

Northavimet

User Guide

New LLF

Table of Contents

New LLF - Denmark and Sweden	3
Low Level Forecast - "LLF"	4
LLF – Denmark/Sweden	4
Purpose	4
Areas	4
Naming example	6
Forecast parameters	7
Graphical forecast	7
Time step buttons	8
Preliminary forecast	9
Text forecasts	9
Heights and units	10
Visibility, Cloud base and Weather	11
Cloud top, Turbulence and Icing	11
Ground inversion and Wind shear	12
Surface wind and gusts	12
High level winds and temperatures	12

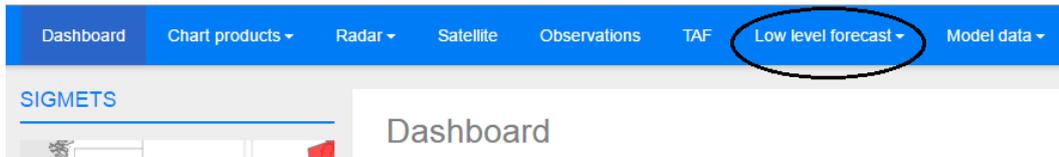
New LLF - Denmark and Sweden

On January 25th a new redesign of the Low level forecasts, LLF, for The Danish and Swedish area is introduced.

The redesign covers both the tool the Aviation forecasters are using as well as the out coming products. On the following pages you can read more about how to interpret the products.

Low Level Forecast - "LLF"

The Low Level Forecast, or "LLF", are area forecasts for low level flights and is accessed via the Navigation bar, se picture below.



LLF - Denmark/Sweden

The following info is aimed mainly towards users of the Danish and Swedish LLF.

Purpose

The LLF is an area forecast covering Sweden east of the Scandinavian Mountains, Denmark and the North Sea. LLF contains information of interest to both VFR and IFR flights and covers vertically from the surface to FL125.

The forecasts from LLF are distributed in 2 different formats:

- As regular text forecasts
- As graphical products

Areas

Denmark and Sweden are divided into 6 areas in total: A, B, C, D, E and F - see the map on page 6. Each of these areas is divided into sub-areas and these sub-areas into fragments. EKDK FIR consists of the areas D (Denmark) and F (North Sea). Area F extends west of EKDK FIR to E004. ESSA FIR east of the Scandinavian Mountains consists of the areas C, B, A and E.

Each sub-area has a letter code that prefixes each fragment name, thereby making these names unique.

Area C contains sub-areas

- "Northern part" with prefix "A"
- "Middle part" with prefix "B"
- "South-western part" with prefix "C"
- "South-eastern part" with prefix "D"

Area B contains sub-areas

- "North-western part" with prefix "E"

- "Northern part" with prefix "F"
- "Southern part" with prefix "G"
- "South-eastern part" with prefix "H"

Area A contains sub-areas

- "Northern part" with prefix "I"
- "South-eastern part" with prefix "K"

Area E only has one sub-area

- The entire area with prefix "J"

Area D consists of sub-areas:

- "Jutland" with prefix "M"
- "The Islands" with prefix "N"

