NOTES:

(1) This code form is known as the International Analysis Code (IAC).

(2) The groups in the first four lines of the above message constitute the preambles of the message. The preamble in the first line is for surface analysis and the preamble in the second line is for analysis other than surface. The preamble in the third line is for surface prognosis and the preamble in the fourth line is for prognosis other than surface.

(3) The appropriate preamble is included each time the analysis or prognosis is made up from a different chart, whether it be for sea level or any other level, and for each different type. Each such analysis or prognosis ends with the group 19191.

(4) The sections of the message beginning with groups of the type 999 - - are the following:
99900 – Section of pressure systems or topography systems
99911 – Section of frontal systems
99922 – Isopleth section
99933 – Air mass section
99944 – Weather area section
99955 – Tropical section
99966 – Cloud section
99977 – Upper wind section
99988 – Jet stream section
99999 – Tropopause section
88800 – Wave or sea temperature section
88822 – Vertical wind shear section

(5) The groups 99900, 99911, etc., are used once only for each section, except that if the same type of data is given in two separate portions of the message, the appropriate 999 - - or 888- - - group may precede each new portion. The remaining series of groups in each analysis or prognosis section may be repeated as many times as necessary. The 999- - - or 888- - - groups are primarily designated for use at analysis centers where different sections or portions of sections may be prepared at varying times and may be communicated in a varying order.

(6) Position groups yyyyy are given in the form specified by the symbol x_1x_1. Under certain conditions groups of the form $000L_aL_O$ after the appropriate $QL_aL_aL_OL_O$ groups and groups of the form $00s_200$ after the appropriate $iiiD_1s_1$ groups may be added to the message (see meaning of x_1x_1).

(7) In sections 99900 and 99911 the basic code forms give the details of pressure systems and fronts for the time of the chart in analysis messages and for the time of the forecast chart in prognosis messages. One or more alternative groups, introduced by a time group $000g_pg_p$, can be used when greater detail is required about past and future movements and characteristics of any pressure system or front. In section 99900, when $8P_tP_cPP$ is used after the time group $000g_pg_p$, the position group yyyyy refers to time G_cG_c, P_c refers to the character of the pressure system during the period g_pg_p hours prior to G_cG_c, the movement indicator figure m refers to the same period and $d_sd_sf_sf_s$ gives the mean direction and speed of the system in that period. In section 99900, when $7P_tP_cPP$ is used after the time group $000g_pg_p$, the position group yyyyy refers to time G_cG_c, P_c refers to the forecast character of the pressure system during the period of g_pg_p hours following G_cG_c, the movement indicator figure m refers to the same period and $d_sd_sf_sf_s$ gives the forecast mean direction and speed of the system in that period. Frontal systems can be treated similarly in analysis messages. The same principle is adopted in prognosis messages. In these, the position groups yyyyy refer to the time $G_cG_c+G_pG_p$. However, forecast details of character and movement of pressure centers and fronts during periods prior to and following $G_cG_c+G_pG_p$ can be given g_pg_p indicating the period relative to the time $G_cG_c+G_pG_p$.

(8) In section 99966, the groups indicated by 9 and 8 refer to reported conditions, and those indicated by 7 and 6 to forecast conditions.

(9) In section 99977 wind analysis or prognosis for 850, 700, 500, 400, 300, 200 and 100 mb., or for a selection of these levels, is given for a series of positions indicated by yyyyy.

(10)–(i) In section 99988 actual or forecast winds can be given for a number of positions along the jet stream core or along the line of maximum wind speed on the standard constant pressure charts immediately above or below the jet core;
(ii) This section will be restricted normally to winds exceeding 60 knots or 100 km./hour.

(11) In section 99999, tropopause temperature data in relation to isopleths of the level of the tropopause can be given by the concurrent use of groups $4e_1uuu$ and 42uuu.

In this case, the $4e_1uuu$ group gives the value of the isobar or of the isohypse described by all yyyyy groups which follow up to the next $4e_1uuu$ group in the message. This group is used only once for the same level isopleth, whatever the temperature may be along this isopleth.

Along a given isobar or a given isohypse, each of the 42uuu groups gives the temperature at the points indicated by the following yyyyy groups. When the temperature changes along the tropopause isopleth, an indicator group 00000 is included, followed by a 42uuu group and the yyyyy groups.

In the 42uuu group, uuu gives the temperature in whole degrees Celius (add 500 for negative values).

(12) In the Section 88800, the group $(9d_Wd_WP_{W_1}P_{W_1})$ when used, indicates the direction and period of waves at the position defined by the yyyyy groups which follow.

(13) When $x_2x_2x_2=555$, the group 85558 is followed by two $00x_3x_3x_3$ groups. Also, when $x_2x_2x_2=666$, the group 86668 is followed by either 81118 or 82228.

(14) The group $33M_hM_sM_t$ may be followed by another group in the same form (see Code 2552).

(15) Use of bracketed groups
The groups in brackets are optional groups, to be used at the discretion of each Service.

(16) Additional groups or supplementary information
   (i) An addition in plain language may be made to the message when this is considered necessary to emphasize the existence of a line squall.
   (ii) If additional supplementary sections of the analysis code are used for national purposes, the above code form should be used so far as it is applicable and the supplementary sections should be placed at the end of the international forms or sent as separate messages.

(17) When it is necessary to send a correction to the analysis or prognosis, the correction message commences with the groups "11133–$OYYG_cG_c$". The corrections follow, preceded by the key group indicators pertinent to the sections, and the message ends with the 19191 group.

FM 46.C Analysis in abbreviated form (IAC FLEET)

10001 33388 $OYYG_cG_c$ or
65556 33388 $OYYG_cG_c$ $000G_pG_p$
99900 $8P_tP_cPP$ $QL_aL_aL_aL_a$ ($QL_aL_aL_oL_o$) $md_sd_sf_sf_s$
or $000g_pg_p$ $8P_tP_cPP$ $QL_aL_aL_oL_o$ ($QL_aL_aL_oL_o$) $md_sd_sf_sf_s$
and $000g_pg_p$ $8P_tP_cPP$ $QL_aL_aL_aL_o$ ($QL_aL_aL_oL_o$) $md_sd_sf_sf_s$
99911 $66F_tF_iF_c$ $QL_aL_aL_oL_o$ $QL_aL_aL_oL_o$ ---- $md_sd_sf_sf_s$
or $000g_pg_p$ $66F_tF_iF_c$ $QL_aL_aL_oL_o$ ---- $md_sd_sf_sf_s$
and $000g_pg_p$ $67F_tF_iF_c$ $QL_aL_aL_oL_o$ ---- $md_sd_sf_sf_s$
99922 44PPP $QL_aL_aL_oL_o$ $QL_aL_oL_oL_o$ ----
99955 ($55T_tT_iT_c$) (555PP) $QL_aL_aL_oL_o$ $QL_aL_aL_oL_o$ ---- $md_sd_sf_sf_s$
99944 $987w_sw_s$ $QL_aL_aL_oL_o$ $QL_aL_aL_oL_o$ ----
88800 $77e_2uu$ ($9d_wd_wP_wP_w$) $QL_aL_aL_oL_o$ ($9d_wd_wP_wP_w$) $QL_aL_oL_oL_o$
------ ------ ($9d_wd_wP_wP_w$) $QL_aL_oL_oL_o$ ($00C_100$)
77744 ---------- Vocabulary groups ---------- 44777
19191

NOTES:

(1) This abridged form of the International Analysis Code for marine use is known as the IAC FLEET.

(2) The groups in the first two lines of the above message constitute the preambles of the message. The preamble in the first line is for surface analysis and the preamble in the second line is for surface prognosis.

(3) The appropriate preamble is included each time the analysis or prognosis is made up from a different chart and for each different type. Each such analysis or prognosis ends with the group 19191.

(4) The sections of the message beginning with groups of the type 999- - - or 888- - - are the following:

99900 Section of pressure systems
99911 Section of frontal systems
99922 Isobars section
99944 Weather area section
99955 Tropical section
88800 Wave or sea temperature section.

(5) The groups 99900, 99911, etc., are used once only for each section, except that if the same type of data is given in two separate portions of the message, the appropriate 999- - - or 888- - - group may precede each new portion. The remaining series of groups in each analysis or prognosis section may be repeated as many times as necessary. The 999- - - or 888- - - groups are primarily designated for use at analysis centers where different sections or portions of sections may be prepared at varying times and may be communicated in a varying order.

(6) Each analysis or prognosis section may be repeated as many times as necessary. Any section may be omitted. Use of the tropical section does not preclude the use in the same general area of other sections where applicable. Movement group must be given for each pressure, frontal or tropical system included. For a stationary system, $md_sd_sf_sf_s$ is coded as 10000.

(7) In sections 99900 and 99911 the basic code forms give the details of pressure systems and fronts for the time of the chart in analysis messages and for the time of the forecast chart in prognosis messages. One or more alternative groups, introduced by a time group $000g_pg_p$, can be used when greater detail is required about past and future movements and characteristics of any pressure system or front. In section 99900, when $8P_tP_cPP$ is used after the time group $000g_pg_p$, the position group $QL_aL_aL_oL_o$ refers to time G_cG_c, P_c refers to the character of the pressure system during the period g_pg_p hours prior to G_cG_c, the movement indicator figure m refers to the same period and $d_sd_sf_sf_s$ gives the mean direction and speed of the system in that period.
In section 99900, when $7P_tP_cPP$ is used after the time group $000g_pg_p$, the position group $QL_aL_aL_oL_o$ refers to time G_cG_c, P_c refers to the forecast character of the pressure system during the period of g_pg_p hours following G_cG_c, the movement indicator figure m refers to the same period and $d_sd_sf_sf_s$ gives the forecast mean direction and speed of the system in that period. Frontal systems can be treated similarly in analysis messages. The same principle is adopted in prognosis messages. In these, the position groups $QL_aL_aL_oL_o$ refer to the time $G_cG_c + G_pG_p$. However, forecast details of character and movement of pressure centers and fronts during periods prior to and following $G_cG_c + G_pG_p$ can be given, g_pg_p indicating the period relative to the time $G_eG_e + G_pG_p$.

(8) Amplifying phrases from a vocabulary code can be inserted as and where desired, but must be preceded and terminated by the appropriate key groups. Other information is invariably to be given in the sequence shown in the code form.

(9) Services which desire to report positions in this message to the nearest half degree, should use 33300, 33311 or 33322, instead of 33388, for the second group of the message. If group 33300, 33311 or 33322 is used, group $L_aL_aL_oL_ok$ is subsitited for group $QL_aL_aL_oL_o$ in the code form.

If group 33388 is used, it indicates that point position groups are in the form $QL_aL_aL_OL_O$. A method of indicating latitude and longitude of point positions to tenths of degrees, where desired, is provided under the meaning of the symbol x_1x_1. According to this method, the group $000L_aL_O$ may be included in the message, after the appropriate $QL_aL_aL_OL_O$ group.

(10) The following sequence should be adopted for coding each section:
Pressure system: to be given in order of occurrence from West to East,
Frontal information: to give a general run as far as possible from West to East.
Tropical systems: as for pressure systems or frontal information according to whichever the tropical system more closely resembles.
Isobar delineation: points on an isobar encircling a LOW should be given first and in cyclonic direction. Points on an isobar encircling a HIGH should be given last and in an anticyclonic direction.
Significant weather: in order of occurence from West to East.

(11) The position group for each pressure system may be given twice. Points on fronts, tropical systems resembling fronts, isobars and boundaries of areas of significant weather are given once only.

(12) If a pressure or tropical system is elongated and open, two or more points (twice each if desired) are given to indicate the axis of the system; the first position and the pressure when given refer to the vertex of the system. The speed, direction and rate of change or characteristic of motion of the system then refer to the axis of the system.

(13) When used with fronts or tropical systems resembling fronts, the movement group refers to the central portion of the type concerned. When it is necessary to use two or more movement groups in reference to a given type, the type should be subdivided by repetition of the group $66F_tF_iF_C$ or $55T_tT_iT_C$.

(14) In section 88800, the group ($9d_wd_wP_wP_w$), when used, indicates the direction and period of waves at the position defined by the $QL_aL_aL_OL_O$ group which follows.

(15) Use of bracketed groups See Note (13) under FM 45.C.

(16) Additional groups or supplementary information See Note (16) under FM 45.C.

(17) When it is necessary to send a correction to the analysis or prognosis, the correction message commences with the groups "11133 $OYYG_cG_c$". The corrections follow, preceded by the appropriate indicators (8 ----, 66 ---, 44 ---, etc.), and the message ends with the 19191 group.

FM 51.C Aerodrome (terminal or alternote) forecast in full form

TAFOR $G_1G_1G_2G_2G_3$
(II) iii Nddff $VV_1w_1w_1$ $8N_sCh_sh_s$
($7h_th_th_fh_f$) ($6I_ch_ih_it_L$) ($5Bh_Bh_Bt_L$)
($4h_xh_xT_hT_h$ $3d_hd_hf_hf_h$) ($2G_FG_FT_FT_F$) $9i_3nnn$

NOTES:

(1) The code name TAFOR is used as a prefix to the message, indicating that it is an aerodrome forecast in full form, but in the case of a group of such forecasts, it should only be used in the heading of the collective.

(2) A group with an indicator figure may, unless otherwise specified, be omitted from a particular message whenever the elements specified in the group are forecast not to occur, or are not required (see Note (12) below).

(3) The groups may be repeated in accordance with the detailed instructions for each group.

(4) Owing to:
(i) the unavoidable limitations in the definition of some of the elements, e.g.: VV, h_sh_s, h_sh_s, h_th_t, h_fh_f, h_ih_i, h_Bh_B, t_L, ff, f_hf_h, T_hT_h and T_FT_F;
(ii) the variability of these elements over very short intervals of time and space; and
(iii) the present inadequacies of forecast techniques;
the specific value of any of the above elements given in forecasts should be understood to be necessarily approximate, and the value of the element in question should accordingly be interpreted as representing the most probable mean of a range of values which the element may assume during the period of the forecast concerened and over the area or in the airspace concerned. Similarly when the time of occurrence or of an element is given in a forecast (as indicated by GG and Gp), this time should be interpreted as representing the most probable mean of a range of times.

(5) See Note (2) under AERO FM 15.C.

(6) Instructions for the group $8N_sCh_sh_s$:
(i) The group is repeated as often as necessary to forecast the general cloud distribution. The order of the 8-groups is such that the lowest base is given first, the next higher base second, etc.
(ii) In any 8-group the N_s is the total amount of cloud that the forecaster expects to be at the level given by h_sh_s.
(iii) When clear sky is forecast (N equals O), the 8-group is not used. 8-groups are used whenever N equals 1 to 9.
(iv) When in the first 8-group N_s equals 9 is forecast, the 8-group should read $89/h_sh_s$, where h_sh_s is the vertical visibility.

(7) Instructions for the group $9i_3nnn$:
(i) The groups $90DP_wH_w$, $91P_2P_2P_2$, $92F_tL_aL_a$, $93F_tL_OL_O$, $94F_tGG$ are always placed at the end of the relevant part of the message. The groups $92F_tL_aL_a$, $93F_tL_OL_O$, $94F_tGG$ are only used to indicate the type of front, together with the position or time of passage. The type of weather during the frontal passage is indicated separately, e.g. by separating the forecasts into different periods, or by using the groups $96GGG_p$, $97GGG_p$ and $98GGG_p$ or by a combination of both methods.

(ii) The change groups $96GGG_p$, $97GGG_p$, $98GGG_p$ may appear after any group in the forecast to indicate that the group(s) following give changed values of the elements given in some or all of the groups preceding, in accordance with the following rules:
- If it is desired to indicate a change in only the Nddff group, a change group appears between the two Nddff groups
- If is desired to indicate a change in the $VVw_1w_1/$ group alone, or in both the Nddff and $VVw_1w_1/$ groups, it is always necessary to repeat both groups after the change group.
- If it is desired to indicate a change which involves only groups with indicators, then only those groups in which changes are desired need be given after the change group.
- If it is desired to indicate a change in any element in the groups Nddff and $VVw_1w_1/$ along with changes in groups carrying indicators, then it is always necessary to include the groups Nddff and $VVw_1w_1/$ after the change group.

(iii) Group $96GGG_p$ indicates a change beginning at GG and continuing throughout the period indicated by G_p.

(iv) The group $97GGG_p$ (temporary variation(s)) is used:
- When the condition is not expected in each instance to last more than one hour. (If the condition is expected to last more than one hour, the group $96GGG_p$ is used or the forecast is divided into periods.)
- When the condition, if expected to recur, will not, in the aggregate, cover more than ½ of the forecast period during which the phenomenon is expected to occur, i.e. the time indicated by G_p.

(v) The group 98GGGp (intermittent variations) is used:
- If the variations from the main forecast conditions are expected to be more frequent than those which would be indicated by a 97GGGp group.

(vi) If there is a requirement for Gp greater than GG plus nine hours, then the forecast period should be divided.

(vii) The group $9999C_2$ may appear after any group in the forecast. It may be used alone or in combination with a change group. If the latter, the $9999C_2$ group precedes the change group. The group indicates the probability of the occurrence of phenomena described in the group(s) which follow, in accordance with the above rules for the change groups.

(viii) For the use of any change group 9ignnn in TAFOR messages, Meteorological Services have the choice between the coded form of the chauge group and its plain language equivalent for the purpose of ground/ground exchanges and ground/air transmissions of forecasts.

(8) *Use of bracketed groups*

The elements or groups euclosed in brackets are included in the standard form in accordance with regional air navigation agreements, or bilateral or national arrangements, unless otherwise specified in the following notes:

(i) (II)iii – See Note (4) (ii) under AERO FM 15.C.

Remark: When the same forecast applies to several aerodromes, more than one iii group may be inserted in the message.

(ii) Groups ($2G_FG_FT_FT_F$) may be used, as necessary, to give the forecast temperatures at H, H + 6 and H + 12 hours (H being the time of commencement of the period covered by the TAFOR), the forecast minimum and maximum temperatures and their forecast times of occurrence.

(9) Instructions for the group $7h_th_th_fh_f$:

(i) When it is desired to forecast a number of layers giving both bases and tops for the layers, the 8- and 7-groups are used in pairs for each layer, i.e. 8-7-8-7 etc.

(ii) When the O°C isotherm is forecast but no forecast is made for top of clouds, the 7-group has the form $7//h_fh_f$.

If two 8-groups are given but only one O°C isotherm is forecast, the order of the groups is 8-7-8-7 as indicated in (i) and the second 7-group is given as $7h_th_t//$. If one 8-group is forecast and two O°C isotherms, the groups are given as 8-7-7 with the second 7-group given as $7//h_fh_f$.

(10) Instructions for the group $6I_ch_ih_it_L$:

(i) The group is repeated if more than one type or more than one type or more than one layer of icing is forecast.

(ii) If the thickness of the layer for any one type of icing is greater than 2,700 m (9,000 ft.), the group is repeated and the base indicated in the second group coincides with the top of the layer as given in the preceding group.

(11) Instructions for the group $5Bh_Bh_Bt_L$:

The rules in Note (10) applying to icing are equally applicable to turbulence.

(12) Instructions for the groups $4h_xh_xT_hT_h$ $3d_hd_hf_hf_h$:

These groups are always used together and are repeated for each level for which temperature and wind are forecast.

(13) Additional groups or supplementary information

(i) Appropriate Q signals or plain language may be added at the end of the message when directional differences in visibility can be foreseen and when it is desired to indicate these specific direction(s) and expected visibility in the forecast.

(ii) Q signals may be used in connection with TAFOR when temperature, humidity and pressure forecasts for the take off and landing of turbine powered aircraft are requested.

(14) When an amended TAFOR has to be sent the message will be coded according to the following procedure on circuits on which the WMO abbreviated message headings are used:

TTAA(i)	CCCC(k)	$Y_aY_aG_aG_ag_ag_a$	AMD
YYGGgg	TAFOR	$G_1G_1G_2G_2G_3$	etc.

where the first line is the abbreviated heading in which $Y_aY_aG_aG_ag_ag_a$ is the time of issue of the amendment and AMD the abbreviation for "amended message"; in the second line YYGGgg signifies the original time of issue of the amended TAFOR, G_1G_1 the beginning of the period to which the amendment applies and G_2G_2 the same time as in the original TAFOR.

FM 52.C Aerodrome (terminal or altemote) forecast in abbreviated form

TAF $G_1G_1G_2G_2G_3$
(II) iii Nddff $VVw_1w_1/$ $8N_SCh_Sh_S$
$9i_3nnn$

NOTES:

(1) The code name TAF is used as a prefix to the message, indicating that it is an aerodrome forecast in abbreviated form, but in the case of a group of such forecasts, it should only be used in the heading of the collective.

(2) The TAF is the abbreviated version of the TAFOR and is intended to be used for ground to ground exchange of short period aerodrome forecast. It is also used to pass aerodrome forecast to aircraft in flight.

(3) For the use of any change group $9i_3nnn$ in TAF messages meteorological services have the choice between the coded form of the change group and its plain language equivalent for the purpose of ground/ground and air/ground transmissions of forecast. For ground/air transmissions of forecast in TAF code form however, the plain language alternative is preferable.

(4) See NOTES (2), (3) and (4) under TAFOR FM 51.C.

(5) See NOTES (2) under AERO FM 15.C.

(6) See NOTES (6), (7), (8), (13) and (14) under TAFOR FM 51.C.

(7) An amendment to a TAF is sent in the form given in NOTES (14) under TAFOR FM 51.C, except that the code name TAF is substituted for TAFOR.

