Aviation Meteorological Forecaster Competency 2

Forecast Aeronautical Meteorological Phenomena and Parameters

High-Level
Significant weather chart
Jetstream
AMF AC 2.1.2 and 2.2

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AIM OF THIS PRESENTATION

Before reviewing this presentation ensure to first consult the following theory presentation to enable better understanding:
RTC-PRE-079_AMF AC 3.1.2_3.1.3_2.1.9_Forecast and Warn of Hazardous Phenomena_Turbulence and Windshear

At the end of this presentation, you will be able to:

- Compile high significant weather chart and use it to demonstrate competency in **AMF AC 2.1.2 and 2.2 – Jetstream's and format**

- Complete weekly quizzes related to Significant weather charts using this presentation as an example.

- Use the **Aviation Software** to construct low- and high-level significant weather charts.

- Display commands relevant to the Jetstream used in the **Wingridds weather display system software**.

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Placement of the jet stream (AMF AC 2.1.2)

-Place the jet starting from the west towards the east.
-Start in the west at the first point where the wind speed becomes 80kt on your chart.
-The jet must be placed along the axis or core of strongest wind speed.
- Significant speed changes of 20kts must be indicated and separated with a jet stream break (i.e. 80 kt becoming 100kt) or if height changes by <=>3000ft.
- For jetspeeds >= 120kt the vertical displacement is indicated

FL 320
220/400

FL 310
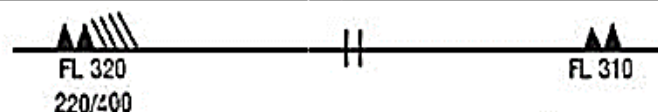
Wind arrows indicate the maximum wind in jet and the flight level at which it occurs. If the maximum wind speed is 60 m/s (120 kt) or more, the flight levels between which winds are greater than 40 m/s (80 kt) is placed below the maximum wind level. In the example, winds are greater than 40 m/s (80 kt) between FL 220 and FL 400.

The heavy line delineating the jet axis begins/ends at the points where a wind speed of 40 m/s (80 kt) is forecast.

⊬ Symbol used whenever the height of the jet axis changes by +/-3000 ft or the speed changes by +/-20 kt

* This symbol refers to widespread surface wind speeds exceeding 15 m/s (30 kt).
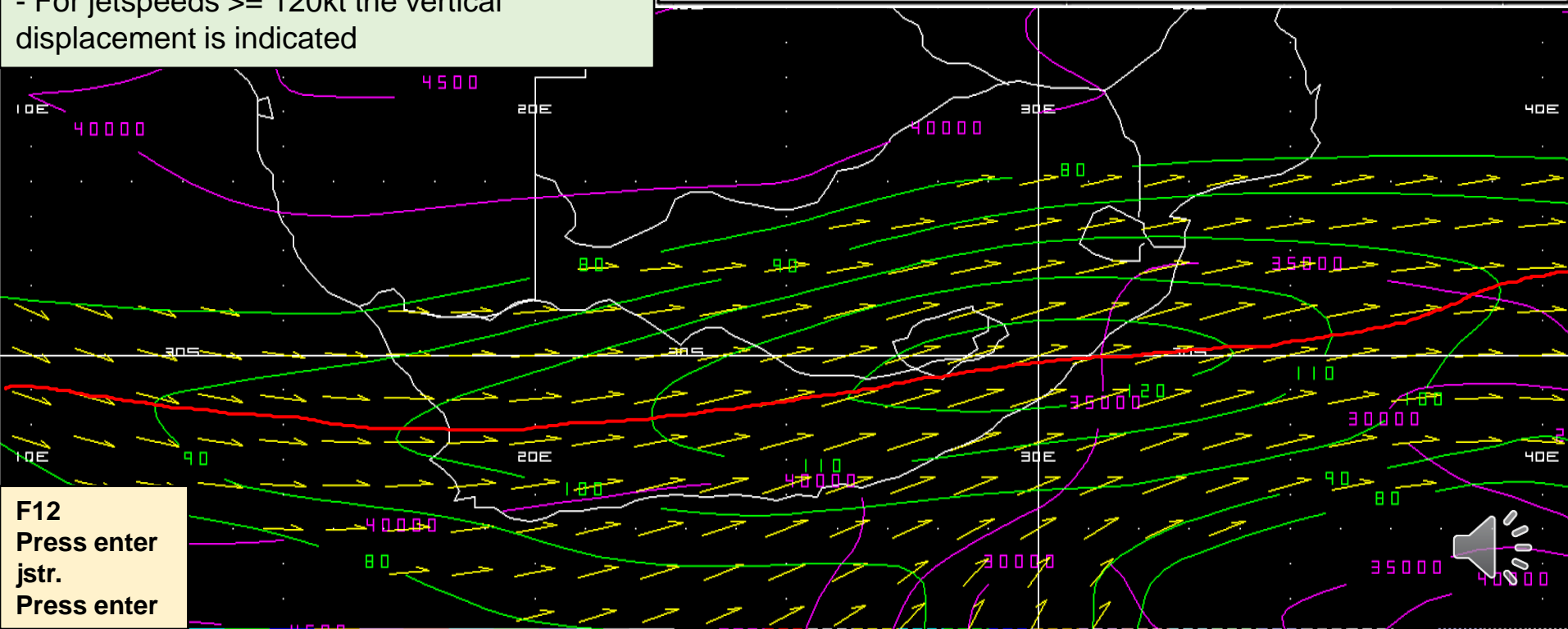
F12
Press enter
jstr.
Press enter

