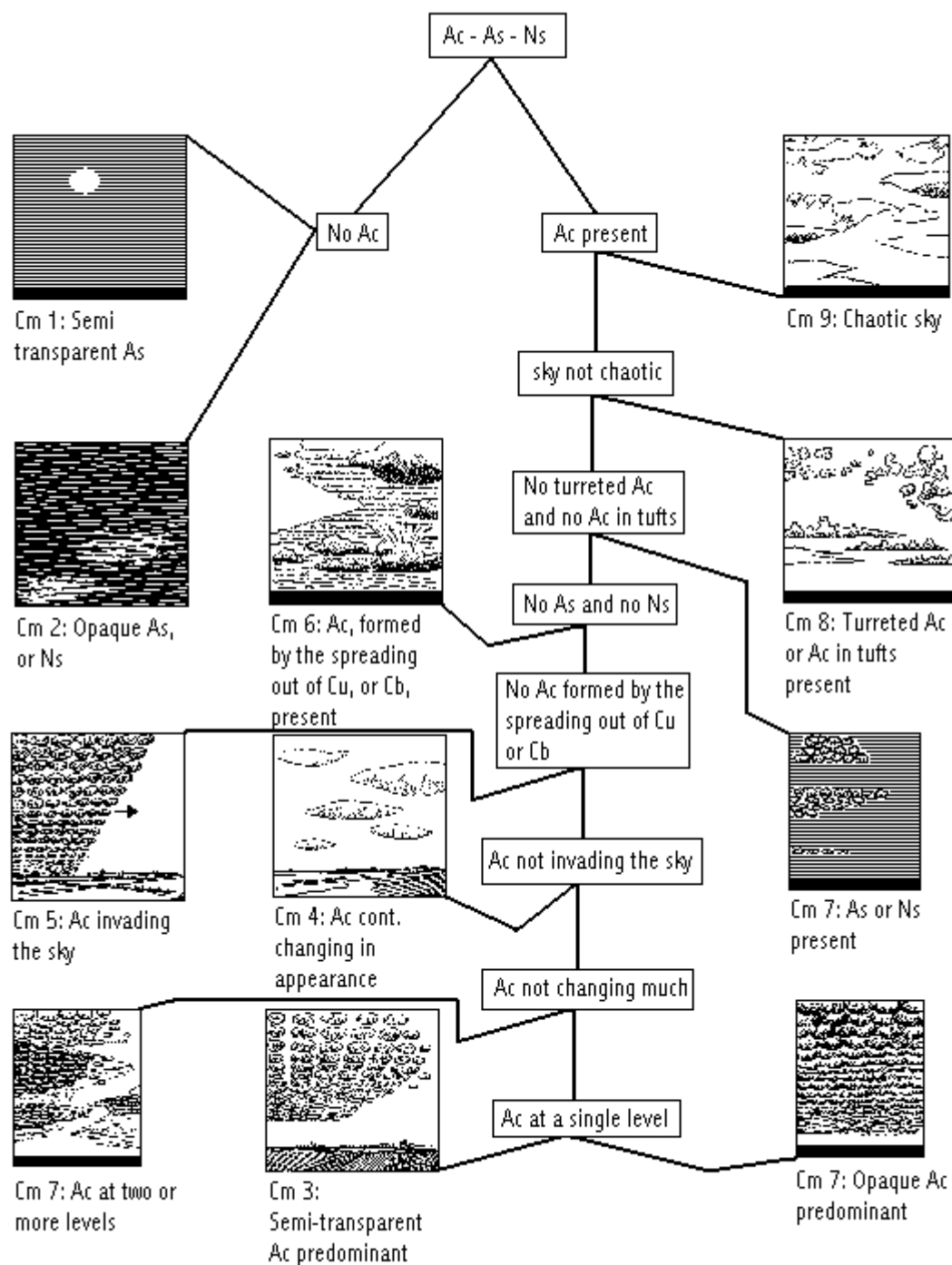


Cm pictorial guide



legend

Ac = Altocumulus*
 As = Altostratus**
 Cb = Cumulonimbus***
 Cu = Cumulus****
 Ns = Nimbostratus*****

*White or grey, or both white and grey, patch, sheet, or layer of cloud, generally with shading, composed of laminae, rounded masses, rolls, etc., which are sometimes partly fibrous or diffuse and which may or may not be merged; most of the regularly arranged small elements usually have an apparent width between one and five degrees.