FM 53.B Area forecast
ARFOR
$G_1G_1G_2G_2G_3$

AAAAA	(Nddff)	$(VVw_1w_1/)$	$8N_SCh_Sh_S$
$7h_th_th_fh_f$	$6I_ch_ih_jt_L$	$5Bh_Bh_Bt_L$	$4h_xh_xT_hT_h$
$3d_hd_hf_hf_h$	$2h'_ph'_pT_pT_p$	11111	$QL_aL_aL_oL_o$
$H'_jh'_jf_jf_jf_j$	$9i_3nnn$ etc.		

NOTES:

(1) The code name ARFOR is used as a prefix to the message indicating that it is an area forecast, in which all heights are given above mean sea level, exceept for the jet core and tropopause which are in I.C.A.O. flight levels.

(2) See Notes (2), (3) and (4) under TAFOR FM 51.C.

(3) The group combination "11111 $QL_aL_aL_oL_o$ $h'_jh'_jf_jf_jf_j$", which specified the position of the jet core and the wind to be encountered in the jet core may be combined at the end of the report in the form
11111 $QL_aL_aL_oL_o$ $h'_jh'_jf_jf_jf_j$
$QL_aL_aL_oL_o$ $h'_jh'_jf_jf_jf_j$ $QL_aL_aL_oL_o$ $h'_jh'_jf_jf_jf_j$ etc.
in case the jet extends through a large position of the area or through several zones.

(4) See Note (2) under AERO FM 15.C.

(5) The code to be used for AAAAA is agreed regionally. Alternatively, plain language may be used.

(6) See Notes (6), (7), (9), (10), (11) and (12) under TAFOR FM 51.C.

(7) Use of bracketed groups
(Nddff), $(VVw_1w_1/)$—These groups are optional, but the group $VVw_1w_1/$ is included whenever any of the following phenomena are forecast: thunderstorm, hail, dust/sand storm, freezing rain.

(8) Additional groups or supplementary information
See Note (13) under TAFOR FM 51.C.

(9) An amendment to an ARFOR is sent in the form given in NOTES (14) under TAFOR FM 51.C, except that the code name ARFOR is substituted for TAFOR.

FM 54.B Route forecast
ROFOR
$G_1G_1G_2G_2G_3$

iii $(QL_aL_aL_oL_o)$ iii Oi_2zzz (Nddff) $(VVw_1w_1/)$
$8N_SCh_Sh_S$ $7h_th_th_fh_f$ $6I_ch_ih_jt_L$ $5Bh_Bh_Bt_L$
$4h_xh_xT_hT_h$ $3d_hd_hf_hf_h$ $2h'_ph'_pT_pT_p$ 11111 $QL_aL_aL_oL_o$
$h'_jh'_jf_jf_jf_j$ $9i_3nnn$ etc.

NOTES:

(1) The code name ROFOR is used as a prefix to the message, indicating that it is a route forecast, in which all heights are given above mean sea level, except for the jet core and tropopause which are in I.C.A.O. flight levels.

(2) See Notes (2), (3) and (4) under TAFOR FM 51.C.

(3) See Note (3) under ARFOR FM 53.B.

(4) The forecast conditions may be described by one of two methods:
(i) By dividing the route into sections (i_2 = 0 to 5 inclusive) and giving the detail of conditions expected during the period over the extent of each section. Five degree zones (i_2 = 5) may be combined if weather elements are sufficiently uniform.
(ii) By selecting a series of points along the route (i_2 = 6 to 9 inclusive) and forecasting the conditions at these points. Sufficient points must be selected to provide an adequate sampling of the various weather and wind conditions expected along the route. The forecasts for the points are given as if a series of TAFOR were being prepared for such points.

(5) Instructions for the group $G_1G_1G_2G_2G_3$:
The forecast is considered as valid between the hours G_1G_1 and G_2G_2 at all points or in all sections along the route.

(6) Instructions for route designation-groups iii ($QL_aL_aL_oL_o$) iii:

(i) It is considered that II is unnecessary since ROFOR is prepared for routes between predetermined aerodromes. The use of the three-figure station number avoids confusion with groups $QL_aL_aL_oL_o$.

(ii) The route to which the forecast applies is given by the index indentifiers iii of the stations at either end of the route. Where it is desirable to specify the route in greater deatil, group(s) $QL_aL_aL_oL_o$ is (are) included between the iii groups to identify a sufficient number of additional points.

(iii) The forecast detail is given starting from the aerodrome of departure indicated by the first iii.

(7) The Oi_2zzz group is used at the start of the forecast for each section or point.

(8) See Note (2) under AERO FM 15.C.

(9) See Notes (6), (7), (9), (10), (11) and (12) under TAFOR FM 51.C.

(i) In addition to instructions for the group $9i_3nnn$ given in Note (7) under TAFOR FM 51.C, the groups 951//, $952L_aL_a$, $953L_aL_a$, $954L_oL_o$, $955L_oL_o$ or the corresponding plain language alternative terminology must be used for indicating changes along the route.

(10) Use of bracketed groups
($QL_aL_aL_oL_o$), (Nddff), ($VVw_1w_1/$)—These groups are optional, but the group $VVw_1w_1/$ is included whenever any of the following phenomena are forecast: thunderstorm, hail, dust/sand storm, freezing rain.

(11) An amendment to a ROFOR is sent in the form given in Note (14) under TAFOR FM 51.C, except that the code name ROFOR is substituted for TAFOR.

FM 55.B Flight forecast
FIFOR $G_dG_dG_aG_aG_3$

$i_di_di_d$ ($QL_aL_aL_oL_o$) $i_ai_ai_a$ Oi_2zzz (Nddff)
($VVw_1w_1/$) $8N_sCh_sh_s$ $7h_th_th_fh_f$ $6l_ch_ih_it_L$
$5Bh_Bh_Bt_L$ $4h_xh_xT_hT_h$ $3d_hd_hf_hf_hf_h$ $2h'_Ph'_PT_PT_P$
11111 $QL_aL_aL_oL_o$ $h'_jh'_if_jf_jf_j$ $9i_3nnn$ etc.

NOTES:

(1) The code name FIFOR is used as a prefix to the message, indicating that it is a flight forecast.

(2) See Notes (2), (3) and (4) under TAFOR FM 51.C.

(3) See Note (3) under ARFOR FM 53.B.

(4) The forecast is a flight forecast between the aerodromes indicated by $i_di_di_d$ and $i_ai_ai_a$. Where it is desirable to specify the route in greater detail, group(s) $QL_aL_aL_oL_o$ is (are) included between the $i_di_di_d$ and $i_ai_ai_a$ groups to identify a sufficient number of additional points.

(5) See Note (6) under ROFOR FM 54.B.

(6) The Oi_2zzz group is used at the start of the forecast for each section of the route.

(7) See Note (2) under AERO FM 15.C.

(8) See Notes (6), (7), (9), (10), (11) and (12) under TAFOR FM 51.C and Note (9) (i) under ROFOR FM 54.B.

(9) Use of bracketed groups
See Note (10) under ROFOR FM 54.B.

(10) An amendment to a FIFOR is sent in the form given in Note (14) under TAFOR FM 51.C, except that the code name FIFOR is substituted for TAFOR.

FM 56.C Area forecast
PROAR $G_1G_1G_2G_2G_3$
AAAAA (Nddff) ($VVw_1w_1/$) $8N_sGP_LP_L$
$7P_MP_MP_fP_f$ $6I_cP_iP_iP_T$ $5BP_BP_BP_T$ $4P_xP_xT_hT_h$
$3d_hd_hf_hf_h$ $2P_tP_tT_pT_p$ 11111 $QL_aL_aL_oL_o$
$P_jP_jf_jf_jf_j$ $9i_3nnn$ etc.

NOTES:

(1) The code name PROAR is used as a prefix to the message indicating that it is an area forecast in which the levels of cloud bases and tops, icing, turbulence, 0 DEG. C isotherm, jet core, etc., are expressed in terms of pressure. The code name may be repeated at the end of the message.

(2) This code form is used for communication of information to aerodromes at which there is no main meteorological office; it may, by agreement, be used for the exchange of forecasts between forecast offices.

(3) See Notes (2) and (3) under TAFOR FM 51.C.

(4) Owing to:

(i) The unavoidable limitations in the definition of some of the elements, e.g.: VV, P_LP_L, P_MP_M, P_fP_f, P_iP_i, P_T, P_BP_B, T_hT_h, ff, f_hf_h, P_tP_t, T_pT_p, P_jP_j;

(ii) The variability of these elements over very short intervals of time and space; and

(iii) The present inadequacies of forecast techniques; the specific values of any of the above elements given in forecasts should be understood to be necessarily approximate, and the value of the element in question should accordingly be interpreted as representing the most probable mean of a range of values which the element may assume during the period of the forecast concerned and over the area or in the air space concerned. Similarly when the time of occurrence or of change of an element is given in a forecast (as indicated by GG and G_p), this time should be interpreted as representing the most probable mean of range of times.

(5) The group combination "11111 $QL_aL_aL_OL_O$ $P_jP_jf_jf_jf_j$", which specifies the position of the jet core and the wind to be encountered in the jet core, may be combined at the end of the report in the form

11111 $QL_aL_aL_OL_O$ $P_jP_jf_jf_jf_j$
$QL_aL_aL_OL_O$ $P_jP_jf_jf_jf_j$ $QL_aL_aL_OL_O$ $P_jP_jf_jf_jf_j$ etc.

in case the jet extends through a large portion of the area or through several zones.

(6) See Note (2) under AERO FM 15.C.

(7) See Note (5) under ARFOR FM 53.B.

(8) See Notes (6) and (7) under TAFOR FM 51.C.

(9) Instructions for the group $7P_MP_MP_tP_t$:

(i) When it is desired to forecast a number of layers giving both bases and tops for the layers, the 8- and 7-groups are used in pairs for each layer 8-7-8-7, etc.

(ii) When the 0 DEG. C isotherm is forecast but no forecast is made for top of clouds, the 7-group has the form $7//P_fP_f$. If two 8-groups are given but only one isotherm is forecast, the order of the groups 8-7-8-7 as indicated in (i) and the second 7-group is given as $7P_MP_M//$. If one 8-group is forecast and two isotherms, the groups are given as 8-7-7 with the second 7-group given as $7//P_fP_f$.

(10) Instructions for the group $6I_cP_cP_cP_T$:

(i) The group is repeated if more than one type or more than one layer of icing is forecast.

(ii) If the difference in pressure between the base and top of the layer for any one type of icing is greater than 225 mb the group is repeated and the base indicated in the second group coincides with the top of the layer given in the preceding group.

(11) Instructions for the group $5BP_BP_BP_T$:

The rules in Note (8) applying to icing are equally applicable to turbulence.

(12) Instructions for the groups $4P_xP_xT_hT_h$ $3d_hd_hf_hf_h$:

These groups are always used together and are repeated for each level for which temperature and wind are forecast.

(13) See Note (7) under ARFOR FM 53.B.

(14) *Additional groups or supplementary information*

See Note (13) under TAFOR FM 51.C.

(15) An amendment to this code is sent in the form given under TAFOR FM 51.C (Note 14) except that PROAR is substituted for TAFOR.

FM 57.C Route forecast

PRORO $G_1G_1G_2G_2G_3$
iii $(QL_aL_aL_OL_O)$ iii $0i_2zzz$
(Nddff) $(VVw_1w_1/)$ $8N_sCP_LP_L$
$7P_MP_MP_fP_f$ $6I_cP_iP_iP_T$ $5BP_BP_BP_T$ $4P_xP_xT_hT_h$
$3d_hd_hf_hf_h$ $2P_tP_tT_pT_p$ 11111 $QL_aL_aL_OL_O$
$P_jP_jf_jf_jf_j$ $9i_3nnn$ etc.

NOTES:

(1) The code name PRORO is used as a prefix to the message indicating that it is a route forecast in which the levels of cloud bases and tops, icing, turbulence, 0 DEG. C isotherm, jet core, etc., are expressed in terms of pressure. The code name may be repeated at the end of the message.

(2) See Note (2) under PROAR FM 56.C.

(3) See Notes (2) and (3) under TAFOR FM 51.C.

(4) See Note (4) under PROAR FM 56.C.

(5) See Notes (4), (5), (6) and (7) under ROFOR FM 54.B.

(6) See Note (2) under AERO FM 15.C.

(7) See Notes (6) and (7) under TAFOR FM 51.C.

(i) In addition to instructions for the group $9i_3nnn$ given in Note (7) under TAFOR FM 51.C, the groups $951//$, $952L_aL_a$, $953L_aL_a$, $954L_OL_O$, $955L_OL_O$, or the corresponding plain language alternative terminology, must be used for indicating changes along the route.

(8) See Notes (9), (10), (11) and (12) under PROAR FM 56.C.

(9) See Note (10) under ROFOR FM 54.B.

(10) An amendment to this code is sent in the form given under TAFOR FM 51.C Note (14) except that PRORO is substituted for TAFOR.

FM 58.C Flight forecast

PROFI $G_dG_dG_aG_aG_3$
$i_di_di_d$ $(QL_aL_aL_OL_O)$ $i_ai_ai_a$ $0i_2zzz$
(Nddff) $(VVw_1w_1/)$ $8N_sCP_LP_L$
$7P_MP_MP_fP_f$ $6I_cP_iP_iP_T$ $5BP_BP_BP_T$ $4P_xP_xT_hT_h$
$3d_hd_hf_hf_h$ $2P_tP_tT_pT_p$ 11111 $QL_aL_aL_OL_O$
$P_jP_jf_jf_jf_j$ $9i_3nnn$ etc.

NOTES:

(1) The Code name PROFI is used as a prefix to the message indicating that it is a flight forecast in which the levels of cloud bases and tops, icing, turbulence, 0 DEG. C isotherm, jet core, etc., are expressed in terms of pressure. The code name may be repeated at the end of the message.

(2) See Note (2) under PROAR FM 56.C.

(3) See Notes (2) and (3) under TAFOR FM 51.C.

(4) See Note (4) under PROAR FM 56.C.

(5) See Note (4) under FIFOR FM 55.B.

(6) See Notes (6) (i) under ROFOR FM 54.B.

(7) See Note (6) under FIFOR FM 55.B.

(8) See Note (2) under AERO FM 15.C.

(9) See Notes (6) and (7) under TAFOR FM 51.C and Note (9) (i) under ROFOR FM 54.B.

(10) See Notes (9), (10), (11) and (12) under PROAR FM 56.C.

(11) See Note (10) under ROFOR FM 54.B.

(12) An amendment to this code is sent in the form given under TAFOR FM 51.C Note (14) except that PROFI is substituted for TAFOR.

FM 61.C Forecast for shipping

MAFOR $OAAAa_m$ $1GDF_mW_1$ $(2VST_xT_n)$ $(3D_KP_WH_WH_W)$

NOTES:

(1) The code name MAFOR is used as a prefix to the message, indicating that it is a forecast for shipping. If several of of these messages are grouped in a single broadcast the prefix will appear only at the beginning of the collective message.

(2) The group $OAAAa_m$ may be replaced by the geographical name for the forecast region.

(3) The group $1GDF_mW_1$ can be repeated as many times as necessary to describe the changes in the meteorological conditions forecast in a given area. The first group $1GDF_mW_1$ then refers to the forecast weather commencing at the time of broadcast and subsequent groups $1GDF_mW_1$ (G = 1–8) give the period of time that the described weather is forecast to persist commencing at the end of the period covered by the preceding group $1GDF_mW_1$ (G = 1–8). A group describing a phenomenon which is forecast to occur occasionally (G=9) should follow the groups of the entire forecast $1GDF_mW_1$ $(2VST_xT_n)$ $(3D_KP_WH_WH_W)$.

(4) The groups $(2VST_xT_n)$ and $(3D_KP_WH_WH_W)$ are optional.

(5) The specific value of any of the elements given in the forecast should be understood to be necessarily approximate, and the value of the element in question should accordingly be interpreted as representing the most probable mean of a range of values which the element may assume during the period of the forecast concerned and over the area concerned.

FM 71 Report of monthly means from land station

CLIMAT IIiii $\overline{PPTTT}$ $\overline{UU}R_1R_1R_d$
(NORMAL $\overline{PPTTT}$ $\overline{UU}R_1R_1$/)

NOTES:

(1) The code name CLIMAT is used as a prefix to the report, indicating that it is a report of monthly means from a land station, but in the case of a group of such reports, it should only be used in the heading of the collective.

(2) Mean surface values of the meteorological elements contained in the above report should be broadcast for one in five stations in the synoptic network, as soon as possible after the end of the month and not later than the 5th.

(3) Use of bracketed groups
(NORMAL $\overline{PPTTT}$ $\overline{UU}R_1R_1$/)—Meteorological Services should submit to the Secretariat, for distribution to the Members, complete normal data of the elements for stations to be included in CLIMAT broadcasts. CLIMAT messages for the two months following the submission of such complete normal data to the Secretariat should include the normals for the months in question, in the form.

NORMAL $\overline{PPTTT}$ $\overline{UU}R_1R_1$/—The same procedure is followed, when services consider it necessary to make amendments to previously published normal values.

(4) The normals should be computed from the most recent 30-year period, starting on 1 January of a year ending with the digit 1, for which the necessary data are available. Normal values should be recomputed each decade (i.e. at the end of 1960, 1970, etc.).

(5) When normal data are included in the broadcast, the number of stations may be reduced if necessary.

FM 72.B Report of monthly means from Ocean weather station

CLIMAT SHIP

/CL$_a$L$_a$L$_a$ L$_o$L$_o$L$_o$// $\overline{PPTTT}$ $\overline{UUT_STST_S}$ (99R$_1$R$_1$R$_d$)

(NORMAL $\overline{PPTTT}$ $\overline{UUT_STST_S}$ (99R$_1$R$_1$/))

NOTES:

(1) The code name CLIMAT SHIP is used as a prefix to the report, indicating that it is a report of monthly means from Ocean weather station, but in the case of a group of such reports, it should only be used in the heading of the collective.

(2) Mean surface values of the meteorological elements contained in the above report should be broadcast as soon as possible after the end of the month and not later than the 5th.

(3) Use of bracketed groups
(NORMAL $\overline{PPTTT}$ $\overline{UUT_STST_S}$ (99R$_1$R$_1$/))—Meteorological services should submit to the Secretariat for distribution to the Members, complete normal data of the elements for stations to be included in CLIMAT broadcasts. CLIMAT messages for the two months following the submission of such complete normal data to the Secretariat should include the normals for the months in question, in the form NORMAL $\overline{PPTTT}$ $\overline{UUT_STST_S}$ (99R$_1$R$_1$/). The same procedure is followed when services consider it necessary to make amendments to previously published normal values.

(4) See Note (4) under CLIMAT FM 71.

FM 73 Report of monthly means for oceanic area

NACLI CLINP SPCLI	L$_a$L$_a$L$_o$L$_o$n L$'_a$L$'_a$L$'_o$L$'_o$n$'$	P$_1$P$_1$P$_2$P$_2$P$_3$ P$'_1$P$'_1$P$'_2$P$'_2$P$'_3$	P$_3$P$_4$P$_4$P$_5$P$_5$ ..... P$'_3$P$'_4$P$'_4$P$'_5$P$'_5$ .....
CLISA INCLI	L$''_a$L$''_a$L$''_o$L$''_o$n$''$	P$''_1$P$''_1$P$''_2$P$''_2$P$''_3$	P$''_3$P$''_4$P$''_4$P$''_5$P$''_5$ .....
	.....	.....	....

NOTES:

(1) This form is used for broadcasting monthly means for oceanic areas.

(2) For each oceanic area the appropriate code word is used, i.e.:

NACLI – for the North Atlantic
CLINP – for the North Pacific
SPCLI – for the South Pacific
CLISA – for the South Atlantic
INCLI – for the Indian Ocean

(3) Monthly means for oceanic areas, in the above form, should be broadcast as soon as possible after the end of the month.

FM 75.C Report of monthly aerological means from land station

CLIMAT TEMP Iliii	$\overline{P_oP_oP_oP_oT_o}$	$\overline{T_oT_oT_{do}T_{do}T_{do}}$	$\overline{r_fd_vd_vf_vf_v}$
	$\overline{HHHHT}$	$\overline{TTT_dT_dT_d}$	$\overline{r_fd_vd_vf_vf_v}$
	$\overline{HHHHT}$	$\overline{TTT_dT_dT_d}$	$\overline{r_fd_vd_vf_vf_v}$
	.....	.....	.....
	.....	.....	..... etc.

The code name CLIMAT TEMP prefixed to a message indicates that it is a report or collection of reports of monthly aerological mean values from a land station. In a group of such reports the code name is used only in the heading of the collective.

NOTES:

(1) The code name CLIMAT TEMP shall be included either as a prefix to each report transmitted separately or in the heading of the collective in case of such reports.

(2) The broadcast of monthly mean values of the upper-air element shall include information for station level and for the isobaric surfaces of 850, 700, 500, 300, 200, 150, 100, 50 and 30 mb, if available.

(3) The mean values of surface pressure, surface temperature, surface dew-point and surface wind shall be the monthly mean values at the time of release of the radiosonde.

(4) Monthly aerological means, in the above form, shall be broadcast as soon as possible after the end of the month to which they refer and not later than the fifth day of the next following mouth.

(5) The mean vector wind group shall be included in the message for all the isobaric surfaces reported in the message.

FM 76.C Report of monthly aerological means from ocean weather station

CLIMAT TEMP SHIP

9QL$_a$L$_a$L$_a$ L$_o$L$_o$L$_o$99	$\overline{P_oP_oP_oP_oT_o}$	$\overline{T_oT_oT_{do}T_{do}T_{do}}$	$\overline{r_fd_vd_vf_vf_v}$
	$\overline{HHHHT}$	$\overline{TTT_dT_dT_d}$	$\overline{r_fd_vd_vf_vf_v}$
	.....	.....	.....
	.....	.....	..... etc.

