Aviation Meteorological Forecaster Competency 5

EN ROUTE WEATHER FORECAST AMF AC 5.1 and 5.2

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AIM OF THIS PRESENTATION

Before starting this practical AMF task presentation, review the following theory presentation:

RTC-PRE-082_Communication_AMF AC 5.2_4.1_En Route Weather

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

- Conduct an En Route weather forecast by oral communication to internal and external users to demonstrate competency in AMF AC 5.1 and 5.2

- Complete weekly quizzes related to the communication of en route weather forecasts.

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Communication (AMF AC 5.2)

Example Task for Case Study 20 Oct 2018:

Complete the **en route weather briefing table below** based on the following telephonic enquiry from a pilot.

A weather briefing can contain all, or a few of the 8 components indicated below.
As part of your training, you are taught to be able to do a complete comprehensive briefing including all 8 components.
Once you are able to do a complete briefing, it will be easier to trim it down depending on the specific request from the pilot as apposed to enhancing it, if you have not been trained to do so.

For any given flight route, the following 8 components are addressed for a comprehensive en route weather briefing from departure to landing aerodrome.

1) Clarify information received from pilot
2) Take-off conditions at aerodrome
3) En route winds at flight level
4) En route weather around take-off aerodrome
5) En route weather over different geographical areas along flightpath
6) En route weather around landing aerodrome
7) Landing forecast at aerodrome
8) Flight recommendation based on flight rules/warnings

Clarify information received from pilot

Incoming call – Ring, Ring, Ring….

Your phone is ringing, answer your phone!

Question from Pilot: I would like to fly from Kruger National airport (FAKN) to Johannesburg (FAOR) departing at half past 8 local time and arriving at 14 o clock local time in Johannesburg.
Please provide me with a comprehensive en route weather forecast.

Clarify information received from pilot	
Clarification based on the question includes but is not limited to: departure aerodrome, landing aerodrome, time of departure, time of landing, type of flight undertaken, and flight level…	
What flight level will you be flying at? FL 130 What type of flight will you be undertaking? I'm able to fly VFR or IFR.	**Mark allocation** 2

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Take-off conditions (FAKN)

METAR FAKN 200800Z 14010KT 9999 BKN008 OVC015 16/14 Q1026 BECMG BKN012=

Take-off conditions	
Take-off conditions are provided for the departure aerodrome at the time closest to the departure time for FAKN: Every parameter of the METAR is provided	
Wind direction: 140 degrees	
Wind speed: 10 knots	
Visibility: more than 10 km	
Cloud: Broken cloud at 800 ft a.g.l and overcast cloud at 1500 ft a.g.l	
Weather: -	
Temp: 16 degrees Celsius	
Dew point temperature: 14 degrees Celsius	
QNH: 1026 hPa	
TREND: The cloud is expected to become broken at 1200 ft a.g.l in the next 2 hours.	