**Greyish or bluish sheet or layer of striated, fibrous, or uniform appearance, totally or partly covering the sky, and having parts thin enough to reveal the sun at least vaguely, as through ground glass. Altostratus does not show halo phenomena.

***Heavy and dense cloud, with a considerable vertical extent, in the form of a mountain or huge towers. At least part of its upper portion is usually smooth, or fibrous or striated, and nearly always flattened; this part often spreads out in the shape of an anvil or vast plume.

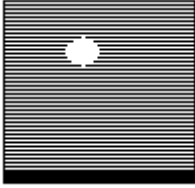
****Detached clouds, generally dense and with sharp outlines, developing vertically in the form of rising mounds, domes or towers, of which the bulging upper part often resembles a cauliflower. The sunlit parts of these clouds are mostly brilliant white; their base is relatively dark and nearly horizontal. Sometimes Cumulus is ragged.

*****Grey cloud layer, often dark, the appearance of which is rendered diffuse by more or less continuously falling rain or snow, which in most cases reaches the ground. It is thick enough throughout to blot out the sun. Low, ragged clouds frequently occur below the layer, with which they may or may not merge.

In order to find the correct code figure, the following procedure is used.

- (a) Start from the box at the top of the diagram and follow one of the two lines leading out of this box.
- (b) Proceed from box to box as long as all successive boxes contain criteria which are applicable to the observed sky.
- (c) When this procedure leads to a box with a criterion which is not applicable to the observed sky, go back to this previous box and follow the other line leading out of this box.
- (d) If this line leads to a box, repeat the procedure described under (b) and (c). If the line leads to a picture, the code figure below this picture is the correct code to be reported.
- (e) If all the successive boxes contain criteria which are applicable to the observed sky, the procedure will finally lead to a box from which two or more lines terminate in pictures. Read the criteria below these pictures to obtain the correct code figure.

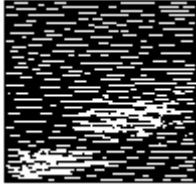
Cm 1



Altostratus*, the greater part of which is semi-transparent; through this part the sun or moon may be weakly visible, as through ground glass.

*Greyish or bluish sheet or layer of striated, fibrous or uniform appearance, totally or partly covering the sky, and having parts thin enough to reveal the sun at least vaguely, as through ground glass. Altostratus does not show halo phenomena.

Cm 2



Altostratus*, the greater part of which is sufficiently dense to hide the sun or the moon, or Nimbostratus**.

*Greyish or bluish sheet or layer of striated, fibrous or uniform appearance, totally or partly covering the sky, and having parts thin enough to reveal the sun at least vaguely, as through ground glass. Altostratus does not show halo phenomena.

**Grey cloud layer, often dark, the appearance of which is rendered diffuse by more or less continuously falling rain or snow, which in most cases reaches the ground. It is thick enough throughout to blot out the sun. Low, ragged clouds frequently occur below the layer, with which they may or may not merge.

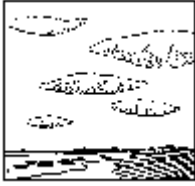
Cm 3



Alto cumulus*, the greater part of which is semi-transparent; the various elements, of the cloud change only slowly and are all at a single level.

*White or grey, or both white and grey, patch, sheet, or layer of cloud, generally with shading, composed of laminae, rounded masses, rolls, etc., which are sometimes partly fibrous or diffuse and which may or may not be merged; most of the regularly arranged small elements usually have an apparent width between one and five degrees.

Cm 4



Patches (often in the form of almonds or fishes) of *Alto cumulus**, the greater part of which is semi-transparent; the clouds occur at one or more levels and the elements are continually changing in appearance.

*White or grey, or both white and grey, patch, sheet or layer of cloud, generally with shading, composed of laminae, rounded masses, rolls, etc., which are sometimes partly fibrous or diffuse and which may or may not be merged; most of the regularly arranged small elements usually have an apparent width between one and five degrees.

Cm 5



Semi-transparent Altocumulus* in bands, or Altocumulus in one or more fairly continuous layers (semi-transparent or opaque), progressively invading the sky; these Altocumulus clouds generally thicken as a whole.

*White or grey, or both white and grey, patch, sheet or layer of cloud, generally with shading, composed of laminae, rounded masses, rolls, etc., which are sometimes partly fibrous or diffuse and which may or may not be merged; most of the regularly arranged small elements usually have an apparent width between one and five degrees.