The code name CLIMAT TEMP SHIP prefixed to a message indicates that it is a report or collection of reports of monthly aerological mean values from an ocean weather station. In a group of such reports the code name is used only in the heading of the collective.

NOTES:

(1) The code name CLIMAT TEMP SHIP shall be included either as a prefix to each report transmitted separately or in the heading of the collective in the case of such reports.

(2) See Notes (2), (3) and (4) under CLIMAT TEMP 75.C.

FM 81.A Synoptic report of "atmospherics" bearings

SFAZI (999II) iiiGG $F_1I_jD_1D_1D_1$ $F_2I_jD_2D_2D_2$ etc.

NOTES:

(1) The code name SFAZI is used as a prefix to the report, indicating that it is a report of "atmospherics" bearings, but in the case of a group of such reports it should only be used in the heading of the collective.

(2) As many groups of the form $F_1I_jD_1D_1D_1$ as necessary are included to describe the different sources.

(3) Use of bracketed group
(999II) – When all reports in a collective message have the same block number II, the group 999II is only included immediately before the group iiiGG of the first report in the message. When any following report or group of reports originates from station(s) with block number not identical with the preceding block number, the group 999II is given immediately before such a report or group of reports. The group 999II is not repeated at the end of the group of reports to which it pertains in collectives for ground to air transmissions and while it may be repeated at the end of groups of reports for ground to ground transmissions, care should be taken to ensure that such repetition does not lead to confusion.

(4) Stations are grouped into appropriate networks, each network with a co-ordinating center, by arrangement among the Members concerned.

(5) Reports refer to observation periods terminating at the hours 00, 03, 06, 09, 12, 15, 18 and 21 GMT and data are transmitted for as many of these periods as possible, in addition to any daily summary (SFAZU form).

(6) Reports in the SFAZI form are transmitted not later than three hours after the time to which the observations refer.

FM 82.A Synoptic report of "atmospherics" geographical location

SFLOC 66600 66655 $GGx4a_iA_i$ $L_aL_aL_aL_aK$ . . . . .

$99x4a_iA_i$ $L_aL_aL_aL_aK$ . . . . .

NOTES:

(1) The code name SFLOC is used as a prefix to the report, indicating that it is a report of "atmospherics" geographical location, but in the case of a group of such reports, it should only be used in the heading of the collective.

(2) The first group (66600 or 66655) indicates the method used for observations (location by cathoderay direction-finder (CRDF) or by narrow-sector direction-finder).

(3) As many sections, beginning with 99-indicator groups, as necessary are included to describe the different sources.

(4) See Notes (4) and (5) under SFAZI FM 81.A.

(5) Reports in the SFLOC form are transmitted not later than three hours after the time to which the observations refer.

FM 83.A Detailed report of the distribution of "atmospherics" by bearings for the preceding 24 hours

SFAZU IIiii $YG_1G_2G_2$

999NI $g_1g_1D'_1D'_1D'_1$ $g_2g_2D'_2D'_2D'_2$

999NI $g_1g_1D'_1D'_1D'_1$ $g_2g_2D'_2D'_2D'_2$ etc.

NOTES:

(1) The code name SFAZU is used as a prefix to the report, indicating that it is a report of the distribution of "atmospherics" by bearings for the preceding 24 hours, but in the case of a group of such reports, it should only be used in the heading of the collective.

(2) As many sections, beginning with 999-indicator groups, as necessary are included to describe the different sources.

(3) See Note (4) under SFAZI FM 81.A.

(4) Reports in the SFAZU form, referring to the preceding 24 hour period, are issued once daily.

B–MEANING OF SYMBOLIC WORDS AND GROUPS

Symbolic words and groups appearing in the code forms can be classified in the following categories:

a. Symbolic words and letter groups (code names and code words)

b. Symbolic figure groups.

Words and groups in these categories are listed below with their meaning.

a. LIST OF SYMBOLIC WORDS AND LETTER GROUPS
(Code names and code words)

The code words ICE, NORMAL, WATEN, WAVES are included in a report as *Symbolic prefixes* to identify particular information.

The code names (e.g. SYNOP, AERO, RECCO, IAC) have a twofold use:

(i) As true *code names*, i.e. as a convenient mean of designating each code form without referring to its FM number (e.g. IAC);

(ii) As a *symbolic prefix* to the message when necessary to provide ready identification of the code form used in the message (e.g. MMMMM, AERO).

In collective messages certain code names may be given only at the beginning of the section which contains appropriate reports, and they are not repeated for every individual report.

ABTOP	Summary of upper air report, in abridged form (FM 38.B).
AERO	Aviation routine weather report. (FM 15.C)
ARFOR	Area Forecast. (FM 53.B)
BBBBB	Selected special weather report (sudden changes) for improvement in weather conditions from land station. (FM 16.A)
CLIMAT	Report of monthly means from land station. (FM 71)
CLIMAT SHIP	Report of monthly means from ocean weather station. (FM 72.B)
CLIMAT TEMP	Report of monthly aerological means from land station. (FM 75.C)
CLIMAT TEMP SHIP	Report of monthly aerological means from ocean weather station. (FM 76.C)
CLINP	Report of monthly means for the oceanic area of the North Pacific. (FM 73)
CLISA	Report of monthly means for the oceanic area of the South Atlantic. (FM 73)
FIFOR	Flight forecast. (FM 55.B)
IAC	Analysis in International Analysis Code. (FM 45.C)
IAC FLEET	Analysis in abbreviated form of the International Analysis Code, for marine use (FM 46.C)
ICE	Prefix of the ice group. (FM 21.C, FM 22.C, FM 23.C)
ICING	Prefix of ice accretion on ships when reported in plain language (FM 21.C, FM 22.C, FM 23.C)
INCLI	Report of monthly means for the oceanic area of the Indian Ocean (FM 73)
JJJ	Ends an upper level temperature and wind (possibly air density) report from a land rocketsonde station or from a racketsonde station on a ship (FM 39.C, FM 40.C).
MAFOR	Forecast for shipping. (FM 61.C)
MMMMM	Selected special weather report (sudden changes) for deterioration of weather conditions from land station. (FM 16.A)
MONT	Cloud report from land station. (FM 17)
NACLI	Report of monthly means for the oceanic area of the North Atlantic. (FM 73)
NEPH	Report of nephoscopic observation (FM 31)
NORMAL	Prefix of groups giving normal values of the elements in a CLIMAT or CLIMAT SHIP report. (FM 71, FM 72.B)
PILOT	Upper wind report from land station. (FM 32.C)
PILOT SHIP	Upper wind report from ship. (FM 33.C)
PROAR	Area forecast (FM 56.C)
PROFI	Flight forecast (FM 58.C)
PRORO	Route forecast (FM 57.C)
ROCOB	Upper level temperature and wind (possibly air density) report from rocketsonde station (FM 39.C)
ROCOB SHIP	Upper level temperature and wind (possibly air density) report from rocketsonde station on ship (FM 40.C).
ROFOR	Route forecast (FM 54.B)
SFAZI	Synoptic report of atmospherics bearings. (FM 81.A)
SFAZU	Detailed report of the distribution of atmospherics by bearings for the preceding 24 hours. (FM 83.A)
SFLOC	Synoptic report of atmospherics geographical location. (FM 82.A)
SHIP	Surface report from ship. (FM 21.C, FM 22.C)
SHRED	Surface report from ship in reduced form. (FM 23.C)
SPCLI	Report of monthly means for the oceanic area of the South Pacific. (FM 73)
SPESH	Special weather report from ship. (FM 26.B)
SYNOP	Surface report from land station. (FM 11.C)
TAF	Aerodrome forecast in abbreviated form (FM 52.C)
TAFOR	Aerodrome forecast in full form. (FM 51.C)
TEMP	Upper level pressure, temperature and humidity (possibly wind) report from land station. (FM 35.C)
TEMP SHIP	Upper level pressure, temperature and humidity (possibly wind) report from ship. (FM 36.C)
WATEN	Prefix of the waves group, when tendency is reported. (FM 11.C, FM 16.A)
WAVES	Prefix of the actual height of the waves, when this height is over 9¼ m. (31 ft.). (FM 11.C, FM 16.A, FM 21.C)

b. LIST OF SYMBOLIC FIGURE GROUPS

00200 indicates that wind speed given by preceding group is to be increased by 200 knots. (FM 32.C, FM 33.C, FM 35.C, FM 36.C)

00300 indicates that wind speed given by preceding group is to be increased by 300 knots. (FM 32.C, FM 33.C, FM 36.C, FM 36.C)

01010 Date on clouds observed at the station at the moment of the release follaw in the farm given in Section 9. (FM 35.C, FM 36.C.

10001 Analysis message follows. (FM 45.C, FM 46.C)

11111 Data on the position of the jet core and the wind to be encountered in the jet core. (FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)

11133 Correction message to an anolysis or prognosis message follows. (FM 45.C, FM 46.C)

17171 Sounding data obtoined during a vertical ascent or descent of the aircraft follow in the FM 35.C code form (TEMP).

19191 ends an analysis or prognosis message or a correction to an analysis or prognosis message. (FM 45.C, FM 46.C)

22222 Data for odditional levels follow in the form given in Section 6. (FM 35.C, FM 36.C)

22233 Cloud information follows. (FM 35.C, FM 36.C)

22244 Precipitation information follows. (FM 35.C, FM 36.C)

22255 Turbulence data follow. (FM 35.C, FM 36.C)

22266 Icing data follow. (FM 35.C, FM 36.C)

22277 Fog or haze data follaw. (FM 35.C, FM 36.C)

33300, 33311, 33322 indicate that position groups are given in the form $L_aL_aL_oL_o$, instead of the form $QL_aL_oL_oL_o$ indicated in the code form (any one of these symbolic groups being inserted instead of the group 33388). (FM 46.C)

33333 Data for additionol levels follow in the form given in Section 7. (FM 35.C, FM 36.C, FM

33388 indicates that position groups in the message are given in the form $QL_aL_aL_aL_o$. (FM 36.C)

44444 — PILOT selected (PISEL) data follow. (FM 32.C, FM 33.C)
— Wind data at the standard pressure levels follow in the form given in Section 8. (FM 35.C, FM 36.C)

44777 ends the vocabulary section. (FM 45.C, FM 46.C)

55555 — Data for significont paints in wind (hodograph) follow: altitudes are in decameters. (FM 32.C, FM 33.C)
— Data far additionol levels follow in the form given in Section 2. (FM 35.C, FM 36.C)

65556 Prognosis message follows. (FM 45.C, FM 46.C)

66600 indicates that atmospherics are located by means of cathode-ray direction-finder (CRDF). (FM 82.A)

66655 indicates that atmospherics are located by means of narrow-sector direction-finder. (FM 82.A)

66666 — Data for additional levels follow in the form given in Section 3. (FM 35.C, FM 36.C)

71717 Sounding data obtained by a drop-sonde released from the aircraft follow in the FM 36.C code form (TEMP SHI P).

77744 Vocabulary section follows. (FM 45.C, FM 46.C)

77777 Data for additianal levels follow in the form given in Section 4. (FM 35.C, FM 36.C)

88800 Wave or sea temperature follows. (FM 45.C, FM 46.C)

88822 Vertical wind shear follows. (FM 45.C)

88888 — Computed wind vector differences between selected standard levels follow (i.e., higher level minus lower level). (FM 32.C, FM 33.C)
— Data for additional levels follow in the form given in Section 5. (FM 35.C, FM 36.C)

99900 Analysis or prognosis* of pressure systems or topography systems follows. (FM 45.C)

99911 Analysis or prognosis* of frontal systems follows. (FM 45.C)

99922 Analysis or prognosis* af isopleths follows. (FM 45.C)

99933 Analysis or prognosis* of air mass follows. (FM 45.C)

99944 Analysis or pragnosis* of weather areo follows. (FM 45.C)

99955 Analysis or prognosis* of the tropical section of the message follows. (FM 45.C)

99966 Analysis or prognosis* of the cloud follows. (FM 45.C)

99977 Analysis or prognosis* of the upper wind follows. (FM 45.C)

99988 Analysis or prognosis* of the jet stream follows. (FM 45.C)

99999 Analysis or prognosis* of the tropopause follows. (FM 45.C)

/60/ Indicates that pressure data included in groups which follow are expressed in tenths of a millibar (Part C of FM 35.C and FM 36.C)

* Preceding group 10001 or 65556 specifies whether an analysis or a prognosis follows.

C–SPECIFICATIONS OF SYMBOLIC LETTERS (or groups of letters)

SYMBOLIC LETTERS AND REMARKS AS TO THE METHODS OF CODING

A_i Repetition rate of "atmospherics". (Code 0139) (FM 82.A)

AA Data and units indicator in the group 111AA (Code 0177)
(FM 32.C, FM 33.C, FM 35.C, FM 36.C, FM 38.B)

AAA Indicator for maritime area.
(FM 61.C)

AAAAA Area indicator.
(FM 53.B, FM 56.C)

a Characteristic of pressure tendency during the three hours preceding the time of observation. (Code 0200)
(FM 11.C, FM 21.C)

a_i Distribution of atmospherics. (Code 0239)
(FM 82.A)

a_m Indicator for the portion of the maritime area (Code 0244)
(FM 61.C)

a_3 Indicator giving the standard "constant pressure level" of which the geopotential is reported. (Code 0264)
(FM 11.C)

B Turbulence. (Code 0300)
(FM 51.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)

B_1 Intensity of the turbulence encountered by the aircraft (Code 0362)
(FM 35.C, FM 36.C)

C Genus of cloud. (Code 0500)
(FM 11.C, FM 15.C, FM 16.A, FM 21.C, FM 26.B, FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)

(1) A layer of cloud exists when N, N_s, etc. = 1 or more.

(2) For observing purposes, see Note (3) under AERO FM 15.C.

(3) For forecasting purposes, see Note (6) under TAFOR FM 51.C.

(4) The genus of the cloud of the reported layers is determined on the basis of the 10 genera of cloud and of their illustrations given in the International Cloud Atlas.

(5) Rapidly dissipating condensation trails shall not be reported.

(6) Persistent condensation trails and cloud masses which have obviously developed from condensation trails shall be reported as C clouds, using the appropriate code figure, when they resemble such clouds. Their existence is indicated by use of the word COTRA at the end of the report.

— Genus of cloud for nephascopic reports. (Code 0500)
(FM 31)

(1) In nephoscopic reports, priority is to be given to the measurement of the movement of high clouds, of genera 0, 1, and 2 in Code 0500 and then, to the measurement of the movement of medium clouds, of genera 3, 4, and 6 in Code 0500. Movement of the low clouds of genera 5, 7, 8, and 9 is not to be given in a nephoscopic report.

(2) Any opportunity must be taken for measuring the movement of high or medium clouds, even if this apportunity is presented, say 2 hours before the standard time of observation. This measurement is added to the synoptic report, preceded by the word NEPHI, by means of the group $Cddv_rv_r$ if a subsequent opportunity did not present itself, owing to a layer of low clouds hiding medium or high cloud at the time of observation.

(3) Separate $Cddv_rv_r$ groups are to be given in succession, if several cloud genera have been present and their movement has been measured.

(4) See Notes (5) and (6) under C above.

— Genus of cloud penetrated by the aircraft. (Code 0500)
(FM 35.C, FM 36.C)

— Genus of cloud (Code 0500)
(FM 45.C)

(1) The genus of cloud predominating in the layer is reported for C.

C_H Clouds of the genera Cirrus, Cirrocumulus and Cirrostratus. (Code 0509)
(FM 11.C, FM 21.C, FM 22.C, FM 35.C, FM 36.C)

(1) The figure to be reported for C_H shall be determined on the basis of the detailed description of C_H clouds and illustrations of them in the International Cloud Atlas in conjunction with specifications in Code 0509.

(2) Cloud observations made when the sky is visible through fog or other analogous phenomena shall be made as if these phenomena were nonexistent.

(3) The figure $C_H = 9$ shall be used when the predominant C_H clouds are Cirrocumulus although small amounts of Cirrocumulus may be present in C_H cloud system reported under $C_H = 1$ to 8.

(4) Rapidly dissipating condensation trails shall not be reported.

(5) Persistent condensation trails and cloud masses which have obviously developed from condensation trails shall be reported as C_H clouds when they resemble such clouds. Their existence is indicated by use of the word COTRA at the end of the report.

C_L Clouds of genera Cumulus, Cumulonimbus, Stratocumulus and Stratus. (Code 0513)
(FM 11.C, FM 21.C, FM 22.C, FM 35.C, FM 36.C)

(1) In Code 0513, specifications of C_L clouds are given in both technical language (left-hand column) and plain language (right-hand column). The latter contains detailed explanation of the technical specification in non-technical language.

(2) The figure to be reported for C_L is determined on the basis of the detailed description of the low clouds and illustrations of them in the International Cloud Atlas in conjunction with specifications in Code 0513.

(3) See Note (2) under C_H.

(4) For the reporting of clouds at land stations see Notes (1) to (5) under FM 17 MONT. See also notes under h_h, N' and $h'h'$.

C_M Clouds of genera Altocumulus, Altrostratus and Nimbostratus. (Code 0515)
(FM 11.C, FM 21.C, FM 22.C, FM 35.C, FM 36.C)

(1) The figure to be reported for C_M shall be determined on the basis of the detailed description of C_M clouds and illustrations of them in the International Cloud Atlas in conjunction with specifications in Code 0515.

(2) Cloud observations made when the sky is visible through fog or other analogous phenomena shall be made as if these phenomena were nonexistent.

(3) Rapidly dissipating condensation trails shall not be reported.

(4) Persistent condensation trails and cloud masses which have obviously developed from condensation trails, shall be reported as C_M clouds when they resemble such clouds. Their existence is indicated by use of the word COTRA at the end of the report.

C_s Cloud system. (Code 0551)
(FM 45.C)

C_t Description of the top of cloud whose base is below the level of the land station. (Code 0552)
(FM 17)

(1) When $C_t = 9$ (two or more layers at different levels), two or more $N'C'H'h'C_t$ groups are used. In this case 9 is reported for C_t in the group reporting the layer of the smaller cloud amount and in the remaining groups C_t is coded in Code 0552.

(2) When the station is in the cloud, special attention must be paid in order not to confuse the cloud with fog. If the observer is sure that the fog is not in reality a Stratus cloud covering the station, the group MONT is not to be used and fog is to be reported by ww.

C_1 Confidence figure. (Code 0582)
(FM 45.C)

C_2 Probability in tens of per cent.
(FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)

(1) C_2 cannot exceed 5 = 50 per cent. (If the probability of occurrence of an element exceeds 50 per cent, then that occurrence should be predominant feature of the forecast).

C' Genus of cloud whose base is below the land station. (Code 0500)
(FM 17)

(1) Observation of the cloud is made and the relevant data are coded according to Notes (1) to (6) under FM 17 MONT.

(2) See Note (2) under C_t.

(3) Rapidly dissipating condensation trails shall not be reported.

(4) Persistent condensation trails and cloud masses which have obviously developed from condensation trails shall be reported as C' clouds, using the appropriate code figure, when they resemble such clouds. Their existence is indicated by use of the word COTRA at the end of the report.

c_2 Description of kind of ice. (Code 0663)
(FM 21.C, FM 22.C, FM 23.C)

D Direction of surface wind. (Code 0700)
(FM 32.C, FM 33.C, FM 61.C)

— Direction from which waves are coming. (Code 0700)
(FM 51.C)

(1) Directions are to be true directions (referred to the true and not to the magnetic North).

D_K Direction of swell. (Code 0700)
(FM 61.C)

(1) The direction is to be referred to the true and not to the magnetic North.

(2) When there are waves from several directions, the direction from which the wave of longest period is travelling is reported.

D_i Bearing of ice edge. (Code 0739)
(FM 21.C, FM 22.C, FM 23.C)

(1) If more than one ice edge can be stated, the nearest or most important should be reported.

(2) The bearing is to be referred to the true and not to the magnetic North.

D_s Ship's course (true) made good during the three hours preceding the time of observation. (Code 0700)
(FM 21.C, FM 22.C, FM 23.C)

(1) The bearing is to be referred to the true and not to the magnetic North.

D_l Direction of the point position from the station. (Code 0700)
(FM 45.C)

(1) The direction is to be referred to the true and not to the magnetic North.

$D_1D_1D_1$
$D_2D_2D_2$
etc. Direction, in degrees, or source.
(FM 81.A)

(1) The center axis recorded to $\pm 1°$.

$D'_1D'_1D'_1$
$D'_2D'_2D'_2$
etc. Direction, in degrees, of the axis of the center corresponding to g_1g_1, g_2g_2, etc.
(FM 83.A)

dd True directions, in tens of degrees, from which wind is blowing (or will blow). (Code 0877) (Polar stations Code 0878)
(FM 11.C, FM 15.C, FM 16.A, FM 21.C, FM 22.C, FM 23.C, FM 26.B, FM 32.C, FM 33.C, FM 45.C, FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C).

— Direction of cloud movement (from which cloud is coming) in tens of degrees. (Code 0877)
(FM 31)

(1) All directions shall be referred to the true and not to the magnetic North.

(2) Stations within 1° of the North Pole shall use Code 0878 for reporting wind direction.

(3) In an upper wind sounding, 50 shall be added to dd, when the wind speed is over 99 and less than 200 knots (see Note (5) under ff).

(4) In nephoscope observations, 50 shall be added to dd (Direction of cloud movement) when the relative speed of cloud, determined by the nephoscope, is greater than 99 radians per hour.