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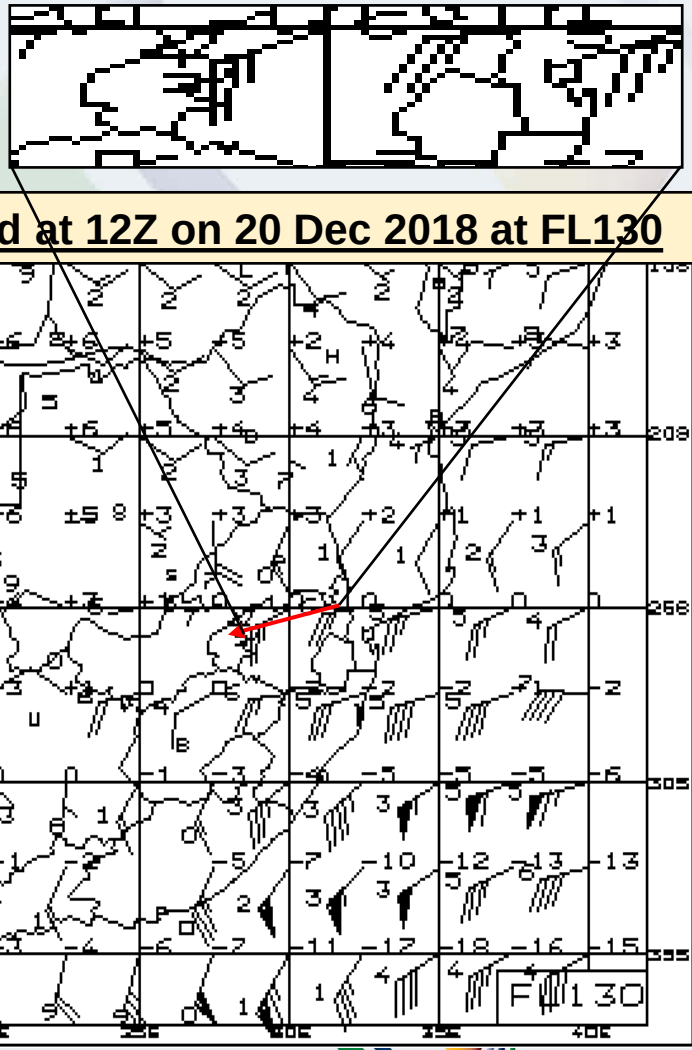
En Route winds

En Route winds

En Route winds are provided at a specified flight level (FL130) between the take-off and landing aerodromes (draw a straight line between the takeoff and landing aerodrome). Reference is made to geographical locations/town/provinces when providing the wind direction in degrees and speed in knots. Mention areas where the wind changes significantly

Around FAKN (Take-off aerodrome): 270 degrees 25 knots	
Over Mpumalanga winds the winds will be: 250 degrees 25 knots	
Over (any other geographical references if necessary)….	
Around FAOR (landing aerodrome): 230 degrees 25 knots	



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En Route weather around take-off aerodrome (FAKN)

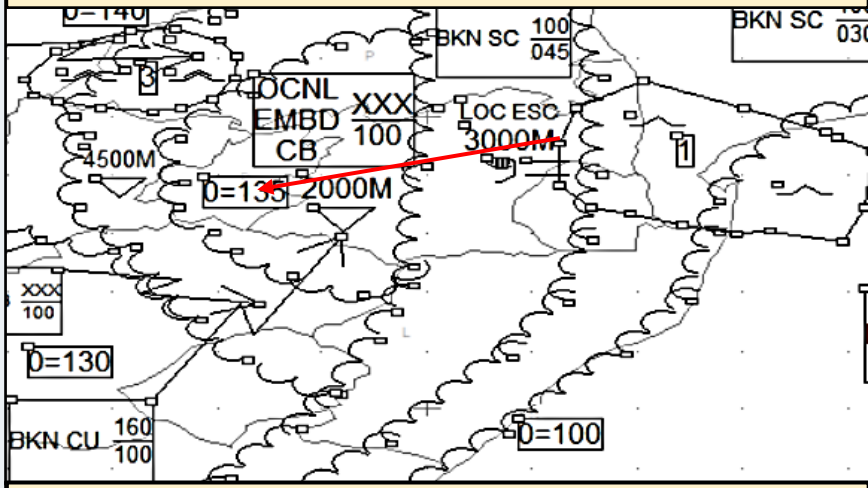
En Route weather around take-off aerodrome

En Route weather includes cloud type, base, top, significant weather and visibility surrounding the departure aerodrome (draw a straight line between the takeoff and landing aerodrome). Information is obtained from the low and high significant weather chart valid closest to the time most of the flight is occurring. Reference is made to geographical locations/town/provinces when providing the en route weather.