Cm 6



Alto**cumulus*** resulting from the spreading out of Cumulus** (or Cumulonimbus***).

*White or grey, or both white and grey, patch, sheet, or layer of cloud, generally with shading, composed of laminae, rounded masses, rolls, etc., which are sometimes partly fibrous or diffuse and which may or may not be merged; most of the regularly arranged small elements usually have an apparent width between one and five degrees.

**Detached clouds, generally dense and with sharp outlines, developing vertically in the form of rising mounds, domes, or towers, of which the bulging upper part often resembles a cauliflower. The sunlit parts of these clouds are mostly brilliant white; their base is relatively dark and nearly horizontal. Sometimes Cumulus is ragged.

***Heavy and dense cloud, with a considerable vertical extent, in the form of a mountain or huge towers. At least part of its upper portion is usually smooth, or fibrous or striated, and nearly always flattened; this part often spreads out in the shape of an anvil or vast plume.

Cm 7



Altocumulus* in two or more layers, usually opaque in places, and not progressively invading the sky.



or an opaque layer of Altocumulus*, not progressively invading the sky.



or Altocumulus* together with Altostratus** or Nimbostratus***.

*White or grey, or both white and grey, patch, sheet, or layer of cloud, generally with shading, composed of laminae, rounded masses, rolls, etc., which are sometimes partly fibrous or diffuse and which may or may not be merged; most of the regularly arranged small elements usually have an apparent width between one and five degrees.

**Greyish or bluish sheet or layer of striated, fibrous, or uniform appearance, totally or partly covering the sky, and having parts thin enough to reveal the sun at least vaguely, as through ground glass. Altostratus does not show halo phenomena.

***Grey cloud layer, often dark, the appearance of which is rendered diffuse by more or less continuously falling rain or snow, which in most cases reaches the ground. It is thick enough throughout to blot out the sun. Low, ragged clouds frequently occur below the layer, with which they may or may not merge.

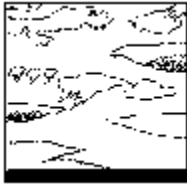
Cm 8



Altocumulus* with sprouting's in the form of small towers or battlements or Altocumulus having the appearance of cumuliform tufts.

*White or grey, or both white and grey, patch, sheet, or layer of cloud, generally with shading, composed of laminae, rounded masses, rolls, etc., which are sometimes partly fibrous or diffuse and which may or may not be merged; most of the regularly arranged small elements usually have an apparent width between one and five degrees.

Cm 9



Altocumulus* of a chaotic sky, generally at several levels.

*White or grey, or both white and grey, patch, sheet, or layer of cloud, generally with shading, composed of laminae, rounded masses, rolls, etc., which are sometimes partly fibrous or diffuse and which may or may not be merged; most of the regularly arranged small elements usually have an apparent width between one and five degrees.

Alto cumulus

White or grey, or both white and grey, patch, sheet, or layer of cloud, generally with shading, composed of laminae, rounded masses, rolls, etc., which are sometimes partly fibrous or diffuse and which may or may not be merged; most of the regularly arranged small elements usually have an apparent width between one and five degrees.

Main differences between Alto cumulus and similar clouds of other genera

(a) Cirrus

Alto cumulus clouds sometimes produce descending trails of fibrous appearance (Virga*). When this is the case, the clouds are regarded as Alto cumulus and not as Cirrus, so long as they have a part without a fibrous appearance or a silky sheen.

(b) Cirrocumulus

Alto cumulus may sometimes be confused with Cirrocumulus. In case of doubt, if the clouds have shading, they are by definition Alto cumulus, even if their elements have an apparent width of less than one degree. Clouds without shading are by definition Alto cumulus if most of the regularly arranged elements, when observed at an angle of more than 30 degrees above the horizon, have an apparent width between one and five degrees. A Corona** or irisation is often observed on thin parts of Alto cumulus but only infrequently on Cirrocumulus.

(c) Altostratus

An Alto cumulus layer may sometimes be confused with Altostratus; in case of doubt, clouds are called Alto cumulus if there is any evidence of the presence of laminae, rounded masses, rolls, etc.

(d) Stratocumulus

Alto cumulus, with dark portions, may sometimes be confused with Stratocumulus. If most of the regularly arranged elements have, when observed at an angle of more than 30 degrees above the horizon, an apparent width between one and five degrees, the cloud is Alto cumulus.