Placement of the jet stream:

Complete steps **1 to 6**. Select the jet at **1**, then click the position of the jet as per NWP ensuring that you have placed enough movable points on the jet to create a jet as **2**. Use **3** to move the jet along the axis of core maximum wind speed as per NWP.

Select the wind barbs for the jet at **4**. Complete the popup at **5, click ok** and place at the start of the jet at **6.** Similarly indicate changes >=20kts along the jet.
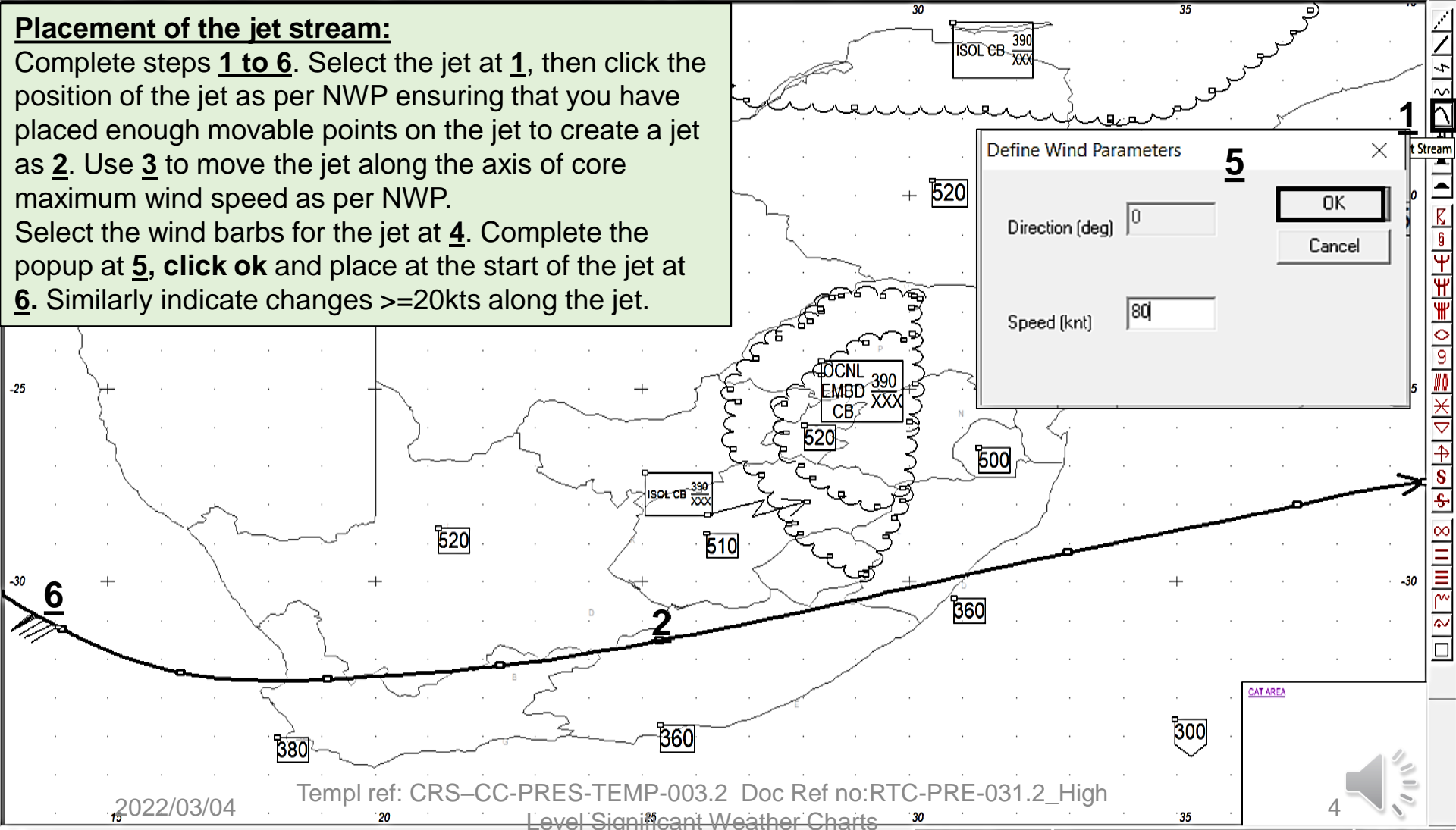
Using the first speed of 80kts as reference, indicate any subsequent significant changes (increases or decreases) in wind speed of 20kts and separate them with a jet stream break.

Follow the same procedure as previous slide to place wind barbs at **1** (100kt),**2** (120kt) and **3** (100kt).

Select the jet stream break at **4** and place on jet in between winds with a 20kt change at **5, 6 and 7**.

Use the left or right arrows on the keyboard to enlarge the wind barb or jet stream break to make it **smaller (left arrow)** or **bigger (right arrow).**

The jet stream break is used when the jet stream axis changes by +/- 3000 ft **or** the speed changes by **+- 20KT**