(5) Stations within 1° of the South Pole shall use Code table 0877 for reporting wind direction. These stations shall orient their azimuth rings so that the ring's zero coincides with the Greenwich meridian (e.g., wind from 0° longitude is coded 36, from 90° E longitude is coded 09, from 180° longitude is coded 18, and from 90° W longitude is coded 27, etc.)

Notes:

(a) See notes under ff.

(b) Clouds near the zenith are preferable for nephoscope observations.

(c) In plain language reports or forecasts, the direction of the wind may be expressed by reference to the cardinal points, i.e. north-west, south, north-east, etc.

d_ad_a True direction, in tens of degrees, from which maximum wind is blowing at the level given by $H_mH_mH_mH_m$. (Code 0877)
(FM 32.C, FM 33.C, FM 35.C, FM 36.C, FM 38.B)

d_bd_b True direction, in tens of degrees, from which wind is blowing at the level given by H_tH_t. (Code 0877)
(FM 35.C, FM 36.C, FM 38.B)

d_hd_h True direction, in tens of degrees, from which wind will blow at the height indicated by h_xh_x or $h'_xh'_x$. (Code 0877)
(FM 53.B, FM 54.B, FM 55.B)

(1) See Note (1) under f_hf_h.

$d_i d_i$ Direction, in tens of degrees, from which jet stream is blowing or will blow. (Code 0877)
(FM 45.C)

$d_s d_s$ Direction, in tens of degrees, toward which system or front is moving. (Code 0877)
(FM 45.C, FM 46.C)

(1) The direction is referred to the true and not to the magnetic North.

(2) $d_s d_s$ denotes the direction towards which the system is moving at the time of the analysis or prognosis when used in the basic code form, and the mean direction over the periods indicated by $g_p g_p$ when used in the alternative code forms of FM 45.C.

$d_t d_t$ Direction, in tens of degrees, of the wind vector difference. (Code 0877)
(FM 32.C, FM 33.C)

$d_v d_v$ Direction, in tens of degrees, of the monthly mean vector wind at the surface and at specified isobaric surfaces. (Code 0877)
(FM 75.C, FM 76.C)

$d_w d_w$ Direction, in tens of degrees, from which waves are coming. (Code 0885)
(FM 11.C, FM 16.A, FM 21.C)

(1) The direction is referred to the true and not the magnetic North.

(2) 50 is added to $d_w d_w$ when the height of the wave is over 4¾ metres (15 feet) (see Notes under H_w).

$d_o d_o$ True direction, in tens of degrees, from which surface wind is blowing. (Code 0877)
(FM 35.C, FM 36.C, FM 38.B)

(1) See Notes (1) and (2) under dd and Notes under ff.

$d_1 d_1$
$d_2 d_2$

$d_n d_n$

True direction in tens of degrees, from which wind is blowing at levels specified by P_1P_1, P_2P_2- - - - P_nP_n, or at selected levels. (Code 0877)
(FM 35.C, FM 36.C, FM 38.B)

(1) Directions are referred to the true and not to the magnetic North.

(2) See Note (3) under dd.

E State of the ground. (Code 0900)

(1) When this symbol is introduced for regional or national use, it is recommended that code table 0900 should be used for its specification.

$E_s E_s$ Thickness of ice accretion on ships in cm.
(FM 21.C, FM 22.C, FM 23.C)

e Orientation of ice edge. (Code 1000
(FM 21.C, FM 22.C, FM 23.C)

e_1 Type of isopleth. (Code 1062)
(FM 45.C)

e_2 Type of isopleth. (Code 1063)
(FM 45.C, FM 46.C)

F Force of surface wind. (Code 1100)

(1) See notes under ff.

(2) The Beaufort scale of wind force, given in Code 1100, is intended for use by land stations without wind instruments and, mainly, by ships at sea.

(3) Coastal stations not having wind instruments may use for the estimation of the wind force the specifications given in the column of Code 1100 headed by the word "Coast".
The fishing smack mentioned in this column may be taken as representing a trawler of average type and trim. Allowance must be made for larger or smaller boats and for special circumstances.

F_c Character of front. (Code 1133)
(FM 45.C, FM 46.C)

F_i Intensity of front. (Code 1139)
(FM 45.C, FM 46.C)

F_m Force of surface wind. (Code 1144)
(FM 61.C)

F_t Type of front. (Code 1152)
(FM 45.C, FM 46.C, FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)

F_1, F_2, etc. Intensity of paints. (Code 1162)
(FM 81.A)

f_a Surface wind speed to the nearest tens of knots or fives of meters per second, e.g.:
0 = 0–4 knots or 0– 2m/sec.
1 = 5–14 knots or 2½–7 m/sec.
2 = 15–24 knots or 7½–12 m/sec.
9 = 85 knots and above or 42½ m/sec. and above.
(FM 32.C, FM 33.C)

(1) When Section 1 is included in Part C (i.e. above 100 mb) of either FM 32.C or FM 33.C code forms, a solidus (/) is reported for f_a.

f_2, f_3, ------, f_n Wind speed at standard pressure levels in units of 5 knots (Code 1263)
(FM 38.B)

(1) When the wind speed exceeds 47 knots but is less than 98 knots, 50 is added to d_2d_2, d_3d_3, ------ d_nd_n and f_2, f_3, ------ f_n is coded as shown in Code 1263.
(2) When the wind speed exceess 97 knots d_2d_2, d_3d_3, ------ d_nd_n, and f_2, f_3, ------f_n are coded by 99 and 9 and a supplementary group d_2d_2, d_3d_3, ------ d_nd_n, fff is added in which fff is the wind speed in knots.

ff Wind speed in knots.
(FM 11.C, FM 15.C, FM 16.A, FM 21.C, FM 22.C, FM 23.C, FM 26.B, FM 32.C, FM 33.C, FM 35.C, FM 36.C, FM 38.B, FM 45.C, FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)
(1) Surface wind direction and speed must be observed and reported in such a manner as to give a fairly true representation of the general air current above the surface of the earth at the station locality.
(2) The mean speed of the wind during about ten minutes is to be reported.
(3) In the absence of wind instruments the wind speed is to be estimated on the basis of the specifications of the Beaufort scale of the wind (Code 1100). The Beaufort number obtained by estimation is converted into knots by the use of the wind speed equivalent column of the Beaufort scale and this speed in knots is reported for ff.
(4) Wind speed at sea is estimated and coded in accordance with the Note (3) above, but the speed of the apparent wind is to be corrected for the course and the speed of the ship. In order to obtain the speed of the true wind, which is to be reported. The correction can be made on the basis of the parallelagram of velocities or by means of special tables.
(5) By ff the wind speed in knots is reported, up to 99 knots. Greater wind speeds are reported as follows:
(a) For wind speeds of 100–199 knots inclusive, 50 is added to dd (or d_od_o, d_1d_1, ------ d_nd_n). This means that when decoding, 100 knots are to be added to the number of knots shown by ff.
(b) For wind speeds of 200–299 knots inclusive, the code group 00200 is added after the group to which it refers (Oddff, Iddff, Hddff, Nddff, $Od_od_of_of_o$, $Od_1d_1f_1f_1$, $Od_2d_2f_2f_2$, ------ $Od_nd_nf_nf_n$). This group 00200 means that 200 knots are to be added to the number of knots shown by ff in the preceding group.
(c) For wind speed of 300-399 knots inclusive, the code group 00300 is added after the group to which it refers, as above. This group 00300 means that 300 knots are to be added to the number of knots shown by ff in the preceding group.
(d) In the above cases (b) and (c), 50 is not added to dd.

(6) In upper wind reports (FM 32.C, FM 33.C) the wind speed given by ff is the wind speed at the height given by H.

(7) In pressure, temperature, humidity (wind) reports (FM 35.C, FM 36.C) the wind speed given by ff is the wind speed at the height given by H_tH_t.

f_hf_h Wind speed, in knots at the height indicated by h_xh_x (FM 51.C, FM 53.B, FM 54.B, FM 55.B) or at the pressure indicated by P_xP_x (FM 56.C, FM 57.C, FM 58.C).

(1) For wind speeds of 100–199 knots inclusive, delete hundreds figure and add 50 to d_hd_h; when over 199 knots, d_hd_h is indicated without adding 50, f_hf_h is coded as // and plain language is used after the 3-group, e.g. "WIND 240".

f_sf_s Speed, in knots, of system, front or area.
(FM 45.C, FM 46.C)

(1) f_sf_s denotes the speed of the system at the time of the analysis or prognosis when used in the basic code form and the mean speed over the periods indicated by g_pg_p when used in the alternative code forms of FM 45.C.

f_tf_t Speed of the wind vector difference in knots.
(FM 32.C, FM 33.C)

$\overline{f_vf_v}$ Speed, in knots of the monthly mean vector wind at the surface and at specified isobaric surfaces.
(FM 75.C, FM 76.C)

f_of_o Wind speed, in knots, at surface.
(FM 35.C, FM 36.C)

(1) See Notes (1) to (5) under ff.

f_1f_1, f_2f_2, ..., f_nf_n Wind speed, in knots at levels specified by P_1P_1, P_2P_2, --- P_nP_n, or at selected levels.
(FM 35.C, FM 36.C)

(1) See Notes (5) and (6) under ff.

fff Wind speed, in knots, at the levels given by hhh or $H_mH_mH_mH_m$ (direct reading).
(FM 32.C, FM 33.C, FM 35.C, FM 36.C, FM 38.B)

$f_jf_jf_j$ Wind speed of jet stream in units indicated by i_j.
(FM 45.C)

— Wind speed, in knots, at the level given by $h'_jh'_j$ (FM 53.B, FM 54.B, FM 55.B) or at the level given by P_jP_j (FM 56.C, FM 57.C, FM 58.C)

G Period of time covered by forecast. (Code 1300)
(FM 61.C)

G_p Period of time in whole hours.
(FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)

G_3 Time of chart on which forecast is based. (Code 1364)
(FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)

GG Actual time of observation to the nearest whole hour GMT.
(FM 21.C, FM 22.C, FM 23.C, FM 32.C, FM 33.C, FM 35.C, FM 36.C, FM 38.B, FM 81.A, FM 82.A)

— Time to the nearest whole hour GMT.
(FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)

(1) In the case of surface observations, the actual time of observation is the time at which the barometer is read.

(2) In the case of upper air observations, the actual time of observation is the time at which the balloon or rocket is actually released, or the time at which the aircraft actually takes off from the surface.

G_aG_a Estimated time of arrival in GMT.
(FM 55.B, FM 58.C)

G_cG_c Synoptic hour, in GMT, of observation of data from which chart is prepared.
(FM 45.C, FM 46.C)

G_dG_d Estimated time of departure in GMT.
(FM 55.B, FM 58.C)

G_FG_F Time to the nearest hour GMT to which forecast temperature T_FT_F applies.
(FM 51.C, FM 52.C)

G_pG_p Number of hours to be added to G_cG_c (chart time) to obtain time to which the prognosis refers.
(FM 45.C, FM 46.C)

G_1G_1 Time of commencement of period of forecast in whole hours GMT.
(FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 56.C, FM 57.C)

— Stort of recording to the nearest whole hour GMT.
(FM 83.A)

G_2G_2 Time of ending of periad of forecast in whole hours GMT.
(FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 56.C, FM 57.C)
(1) Add 50 when period is between 25 and 48 hours after G_1G_1.

— End of recording to the nearest whole hour GMT.
(FM 83.A)

GG_{gg} Time of observation in hours and minutes GMT.
(FM 15.C, FM 16.A, FM 26.B)
(1) There are three basic types of surface observations for aeronautical purposes: routine, MMMMM/BBBBB and "others.". The times to be reported for each of these are:
routine — official time of observation;
MMMMM/BBBBB — actual time of observation of the element w_2;
in all "others" — actual time of observation.
(2) In the case of AERO observations, the actual time of observation is the time when the observing of all elements required is completed. Meteorological Services may decide the sequence of observing the elements appropriate to particular situations.
(3) In the case of SPESH observations the time to be reported is the actual time of observations of the element w_2.
(4) The official time of observation is laid down by the Meteorological Service concerned.

g_pg_p Number of haurs to be added to ar subtracted from G_cG_c (chart time) or $G_cG_c + G_pG_p$ to give supplementary infarmation in sections 99900 and 99911, or number of hours to be added to G_cG_c for indicating the time to which the forecast winds in section 99977 refer. (FM 45.C)

g_1g_1 Time of appearance of center to the nearest whole hour GMT.
(FM 83.A)

g_2g_2 Time of disappearance of center ta the nearest whole haur GMT.
(FM 83.A)

H Height in units of 300, 500 or 1,000 meters above mean sea level, or in units of 100 meters above ground level.
(FM 32.C, FM 33.C)
(1) In the case of 300 meters unit, code figures 0–9 give heights above meon sea level up to 2,700 meters. For higher levels, the contral group 9999n is included in the repart meaning that the H values of the following groups represent heights above the level given by n (N : 1 = 3,000 M, 2 = 6,000 M, 3 = 9,000 m, etc.)..

H_r Pressure of the higher level for which information is given. (Code 1549)
(FM 38.B)

H_w Height of the waves. (Cade 1555)
(FM 11.C, FM 16.C, FM 21.C, FM 51.C, FM 61.C)
(1) For heights of waves aver 4¾ m (15 ft.), 50 is added to d_wd_w.
(2) For heights over 9¾ m (31 ft.), the height should be given by reporting the greatest height which can be reported by the code (9¾ m or 31 ft.) followed by the word WAVES and the actual height of the waves in meters or in feet.
(3) In aeronautical forecast codes only the left-hand table is used and code figure 9 has the meaning 4½ m. (14 ft.) or more.

HH	Altitude of the upper limits of the phenomena (i.e., cloud, precipitation, turbulence, icing or haze, reported in the group in hectometers. (FM 35.C, FM 36.C)
H_tH_t	Geopotential of tropopause in geopotential hectometers. (FM 35.C, FM 36.C, FM 38.B)
H' H'	Altitude of the upper surface of clouds reported by C' in hectometers. (FM 17) (1) H'H' = 98—the upper surface of clouds is at altitude 9,800 m. or higher. (2) H'H' = 99—station in cloud. (3) The MONT code form must not be used for clouds of which the bases are above the land station.
$H_bH_bH_b$	Altitude of cloud base in hundreds of meters. (FM 45.C)
$H_iH_iH_i$	Geopotential of jet stream core in units indicated by i_j. (FM 45.C)
$H_tH_tH_t$	Altitude of tops of clouds in hundreds of meters. (FM 45.C)
$H_1H_1H_1$ $H_2H_2H_2$ — $H_nH_nH_n$	Geopotential of levels of 1,000, 850, 700, 500, 300, 200 and 100 mb in geopotential decameters. (FM 38.B)
$H_mH_mH_mH_m$	Altitude of the maximum wind. (FM 32.C, FM 33.C, FM 35.C, FM 36.C, FM 38.B)
$H_zH_zH_zH_z$	Altitude of significant point in decameters. (FM 32.C, FM 33.C)
HHHH	Mean geopotential of the pressure surface in geopotential meters. (FM 75.C, FM 76.C) (1) This value in geopotential meters is, for practical purposes, numerically equal to the height expressed in meters. (2) In the case of geopotentials above 9,999 geopotential meters the figures indicating the number of tens of thousands are omitted.
h	Height, above ground, of the base of the cloud. (Code 1600) (FM 11.C, FM 21.C, FM 22.C, FM 35.C, FM 36.C) (1) When the station is in fog, a sandstorm or duststorm, or in blowing snow, but the sky is discernible through it, h shall refer to the base of the lowest cloud, if any, observed. When under the above conditions, the sky is not discernible, h shall be reported as / (also N_h = 9, C_L = /, C_M = /, C_H = /). Note: At the land stations, regulations for reporting clouds with bases below station level are given under FM 17 (MONT).
h_c	Character of topography system. (Code 3133) (FM 45.C)
h_r	Pressure of lower level for which information is given. (Code 1549) (FM 38.B)
h_t	Type of topography system. (Code 3152) (FM 45.C)
hh	Altitude of the lower limits of the phenomena (i.e., cloud, precipitation, turbulence, icing or haze) reported in the group in hectometers. (FM 35.C, FM 36.C)
H_BH_B	Height* of lowest level of turbulence. (Code 1577) (FM 51.C, FM 53.B, FM 54.B, FM 55.B)

This note refers to h_Bh_B h_ih_i h_sh_s only.

* Heights are above ground level in FM 11.C, FM 15.C, FM 16.A, FM 51.C, and FM 52.C and the above mean sea levels in FM 21.C, FM 26.B, FM 53.B, FM 54.B, and FM 55.B.
In the case of reports or forecasts from airports in FM 15.C and FM 16.A or FM 51.C and FM 52.C, ground level is considered as being the official airport elevation.
In the other cases, ground level is the station level.

h_0h_0 Geopotential of constant pressure surface in geopotential decameters.
(FM 45.C)

(1) For a HIGH or a LOW, h_0h_0 is the geopotential at the center. Along a ridge line, h_0h_0 is the greatest geopotential, and along a trough line, it is the lowest geopotential.

h_fh_f Height* of the 0° C isotherm level. (Code 1577)
(FM 51.C, FM 53.B, FM 54.B, FM 55.B)

h_ih_i Height* of lowest level of icing. (Code 1577)
(FM 51.C, FM 53.B, FM 54.B, FM 55.B)

h_sh_s Height* of base of cloud layer or mass whose genus is indicated by C. (Code 1577)
(FM 11.C, FM 15.C, FM 16.A, FM 21.C, FM 26.B, FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 55.B)

(1) For cloud layers see Note (1) under C.

(2) If the height of the layer falls between two of the heights given in Code 1577, the lower code figure is to be reported (e.g., if h_sh_s = 740 m. (2,460 ft.), it is reported as 24, except for the decade 90–99; in this case a height exactly equal to one of the heights at the ends of the ranges is coded in the higher range (e.g., a height of 600 m. is reported by code figure 95).

(3) If, notwithstanding the existence of fog, sandstorm, duststorm, blowing snow or other obscuring phenomena, the sky is discernible, the partially obscuring phenomena are disregarded.
If, under the above conditions, the sky is not discernible, the 8–group is to be coded $89/h_sh_s$ with the appropriate vertical visibility value being coded for h_sh_s. The vertical visibility is defined as the vertical visual range into an obscuring medium. When stars or blue sky are visible through the obscuring medium, the vertical visibility is considered to be unlimited. Vertical visibility is recorded to the same limits of accuracy as specified for cloud heights. (Code 1577)

(4) The 90–99 decade in the code table for h_sh_s should neither be used for aeronautical purposes nor in a special weather report from ships.

h_th_t Height* of top of cloud layer or mass whose genus is indicated by C and base by h_sh_s. (Code 1577)
(FM 51.C, FM 53.B, FM 54.B, FM 55.B)

h_xh_x Height* to which temperature and wind refer. (Code 1577)
(FM 51.C, FM 53.B, FM 54.B, FM 55.B)

h_1h_1 ... h_nh_n Geopotential of the level in geopotential decameters.
(FM 35.C, FM 36.C)

(1) The use of $h_1h_1, \ldots h_nh_n$ instead of $n_1n_1, \ldots n_nn_n$, or vice-verso, is optional in accordance with national or regional requirements.

$h'_ph'_p$ Height** of the tropopause level.
(FM 53.B, FM 54.B, FM 55.B)

$h'_jh'_j$ Height** of the level of the jet stream core.
(FM 53.B, FM 54.B, FM 55.B)

* Heights are above official airport elevation in FM 51.C, and above mean sea level in FM 53.B, FM 54.B, FM 55.B.

** These heights are indicated in ICAO flight level numbers with last figure omitted. The ICAO flight levels are related to a pressure datum of 1,013.2 mb and are separated by a nominal distance of 500 ft. Schema of coding:

Code figure	ICAO flight level number	Meters (approx.)	Feet
20	200	6,000	20,000
20	205	6,150	20,500
21	210	6,300	21,000
21	215	6,450	21,500
etc.	etc.	etc.	etc.

hhh	Geopotential of the standard "constant pressure level" given by a_3 in geopotential meters. (FM 11.C)
$h_1h_1h_1$ $h_2h_2h_2$ . . . $h_nh_nh_n$	Geopotential of the standard isobaric surfaces P_1P_1, P_2P_2 . . . P_nP_n in geopotential meters and geopotential decameters. (FM 35.C, FM 36.C) (1) Geopotentials of surfaces below sea level are reported by adding 500 to the absolute value of the geopotential. (2) The geopotential is reported in whole geopotential meters for levels up to but not including 500 mb and in geopotential decameters at 500 mb and higher.
I	Density of points. (Code 1700) (FM 83.A)
I_c	Type of ice accretion. (Code 1733) (FM 51.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C) (1) This symbol refers to icing deposited on the external parts of the aircraft.
I_i	Intensity of the icing. (Code 1739) (FM 35.C, FM 36.C)
I_j	Density of points. (Code 1741) (FM 81.A)
I_s	Ice accretion on ships. (Code 1751) (FM 21.C, FM 22.C, FM 23.C)
II	Block number. (FM 11.C, FM 15.C, FM 16.A, FM 31, FM 32.C, FM 35.C, FM 38.B, FM 51.C, FM 52.C, FM 71, FM 75.C, FM 81.A, FM 83.A) (1) The block numbers define the area in which the reporting station is situated. They are allocated to one country or more in the same Region. The list of block numbers for all countries is given in H.O. Pub. 119.
i	Intensity or character of the weather element W_a (type of weather). (Code 1800) (FM 45.C)
i_h	Interval indicator. (Code 1838) (FM 32.C, FM 33.C)
i_j	Units indicator for jet stream (Code 1841) (FM 45.C)
i_R	Indicator for relationship of runway visual range to capability of observational system. (Code 1821) (FM 15.C)
i_2	Zone type indicator. (Code 1863) (FM 54.B, FM 55.B, FM 57.C, FM 58.C) (1) This symbol indicates the way in which the route is divided into sections.
i_3	Supplementary phenomena indicator. (Code 1864) (FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)
iii	International station number. (FM 11.C, FM 15.C, FM 16.C, FM 31, FM 32.C, FM 35.C, FM 38.B, FM 45.C, FM 51.C, FM 52.C, FM 54.B, FM 57.C, FM 71, FM 75.C, FM 81.A, FM 83.A) (1) Three-figure number allocated by the Meteorological Services to each of their reporting stations, within the block number and the 3-figure numbers assigned to them. The combination of the block number and the station number constitutes the international index number of the station (IIiii). (2) The list of the station index numbers for all countries is given in H.O. 119.
—	International station number of station from which direction and distance of point position are given. (FM 45.C)
$i_ai_ai_a$	International station number of airport of arrival. (FM 55.B, FM 58.C)
$i_di_di_d$	International station number of airport departure. (FM 55.B, FM 58.C)
J	Aircraft icing and turbulence. (Code 1900) (FM 45.C)
j_a	Indicator of the characteristic of pressure tendency or of other elements. (FM 11.C)

(1) i_a = 0–8 designates a–the characteristic of pressure tendency during the three hours preceding the time of observation; in this case the two following figures j_pj_p give pp–volue of the pressure change during the preceding three hours expressed in tenths of millibars.

i_a = 9 indicates that the information given under j_pj_p refers to elements included by regional agreement; information concerning those regional agreements is given in Section II.

i_n Elements to be included by regional agreement (see Section II).
(FM 32.C, FM 33.C, FM 35.C, FM 36.C, FM 38.B)

j_j Element(s) to be included by regional agreement (see Section II).
(FM 11.C, FM 21.C)

j_pj_p Indicator of pp, pressure tendency, or other elements.
(FM 11.C)

(1) See Note (1) under i_a.

