

MSC STDS 3-2002 - Visibility Chart Standards

General

A visibility chart is a map of visible objects showing their azimuth and range from a standard point of observation. It includes objects visible to the unaided eye during day or night that are deemed to be suitable for visibility markers by an inspector.

The visibility chart is used by observers as an aid to assessing prevailing visibility and directional visibility.

The current original signed visibility chart shall be the official aid for assessing visibility.

Definitions

Inspector - Person or representative of the Meteorological Service of Canada qualified to perform meteorological station inspections.

Outdoor point of observation - the usual outdoor point or area where visibility is determined from. It is shown as the center point of the concentric circles on the visibility chart.

Visibility Source Document - document containing all data for constructing visibility charts.

SM - Denotes statute miles.

Visibility Source Document

Visibility charts shall be derived from a source document. The visibility source document shall contain the following information:

- name of station
- definition of the point of observation (zero point of concentric circles)
- markers
 - marker (description)
 - azimuth
 - distance
 - latitude and longitude (if able)
 - method of measurement
 - date of measurement
 - name of author

The visibility source document shall be maintained by the inspector.

Appearance

Each chart shall contain:

Title

Legend

Signature Block

True North Reference Icon
3 Scaled Azimuth circles

Construction

General

Charts shall be constructed under the authority of an inspector.
New charts shall be approved, signed and dated by an inspector.
Center point of azimuth circles is the outdoor point of observation as described in the title section.
Markers are placed within + or - 10% with respect to distance from the outdoor point of observation and within + or - 5 degrees with respect to the azimuth position on the horizon based on the outdoor point of observation.

Title

The chart title shall state the following:

VISIBILITY MARKERS at (Name of Station) and a description of the location of the outdoor point of observation.

Legend

The legend shall contain chart specific symbols for suitable objects.

Signature Block

The signature block shall contain the following statement:
Prepared according to MSC STDS for visibility charts. Original prepared by (printed name) on (date) (signature).

The signature block shall also contain space for changes and validations.

Azimuth Circles

The 6 SM circle shall be the predominant circle and with 1SM scaled concentric grids
1 SM circle ¼SM scaled concentric grids
30 SM circle 10 SM scaled concentric grids
All circles shall display 10° azimuth reference gridlines

Selection of markers

Select as many different distances and directions as possible. Each azimuth circle should have a minimum of 2 visibility markers per quadrant.

Marker objects should subtend at an angle of not less than 0.5° at the observers eye. This can be done by selecting objects using a hole of 7.5mm in diameter, punched in a card and held at arm's length; a visibility object viewed through this aperture should completely fill it and at the same time an object would not subtend an angle of more than 5°.

Marker objects should be black or nearly black objects which stand out on the horizon against the sky. Light colored objects or objects located close to a terrestrial background should be avoided. If an object against a terrestrial background has to be used it should stand well in front of the background, i.e. at a distance at least half that of the object from the point of observation. A tree at the edge of the woods, for example would not be suitable for visibility observations.

For night time observations choose unfocused lights of moderate intensity with mechanical and optical stability at known distances, the silhouettes of hills and mountains against the sky may also be used.

Marker Labels

Markers may be labeled for clarity. (For example hangar, barn, name of mountain etc.)

Maintenance

Additions or deletions

The inspector is the authority for all additions and deletions (ie. new visibility markers) to the chart, determinations shall be performed at each station inspection.

- Additions shall be added to the current chart and source document
- Deletions shall be removed from the source document and removed from the chart by a circled X over the object.
- Additions and deletions shall be noted as an amendment in the legend.

New Charts

A new chart shall be constructed:

- when the outdoor point of observation is moved by greater than 66 FT (10% of 1/8 SM)
- when deemed necessary by the regional meteorological inspector

Annual Validation

Charts shall be validated as correct by a qualified meteorological inspector and noted in the annual inspection report.