For Help, press F1
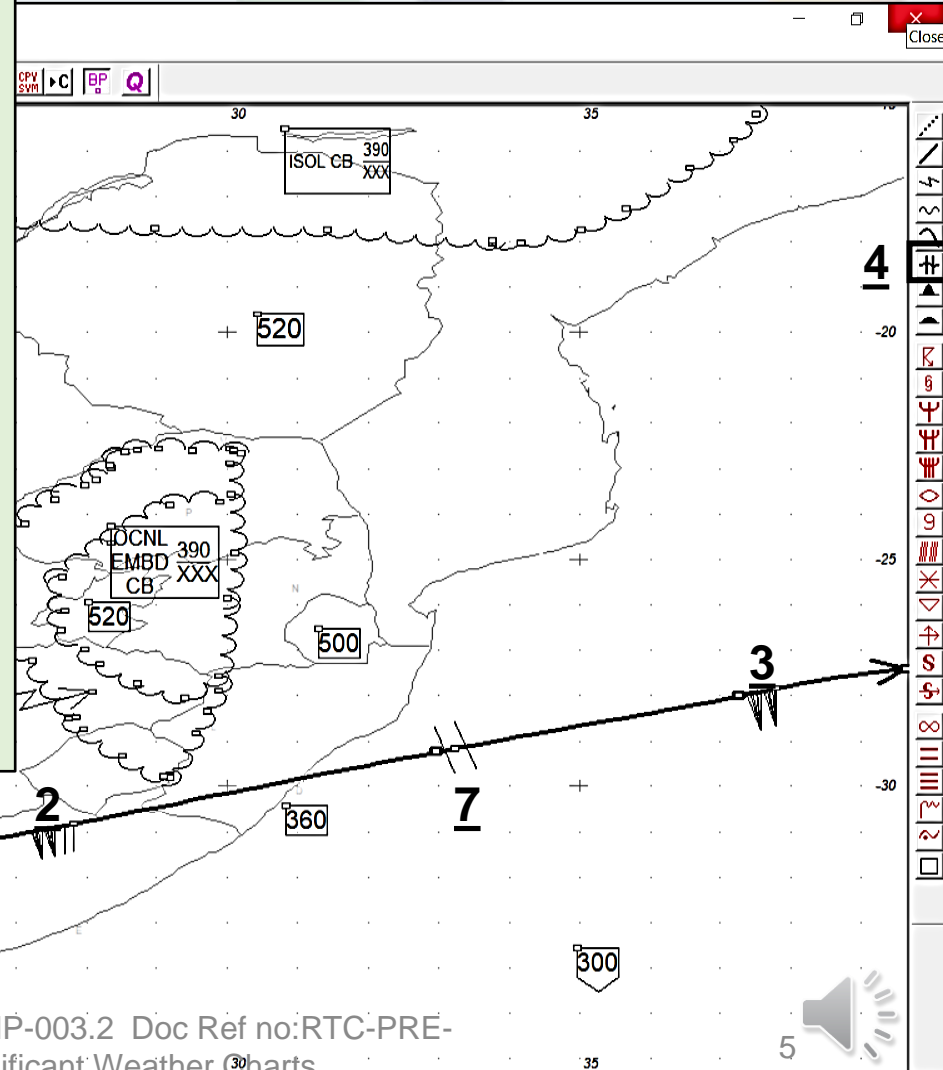
Depicting the flight level on the jet stream (AMF AC 2.1.2 and 2.2)


Select the flight level at **1**, a popup will appear at **2**, enter the height as per NWP paying attention to differences in height