K Effect of the ice on navigation. (Code 2100)
(FM 21.C, FM 22.C, FM 23.C)

k Indicator used to specify the half degrees, if any, to be added to L_aL_a and L_oL_o as given in the group $L_aL_aL_oL_ok$. (Code 2200)
(FM 45.C, FM 46.C, FM 82.A)

(1) When k = 4 or 9, the values of L_aL_a and L_oL_o are accurate to the nearest whole degree only; for all other values of k, the accuracy is to the nearest ½ degree.

L_a Tenths of degree of latitude.
(FM 45.C, FM 46.C)

(1) See Note (6) under FM 45.C, Note (9) under FM 46.C and Note (3) under x_1x_1.

L_o Tenths of degree of longitude.
(FM 45.C, FM 46.C)

(1) See Note (6) under FM 45.C, Note (9) under FM 46.C and Note (3) under x_1x_1.

L_aL_a Latitude in whole degrees.
(FM 45.C, FM 46.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C, FM 82.A)

L_oL_o Longitude in whole degrees.
(FM 45.C, FM 46.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C, FM 82.A)

(1) The hundreds digit is omitted for longitudes 100° to 180°.

L_aL_a
$L'_aL'_a$
$L''_aL''_a$
. . .

Latitude parallel, in whole degrees, along which pressure values are given.
(FM 73)

(1) See Notes under $\overline{P_1P_1}$, $\overline{P_2P_2}$, . . ., $\overline{P'_1P'_1}$, $\overline{P'_2P'_2}$, . . .

L_oL_o
$L'_oL'_o$
$L''_oL''_o$
. . .

Meridion, in whole degrees, to which the first given pressure P_1P_1, $P'_1P'_1$, $P''_1P''_1$, . . .) refer.
(FM 73)

(1) See Notes under $\overline{P_1P_1}$, $\overline{P_2P_2}$, . . ., $\overline{P'_1P'_1}$, $\overline{P'_2P'_2}$, . . .

$L_aL_aL_a$ Latitude in tenths of degrees.
(FM 21.C, FM 22.C, FM 23.C, FM 26.B, FM 33.C, FM 36.C, FM 38.B, FM 72.B, FM 76.C)

(1) Tenths ore obtained by dividing the number of minutes by 6, disregarding the remainder.

$L_oL_oL_o$ Longitude in tenths of degrees.
(FM 21.C, FM 22.C, FM 23.C, FM 26.B, FM 33.C, FM 36.C, FM 38.B, FM 72.B, FM 76.C)

(1) The hundreds digit is omitted for longitudes 100° to 180°.

(2) See Note (1) under $L_aL_aL_a$.

M_h Continental or maritime character of air mass. (Code 2538)
(FM 45.C)

M_s Source region of air mass. (Code 2551)
(FM 45.C)

M_t Thermodynamic character of air mass. (Code 2552)
(FM 45.C)

M_iM_i Message identifier letters. (Code 2582)
(FM 32.C, FM 33.C, FM 35.C, FM 36.C)

MMM Number of Marsden square for the ship's position at the time of observation. (Code 2590)
(FM 33.C, FM 36.C, FM 38.B)

m Movement indicator figure. (Code 2600)
(FM 45.C, FM 46.C)

N The fraction of the celestial dome covered by cloud. (Code 2700)
(FM 11.C, FM 15.C, FM 16.A, FM 21.C, FM 22.C, FM 23.C, FM 26.B, FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)

(1) This symbolic letter shall embrace the total fraction of the celestial dome covered by clouds irrespective of their genus.

(2) In all codes reporting meteorological observations N is to be reported as actually seen by the observer during the observation.

(3) A mackerel sky (Altocumulus or Stratocumulus translucidus) shall be reported using code figures 7 or less since breaks are always present in this cloud form even if it extends over the whole celestial dome.

(4) N shall be reported as 0 when blue sky or stars are seen through existing fog or other analogous phenomena without any trace of cloud being seen.

(5) When clouds are observed through fog or analogous phenomena their amount shall be evaluated and reported as if these phenomena were nonexistent.

(6) Rapidly dissipating condensation trails shall not be reported.

(7) Persistent condensation trails, and cloud masses which have obviously developed from condensation trails, shall be reported as cloud using the appropriate C_H or C_M code figure. Their existence is indicated by use of the word COTRA at the end of the report.

N_h The fraction of the celestial dome covered by all the C_L–cloud(s) present and if no C_L cloud is present, that fraction covered by all the C_M–cloud(s) present. (Code 2700)
(FM 11.C, FM 21.C, FM 22.C, FM 35.C, FM 36.C)

(1) See Notes (2) to (7) under N.

(2) See Note (1) under h.

N_s Amount of individual cloud layer or mass, of genus C. (Code 2700)
(FM 11.C, FM 15.C, FM 16.A, FM 21.C, FM 26.B, FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)

(1) See Note (1) under C.

(2) For observing purposes, see Note (3) under AERO FM 15.C.

(3) For forecasting purposes, see Note (6) under TAFOR FM 51.C.

(4) See Notes (4) and (5) under N.

(5) Rapidly dissipating condensation trails shall not be reported.

(6) Persistent condensation trails and cloud masses which have obviously developed from condensation trails shall be reported as C clouds, using the appropriate code figure, when they resemble such clouds. Their existence is indicated by the use of the word COTRA at the end of the report.

N' Amount of cloud whose base is below the level of the land station. (Code 2700)
(FM 17)

(1) See Notes under C_t, Notes (2) to (5) under N and Notes (3) to (5) under FM 17 MONT.

(2) Spaces occupied by mountains emerging from the cloud layers are counted as occupied by cloud.

(3) Rapidly dissipating condensation trails shall not be reported.

(4) Persistent condensation trails and cloud masses which have obviously developed from condensation trails shall be reported as C' clouds, using the appropriate code figure, when they resemble such clouds.

NN Identity number of a front or system.
(FM 45.C)

(1) This number is assigned to the front or system by an analysis center and is used for the same front or system throughout its life even though the type of front changes; e.g., cold to quasi-stationary, etc.

n The number of tens to be added to H in the group(s) which follow.
(FM 32.C, FM 33.C)

(1) The number given for n is to be multiplied by 3,000 and the result gives a datum plane, above mean sea level. Values of H in the group or groups following are heights in units of 300 meters above this datum plane.

(2) See Note under H.

n
n'
n''
$\ldots$

Number of the points on latitude parallels L_aL_a, $L'_aL'_a$, $L''_aL''_a$, . . . etc., for which pressure is given.
(FM 73)

(1) See Notes under $\overline{P_1P_1}$, $\overline{P_2P_2}$, . . ., $\overline{P'_1P'_1}$, $\overline{P'_2P'_2}$, . . .

n_1n_1
$\ldots$
n_nn_n

Number of the level.
(FM 35.C, FM 36.C)

nnn Specifications related to supplementary phenomena. (Code 1864)
(FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)

O_w Tendency of height of the waves since the last observation. (Code 2955)
(FM 11.C, FM 16.A)
(1) See Note (2) under P_w.

P_T Thickness of layer. (Code 3122)
(FM 56.C, FM 57.C, FM 58.C)

P_c Character of pressure system. (Code 3133)
(FM 45.C, FM 46.C)

P_t Type of pressure system. (Code 3152)
(FM 45.C, FM 46.C)

P_w Period of the waves. (Code 3155)
(FM 11.C, FM 16.A, FM 21.C, FM 51.C, FM 61.C)
(1) Coastal stations equipped with instruments for measuring accurately the period and height of waves, i.e., instruments for recording waves and for harmonic analysis of the records, should send one or more groups of the form $1d_wd_wP_wH_w$, each group denoting a separate system of waves, distinguished by a significant difference of period.
(2) Coastal stations not equipped with suitable instruments for recording the characteristics of waves, but desiring to report "tendency" in addition, instead of the group $1d_wd_wP_wH_w$, send the group $O_wd_wd_wP_wH_w$, preceded by the word WATEN.

PP Pressure on a constant level surface in whole millibars.
(FM 45.C, FM 46.C)
(1) For a HIGH or a LOW, PP is the pressure at the center. Along a ridge line, PP is the highest pressure and along a trough line it is the lowest pressure.

— Pressure in whole millibars.
(FM 23.C)
(1) Thousands and hundreds of millibars of the pressure value are omitted.

P_BP_B Pressure, in tens of millibars, of lowest level of turbulence.
(FM 56.C, FM 57.C, FM 58.C)

P_LP_L Pressure, in tens of millibars, of base of cloud layer or mass whose genus is indicated by C.
(FM 56.C, FM 57.C, FM 58.C)

P_MP_M Pressure, in tens of millibars, of top of cloud layer or mass whose genus is indicated by C.
(FM 56.C, FM 57.C, FM 58.C)

P_fP_f Pressure, in tens of millibars, of the 0° C isotherm level.
(FM 56.C, FM 57.C, FM 58.C)

P_iP_i Pressure, in tens of millibars, of the lowest level of icing.
(FM 56.C, FM 57.C, FM 58.C)

P_JP_j Pressure, in tens of millibars, of the level of the jet stream core.
(FM 56.C, FM 57.C, FM 58.C)

P_tP_t Pressure, in tens of millibars, at the tropopause.
(FM 35.C, FM 36.C, FM 38.B, FM 56.C, FM 57.C, FM 58.C)

P_WP_W Period of waves in seconds.
(FM 45.C, FM 46.C)

P_xP_x Pressure, in tens of millibars, to which temperature and wind refer.
(FM 56.C, FM 57.C, FM 58.C)

P_1P_1
P_2P_2
$\ldots$
P_nP_n

Pressure, in tens of millibars, at the standard isobaric surfaces (1000 mb = 00).
(FM 35.C, FM 36.C)

$\overline{PP}$ Monthly mean pressure or monthly mean geopotential for surface stations.
(FM 71, FM 72.B)

(1) $\overline{PP}$ indicates the pressure reduced to an agreed datum level specified for PPP, or the geopotential of an agreed standard constant pressure level specified for PPP.

(2) For the zone between latitudes 20°N and 20°S $\overline{PP}$ reports the pressure in tenths of millibars or the geopotential in geopotential meters; for other zones $\overline{PP}$ reports pressure in whole millibars or geopotential in geopotential decameters of hundreds of geopotential feet.

(3) In preparing monthly mean values of meteorological elements for broadcasting in CLIMAT reports, the following should be observed when all daily values are not available:
(a) Where possible, missing daily values are interpolated from the synoptic and aerological charts.
(b) Where all daily values are not available and cannot be deduced., the mean of available values is given as the monthly mean value, provided that not less than ten individual values are available and provided that there is no continuous period of five days without an assigned value.

(4) When $\overline{PP}$ is given in the occasional broadcasts of normal data, following the code word NORMAL, it represents the normal value of the pressure or geopotential for the month. deduced from observation over a 30-year normal period.

$\overline{P_1P_1}, \overline{P_2P_2}\ldots$
$\overline{P'_1P'_1}, \overline{P'_2P'_2}\ldots$
$\overline{P''_1P''_1}, \overline{P''_2P''_2}\ldots$

Monthly mean pressures in oceanic areas.
(FM 73)

(1) For the zone between latitudes 20° N and 20° S, the pressure is given in tenths of millibars; for other zones it is given in whole millibars.

(2) Every position group $L_aL_aL_oL_on$, $L'_aL'_aL'_oL'_on'$, etc., is followed by groups of the form $\overline{P_1P_1P_2P_2P_3}$, $\overline{P_3P_4P_4P_5P_5}$,..., $\overline{P'_1P'_1P'_2P'_2P'_3}$, $\overline{P'_3P'_4P'_4P'_5P'_5}$, ... etc.
The first pressure $\overline{P_1P_1}$ is the mean monthly pressure at mean sea level for the point of intersection of the parallel and the meridian specified by L_aL_a and L_oL_o in the preceding position group.
The pressures following, i.e., $\overline{P_2P_2}$, $\overline{P_3P_3}$,... etc. are the values of the mean monthly pressure on the same parallel L_aL_a, but at points $L_oL_o \pm 5°$, $L_oL_o \pm 10°$,... etc. The number given for n specifies the number of the points on the parallel, for which pressure is given.
The succession of points, for which pressures are given, is in the sense East-West or West-East, the convenient direction for the ocean concerned being chosen.

(3) See Note (3) under $\overline{PP}$.

PPP Pressure in tenths of millibars or geopotential in geopotential meters.
(FM 11.C, FM 21.C, FM 22.C)

(1) Thousands and hundreds of millibars of the pressure value are omitted.

(2) (a) All stations for which pressure at mean sea level can be computed with reasonable accuracy report this pressure in the PPPTT group.
(b) A station which cannot report mean sea level pressure with reasonable accuracy reports, by regional agreement, either the geopotential of an agreed standard "constant pressure level" or the pressure reduced to an agreed datum level for that station.
(c) High level stations which can do both, report pressure reduced to mean sea level in the group PPPTT and may use the group $6a_3hhh$, where hhh indicates the geopotential in geopotential meters of the standard "constant pressure level" specified by a_3.
(d) When this group is used in the SYNOP code form, it appears as the last group in the report.

(3) In reports of ships at sea, the pressure reduced to mean sea level is given.

— Pressure, in whole millibars, of an isobar, the delineation of which is given by positions of successive points.
(FM 46.C)

$P_sP_sP_s$ Pressure in millibars of standard constant pressure surface in which the line of maximum wind speed is given.
(FM 45.C)

$P_tP_tP_t$ Pressure at the tropopause in whole millibars.
(FM 35.C, FM 36.C, FM 38.B)

$P_oP_oP_o$ Pressure at surface in whole millibars.
(FM 35.C, FM 36.C)

(1) Surface pressure is read from a mercury barometer, corrected for instrumental error and reduced to the standard gravity and to the temperature 0°C of the mercury.

(2) The term "surface" refers to a horizontal plane whose elevation above MSL is the same as that of the floor of the instrument shelter. Pressure reported for $P_oP_oP_o$ is observed with reference to this plane.

(3) See Notes under PPP.

$P_1P_1P_1$ ... $P_nP_nP_n$ — Pressure at selected levels in whole millibars.
(FM 35.C, FM 36.C)

$P_2P_2P_2$ — Pressure reduced to mean sea level in whole millibars (FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C) or QNH altimeter setting in whole millibars (FM 51.C, FM 52.C).

$P_HP_HP_HP_H$ — QNH value in whole millibars.
(FM 15.C)

$\overline{P_oP_oP_oP_o}$ — Mean monthly surface pressure, in whole millibars, at the time of release of the radiosonde.
(FM 75.C, FM 76.C)
(1) See Note (3) under $\overline{PP}$.

pp — Amount of pressure tendency at the station level during the three haurs preceding the time of observation, expressed in tenths of millibars.
(FM 11.C, FM 21.C)
(1) When the tendency is equal to or greater than 9.9 mb, pp is reported as 99. The actual value of the tendency is then given by ppp in the additional group 99ppp, which is inserted in that case in the report, immediately following the graup T_dT_dapp (form with pressure tendency of the group $T_dT_dj_aj_Pj_P$) ar the group D_sv_sapp.

ppp — Total pressure tendency, in tenths of millibars, when pp ≥ 9.9 mb.
(FM 11.C, FM 21.C)
(1) See Note under pp.

Q — Octant of the globe. (Code 3300)
(FM 21.C, FM 22.C, FM 23.C, FM 26.C, FM 33.C, FM 36.C, FM 45.C, FM 46.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C, FM 72.B, FM 76.C)

R_d — Indication of the frequency group within which R_1R_1 falls. (Code 3534)
(FM 71, FM 72.B)
(1) If for a particular month the total amount of the precipitation is zero, R_1R_1 should be given as 00 and R_d is given by the highest number of quintile which has 0.0 as lower limit (e.g., in months with no rainfall in the 30-yeor period by 5).

R_s — Rate of ice accretion on ships. (Code 3551)
(FM 21.C, FM 22.C, FM 23.C)

RR — Amount of precipitation. (Code 3577)
(FM 11.C, FM 21.C)
(1) The period for which the amount of precipitation is reported is specified regionally or nationally (see Section II).
(2) (a) In the case of mobile ship stations, the period for which the amount of precipitation is reported shall be approximately six hours preceding the main standard time of observation unless otherwise specified by the code figures.
(b) If the circumstances of wind and/or weather prevent the reading of rain-gauges with sufficient occuracy, and the amount of precipitation is reported for periods different from six hours, this shall be specified by using the oppropriate code figures of t_Rt_R. (Code 4080)
(3) Precipitation amounts from 0.1 mm to 0.6 mm are given by the code figure 91 to 96 respectively.
Precipitation amounts from 0.7 mm to 55.4 mm are raunded to the nearest millimeter and the figure obtained is to be reported as code figure for RR.
Precipitation amounts from 55.5 mm to 400 mm are rounded to the nearest centimeter. If 50 is added to this figure, the code figure to be reported for RR is obtoined. For example:
RR = 72 mm ≃ 7 cm. Code figure 7+50 = 57
RR = 208 mm ≃ 21 cm. Code figure 21+50 = 71.
(4) RR = 00 corresponds to the exoct amount of 0.0 mm.

R_1R_1 — Total precipitation for the month. (Code 3587)
(FM 71, FM 72.B)
(1) Precipitation amounts from 1 mm to 6.4 mm are rounded to the nearest millimeter. If 90 is added to this figure, the code figure to be reported for R_1R_1 is obtained.
Precipitation amounts from 6.5 mm to 554 mm are rounded to the nearest centimeter and the figure obtoined is to be reported as code figure for R_1R_1.
Precipitation amounts from 555 mm to 4,000 mm are rounded to the nearest decimeter. If 50 is added to this figure, the code figure to be reported for R_1R_1 is obtained. For example:
R_1R_1 = 723 mm ≃ 7 dm. Code figure 7+50 = 57.
R_1R_1 = 2,084 mm ≃ 21 dm. Code figure 21+50 = 71.

(2) R_1R_1 = 00 corresponds to the exact amount of 0.0 mm.

(3) When R_1R_1 is given in the occasional broadcasts of normal data, following the code word NORMAL, it represents the mean total amount of the precipitation for the month, deduced from observations over a 30-year normal period.

r — Distance to ice edge from reporting ship. (Code 3600)
(FM 21.C, FM 22.C, FM 23.C)

(1) When the distance is given by two figures of the code, the lower code figure is to be reported; e.g., the distance of 6 miles should be reported as r = 3.

r_f — Steadiness of wind at the surface or at specified isobaric surface. (Code 3636)
(FM 75.C, FM 76.C)

(1) The steadiness factor is defined as the ratio of the speed of the monthly mean vector wind to the speed of the monthly mean scalar wind; it shall be expressed as a percentage.

S — State of sea. (Code 3700)
(FM 61.C)

S_t — Character of tropapause. (Code 3752)
(FM 35.C, FM 36.C, FM 38.B)

S_1 — Nature of the zone separated by the line formed by the points following the $2C_sS_1S_2Z_1$ group (part to the right of the line). (Code 3762)
(FM 45.C)

S_2 — Nature of the zone separated by the line formed by the points following the $2C_sS_1S_2Z_1$ group (zone inside the line). Code 3762)
(FM 45.C)

SS — Section of front or of pressure system to which NN refers. (Code 3777)
(FM 45.C)

$S_pS_ps_ps_p$ — Special phenomena.
(FM 11.C, FM 21.C)

(1) Special phenomena are specified regionally (see Section II).

s — Depth of snow. (Code 3800)

(1) When this symbol is introduced for regional or national use, it is recommended to use for its specification the Code 3800.

s_1 — Distance, in tens of statute miles, of the point position from the station.
(FM 45.C)

(1) When the distance to be indicated by s_1 is 110 miles or more, the group $00s_200$ may precede the $iiiD_1s_1$ group, which it modifies, with S_2 indicating the hundreds of miles to be added to the value of s_1.