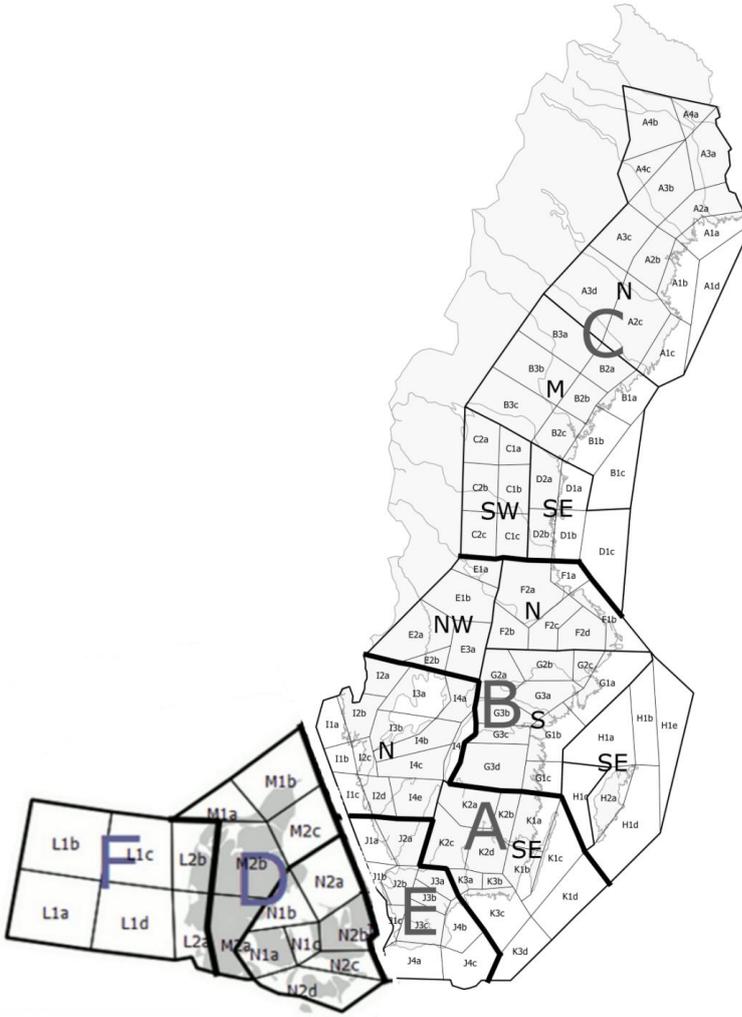
Area F has only one sub-area

- The entire area with prefix "L"

Naming example

The fragment covering the Island of Gotland has the name H2a, indicating that the fragment lies in the south-eastern part of area B.

In the LLF text forecasts the fragments are referenced to with this naming.



LLF Areas and fragments. Sub-areas are indicated by a slightly thicker line.

Forecast parameters

The following parameters are available both as graphics and text: Visibility, Cloud base, VMC-Overview, Weather, CB, Cloud top, Turbulence, Icing, Freezing levels, Surface winds, Wind gusts, Lowest QNH, High level winds/Temperature, and Ground inversions.

Graphical forecast

In the top are buttons for the different areas, which refer to the *Overview-text* presented just below and the *Text forecast* – the language for these can be changed on the flags below to local-language, either Danish or Swedish, and to English.

All the parameters in the LLF are sorted in the following groups:

- **Vis, Clouds, Weather:** Visibility, Cloud base, Weather and CB.
- **Cloud top, turb, icing:** Cloud top, Turbulence, Icing, Freezing level and CB (same as CB in the former group).
- **Surface wind, QNH:** Surface wind, Gust, Turbulence (same as Turbulence in the former group) and QNH.
- **High level winds/temp:** in FL100, FL050 and 2000ft
- **Text forecast:** Today's text forecast and if available Tomorrow's text forecast

The screenshot shows a forecast interface with the following elements:

- A row of area selection buttons: "F - North Sea", "D - Denmark", "E - Halland/Skåne", "A - Norra Götaland", "B - Svealand", and "C - Norrland".
- A text box containing the forecast: "Northwesterly flow of unstable cold air."
- Two language flags: the United Kingdom flag and the Danish flag.
- A row of parameter group buttons: "Vis, clouds, weather", "Cloud top, turb, icing", "Surface wind/QNH", "High level winds/ Temp", and "Text forecast".
- A sub-row of parameter buttons: "Visibility", "Cloud base", and "CB".
- A row of time period buttons: "13-15 UTC", "15-17 UTC", "17-19 UTC", and "19-21 UTC".
- A map showing the geographical area with a zoom-in (+) and zoom-out (-) button.

For the group *Vis, Clouds, Weather* it is possible to toggle the parameters on and off and have shown more than one at a time – having both Visibility and Cloud base on gives you the VMC-Overview, where the areas are colored with regard to the lowest value.

For the remaining groups you can view one parameter at a time.

The graphical forecast is not presented with regard to any predefined fragments, but is drawn precisely as forecasted by the forecaster, resulting in a better resolution and thus improved quality.