along the jet of more than 3000ft and click ok at **3**.

Place the flight level above the jet at **4**.

Similarly to steps **1 to 4**, place the flight level at **5**.

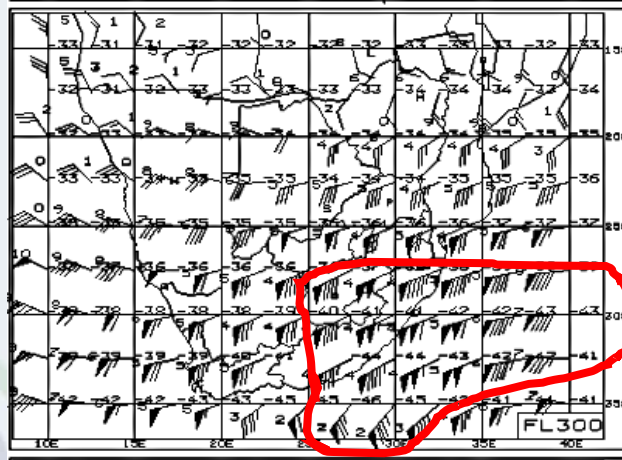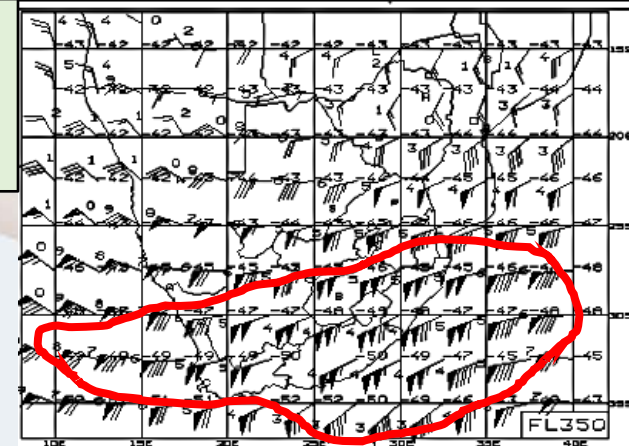Text Entry