(2) When the distance is 100 miles, the direction is coded for symbol D_1 and zero is reported for symbol s_1.

s_2 — Hundreds of statute miles to be added to s_1.
(FM 45.C)

(1) See Note (1) under s_1.

T_c — Tropical system characteristics. (Code 3933)
(FM 45.C, FM 46.C)

T_i — Tropical system intensity. (Codes 3939, 3940)
(FM 45.C, FM 46.C)

(1) Two separate code tables are provided for the cases of T_t = 0–8 (Code 3939) and T_t = 9 (Code 3940).
When T_t = 9, the code figure given for T_i indicates the force of the strongest wind, on the extended Beaufort scale of wind force, in the reported cyclonic circulation or, in the case of a prognosis, the strongest wind force expected at the time of the prognosis.

T_n — Minimum air temperature. (Code 3956)
(FM 61.C)

T_t — Tropical circulation type. (Code 3952)
(FM 45.C, FM 46.C)

T_x Maximum air temperature. (Code 3956)
(FM 61.C)

T_{x0} Approximate tenths value of air temperature and dew point temperature at surface. (Code 3957)
(FM 35.C, FM 36.C)
(1) See Note (2) under $P_0P_0P_0$.

T_{x1}, T_{x2}, . . . T_{xn} Approximate tenths of value of air temperature and dew point temperature at levels specified by P_1P_1, P_2P_2, . . . P_nP_n, or at selected levels. (Code 3957)
(FM 35.C, FM 36.C)

TT Air temperature in whole degrees Celsius.
(FM 11.C, FM 15.C, FM 16.A, FM 21.C, FM 22.C, FM 23.C, FM 26.B)
(1) Temperatures are read in tenths of degrees Celsius and rounded subsequently to the nearest whole degree.
(2) For negative temperatures, 50 is added to the absolute value of the temperature. Thus, a temperature of $-TT$°C is given by (50 + TT), the hundreds figure, if any, being omitted. A temperature of −50°C is given as 00, the distinction between −50°C and 0°C being made from the general weather situation and from comparison with the previous reports of the same station.

T_FT_F Forecast temperature in whole degrees Celsius.
(FM 51.C, FM 52.C)

T_PT_P Air temperature in whole degrees Celsius at the level given by $h'_ph'_p$.
(FM 53.B, FM 54.B, FM 55.B)

T_dT_d Dew point temperature in whole degrees Celsius.
(FM 11.C, FM 15.C, FM 16.A, FM 21.C, FM 26.B)
(1) See Note (2) under TT.
(2) The use of dew point (not frost point) in synoptic surface reports is recommended in circumstances where the vapor pressure is lower than the saturated water vapor pressure of 0°C.

$T_{dp}T_{dp}$ Dew point temperature, in whole degrees Celsius, at the tropopause.
(FM 35.C, FM 36.C, FM 38.B)

$T_{do}T_{do}$ Dew point temperature at surface in whole degrees Celsius in TEMP reports.
(FM 35.C, FM 36.C)
(1) This temperature, obtained in degrees and tenths, is not rounded to the nearest whole degree, but its whole degrees only are given by $T_{do}T_{do}$.
Tenths, of this temperature are given in conjunction with tenths of the air temperature T_oT_o by T_{xo}.
(2) See Note (2) under TT, Note (2) under T_dT_d and Note (2) under $P_oP_oP_o$.

$T_{d1}T_{d1}$, $T_{d2}T_{d2}$, . . . $T_{dn}T_{dn}$ Dew point temperature in whole degrees Celsius at levels specified by P_1P_1, P_2P_2 . . . P_nP_n, or at selected levels.
(FM 35.C, FM 36.C, FM 38.B)
(1) This temperature, obtained in degrees and tenths, is not rounded to the nearest whole degree, but its whole degrees only are given by $T_{d1}T_{d1}$, $T_{d2}T_{d2}$, . . . $T_{dn}T_{dn}$. Tenths of this temperature are given in conjunction with tenths of the corresponding air temperature T_1T_1, T_2T_2, . . . T_nT_n by T_{x1}, T_{x2}, . . . T_{xn} respectively.
(2) See Note (2) under TT and Note (2) under T_dT_d.

T_hT_h Air temperature in whole degrees Celsius at the height indicated by $h'_xh'_x$ (FM 51.C, FM 53.B, FM 54.B, FM 55.B) or at the pressure indicated by P_xP_x. (FM 56.C, FM 57.C, FM 58.C)

T_pT_p Temperature in whole degrees Celsius, at the tropopause.
(FM 35.C, FM 36.C, FM 38.B, FM 56.C, FM 57.C, FM 58.C)

T_sT_s Difference between air temperature and sea temperature in half degrees Celsius.
(FM 21.C)
(1) If the air temperature is below the sea temperature, 50 is added to the numerical value of the difference for coding the report; e.g., if the air temperature is 17.5°C below the sea temperature, T_sT_s is coded as 85.

T_oT_o Air temperature at surface in whole degrees Celsius only in TEMP reports.
(FM 35.C, FM 36.C)
(1) This temperature, observed in degrees and tenths, is not rounded to the nearest whole degree, but its whole degrees only are given by T_oT_o. Tenths of this temperature are given in conjunction with tenths of the dew point temperature $T_{do}T_{do}$ by T_{xo}.
(2) See Note (2) under TT and Note (2) under $P_oP_oP_o$.

T_1T_1
T_2T_2
. . .
T_nT_n

Air temperature in whole degrees Celsius at levels specified by P_1P_1, P_2P_2, . . . P_nP_n, or at selected levels.
(FM 35.C, FM 36.C, FM 38.B)

(1) This temperature, measured in degrees and tenths, is not raunded to the nearest whole degree, but its whole degrees only are given by T_1T_1, T_2T_2, . . . T_nT_n. Tenths af this temperature are given in conjunction with tenths of the corresponding dew point temperature $T_{d1}T_{d1}$, $T_{d2}T_{d2}$, . . . $T_{dn}T_{dn}$ by T_{x1}, T_{x2}, . . . T_{xn} respectively.
(2) See Note (2) under TT.

$\overline{TTT}$ Mean air temperature for the month in tenths of degrees.
(FM 71, FM 72.B, FM 75.C, FM 76.C)
(1) In case af negative temperatures, 500 is added to the absolute value of the meon temperature.
(2) See Note (3) under $\overline{PP}$.
(3) When $\overline{TTT}$ is given in the occasional broadcasts of normal data, following the code word NORMAL, it represents the normal value of the temperature for the month, deduced from observations over a 30-year normal period.

$\overline{T_dT_dT_d}$ Mean dew point temperature for the month in tenths of degrees Celsius.
(FM 75.C, FM 76.C)
(1) See Nate (1) under $\overline{TTT}$ and Note (3) under $\overline{PP}$.

$\overline{T_{do}T_{do}T_{do}}$ Mean monthly dew-point surface temperature in tenths of degrees Celsius at the time of release of the radiosonde.
(FM 75.C, FM 76.C)
(1) See also note under $\overline{T_dT_dT_d}$.

$\overline{T_sT_sT_s}$ Mean sea surface temperature for the month in tenths of degrees.
(FM 72.B)
(1) See Notes (1), (2), and (3) under $\overline{TTT}$.

$\overline{T_oT_oT_o}$ Mean monthly surface temperature, in tenths of degrees Celsius, at the time of release of the radiosonde.
(FM 75.C, FM 76.C)
(1) See also notes under $\overline{TTT}$.

t_L Thickness of layer. (Code 4013)
(FM 51.C, FM 53.B, FM 54.B, FM 55.B)

t_Rt_R Duration of precipitation. (Code 4080)
(FM 21.C)
(1) When the period for which the amount of precipitation reported (RR) is approximately six hours, then:
(a) When the duration of precipitation is known, an appropriate figure for t_Rt_R shall be chosen between 00 and 84.
(b) When the duration af precipitation is unknown, t_Rt_R shall be coded 89.
(2) In the case of mobile ship stations, when the period for which the amount of precipitation reported (RR) is approximately 12, 18 or 24 hours, t_Rt_R shall be coded as 90, 91 ar 92 respectively.
Note: In these cases the duration of precipitation is not specified in the report.

U_{La} Units figure in the reparted latitude.
(FM 33.C, FM 36.C, FM 38.B)

U_{Lo} Units figure in the reported longitude.
(FM 33.C, FM 36.C, FM 38.B)

$\overline{UU}$ Mean relative humidity far the manth.
(FM 71, FM 72.B)
(1) This value is calculated for the purpose of CLIMAT reports, from the meon temperature for the month and the meon vapor pressure.
(2) See Note (3) under $\overline{PP}$.
(3) When UU is given in the occasional broadcasts of normal data, following the code word NORMAL, it represents the normal value of the relative humidity for the month, deduced from observations over a 30-year normal period.

uu Isopleth values. (Code 1063)
(FM 45.C, FM 46.C)

uuu Isapleth values. (Cade 1062)
(FM 45.C)

V Visibility at surfoce. (Code 4300)
(FM 61.C)

VV — Horizontal visibility at surface. (Code 4377)
(FM 11.C, FM 15.C, FM 16.C, FM 21.C, FM 22.C, FM 23.C, FM 26.C, FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)

(1) If the horizontal visibility is not the same in different directions, the shorter distance should be given for VV.

(2) If the distance of visibility is between two of the distances given in the code table (Code 4377), the code figure for the smaller distance is reported; e.g., if the distance is 350 m, code figure 03 is reported.

(3) Only the figures 00–89 in the code table for VV shall be used for aeronautical purposes at land stations.

(4) In reporting visibility at sea the decades 90–99 shall be used.

$V_RV_RV_R$ — Runway visual range in decameters.
(FM 15.C)

v_s — Ship's average speed made good during the three hours preceding the time of observation. (Code 4451)
(FM 21.C, FM 22.C, FM 23.C)

v_rv_r — Relative speed of cloud, in radians per hour, determined by the nephoscope.
(FM 31)

vvv — Vertical wind shear in knots per 1,000 meters.
(FM 45.C)

W — Past weather. (Code 4500)
(FM 11.C, FM 15.C, FM 16.A, FM 21.C, FM 22.C, FM 23.C, FM 26.B)

(1) The period covered by W is:
6 hours for observations at 0000, 0600, 1200 and 1800 GMT;
3 hours for observations at 0300, 0900, 1500 and 2100 GMT;
2 hours for intermediate observations if taken every two hours.

(2) The code figure for W is to be selected in such a way that W and ww together give as complete a description as possible of the weather in the time interval concerned. For example: if the type of weather undergoes a complete change during the time interval concerned, the code figure selected for W should describe the weather prevailing before the type of weather indicated by ww began.

(3) When W is used in the AERO form, it covers a short period of time (usually one hour or less) and Note (2) above applies.

(4) If, using the principle of Note (2), more than one code figure may be given to W, with regard to the past weather, the higher code figure is to be reported.

(5) One or more of the following words should be added at the end of the report, when during the period covered by W, the weather conditions specified for each of them justify their inclusion:
PAST HAIL—When a shower or a thunderstorm, accompanied by hail, occurred in the period covered by W.
SNOW or SLEET—when a snow shower or a shower of rain and snow mixed, with a temperature above 0° C, has been observed during the period covered by W.
SANDSTORM—when a sandstorm, with a temperature below 0° C, has occurred during the period covered by W.

W_1 — Forecast weather. (Code 4562)
(FM 61.C)

w_e — Type of weather. (Code 4635)
(FM 45.C)

w_f — Character of the fog or haze. (Code 4637)
(FM 35.C, FM 36.C)

w_p — Type of precipitation falling in the flight zone. (Code 4647)
(FM 35.C, FM 36.C)

w_2 — Indication of the element forming the principal object of a report of deterioration or improvement of the weather or for the taking of a special weather report from ship. (Code 4663)
(FM 16.A, FM 26.B)

ww — Present weather. Code 4677)
(FM 11.C, FM 15.C, FM 16.A, FM 21.C, FM 22.C, FM 23.C, FM 26.B, FM 45.C)

(1) For a correct use of the code, it is necessary to study with care the "Definitions of meteors" given in the International Cloud Atlas.

(2) The first figure of the scale ww indicates grosso modo a division of the scale into ten decades, numbered 0–9, which correspond to ten principal categories of weather. Firstly, the decade the most suitable to the general state of weather is chosen; then, in the complete list, the code figure is chosen, which best describes the weather at the time of observation or during the period of one hour immediately preceding it. In making the choice of the decade or in determining the complete code figure ww, one does not take into account meteorological phenomena which have been experienced more than one hour before the observation.

(3) In general, the highest applicable figure is to be selected, but code figure 17 should have preference over figure 20–49.

(4) In coding 01, 02, and 03, there is no limitation on the magnitude of the change of the cloud amount. ww = 00, 01 and 02 can each be used when the sky is clear at the time of observation. In this case the following interpretation of the specifications apply:
00 is used when the preceding conditions are not known;
01 is used when the clouds have dissolved during the past hour;
02 is used when the sky has been continuously clear during the past hour.

(5) When the phenomenon is not predominantly water droplet, the appropriate code figure should be selected without regard to "VV".

(6) The code figure 05 is used when the obstruction to visian consists predominantly of lithometeors.

(7) There is no need for internotional visibility restrictions for the specifications for ww = 07 and 09. National instructions ore used to indicate how these specifications are to be reported.

(8) The visibility restriction on ww = 10 is 1,000 m or more. The specification refers only to woter droplets and ice crystals.

(9) In the case of ww = 11 or 12, the apparent visibility is less than 1,000 m.

(10) Figures 20–29 are never used when precipitation is observed at the time of observation.

(11) In the case of ww = 28, visibility should have been less than 1,000 m. The specificatian only refers to visibility restrictions which occurred as a result of water droplets or ice crystals.

(12) For synoptic coding purposes a thunderstorm is regarded as being at the station from the time thunder is first heard, whether or not lightning is seen or precipitation is occurring at the station. A thundersotrm is reported in present weather if thunder is heard within the normal observational period preceding the time of the report. A thunderstorm is regarded as having ceased at the time of the last audible thunder and the cessation is confirmed if thunder is not heard for 10–15 minutes after this time.

(13) With regard to ww = 36, 37, 38 and 39, the necessary uniformity in reporting these figures which may be desirable within certain regions can be obtained by national instructions, and it is not necessary to specify international visibility limits in these specifications.

(14) A visibility restriction "less than 1,000 m." is to be applied to ww = 41–49. In the case of ww = 40, the apparent visibility in the fog or ice fog patch or bank is less than 1,000 m. 40–47 are used when the obstruction to vision consists predominantly of water droplets or ice crystals, and 48, 49 when the obstruction consists predominantly of water droplets.

(15) With respect to precipitation, the phrase "at the station" in the ww table means "at the point where the observation is normally taken."

(16) The precipitation is to be characterized as intermittent, if it has been discontinuous during the preceding hour, without presenting the character of a shower.

(17) For determining the intensity of the precipitatian one should be guided by the intensity at the time of observation.

(18) Code figures 80–90 are to be used only when the precipitotion is of the shower type and takes place at the time of observation. Clouds producing showers are isolated clouds and, in consequence, the showers are always of short duration. Between the showers, openings are observed, except if stratiform clouds fill the intervals between clouds from which showers are falling,

(19) In reporting code figure 98, the observer should be allowed considerable latitude in the presumption that precipitation is or is not occuring, if it is not actually visible.

(20) The word HAIL should be added at the end of the message when a shower or a thunderstorm, accompanied by hail, occurs in the period covered by ww.

$w_s w_s$ Significant weather. (Code 4863)
(FM 45.C, FM 46.C)

$w_1 w_1$ Forecast weather at surface. (Code 4687)
(FM 51.C, FM 52.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.B, FM 58.B)

x_4 Hemisphere indicator. (Code 4865)
(FM 82.A)

$x_1 x_1$ Form in which point position groups are given. (Code 4887)
(FM 45.C)

(1) When the method of indicating positions is changed part way through an analysis, the change is always indicated by the insertion of the appropriate indicator group $333x_1x_1$, except as stipulated in the following Note (2).

(2) When the $L_aL_aL_oL_ok$ type of point position group is used, the key groups 33300 and 33311 ordinarily designate the appropriate hemisphere. When it is desired to use the group 33322 (equatorial) for tropical areas, southern latitudes from 0°S to 30°S are indicated by subtraction from 100 (13°S = 87, 29°S = 71, etc.).

(3) Services using $QL_aL_aL_oL_o$ to denote positions may wish to indicate certain points more precisely. This may be done by adding the group $000L_aL_o$ after the appropriate $QL_aL_aL_oL_o$ group, with L_a and L_o giving tenths of degrees of latitude and longitude respectively. These "tenths" are added to the "units" value by given by L_aL_a and L_oL_o respectively in the preceding $QL_aL_aL_oL_o$ group.

(4) When positions are given in the form $iiiD_1s_1$ and the distance to be indicated by s_1 is 110 miles or more, the group $00s_200$ may precede the $iiiD_1s_1$ group which it modified, with s_2 indicating the hundreds of miles to be added to the value of s_1.

$x_2x_2x_2$ Indicator for specifying the type of analysis. (Code 4892)
(FM 45.C)

$x_3x_3x_3$ Value designator of a given chart or analysis. (Code 4892)
(FM 45.C)

Y Day of the week. (Code (4900)
(FM 21.C, FM 22.C, FM 23.C, FM 26.B, FM 33.C, FM 36.C, FM 38.B, FM 83.A)
(1) The day is defined with reference to Greenwich mean time and not to local time; for example, Sunday means the period between 0000 and 2359 on Sunday at Greenwich.
(2) The day indicated by Y is the day of the report or the group involved; it is therefore, the day of the observation and not the day of transmission.
(3) When in a report in SFAZU FM 83.A code form information is given for a period which includes parts of two calendar days, Y refers to the second calendar day.

YY Day of the month (GMT).
(FM 38.B, FM 45.C, FM 46.C)
(1) 01 means 1st day of the month, 02 means 2nd day of the month, etc.
(2) The day of the observation of the data, from which the chart is prepared, is reported for YY.
(3) The day is defined with reference to Greenwich mean time and not to local time.

yyyyy Position groups in the form indicated by the $333x_1x_1$ group.
(FM 45.C)
(1) See Notes under x_1x_1.

Z Character of the change of the wind in the vertical at the significant point. (Code 5100)
(FM 32.C, FM 33.C)

Z_b Character of the change of the wind at the tropopause. (Code 5100)
(FM 35.C, FM 36.C, FM 38.B)

Z_1 Nature of evaluation of zone S_2. (Code 5162)
(FM 45.C)

ZZ Meteorological zone number by 5 degrees of longitude or latitude. (Code 5177)
(FM 54.B, FM 55.B, FM 57.B, FM 58.C)

zzz Zone specification. (Code 1863)
(FM 54.B, FM 55.B, FM 57.C, FM 58.C)

/ Missing data.
(1) For FM 23.C, see Note (4) under this code form.

// Missing data.

/// Missing data.

D SPECIFICATIONS OF CODE FIGURES

CODE TABLES

a. NUMBERING SYSTEM OF INTERNATIONAL METEOROLOGICAL CODE TABLES

When coding a meteorological report, analysis or forecast, symbolic letters are replaced by figures, which specify the value or the state of the corresponding element. In some cases, the specification of the symbolic letter (or group of letters) is sufficient to permit a direct transcription into figures (e.g., GG or PPP). In other cases, these figures are obtained by means of a special code table (or code, in short) for each element.

The codes elaborated to this end, as far as they are in world-wide use, are called international meteorological code tables. These same codes are used inversely for decoding incoming messages and thus making available the information contained therein.

The international code tables are numbered, each code table bearing a number consisting of four figures from 0100 up to 5299 and allotted in the alphabetical order of the symbols to which the code tables correspond. The attribution of the numbers is done in accordance with the following system:

The first two figures represent the number of the main letter of the symbol in alphabetical order, capital letters are given an odd number, and small letters an even number: 01 for A, 02 for a, 03 for B, 04 for b . . . . . 51 for Z and 52 for z.

The two last figures are allocated in accordance with the following scheme:

00 to 01 are reserved for code tables corresponding to a symbol composed of one letter only (X or x for instance)

02 to 30 are reserved for code tables corresponding to symbols of the forms X_A to X_Z, x_A to x_Z and derived symbols such as X_{Ao} or x_{Ao}

31 to 60 are reserved for code tables corresponding to symbols of the forms X_a to X_z, x_a to x_z and derived symbols such as X_{ao} or x_{ao}

61 to 70 are reserved for code tables corresponding to symbols of the forms X_o to X_n, or x_o to x_n, n being any number

71 to 99 are reserved for code tables corresponding to symbols of the forms X', XX, XXX, x', xx, xxx or any similar forms such as X_bX_b, $X_oX_oX_o$, x_bx_b, $x_ox_ox_o$.

The numbering system and the numbers attributed to the codes for the different elements are given in the following table.

Besides the specifications given by the code tables in world-wide use, other sets of code tables are established for regional use. The codes are numbered with a three-figure number ranging from 120 to 700 but are not included in this publication.