For the parameters Freezing level, Surface wind, Gust and High level wind/temp, model data in high resolution will be made available, if approved by the forecaster. This is not to be confused with the *Weather maps* in the *Model data*-tab, as the LLF model data is thoroughly approved by the forecaster.

Occasionally the forecaster may have deemed it necessary to overrule the model data in certain areas – in these cases manually drawn area(s) will be displayed instead, which set another value for the parameter in that particular area, see example in the picture below.



Time step buttons

The forecast is divided into time steps, each covering a two hour period. The desired time step can be selected below the parameter buttons. The number of available time steps will vary throughout the day, but during the day time there will always be a forecast covering at least 4 hours ahead – during some periods up to 8 hours ahead.

Forecasts are issued according to this schedule:

0355 (0455) UTC: LLF Area A+B+C+D+E+F, valid 04-12 (05-13) UTC

0755 (0855) UTC: LLF Area A+B+C+D+E+F, valid 08-16 (09-17) UTC

1155 (1255) UTC: LLF Area A+B+C+D+E+F, valid 12-20 (13-21) UTC

1555 (1655) UTC: LLF Area F, valid 16-22 (17-23) UTC

1755 (1855) UTC: Preliminary LLF Area A+B+C+D+E+F, valid tomorrow

(Times in parenthesis are production times during wintertime)

Preliminary forecast

If you access the "Low Level Forecast" product tab during the night time and early morning, there will be no valid forecast for Today, but a preliminary forecast for tomorrow's weather is available. This contains forecasts of Visibility, Cloud base, Weather, CB, Wind and Wind gust valid for the periods Morning, Midday and Afternoon and will be available until the first LLF for Today is issued. The time steps for the Preliminary forecast will be visible next to the ordinary Time step buttons.

The Preliminary forecast is divided into three time steps: Tomorrow 04-08utc (05-09utc), Tomorrow 08-12utc (09-13utc), Tomorrow 12-16utc (13-17utc)

(Times in parenthesis are during wintertime)

Text forecasts

The text forecast is divided into individual sections, the first being an overview of the entire selected area. The overview text contains a synoptic weather overview and a brief summary of occurrences of low visibilities and cloud bases (ceiling), turbulence and icing.

Then follows the detailed forecast for each sub-area. This contains the parameters: Turbulence, Icing, Visibility/Weather/Clouds, Cloud top, CB/TCU Clouds, Zero degree isotherm, Surface winds with gusts, High level winds/temperature, Lowest QNH and a disclaimer. All the parameters refer to the fragments into which the entire area is divided, except for Zero degree isotherm and High level winds/temperature, which refer to subareas. See the map on page 6.

Text forecasts can also be retrieved from the TAF/METAR command-line, by entering the telegram header, i.e. *FBDN21* for English version of the *The Islands* over Denmark. You can find the telegram header of your preferred area by selecting your area and language under the Low Level Forecast-tab, go to the *Text forecast* button and then read off the header.

F - North Sea	D - Denmark	E - Halland/Skåne	A - Norra Götaland	B - Svealand	C - Norrland
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Northwesterly flow of unstable cold air.



Vis, clouds, weather	Cloud top, turb, icing	Surface wind/QNH	High level winds/ Temp	Text forecast
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Today	Tomorrow
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FBDN20 EXCH 111200 AAB
CHANGED OVERVIEW FOR AREA D ISSUED 111455, DENMARK
VALID THE 11 OF JANUARY 2017 BETWEEN 13 AND 21 UTC

Weather overview

Northwesterly flow of unstable cold air

Visibility below 5 kilometer or cloudbase below 1000 feet
 13-21UTC: The whole area

Moderate or severe icing
 Is not expected during the forecasted period

Moderate or severe turbulence
 Is not expected during the forecasted period

FBDN21 EXCH 111200 AAB
CHANGED FORECAST FOR AREA N, THE ISLANDS ISSUED 111455
VALID THE 11 OF JANUARY 2017 BETWEEN 13 AND 21 UTC

Moderate or severe turbulence
 13-21UTC: The whole area: Is not expected during the forecasted period

Moderate or severe icing
 13-21UTC: The whole area: Is not expected during the forecasted period

Heights and units

Heights are displayed in flight levels from FL050 and above. Below FL050 heights are displayed above ground level AGL in feet/ft.