Enter text string   350

OK

Cancel
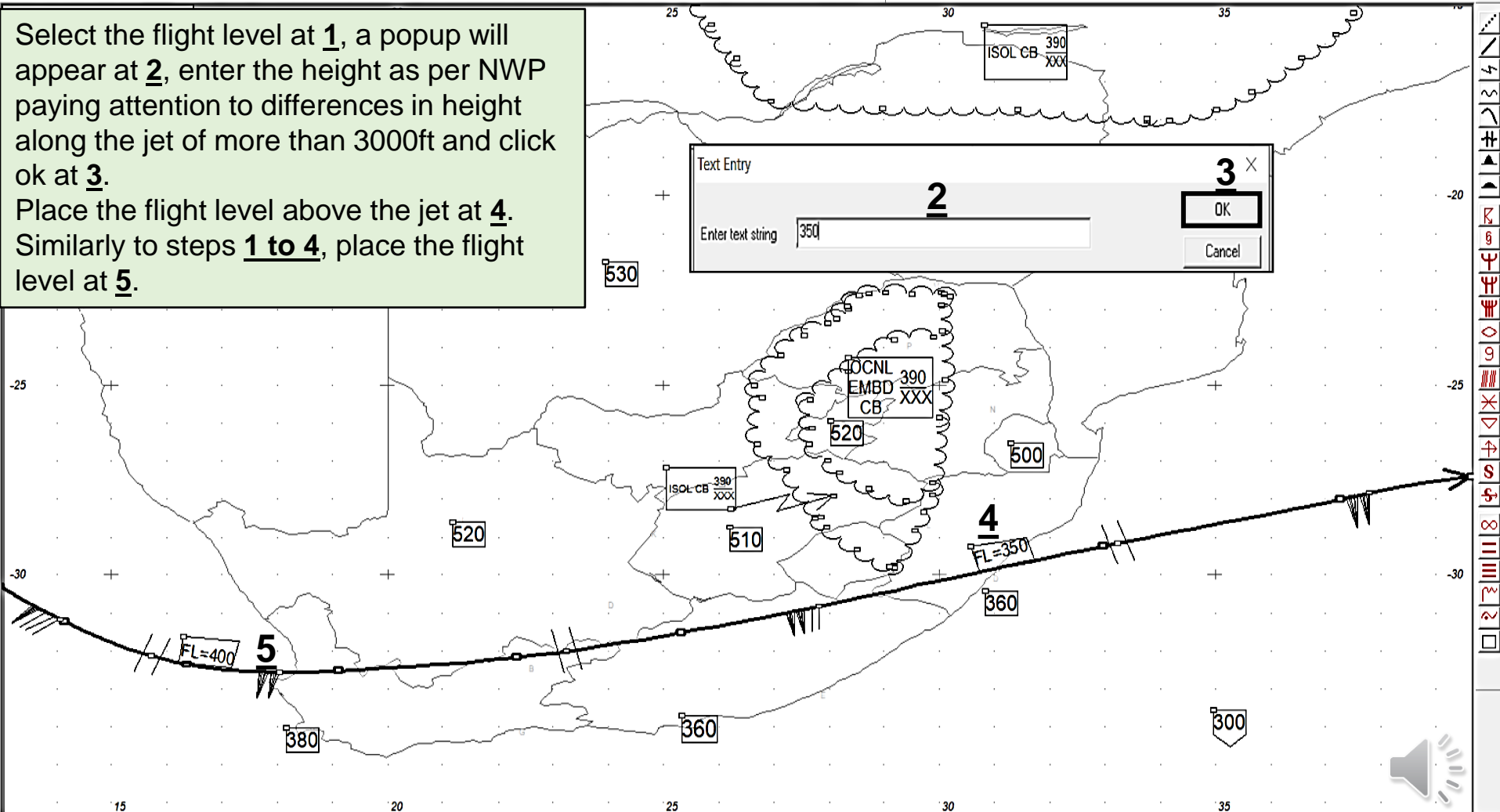
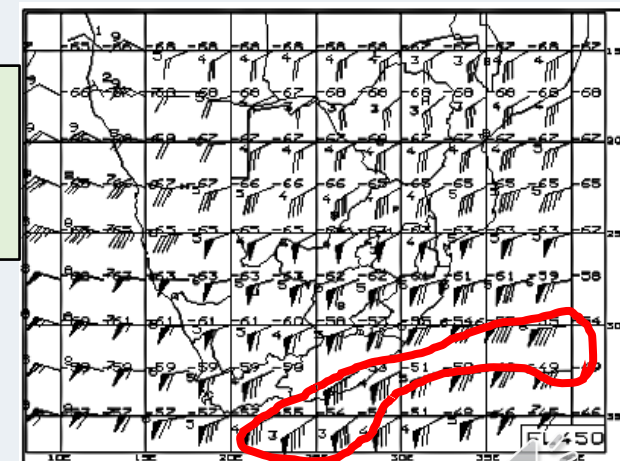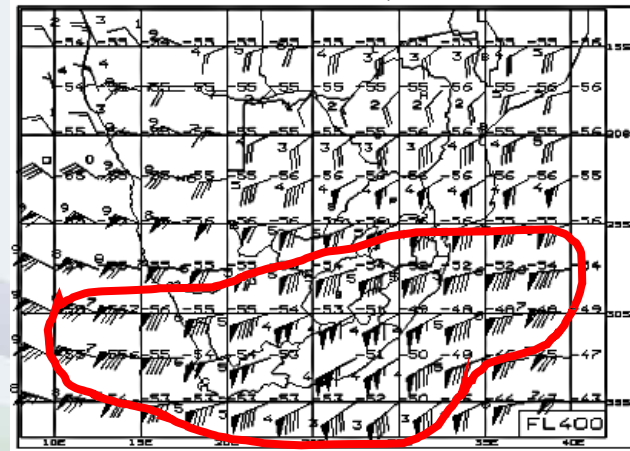# Vertical displacement of jet height (AMF AC 2.1.2 and 2.2)