NUMBERING SYSTEM OF INTERNATIONAL METEOROLOGICAL CODE TABLES

0139	A_i	0739	D_i	1100	F
0177	AA		dd	1133	F_c
0200	a		d_ad_a	1139	F_i
0239	a_i		d_bd_b	1144	F_m
0244	a_m		d_hd_h	1152	F_t
0262	2_1		d_id_i	1162	F_1, F_2,
0264	a_3		d_sd_s		etc.
0300	B	0877	d_td_t		f_2
0362	B_1		$\overline{d_vd_v}$	1263	f_3
0500	C, C'		d_od_o		. . .
0509	C_H		d_1d_1, d_2d_2, ... , d_nd_n		f_n
0513	C_L			1300	G
0515	C_M			1334	G_d
0551	C_s	0878	dd Polar	1364	G_3
0552	C_t	0885	d_wd_w	1549	H_r, h_r
0562	C_1	0900	E	1555	H_W
0663	c_2	1000	e		h_Bh_B
0700	D, D_K, D_s, D_1	1051	e_s		h_fh_f
		1062	e_1, uuu		h_ih_i
				1577	h_sh_s
		1063	e_2, uu		h_th_t
					h_xh_x

(continued)

NUMBERING SYSTEM OF INTERNATIONAL METEOROLOGICAL CODE TABLES

1600	h	3122	P_T	4013	t_L
1700	I	3133	P_c / h_c	4080	$t_R t_R$
1733	I_c			4300	V
1739	I_i	3152	P_t / h_t	4377	VV
1741	I_i			4451	v_s
1751	I_s	3155	P_w	4500	W
1800	i	3300	Q	4562	W_1
1821	i_R	3534	R_d	4635	w_e
1838	i_h	3551	R_s	4637	w_f
1841	i_j	3577	RR	4647	w_p
1863	i_2 / zzz	3587	$R_1 R_1$	4663	w_2
		3600	r	4677	ww
1864	i_3 / nnn	3636	r_f	4683	$w_s w_s$
		3644	r_m	4687	$w_1 w_1$
1900	J	3700	S	4865	x_4
2045	i_n	3752	S_t	4887	$x_1 x_1$
2100	K	3762	S_1, S_2	4892	$x_2 x_2 x_2$ / $x_3 x_3 x_3$
2200	k	3777	SS		
2538	M_h	3800	s	4900	Y
2551	M_s	3933	T_c	5100	Z / Z_b
2552	M_t	3939	T_i		
2582	$M_i M_i$	3940	T_i	5122	Z_T
2590	MMM	3952	T_t	5162	Z_1
2600	m	3956	T_x / T_n	5177	ZZ
2649	M_r				
2700	N / N_h / N_s / N'	3957	T_{x0} / T_{x1} / T_{x2} / . . . . / T_{xn}		
2955	O_w				

b. CODE TABLES

Code 0139

A_i — Repetition rate of "atmospherics"

Code figure	
0	Isolated point of activity
1	Low
3	Medium
5	High
7	Very high
9	No assessment

Code 0177

AA — Data and units indicator in the group 111AA

Code figure	
00	Maximum wind with altitude in decameters
22	Complete tropopause code form with geopotential in hectometers
44	Abridged tropopause code form with pressure reported
55	Abridged tropopause code form with geopotential reported

Code 0200

a — Characteristic of pressure tendency during the three hours preceding the time of observation

Code figure		
0	Increasing, then decreasing; atmospheric pressure the same or higher than 3 hours ago.	
1	Increasing, the steady; or increasing, then Increosing more slowly;	atmospheric pressure now higher than 3 hours ago
2	Increasing (steadily or unsteadily);	
3	Decreasing or steady, then increasing; or increasing, then increasing more rapidly;	
4	Steady; atmospheric pressure the same as 3 hours ago	
5	Decreasing, then increasing; atmospheric pressure the same or lower than 3 hours ago	
6	Decreasing; then steady; or decreasing, then decreasing more slowly;	atmospheric pressure now lower than 3 hours ago
7	Decreasing (steadily or unsteadily):	
8	Steady or increasing; then decreasing; or decreasing, the decreasing more rapdily;	

Code 0239

a_i — Distribution of "atmospherics"

Code figure	
2	No "atmospherics"
0	Isolated point of activity
4	Sources of "atmospherics" activity located in the area enclosed by lines joining successive points $L_aL_aL_oL_ok$
6	Origin of "atmospherics" activity approximating a line joining successive points $L_aL_aL_oL_ok$
9	No report due to technical reasons

Code 0244

a_m — Indicator for the portion of the maritime area

Code figure	
0	Whole of the area AAA
1	NE quadrant of the area AAA
2	Eastern half of the area AAA
3	SE quadrant of the area AAA
4	Southern half of the area AAA
5	SW quadrant of the area AAA
6	Western half of the area AAA
7	NW quadrant of the area AAA
8	Northern half of the area AAA
9	Rest of the area AAA

Code 0262

a_1 — Reason for no report and ground equipment

Code figure		
0	Reason not specified	Data not available or doubtful and not transmitted
1	Rocketmotor failure	
2	Instrument (or telemetry) not received by tracking equipment	
3	Ground tracking equipment failure	
4	Automatic data processing equipment failure	
5	GMD–1 and rodar	
6	GMD–2	
7	FPS–16 class	
8	UNASSIGNED	
9	Other tracking systems not comparable to those listed under 5 to 7 above (i.e., double GMD–1, SCR584 ect.)	

Note: When a firing is made but data ore not obtained, code figures 0 through 4, as applicable, should be reported.

Code 0264

a_3 — Indicator giving the standard "constant pressure level" of which the geopotential is reported

Code figure		
0	1,000 mb level	hhh in geopotential meters
1	850 mb level	
2	700 mb level	

Code 0300

B — Turbulence (FM 51.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)

Code figure	
0	None
1	Light turbulence
2	Moderate turbulence in clear air, infrequent
3	Moderate turbulence in clear air, frequent
4	Moderate turbulence in cloud, infrequent
5	Moderate turbulence in cloud, frequent
6	Severe turbulence in clear air, infrequent
7	Severe turbulence in clear air, frequent
8	Severe turbulence in cloud, infrequent
9	Severe turbulence in cloud, frequent

Code 0362

B_1 — Intensity of the turbulence encountered by the aircraft (in FM 35.C, FM 36.C)

Code figure	Characteristic	Effect on aircraft
1	Light uneasiness of flight	Separate light jolts with pitching
2	Moderate uneasiness of flight	Rather hard and frequent rolling of the aircraft
3	Strong uneasiness of flight	Aircraft tosses
4	Very strong uneasiness of flight	Aircraft tosses 50-100 m to the side, up and down; control of the aircraft is difficult

Code 0500

C — Genus of cloud
— Genus of cloud for nephoscopic reports
— Genus of cloud penetrated by the aircraft
C' — Genus of cloud whose base is below the level of the land station

Code figure		
0	Cirrus	Ci
1	Cirrocumulus	Cc
2	Cirrostratus	Cs
3	Altocumulus	Ac
4	Altostratus	As
5	Nimbostratus	Ns
6	Stratocumulus	Sc
7	Stratus	St
8	Cumulus	Cu
9	Cumulonimbus	Cb
/	Cloud not visible owing to darkness, fog, duststorm, sandstorm, or other analogous phenomena	

Code 0509

C_H — *Clouds of the genera Cirrus, Cirrostratus and Cirrocumulus*

Technical language specifications		Plain language specifications	
Code figure		Code figure	
0	No C_H clouds	0	No Cirrus, Cirrostratus or Cirrocumulus
1	Cirrus fibratus, sometimes uncinus, not progressively invading the sky	1	Cirrus in the form of filaments, strands or hooks, not progressively invading the sky (often called "mares tails")
2	Cirrus spissatus, in patches or entangled sheaves, which usually do not increase and sometimes seem to be the remains of the upper part of a Cumulonimbus, or Cirrus castellanus or floccus	2	Dense Cirrus in patches or entangled sheaves which usually do not increase and sometimes seem to be the remains of the upper part of the Cumulonimbus; or Cirrus with sproutings in the form of towers or battlements or having the aspect of Cumuliform tufts
3	Cirrus spissatus cumulonimbogenitus	3	Dense Cirrus, often in the form of an anvil; the remains of the upper parts of Cumulonimbus
4	Cirrus uncinus or fibratus, or both, progressively invading the sky; they generally thicken as a whole	4	Cirrus in the form of hooks or of filaments, or both, progressively invading the sky; they generally become denser as a whole
5	Cirrus, often in bands, and Cirrostratus, or Cirrostratus alone, progressively invading the sky; they generally thicken as a whole, but the continuous veil does not reach 45° above the horizon	5	Cirrus, often in bands converging towards one or two points of the horizon and Cirrostratus or Cirrostratus only; in either case they are progressively invading the sky, and generally growing denser as a whole, but the continuous veil does not reach 45 degrees above the horizon
6	Cirrus, often in bands, and Cirrostratus or Cirrostratus alone, progressively invading the sky; they generally thicken as a whole, but the continuous veil exceeds 45° above the horizon, without the sky being totally covered	6	Cirrus often in bands converging towards one or two points of the horizon, and Cirrostratus, or Cirrostratus only; in either case, they are progressively invading the sky, and generally growing denser as a whole, but the continuous veil exceeds 45 degrees above the horizon, without the sky being totally covered
7	Cirrostratus covering the whole sky	7	Veil of Cirrostratus completely covering the celestial dome
8	Cirrostrotus not progressively invading the sky and not entirely covering it	8	Cirrostratus not progressively invading the sky and not completely covering the celestial dome
9	Cirrocumulus alone, or Cirrocumulus predominant among the cirriform clouds	9	Cirrocumulus alone or Cirrocumulus accompanied by Cirrus or Cirrostratus, or both, but Cirrocumulus is the predominant cirriform cloud
/	Clouds C_H invisible owing to darkness, fog, blowing dust or sand or other similar phenomena, or because of a continuous layer of lower clouds	/	Cirrus, Cirrostratus and Cirrocumulus are invisible owing to darkness, fog, blowing dust or sand or other similar phenomena, or more because of the presence of a continuous layer of lower clouds

Code 0513

C_L – *Clouds of the genera Stratocumulus, Stratus, Cumulus and Cumulonimbus*

Technical language specifications		Plain language specifications	
Code figure		Code figure	
0	No C_L clouds	0	No Cumulus, Cumulonimbus, Stratocumulus or Stratus
1	Cumulus humilis, Cumulus fractus other than of bad weather*, or both	1	Cumulus with little vertical extent and seemingly flattened, or ragged cumulus other than of bad weather* or both.
2	Cumulus mediocris or congestus, with or without Cumulus of species fractus or humilis, or Stratocumulus; all having their bases at the same level	2	Cumulus of moderate or strong vertical development generally with protuberances in the form of domes or towers, either accompanied or not by other Cumulus or by Stratocumulus; all having their bases at the same level
3	Cumulonimbus calvus, with or without Cumulus, Stratocumulus or Stratus	3	Cumulonimbus the summits of which, at least partially, lack sharp outlines, but are neither clearly fibrous neither cirriform nor in the form of an anvil; Cumulus, Stratocumulus or Stratus may be present
4	Stratocumulus cumulogenitus	4	Stratocumulus formed by the spreading out of Cumulus; Cumulus may also be present
5	Stratocumulus other than strotocumulus cumulogenitus	5	Stratocumulus not proceeding from the spreading out of Cumulus
6	Stratus nebulosus, Stratus fractus other than of bad weather*, or both	6	Stratus in a more or less continuous sheet or layer, or in ragged shreds or both, but no Stratus fractus of bad weather
7	Stratus fractus of bad weather* or Cumulus fractus of bad weather* (pannus), or both; usually below Altostratus or Nimbostratus	7	Stratus fractus of bad weather or Cumulus fractus of bad weather (pannus), or both; usually below Altostratus or Nimbostratus.
8	Cumulus and Stratocumulus, other than Stratocumulus cumulogenitus, with bases ot different levels	8	Cumulus and Stratocumulus, other than those formed from the spreading out of Cumulus; the base of Cumulus is at different level from that of Strotocumulus
9	Cumulonimbus capillatus (often with an anvil), with or without Cumulonimbus calvus, Cumulus, Stratocumulus, Stratus or pannus.	9	Cumulonimbus, the upper part of which is clearly fibrous (cirriform), often in the form of an anvil; either accompanied or not by Cumulonimbus without onvil or fibrous upper part, by Cumulus, Stratocumulus, Stratus or pannus.
/	Clouds C_L invisible owing to darkness, fog, blowing dust or sand, or other similar phenomena	/	Cumulus, Cumulonimbus, Stratocumulus or Stratus are invisible owing to darkness, fog, blowing dust or sand, or other similar phenomena

*"Bad weather" denotes the conditions which generally exist during precipitation and a short time before and after.

Code 0515

C_M — *Clouds of the genera Altocumulus, Altostratus and Nimbostratus*

Technical language specifications		Plain language specifications	
Code figure		Code figure	
0	No C_M clouds	0	No Altocumulus, Altostratus or Nimbostratus
1	Altostratus translucidus	1	Altostratus, the greatest part of which is semi-transparent; through this part the sun or moon may be weakly visible as through ground glass
2	Altostratus opacus or Nimbostratus	2	Altostratus, the greatest part of which is sufficiently dense to hide the sun (or moon) or Nimbostratus
3	Altocumulus translucidus at a single level	3	Altocumulus, the greatest part of which is semi-transparent, the various elements of the cloud change but slowly and are all at a single level
4	Patches (often lenticular) of Altocumulus translucidus, continuously changing and at one or more levels.	4	Patches of semi-transparent Altocumulus (often in the form of almonds or fishes) which are at one or more levels; the elements of this cloud are continuously changing in appearance
5	Altocumulus translucidus in bands, or one or more layers of Altocumulus translucidus or opacus, progressively invading the sky; these Altocumulus clouds generally thicken as a whole	5	Semi-transparent Altocumulus in bands or Altocumulus in one more or less continuous layer progressively invading the sky; these Altocumulus clouds generally thicken as a whole
6	Altocumulus cumulogenitus (or cumulonimbogenitus)	6	Altocumulus resulting from the spreading out of Cumulus (or Cumulonimbus)
7	Altocumulus translucidus or opacus in two or more layers, or Altocumulus opacus in a single layer, not progressively invading the sky, or Altocumulus with Altostratus or Numbostratus	7	Any one of the following cases: (a) Altocumulus in two or more layers usually opaque in places and not progressively invading the sky (b) Opaque layer of Altocumulus not progressively invoding the sky (c) Altocumulus coexisting with Altostratus or Nimbostratus or with both
8	Altocumulus castellanus or floccus	8	Altocumulus with sproutings in the form of small towers or battlements, or Altocumulus having the aspect of cumuliform tufts
9	Altocumulus of a chaotic sky, generally at several levels	9	Altocumulus, generally at several layers in a chaotic sky
/	Clouds C_M invisible owing to darkness, fog, blowing dust or sand or other similar phenomena or because of a continuous layer of lower clouds	/	Altocumulus, Altostratus and Nimbostratus are invisible owing to darkness, fog, blowing dust or sand, or other similar phenomena or more because of the presence of a continuous layer of lower clouds

Code 0551

C_s — Cloud system

Code figure	
0	Not allocated
1	Thunder type
2	Depression type
3	Intense depression type
4	Depression with snow
5	Depression with warm sector
6	Depression with misty tail
7	Altocumulus
8	Altocumulus with lateral zone
9	Altocumulus with misty tail

Code 0552

$\bar{c}_t$ — Description of the top of cloud whose base is below the level of the land station

Code figure		
0	Isolated cloud or fragments of clouds	
1	Continuous cloud	flat tops
2	Broken cloud - small breaks	flat tops
3	Broken cloud - large breaks	flat tops
4	Continuous cloud	undulating tops
5	Broken cloud - small breaks	undulating tops
6	Broken cloud - large breaks	undulating tops
7	Continuous or almost continuous waves with towering clouds above the top of the layer	
8	Groups of waves with towering clouds above the top of the layer	
9	Two or more layers at different levels	

Code 0562

C_1 — Confidence figure

Code figure	
0	No specification
2	With confidence
5	Uncertain
8	Very doubtful

Code 0663

c_2 — Description of kind of ice

Code figure	
0	No ice (0 is used to report ice blink and then a direction must be reported)
1	New ice
2	Fast ice
3	Pack ice/drift ice
4	Packed (compact) slush or sludge.
5	Shore lead
6	Heavy fast ice
7	Heavy pack ice/drift ice
8	Hummocked ice
9	Icebergs *

* Icebergs can also be reported in plain language.

Code 0700

Direction or bearing in one figure

D — Direction of surface wind
— Direction from which waves are coming
D_K — Direction of swell
D_s — Ship's course (true) made good during the three hours preceding the time of observation
D_w — Bearing of weather off course
D_1 — Direction of the point position from the station

Code figure	
0	Calm (in D, D_K), or stationary (in D_sD_w), or at the station (in D_1)
1	NE
2	E
3	SE
4	S
5	SW
6	W
7	NW
8	N
9	All directions (in D_w, D_1), or confused (in $D_{(waves)}$, D_k), or variable (in $D_{(wind)}$), or unknown (in D_s)

Code 0739

D_i — Bearing of ice edge

Code figure		Code figure	
0	No ice edge can be stated	5	Ice edge towards SW
1	Ice edge towards NE	6	Ice edge towards W
2	Ice edge towards E	7	Ice edge towards NW
3	Ice edge towards SE	8	Ice edge towards N
4	Ice edge towards S	9	Ice edge in several directions

Note: If more than one ice edge can be stated, the nearest or most important should be reported.

Code 0877

Direction or bearing in two figures

dd — True direction, in tens of degrees, from which wind is blowing (or will blow)
— True direction, in tens of degrees, from which surface wind is blowing
— Direction of cloud movement (from which cloud is coming) in tens of degrees

d_ad_a — True direction, in tens of degrees, from which maximum wind is blowing at the level given by $H_mH_mH_mH_m$

d_bd_b — True direction, in tens of degrees, from which wind is blowing at the level given by H_tH_t

d_hd_h — True direction, in tens of degrees, from which wind will blow at the height indicated by h_xh_x or at the pressure indicated by P_xP_x

d_jd_j — Direction, in tens of degrees, from which jet stream wind is blowing or will blow

d_sd_s — Direction, in tens of degrees, toward which system or front is moving

d_td_t — Direction, in tens of degrees, of the wind vector difference

$\overline{d_vd_v}$ — Direction, in tens of degrees, of the monthly mean vector wind at the surface and at specified isobaric surfaces

d_od_o — True direction, in tens of degrees, from which surface wind is blowing

d_1d_1, d_2d_2, . . . d_nd_n — True direction, in tens of degrees, from which wind is blowing at levels specified by P_1P_1, P_2P_2, . . . P_nP_n or at selected levels

Code figure		Code figure	
00	Calm (no motion for d_sd_s)	19	185° – 194°
01	5° – 14°	20	195° – 204°
02	15° – 24°	21	205° – 214°
03	25° – 34°	22	215° – 224°
04	35° – 44°	23	225° – 234°
05	45° – 54°	24	235° – 244°
06	55° – 64°	25	245° – 254°
07	65° – 74°	26	255° – 264°
08	75° – 84°	27	265° – 274°
09	85° – 94°	28	275° – 284°
10	95° – 104°	29	285° – 294°
11	105° – 114°	30	295° – 304°
12	115° – 124°	31	305° – 314°
13	125° – 134°	32	315° – 324°
14	135° – 144°	33	325° – 334°
15	145° – 154°	34	335° – 344°
16	155° – 164°	35	345° – 354°
17	165° – 174°	36	355° – 4°
18	175° – 184°	99	Variable, or all directions (for d_td_t), or unknown (for d_sd_s)

Code 0878

dd — True direction, in tens of degrees, from which wind is blowing (or will blow) at stations within 1° of the North Pole

Code figure	Wind coming from a meridian between	Code figure	Wind coming from a meridian between
00	Calm	19	175°E – 165°E
01	5°W – 15°W	20	165°E – 155°E
02	15°W – 25°W	21	155°E – 145°E
03	25°W – 35°W	22	145°E – 135°E
04	35°W – 45°W	23	135°E – 125°E
05	45°W – 55°W	24	125°E – 115°E
06	55°W – 65°W	25	115°E – 105°E
07	65°W – 75°W	26	105°E – 95°E
08	75°W – 85°W	27	95°E – 85°E
09	85°W – 95°W	28	85°E – 75°E
10	95°W – 105°W	29	75°E – 65°E
11	105°W – 115°W	30	65°E – 55°E
12	115°W – 125°W	31	55°E – 45°E
13	125°W – 135°W	32	45°E – 35°E
14	135°W – 145°W	33	35°E – 25°E
15	145°W – 155°W	34	25°E – 15°E
16	155°W – 165°W	35	15°E – 5°E
17	165°W – 175°W	36	5°E – 5°W
18	175°W – 175°E		

Code 0885

$d_w d_w$ — Direction, in tens of degrees, from which waves are coming

Code figure		Code figure	
00	Calm (no waves)	22	215° – 224°
01	5° – 14°	23	225° – 234°
02	15° – 24°	24	235° – 244°
03	25° – 34°	25	245° – 254°
04	35° – 44°	26	255° – 264°
05	45° – 54°	27	265° – 274°
06	55° – 64°	28	275° – 284°
07	65° – 74°	29	285° – 294°
08	75° – 84°	30	295° – 304°
09	85° – 94°	31	305° – 314°
10	95° – 104°	32	315° – 324°
11	105° – 114°	33	325° – 334°
12	115° – 124°	34	335° – 344°
13	125° – 134°	35	345° – 354°
14	135° – 144°	36	355° – 4°
15	145° – 154°		
16	155° – 164°	49	Waves confused, direction indeterminate (waves equal to or less than 4¾ metres)
17	165° – 174°		
18	175° – 184°		
19	185° – 194°		
20	195° – 204°	99	Waves confused, direction indeterminate (waves greater than 4¾ metres)
21	205° – 214°		

Code 0900

E — State of the ground

Code figure	
0	Surface of ground dry (no appreciable amount of dust or loose sand)
1	Surface of ground moist
2	Surface of ground wet (standing water in small or large pools on surface)
3	Surface of ground frozen
4	Glaze on ground, but no snow or melting snow
5	Snow or melting snow (with or without ice) covering less than one-half of the ground
6	Snow or melting snow (with or without ice) covering more than one-half of the ground but ground not completely covered
7	Snow or melting snow (with or without ice) covering ground completely
8	Loose dry snow, dust or sand covering more than one-half of ground (but not completely)
9	Loose dry snow, dust or sand covering ground completely

Notes:

1) Where dust or sand is reported and the temperature is below 0°C, the word DUST or SAND is added at the end of the report.
2) The definitions in the code for E for numbers 0 to 3 apply to representative bare ground and numbers 4 to 9 to an open representative area.
3) In all instances the highest code figures applicable are to be reported.

