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### Determining Cloud Type

United States National Weather Service

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UNITED STATES DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration National Weather Service

C 55.130 CL2

# **DETERMINING CLOUD TYPE** Lower Levels (To 6,500 Feet (2 km)) — Cumulus, Stratus, Stratocumulus, Cumulonimbus





**C<sub>L</sub> = 1:** Cumulus with little vertical extent



**C**<sub>L</sub> = **2**: Cumulus with moderate or greater vertical extent



**C<sub>L</sub> = 3:** Cumulonimbus, tops not fibrous, outline not completely sharp, no anvil



CL = 4: Stratocumulus from the spreading of cumulus



**C<sub>L</sub> = 5:** Stratocumulus not formed from spreading cumulus

**NOTE:** When more than one type of  $C_L$  cloud is observed, the priority order for reporting is  $C_L = 9,3,4,8,2$ .  $C_L = 1,5,6,7$  have equal reporting priority.  $C_L = 2,3,9$  have bases in the lower levels, but will extend into the middle or high levels. Locations of United States Port Meteorological Officers

New York, New York Newark, New Jersey Baltimore, Maryland Norfolk, Virginia Jacksonville, Florida Miami, Florida New Orleans, Louisiana Houston, Texas Los Angeles, California Oakland, California Seattle, Washington Anchorage, Alaska Valdez, Alaska Kodiak, Alaska Honolulu, Hawaii Chicago, Illinois Cleveland, Ohio

See the Mariners Weather Log or NWS Observing Handbook No. 1 for PMO phone numbers and mailing addresses.



C<sub>L</sub> = 6: Stratus in a sheet and/or layer



**C<sub>L</sub> = 7:** Stratus fractus and/or cumulus fractus of bad weather



**C<sub>L</sub> = 8:** Cumulus and stratocumulus not from spreading of cumulus, bases at different levels



C<sub>L</sub> = 9: Cumulonimbus with fibrous top, often with an anvil















**C<sub>M</sub> = 1:** Altostratus, semitransparent, sun or moon dimly visible



**C<sub>M</sub> = 2:** Altostratus, dense enough to hide sun or moon, or nimbostratus



**C<sub>M</sub> = 3:** Altocumulus, semi-transparent, cloud elements change slowly, one level



**C<sub>M</sub> = 4:** Altocumulus patches, semitransparent, multilevel, elements changing. Also altocumulus lenticular

**C<sub>M</sub> = 5:** Altocumulus, one or more bands or layers, expanding, thickening

**NOTE:** When more than one type of  $C_M$  cloud is observed, the priority order for reporting is  $C_M = 9,8,7,6,5,4,7$  (opaque altocumulus), 3 (semi-transparent altocumulus), 2,1. 1800 Zulu from all areas Every 3 Hours from the Great Lakes, from within 300 miles of named tropical storms, and from within 200 miles of the U.S. and Canadian coastlines. Send special reports at any time to alert the NW/S to weather significantly worse than forecast.

schedule: 0000, 0600, 1200,

Weather reporting

See Radio Stations Accepting Ships Weather and Oceanographic Reports for an international listing of where to send weather reports without charge to your vessel.

### Elements of the Ships Synoptic Code

D....D—Radio call sign **YY**—Day of the month **GG**—Time of observation iw-Wind indicator L<sub>a</sub>L<sub>a</sub>L<sub>a</sub>—Latitude **Q**<sub>c</sub>—Quadrant LoLoLo\_Longitude i<sub>R</sub>—Precipitation data indicator ix—Weather data indicator h—Cloud base height VV–Visibility N-Cloud cover dd-Wind direction ff-Wind speed s<sub>n</sub>—Sign of temperature **TTT**—Dry bulb temperature T<sub>d</sub>T<sub>d</sub>T<sub>d</sub>—Dew point temperature **PPPP**—Sea level pressure a-3-hour pressure tendency **ppp**—3-hour pressure change ww—Present weather W<sub>1</sub>—Past weather (primary) W<sub>2</sub>—Past weather (secondary) N<sub>h</sub>-Lowest cloud cover **C**<sub>I</sub> —Low cloud type **C**<sub>M</sub>—Middle cloud type C<sub>H</sub>—High cloud type D<sub>s</sub>—Ship's course V<sub>s</sub>—Ship's average speed T<sub>w</sub>T<sub>w</sub>T<sub>w</sub>—Sea surface temp. PwPw—Sea period HwHw-Sea height dw1dw1-Primary swell direction dw2dw2—Secondary swell direction Pw1Pw1—Primary swell period Hw1Hw1—Primary swell height Pw2Pw2—Secondary swell period Hw2Hw2—Secondary swell height I<sub>s</sub>—lce accretion cause E<sub>s</sub>E<sub>s</sub>—lce accretion thickness **R**<sub>s</sub>—lce accretion rate ci-Sea ice concentration **S**<sub>i</sub>—Sea ice development **b**<sub>i</sub>—lcebergs (land origin) **D**<sub>i</sub>—lce edge bearing



**C<sub>M</sub> = 6:** Altocumulus from the spreading of cumulus or cumulonimbus



**C<sub>M</sub> = 7:** Altocumulus, one or more layers, mainly opaque, not expanding, or altocumulus with altostratus or nimbostratus



**C<sub>M</sub> = 8:** Altocumulus with tower like sproutings



**C<sub>M</sub> = 9:** Altocumulus of a chaotic (heavy, broken, cloud sheets) sky, usually at several levels

## High Levels (10,000 Feet (3 km) To 60,000 Feet (18 km)) — Cirrus, Cirrostratus, Cirrocumulus



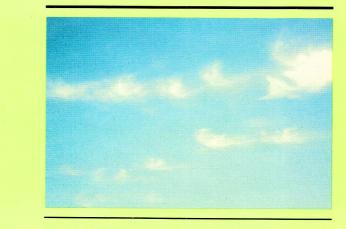
**C<sub>H</sub> = 1:** Cirrus filaments, strands, hooks, not expanding



**C<sub>H</sub> = 2:** Dense cirrus, patches or sheaves, not increasing, or cirrus like cumuliform tufts



C<sub>H</sub> = 3: Dense cirrus, often the anvil remaining from cumulonimbus



**C<sub>H</sub> = 4:** Cirrus hooks or filaments, increasing, becoming denser





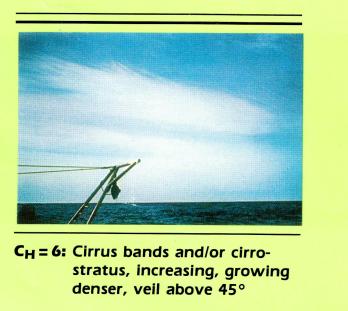
**C<sub>H</sub> = 5:** Cirrus bands, and/or cirrostratus, increasing, growing denser, veil below 45°

**NOTE:** When more than one type of  $C_H$  cloud is present, the priority order for reporting is  $C_H = 9,8,7,6,5,4,3,1,2$ .

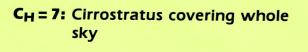
DEPOSITORY

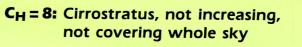
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C<sub>H</sub> = 9: Cirrocumulus alone, and/or cirrus and cirrostratus



Group indicators 99, 0-8, and 222 are a part of the weather message and must be transmitted with the report.

See NWS Observing Handbook No. 1 for a complete explanation of the ship's synoptic code.