UPPER WINDS & TEMPERATURES VALID FOR 20181020 12UTC. Issued by SAWS from WAFC, Washington 20181020 00UTC.
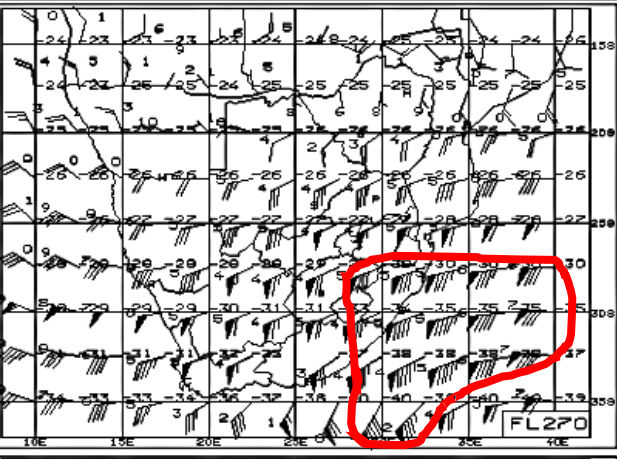
Consult the vector winds at different flight levels around the jet (FL350 to FL400).

The dominant vertical distribution is between FL300 and FL400

Templ ref: CRS–CC-PRES-TEMP-003.2 Doc Ref no:RTC-PRE-031.2_High Level Significant Weather Charts

Depicting the vertical displacement of the jet stream (AMF AC 2.1.2 and 2.2)

Select the text box at **1**, a popup will appear at **2**, enter the height of the jet stream distribution and click ok at **3**.
Place the text box above the flight level at **4**.

N.B: The vertical displacement for the depth of the Jetstream is only done for jets that are >=120KT or changing in height by 3000ft.

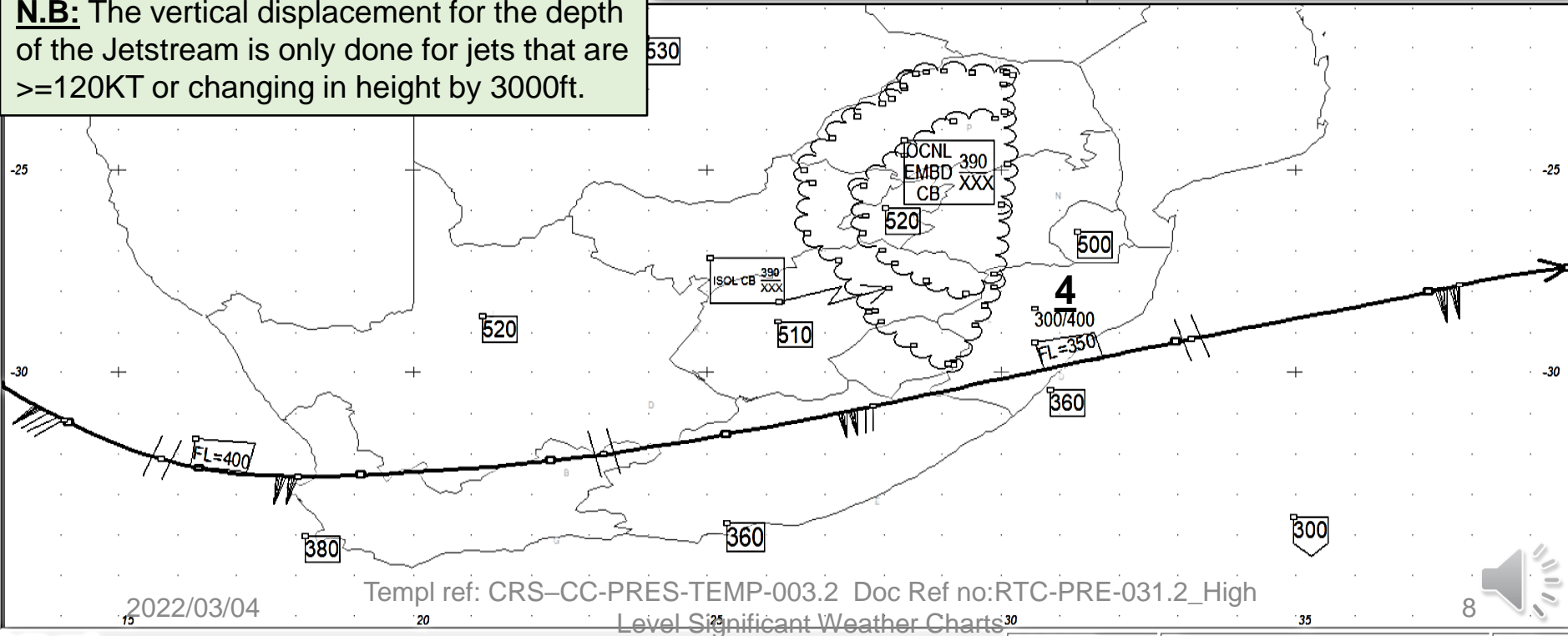# <u>References</u>

- Latest edition of RTC-CN-020_Aviation Practical Course Notes

- RTC-PRE-079_AMF AC 3.1.2_3.1.3_2.1.9_Forecast and Warn of Hazardous Phenomena_Turbulence and Windshear

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