Code 1000

e — Orientation of ice edge

Code figure	
0	Orientation of ice edge impossible to estimate – ship outside the ice
1	Ice edge lying in a direction NE to SW with ice situated to the NW
2	Ice edge lying in a direction E to W with ice situated to the N
3	Ice edge lying in a direction SE to NW with ice situated to the NE
4	Ice edge lying in a direction S to N with ice situated to the E
5	Ice edge lying in a direction SW to NE with ice situated to the SE
6	Ice edge lying in a direction W to E with ice situated to the S
7	Ice edge lying in a direction NW to SE with ice situated to the SW
8	Ice edge lying in a direction N to S with ice situated to the W
9	Orientation of ice edge impossible to estimate – ship inside the ice

Code 1051

e_s—Type of data sensing equipment

Code figure	
0	Falling sphere
1	Chaff
2	Immersion thermometry with hypsometer
3	Immersion thermometry without hypsometer
4	Pressure or density gauge
9	Other type

Code 1062

e_1 Type of isopleth (and units of isopleth value uuu)

Code figure	
0	Relative or absolute contour or isallohypse; uuu in geopotentiol decameters (thousands figure omitted) Note: In tropopause analysis uuu is in geopotential hectometers
1	Dew point isopleth; uuu in whole degrees Celsius (add 500 for minus values)
2	Isotherm; uuu in whole degrees Celsius (add 500 for minus values)
3	Potential temperature Isopleth; uuu in whole degrees Kelvin
4	Isobar or isallobar; uuu in whole millibars (thousands figure omitted)
5	Mixing ratio isopleth; uuu in tenths of groms/kilogram
6	Soturation pressure isopleth; uuu in whole millibars (thousands figure omitted)
7	Relative humidity isopleth; uuu in units of percentage
8	Isopleth of wind speed; uuu in knots
9	Stream line; uuu used as identification number

Code 1063

e_2 — Type of isopleth (and units of isopleth values uu)

Code figure	
0	Sea waves height isopleth, uu in meters
1	Swell wave height isopleth, uu in meters
2	Wave height isopleth (wave type undetermined), uu in meters
3	Wave direction isopleth, uu in tens of degrees
4	Wave period isopleth, uu in seconds
5	Reserved
6	Reserved
7	Reserved
8	Reserved
9	Sea temperature isopleth, uu in whole degrees Celsius

Code 1100

F — *Force of surface wind*

BEAUFORT SCALE OF WIND

(For a standard height of 10 metres above open flat ground)

BEAUFORT NUMBER	DESCRIPTIVE TERM	VELOCITY EQUIVALENT AT A STANDARD HEIGHT OF 10 METRES ABOVE OPEN FLAT GROUND				SPECIFICATIONS			Probable wave height * in metres	Probable wave height * in feet
		mean velocity in knots	metres/sec	km/h	m.p.h.	Land	Sea	Coast		
0	Calm	< 1	0 – 0·2	< 1	< 1	Calm; smoke rises vertically	Sea like a mirror	Calm	—	—
1	Light air	1 – 3	0·3 – 1·5	1 – 5	1 – 3	Direction of wind shown by smoke drift but not by windvanes	Ripples with the appearance of scales are formed, but without foam crests	Fishing smack just has steerage way	0·1 (0·1)	¼ (¼)
2	Light breeze	4 – 6	1·6 – 3·3	6 – 11	4 – 7	Wind felt on face; leaves rustle; ordinary vanes moved by wind	Small wavelets, still short but more pronounced; crests have a glassy appearance and do not break	Wind fills the sails of smacks which then travel at about 1–2 miles per hour	0·2 (0·3)	½ (1)
3	Gentle breeze	7 – 10	3·4 – 5·4	12 – 19	8 – 12	Leaves and small twigs in constant motion; wind extends light flag	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses	Smacks begin to careen and travel about 3–4 miles per hour	0·6 (1)	2 (3)
4	Moderate breeze	11 – 16	5·5 – 7·9	20 – 28	13 – 18	Raises dust and loose paper; small branches are moved	Small waves, becoming longer; fairly frequent white horses	Good working breeze, smacks carry all canvas with good list	1 (1·5)	3 ½ (5)
5	Fresh breeze	17 – 21	8·0 – 10·7	29 – 38	19 – 24	Small trees in leaf begin to sway; crested wavelets form on inland waters	Moderate waves, taking a more pronounced long form; many white horses are formed (chance of some spray)	Smacks shorten sail	2 (2·5)	6 (8½)
6	Strong breeze	22 – 27	10·8 – 13·8	39 – 49	25 – 31	Large branches in motion; whistling heard in telegraph wires; umbrellas used with difficulty	Large waves begin to form; the white foam crests are more extensive everywhere (probably some spray)	Smacks have double reef in mainsail; care required when fishing	3 (4)	9 ½ (13)
7	Near gale	28 – 33	13·9 – 17·1	50 – 61	32 – 38	Whole trees in motion; inconvenience felt when walking against wind	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind	Smacks remain in harbour and those at sea lie-to	4 (5·5)	13 ½ (19)
8	Gale	34 – 40	17·2 – 20·7	62 – 74	39 – 46	Breaks twigs off trees; generally impedes progress	Moderately high waves of greater length; edges of crests begin to break into the spindrift; the foam is blown in well-marked streaks along the direction of the wind	All smacks make for harbour, if near	5·5 (7·5)	18 (25)
9	Strong gale	41 – 47	20·8 – 24·4	75 – 88	47 – 54	Slight structural damage occurs (chimney pots and slates removed)	High waves; dense streaks of foam along the direction of the wind; crests of waves begin to topple, tumble and roll over; spray may affect visibility	—	7 (10)	23 (32)
10	Storm	48 – 55	24·5 – 28·4	89 – 102	55 – 63	Seldom experienced inland; trees uprooted; considerable structural damage occurs	Very high waves with long overhanging crests; the resulting foam, in great patches, is blown in dense white streaks along the direction of the wind; on the whole, the surface of the sea takes a white appearance; the tumbling of the sea becomes heavy and shock-like; visibility affected	—	9 (12·5)	29 (41)
11	Violent storm	56 – 63	28·5 – 32·6	103 – 117	64 – 72	Very rarely experienced; accompanied by widespread damage	Exceptionally high waves (small and medium-sized ships might be for a time lost to view behind the waves); the sea is completely covered with long white patches of foam lying along the direction of the wind; everywhere the edges of the wave crests are blown into froth; visibility affected	—	11·5 (16)	37 (52)
12	Hurricane	64 and over	32·7 and over	118 and over	73 and over	—	The air is filled with foam and spray; sea completely white with driving spray; visibility very seriously affected	—	14 (—)	45 (—)

* This table is only intended as a guide to show roughly what may be expected in the open sea, remote from land. It should never be used in the reverse way; i. e., for logging or reporting the state of the sea. In enclosed waters, or when near land, with an off-shore wind, wave heights will be smaller and the waves steeper. Figures in brackets indicate the probable maximum height of waves

Code 1133

F_c — Character of front

Code figure		Code figure	
0	No specification	5	Forming or existence suspected
1	Frontal activity area decreasing	6	Quasi-stationary
2	Frontal activity area, little change	7	With waves
3	Frontal activity area increasing	8	Diffuse
4	Intertropical*	9	Position doubtful

* Preferable to use tropical section of the message.

Note: 1. The specifications apply to the time of the analysis or prognosis when used in the basic code form, and to the periods indicated by $g_p g_p$ when used in the alternative code forms of FM 45.B.

Code 1139

F_i Intensity of front

Code figure		Code figure	
0	No specification	5	Moderate, little or no change
1	Weak, decreasing (including frontolysis)	6	Moderate, increasing
2	Weak, little or no change	7	Strong, decreasing
3	Weak, increasing (including frontogenesis)	8	Strong, little or no change
4	Moderate, decreasing	9	Strong, increasing

Note: 1. The specifications opply to the time of the analysis or prognosis when used in the basic code form, and to the periods indicated by $g_p g_p$ when used in the alternative code forms of FM 45.B.

Code 1144

F_m—Force of surface wind

Code figure	*Beaufort number*	*Code figure*	*Beaufort number*
0	0–3	5	8
1	4	6	9
2	5	7	10
3	6	8	11
4	7	9	12

Code 1152

F_t — Type of front

Code figure		Code figure	
0	Quasi-stationary front	5	Cold occlusion
1	Warm front	6	Upper cold front
2	Warm occlusion	7	Instability line
3	Upper warm front	8	Intertropical front*
4	Cold front	9	Occlusion

* Preferable to use tropical section of the message in FM 45.B and FM 46.A.

Code 1162

F_1, F_2, etc. — Intensity of points

Code figure		
1	Dots	weak
2	Dots and dashes	
3	Dashes	
4	Dots	moderate
5	Dots and dashes	
6	Dashes	
7	Dots	strong
8	Dots and dashes	
9	Dashes	

Code 1263

f_2, f_3, ... f_n — **Wind speed at standard pressure levels in units of 5 knots**

Code figure		Code figure	When 50 is added to dd
0	0–2 knots	0	48–52 knots
1	3–7 knots	1	53–57 knots
2	8–12 knots	2	58–62 knots
3	13–17 knots	3	63–67 knots
4	18–22 knots	4	68–72 knots
5	23–27 knots	5	73–77 knots
6	28–32 knots	6	78–82 knots
7	33–37 knots	7	83–87 knots
8	38–42 knots	8	88–92 knots
9	43–47 knots	9	93–97 knots

Code 1300

G—Period of time covered by forecast

Code figure	
0	Synopsis of meteorological conditions in the forecast area at the time of broadcast of the weather bulletin
1	Forecast valid for 3 hours
2	Forecast valid for 6 hours
3	Forecast valid for 9 hours
4	Forecast valid for 12 hours
5	Forecast valid for 18 hours
6	Forecast valid for 24 hours
7	Forecast valid for 48 hours
8	Forecast valid for 72 hours
9	Occasionally

Code 1334

G_d—Estimated delay after scheduled launching until replacement rocket is fired

Code figure		
0	0–3 hours	replacement rockets will be fired
1	3–6 hours	
2	6–12 hours	
4	18–24 hours	
5	1–2 days	
6	2–3 days	
7	over 3 days	
8	unknown	
9	replacement rocket will not be fired	
/	replacement rocket not required.	

Notes: (1) When a firing is made but data are not obtained, one of the code figures from 0 through 8 describing the expectation for firing replacement rocket should be reported.
(2) Code figure 9 should be reported when it is known that a replacement rocket will not be fired.
(3) When data are obtained from a firing a solidus (/) should be reported for G_d

Code 1364

G_3 — Time of chart on which forecast is based

Code figure				Code figure
0	0000 GMT	or	0000 GMT	0
1	2100 GMT		0300 GMT	3
2	1200 GMT		0600 GMT	6
3	0300 GMT		0900 GMT	9
5	1500 GMT		1200 GMT	2
6	0600 GMT		1500 GMT	5
8	1800 GMT		1800 GMT	8
9	0900 GMT		2100 GMT	1

Code 1549

H_r—Pressure of the higher level for which information is given

h_r—Pressure of the lower level for which information is given

Code figure		Code figure	
1	100 mb	6	600 mb
2	200 mb	7	700 mb
3	300 mb	8	850 mb
5	500 mb	0	1,000 mb

Code 1555

H_w — Height of the waves

Code figure		Code figure	If 50 is added to $d_w d_w$
0	Less than ¼ m (1 ft)	0	5 m (16 ft)
1	½ m (1½ ft)	1	5½ m (17½ ft)
2	1 m (3 ft)	2	6 m (19 ft)
3	1½ m (5 ft)	3	6½ m (21 ft)
4	2 m (6½ ft)	4	7 m (22½ ft)
5	2½ m (8 ft)	5	7½ m (24 ft)
6	3 m (9½ ft)	6	8 m (25½ ft)
7	3½ m (11 ft)	7	8½ m (27 ft)
8	4 m (13 ft)	8	9 m (29 ft)
9	4½ m (14 ft)	9	9½ m (30½ ft)
/	Height not determined		

Notes:
1) Each code figure provides for reporting a range of heights. For example: 1 = ¼m (1 ft) to ¾m (2½ ft); 5 = 2¼m (7 ft) to 2¾m (9 ft); 9 = 4¼m (13½ ft) to 4¾m (15 ft), etc.
2) If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of 2¾m is reported by code figure 5.
3) In aeronautical codes, only the left-hand table is to be used and code figure 9 has the meaning: 4½m (14 ft) or more.
4) The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.

Code 1577

$h_B h_B$ — Height* of lowest level of turbulence
$h_f h_f$ — Height* of the 0° C isotherm level
$h_i h_i$ — Height* of lowest level of icing
$h_s h_s$ — Height* of base of cloud layer or mass whose genus is indicated by C
$h_t h_t$ — Height* of top of cloud layer or mass whose genus is indicated by C and base by $h_s h_s$
$h_x h_x$ — Height* to which temperature and wind refer

Code 1577 (continued)

Code figure	Metres	Feet (approx.)	Code figure	Metres	Feet (approx.)	Code figure	Metres	Feet (approx.)
00	< 30	< 100						
01	30	100	34	1,020	3,400	67	5,100	17,000
02	60	200	35	1,050	3,500	68	5,400	18,000
03	90	300	36	1,080	3,600	69	5,700	19,000
04	120	400	37	1,110	3,700	70	6,000	20,000
05	150	500	38	1,140	3,800	71	6,300	21,000
06	180	600	39	1,170	3,900	72	6,600	22,000
07	210	700	40	1,200	4,000	73	6,900	23,000
08	240	800	41	1,230	4,100	74	7,200	24,000
09	270	900	42	1,260	4,200	75	7,500	25,000
10	300	1,000	43	1,290	4,300	76	7,800	26,000
11	330	1,100	44	1,320	4,400	77	8,100	27,000
12	360	1,200	45	1,350	4,500	78	8,400	28,000
13	390	1,300	46	1,380	4,600	79	8,700	29,000
14	420	1,400	47	1,410	4,700	80	9,000	30,000
15	450	1,500	48	1,440	4,800	81	10,500	35,000
16	480	1,600	49	1,470	4,900	82	12,000	40,000
17	510	1,700	50	1,500	5,000	83	13,500	45,000
18	540	1,800	51			84	15,000	50,000
19	570	1,900	52			85	16,500	55,000
20	600	2,000	53	Not used		86	18,000	60,000
21	630	2,100	54			87	19,500	65,000
22	660	2,200	55			88	21,000	70,000
23	690	2,300	56	1,800	6,000	89 >	21,000	> 70,000
24	720	2,400	57	2,100	7,000	90	Less than	50 m
25	750	2,500	58	2,400	8,000	91	50 to	100 m
26	780	2,600	59	2,700	9,000	92	100 to	200 m
27	810	2,700	60	3,000	10,000	93	200 to	300 m
28	840	2,800	61	3,300	11,000	94	300 to	600 m
29	870	2,900	62	3,600	12,000	95	600 to	1,000 m
30	900	3,000	63	3,900	13,000	96	1,000 to	1,500 m
31	930	3,100	64	4,200	14,000	97	1,500 to	2,000 m
32	960	3,200	65	4,500	15,000	98	2,000 to	2,500 m
33	990	3,300	66	4,800	16,000	99	2,500 m or more, or no clouds	

*) Heights "are above ground level in FM 11.C, FM 15.C, FM 16.A, FM 51.C, FM 52.C, and above mean sea level in FM 21.C, FM 26.B, FM 53.B, FM 54.B, FM 55.B.

In the case of reports or forecasts from airports in FM 15.C and FM 16.A or FM 51.C and FM 52.C, ground level is considered as being the official airport elevation.

In the other cases ground level is the station level."

Notes:

1) The code is direct reading in units of 30 m (approx. 100 feet) from 0 to 50.
2) The code figures 51 to 55 are not used.
3) For code figures 56 to 80, 50 is subtracted and the remaining figure is direct reading in units of 300 m (approx. 1,000 feet).
4) For code figures 81 to 89, the code reads in increments of 1,500 m (5,000 feet) from the values given for code figure 80.
5) The code table is to be considered as a coding device in which certain code figures are assigned values. These are discrete values (not ranges, with the exception of code figures 90–99 where ranges are specified). Any observation or forecast of values to be coded in the code table is to be made without regard to the code table.

   The coding is then accomplished according to the following rule:

   If the observed or forecast value is between two of the reportable values as given in the table, the code figure for the lower reportable value is reported, except for code figures 90–99; in this decade, a value exactly equal to one of the values at the ends of the ranges is to be coded in the higher range; e.g. a height of 600 m is reported by code figure 95.
6) This 90–99 decade should neither be used for aeronautical purposes nor in a special weather report from ship.

Code 1600

h — Height, above ground, of the base of the cloud

Code figure			Code figure	
0	0 to	50 m	7	1,500 to 2,000 m
1	50 to	100 m	8	2,000 to 2,500 m
2	100 to	200 m	9	2,500 m or more, or no clouds
3	200 to	300 m	/	Height of base of cloud not known or base of clouds at a level lower and tops at a level higher than that of the station
4	300 to	600 m		
5	600 to	1,000 m		
6	1,000 to	1,500 m		

Notes:

1. A height exactly equal to one of the values at the ends of the ranges is to be coded in the higher range; e.g. a height of 600 m is reported by code figure 5.
2. The term "height above ground" is considered as being the height above the official airport elevation or above station level at a non-airport station.

Code 1700

I — Density of points (in FM 83.A)

Code figure	
1	Low
2	Medium
3	High

Code 1733

I_c — Type of ice accretion (in FM 51.C, FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)

Code figure		Code figure	
0	No icing	5	Moderate icing in cloud
1	Light icing	6	Moderate icing in precipitation
2	Light icing in cloud	7	Severe icing
3	Light icing in precipitation	8	Severe icing in cloud
4	Moderate icing	9	Severe icing in precipitation

Code 1739

I_i — Intensity of the icing (in FM 35.C, FM 36.C)

Code figure	Characteristic	Effect on aircraft
1	Light icing	No influence on flight regime
2	Average icing	Burdens the aircraft, but does not impede the flight
3	Significant icing	Flight very difficult
4	Heavy icing	Flight impossible

Code 1741

I_j — Density of points (in FM 81.A)

Code figure		
0	1, 2 or 3 dots	
1	Weak	spread of source 10° or less
2	Moderate	
3	Strong	
4	Weak	spread of source 10° to 20°
5	Moderate	
6	Strong	
7	Weak	spread of source 20° to 40°
8	Moderate	
9	Strong	

Code 1751

I_s — Ice accretion on ships

Code figure	
1	Icing from ocean spray
2	Icing from fog
3	Icing from spray and fog
4	Icing from rain
5	Icing from spray and rain

Code 1800

i — Intensity or character of the weather element w_e (type of weather) (in FM 45.C)

(The column selected from this table depends on the code figures used for symbol w_e)

Code figure	Height of base of significant cloud in metres	Visibility in metres	Wind force (Beaufort)	Icing	Turbulence	Squalls	Snow cover in centimetres
0	Less than 50	Less than 50	10	No specification	Not specified	No specification	No snow
1	50 – 99	50 – 199	11	Light rime ice in cloud	Light	Rain, few	Up to 2
2	100 – 199	200 – 499	12	Moderate rime ice in cloud	Moderate	Rain, scattered but numerous	Up to 5
3	200 – 299	500 – 999	3	Heavy rime ice in cloud	Severe	Rain, very numerous	Up to 10
4	300 – 599	1,000 – 1,999	4	Light clear ice in cloud		Snow, few	Up to 15
5	600 – 999	2,000 – 3,999	5	Moderate clear ice in cloud		Snow, scattered but numerous	Up to 25
6	1,000 – 1,499	4,000 – 9,999	6	Heavy clear ice in cloud		Snow, very numerous	Up to 50
7	1,500 – 1,999	10,000 –19,999	7	Light clear ice in precipitation not in cloud		Rain and snow mixed, few	Up to 100
8	2,000 – 2,499	20,000 –49,999	8	Moderate clear ice in precipitation not in cloud		Rain and snow, scattered but numerous	Up to 200
9	2,500 or more, or no clouds	50,000 or more	9	Heavy clear ice in precipitation not in cloud		Rain and snow, very numerous	200 or more

Note: When w_e = 8 = saturation, 0 is reported for i.

Code 1821

I_R — Indicator for relationship of runway visual range to capability of observational system

Code figure

0 The runway visual range is less than the value given by $V_RV_RV_R$, which is the minimum observable with the system in use

5 The runway visual range is given by $V_RV_RV_R$, which is within the range of values observable with the system in use

9 The runway visual range is greater than the value given by $V_RV_RV_R$, which is the maximum observable with the system in use

Note: When instruments are used to measure visibility, the maximum and minimum distances measurable by the instruments are to be taken into account; when visibility is estimated by an observer who is using markers or lights along the runway; the maximum and minimum visibilities observable are, respectively, the distances to the last and first markers or lights along the runway.