Memorandum - Note de service

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FROM/ **DE**	Director General/Directeur général adjoint Atmospheric Monitoring & Water Survey Directorate/Direction générale de la surveillance atmosphérique et des relevés hydrologiques

FILE/
DOSSIER:

DATE: January 20, 2000
le 20 janvier 2000

Subject/
Objet:

SPC 11-99 PROCEDURES FOR INTERPRETING CLOUD BASES FROM THE CT-VIEW PROGRAM USED WITH LASER CEILOMETERS	**SPC 11-99 MÉTHODE D'INTERPRÉTATION DES BASES DE NUAGES DU PROGRAMME CT-VIEW SERVANT AVEC LES CÉLOMÈTRES AU LASER**

1. Attached is SPC 11-99 "PROCEDURES FOR INTERPRETING CLOUD BASES FROM THE CT-VIEW PROGRAM USED WITH LASER CEILOMETERS These observing procedures are effective upon receipt and are intended only for observers using the CT-View program in conjunction with laser ceilometers.

1. Veuillez trouver ci-joint la circulaire SPC 11-99 : «MÉTHODE D'INTERPRÉTATION DES BASES DE NUAGES DU PROGRAMME CT-VIEW SERVANT AVEC LES CÉLOMÈTRES AU LASER. Cette méthode d'observation, qui entre en vigueur dès réception, est réservée aux observateurs qui utilisent le programme CT-VIEW conjointement avec les célomètres au laser.

2. Please direct all inquires about the content to the following: Manager - Data Standards and Quality Management Division
Meteorological Service of Canada
4905 Dufferin, Street
Downsview, Ontario
M3H 5T4
416-739-4958

2. Veuillez adresser vos questions au sujet du contenu au : Chef - Division des normes des données et du contrôle de la qualité
Service météorologique du Canada
4905 rue Dufferin
Downsview, Ontario
M3H 5T4
416-739-4958

Original signed by Gary Cormick for:
Original signé par Gary Cormick pour
Barry D. Greer
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et des relevés hydrologiques

SPC 11-99

DECEMBER 1999

PROCEDURES FOR INTERPRETING CLOUD BASES FROM THE CT-VIEW PROGRAM USED WITH LASER CEILOMETERS

PURPOSE

Laser ceilometers may use paper charts or video screen programs to display cloud information. SPC 11-99 describes procedures for viewing and interpreting cloud bases with the CT-VIEW program used in conjunction with the CT25K and CT12K laser ceilometers. This circular does not attempt to provide a complete set of instructions for use of the CT-VIEW program, but rather provides some elementary conditions for usage of this program.

GENERAL INFORMATION

The CT-VIEW program is a display program that operates in a WINDOWS environment. The program provides a continuous display and logging of cloud information from the ceilometer.

SECTION 1

CLOUD HEIGHT

Observers are reminded that cloud height is to <u>always</u> be determined as the <u>cloud base</u> using whatever means is available to measure or estimate the value.

OBSERVER DUTIES

Effective upon receipt at sites using the CT-VIEW display program the observer shall:

a) Use only the cloud detection graphics screen for determining cloud bases.
b) Interpret cloud bases using the procedures described in section 2 of this circular.
c) Cease all determination of cloud base from the "Instant Values" or "Backscatter" displays of cloud height.

PROCEDURES FOR INTERPRETING CLOUD BASES FROM THE CT-VIEW PROGRAM USED WITH LASER CEILOMETERS

The CT-VIEW program is a display program that operates in a WINDOWS environment. The program provides a continuous display and logging of cloud information from the ceilometer. The instructions contained here are applicable only to the cloud detection graphics view screen.

The cloud detection graphics view screen presents the detected cloud height data as points at the corresponding height level with time. The numerical cloud heights "instant values" and sky condition displays are not to be used for assessing cloud information as they are instantaneous values, calculated by different methods, do not represent the base of the cloud and therefore are not suitable for Canadian measurements.

DETERMINING CLOUD BASE FROM DISPLAY SCREEN

The "View: Cloud Graph Setting" should normally be set at the "predefined (full linear 0-24,000 foot) option. To facilitate and enhance the accuracy of reporting lower cloud the observer should select the "user defined" option and specify a Y- Axis range appropriate to the cloud layer of interest. It should be noted that the range between the top and bottom of the display must be a minimum of 2,000 feet.

Cloud base is defined as the lowest point of the black vertical trace from the cloud detection graph screen. Diffuse cloud is depicted in blue (dark blue for stronger intensity returns and light blue for weaker ones) and is referred to as vertical visibility (in the CT-VIEW program). This may be cloud, virga or from a surface based layer. For these sorts of traces the lowest point of the dark blue traces is most likely to represent the cloud base; however, this may not always be the case. Observers should, in these instances , try to validate cloud heights by other means. Where black traces are depicted above the blue ones, chances are that the blue traces represent virga or thin cloud. If blue traces are above and more or less parallel to black ones, they may represent the top of the cloud layer.

Using the cloud detection graph screen with grid lines turned on, the observer is to closely examine the cloud base detection trace for the preceding hour, then determine the height during the five minutes immediately preceding the observation using the lowest points on the black vertical cloud base detection trace and record this value as the base of the cloud.

Observers should also refer to *MANOBS* page 1-10 Figure 1 for examples of QL1212 laser record interpretation. More information on CT-VIEW program is contained in the *CT-VIEW User's Guide.*

DETERMINING VERTICAL VISIBILITY IN SURFACE BASED LAYERS

Using the cloud detection graph screen, the observer is to closely examine the cloud base detection trace. When the trace is dark blue, the values represent the vertical visibility into a surface based layer. In these cases both the blue trace and the instant value of V-Visibility correspond well to the Canadian definition of vertical visibility and may be used for vertical visibility determination.