Wind speeds are in knots, wind direction in degrees. In the text forecast Surface wind directions are displayed as N, NNE, NE, ENE, E, ESE, SE, SSE, S, SSW, SW, WSW, W, WNW, NW and NNW.

Temperatures are in degrees Celsius.

Visibility is displayed in meters and kilometers.

Air pressure (QNH) in hPa.

Visibility, Cloud base and Weather

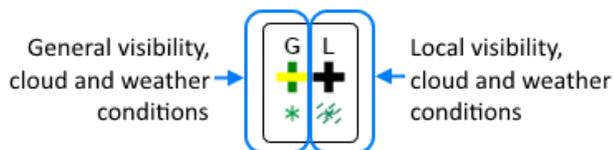
The area is covered with objects that are colored with regards to lowest values of visibility and cloud base (ceiling) forecasted in that area.

■ visibility blw 1500 m	■ ceiling blw 500 ft
■ visibility blw 5 km	■ ceiling blw 1000 ft
■ visibility blw 8 km	■ ceiling blw 2000 ft
■ visibility 8 km or more	■ ceiling 2000 ft or more

The colors correspond to the expressions:

- **Green:** Open
- **Yellow:** Difficult
- **Red:** Marginal
- **Black:** Closed

On the label and on the pop-up info it is possible to read off the values which include information on the general and local conditions. The general are the prevailing conditions.



Cloud top, Turbulence and Icing

By pressing the buttons for the individual parameters, the forecasted values are presented on the area it covers and can be read off in the label or the pop-up info.

Kommentar [MSD1]: Mangler der ikke et ord i denne sætning? Fx 'next to...'?

The Cloud top is forecasted whenever more than half of the sky is expected to be covered, or when CB/TCU clouds are expected.

The Icing parameter covers both in-cloud icing as well as icing in precipitation. The Turbulence parameter covers both in-cloud turbulence, mechanical turbulence due to strong winds in the boundary layer, thermal turbulence arising from cumulus convection or dry thermals.

Icing and Turbulence associated with CB or TCU will not be shown, so be sure to check the forecast for CB activity.

A disclaimer is put on both the graphical forecast and the text forecast:

Beware: only widespread moderate or severe icing and turbulence are forecast in LLF. Absence of icing and turbulence in the forecast does not preclude the presence of light icing and turbulence. For indication of light icing, please check for forecast cloud top extending above freezing level.

Occurrence of TCU or CB always implies risk of moderate/severe icing and turbulence even though not stated explicitly in the forecast.

Should there be any mountain wave turbulence over the area it can be seen in the turbulence parameter.

For Freezing level model data is presented, if approved by the forecaster. It will be colored according to this legend, or there will be manually drawn areas with label and pop-up info.



Ground inversion and Wind shear

Information about the occurrence of ground inversions and Wind shear will be written in the Overview text in the top of the screen or in the Overview telegram.

Ground inversion is forecasted if temperatures are expected to increase by $>10^{\circ}\text{C}$ from the surface to 1000ft above ground level.

Wind shear can occur throughout the inversion layer, and is forecasted if the shear is expected to exceed 4kt/100ft.

Surface wind and gusts

For Surface winds and gust model data is presented, if approved by the forecaster. It will be visualized by wind barbs or by manually drawn areas with label and pop-up info.

The Wind gust parameter is not necessary exceeding the mean wind by 10 knots, as the normal definition, but will be visualized on non-calm days, and can in those situations be taken as a maximum wind speed. For the text forecasts the gust will be added if it exceeds the minimum mean wind value by 10 knots.

High level winds and temperatures

Contains information in three levels: FL100, FL050 and 2000ft. Model data is presented, if approved by the forecaster. It will be visualized by wind barbs and colors for the temperature or by manually drawn areas with label and pop-up info.