(e) Cumulus

Alto cumulus in scattered tufts may be confused with small Cumulus clouds; the Alto cumulus tufts, however, often show fibrous trails (Virga) and moreover are, in their majority, smaller than the Cumulus clouds.

*Vertical or inclined trails of precipitation (fall streaks) attached to the under surface of a cloud, which do not reach the earth's surface.

**One or more sequences (seldom more than three) of colored rings of relatively small diameter, centered on the sun or moon.

Altostratus

Greyish or bluish cloud sheet or layer of striated, fibrous, or uniform appearance, totally or partly covering the sky, and having parts thin enough to reveal the sun at least vaguely, as through ground glass. Altostratus does not show Halo* phenomena.

Main differences between Altostratus and similar clouds of other genera

(a) Cirrus

Sheets or layers of Altostratus may, on rare occasions, degenerate into patches which may be confused with patches of dense Cirrus. Altostratus patches however have a greater horizontal extent and are predominantly grey.

(b) Cirrostratus

A high and thin layer of Altostratus may be mistaken for a veil of Cirrostratus. It is sometimes possible to identify the doubtful cloud by remembering that Altostratus prevents objects on the ground from casting shadows and that it may show a ground glass effect. If Halo phenomena are present, the doubtful cloud is Cirrostratus.

(c) Altocumulus and Stratocumulus

Altostratus sometimes has gaps, breaches, or rifts; care should be exercised not to confuse it with an Altocumulus or Stratocumulus sheet or layer showing the same features. Altostratus is distinguishable from Altocumulus and Stratocumulus by its more uniform appearance.

(d) Nimbostratus

A low, thick layer of Altostratus may be distinguished from a similar layer of Nimbostratus by the presence in Altostratus of thinner parts through which the sun is, or could be, vaguely revealed. Altostratus is also of a lighter grey and its under surface is usually less uniform than that of Nimbostratus. When, on moonless nights, doubt exists regarding the choice of the designation Altostratus or Nimbostratus, the layer is by convention called Altostratus, if no rain or snow is falling.

(e) Stratus

Altostratus is distinguishable from Stratus, with which it may be confused, by its ground glass effect. Furthermore, Altostratus is never white, as thin Stratus may be when observed more or less towards the sun.

*An optical phenomenon in the form of a ring, arc, pillar, or bright spot, produced by the refraction of light by ice crystals suspended in the atmosphere (cirriform clouds, ice fog, etc.). This phenomenon, when formed by refraction of the light of the sun, may show colors, while a halo phenomenon produced by the light of the moon is always white.

Nimbostratus

Grey cloud layer, often dark, the appearance of which is rendered diffuse by more or less continuously falling Rain or Snow, which in most cases reaches the ground. It is thick enough throughout to blot out the sun. Low, ragged clouds frequently occur below the layer, with which they may or may not merge.

Main differences between Nimbostratus and similar clouds of other genera

(a) Altostratus

Thin Nimbostratus may be confused with thick Altostratus. Nimbostratus generally has a darker grey color than Altostratus. By definition, Nimbostratus is sufficiently opaque throughout to hide the sun or moon, whereas Altostratus hides the luminary only when the latter is behind the thickest parts. If on dark nights, doubt exists regarding the choice of the designation Nimbostratus or Altostratus, the cloud is by convention called Nimbostratus when Rain or Snow reaches the ground.

(b) Altocumulus and Stratocumulus

Nimbostratus is distinguished from a thick layer of Altocumulus or Stratocumulus by the lack of clearly defined elements or its lack of a distinct lower surface.

(c) Stratus

Nimbostratus is distinguished from thick Stratus by the fact that it is a dense cloud producing rain, snow or ice pellets; the precipitation which may fall from Stratus is in the form of Drizzle, Ice prisms or Snow grains.

(d) Cumulonimbus

When the observer is beneath a cloud having the appearance of a Nimbostratus, but accompanied by Lightning, Thunder or Hail, the cloud should by convention be called Cumulonimbus.

Marine Observers handbook

Making the observations

The aspect of the sky is continually changing and the cloud formations in evidence at one particular time may not be typical, that is to say they may not be easily recognizable from the standard descriptions. If, however, the observer watches the sky over a period of time he will often find that doubtful cloud forms may be referred to a previous state of development that was typical. Hence the first rule in cloud observing watch the sky as often as possible and not merely at the time of observation.