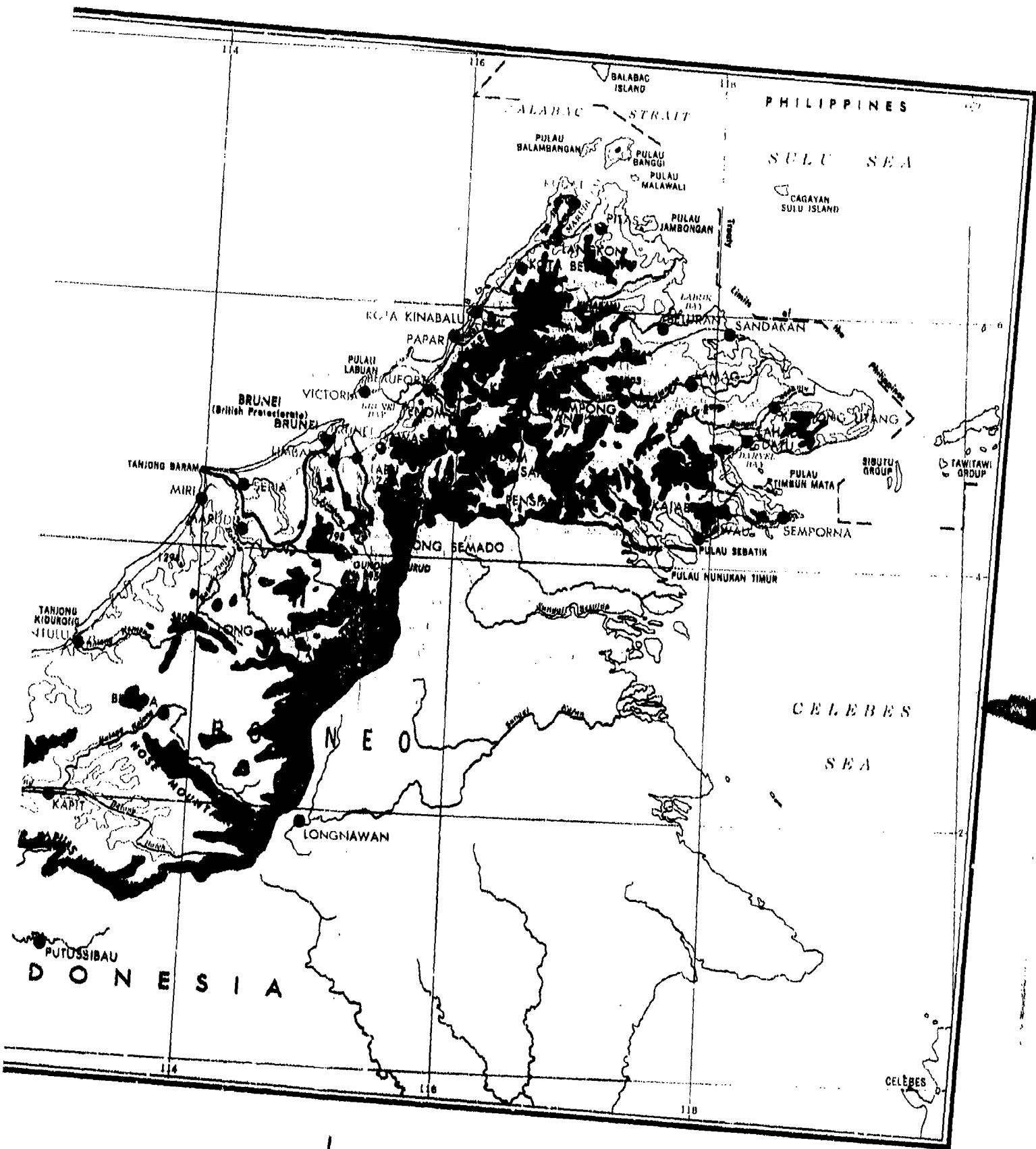
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 STATION LOCATIONS FIGURE 43