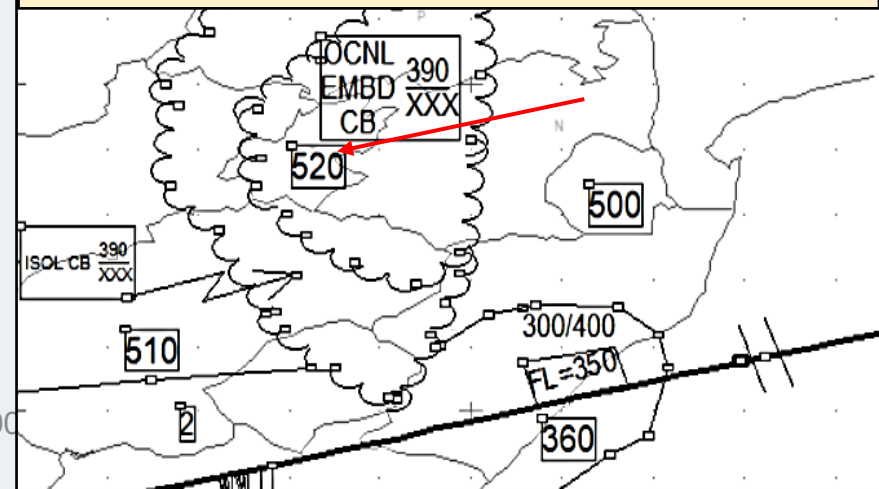
BKN Stratocumulus cloud with a base of 4500 feet a.m.s.l	
and a cloud top of 10000 ft a.m.s.l	
Locally along the escarpment the visibility will be reduced to 3000 meters in drizzle or mist	

Note: FAKN is taken to be just outside turbulence area 1

Low level sigwx chart, you issued at 08Z, which is valid for 12Z on 20 Dec 2018



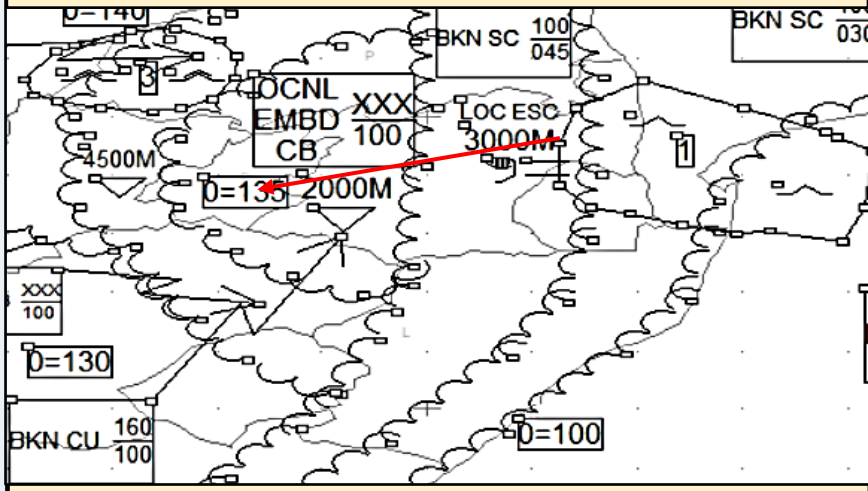
High level sigwx chart, you issued at 08Z, which is valid for 12Z on 20 Dec 2018



En Route weather over area 1 (Mpumalanga as per significant weather chart)

En Route weather over area 1 (Refer to geographical areas as per significant weather chart) – Mpumalanga	
En Route weather includes cloud type, base, top, significant weather and visibility between the departure aerodrome and the destination aerodrome aerodrome (draw a straight line between the takeoff and landing aerodrome). Information is obtained from the significant weather chart valid closest to the time of flight. Reference is made to geographical locations/town/provinces when providing the en route weather	
The same cloud that was expected around Kruger national airport extends onto the eastern Highveld.	
Over the western Highveld of Mpumalanga you can expect broken cumulus clouds to develop during the morning with a cloud base of 10000 feet am.s.l and a cloud top of 16000 feet a.m.s.l	
Occasional embedded Cumulonimbus clouds (or Charlie Bravo) clouds are expected with a cloud base of 10000 ft a.m.s.l and a cloud top of 39000 feet a.m.s.l	
The visibility is expected to be reduced to 2000 meters in showers.	

Low level sigwx chart, you issued at 08Z, which is valid for 12Z on 20 Dec 2018



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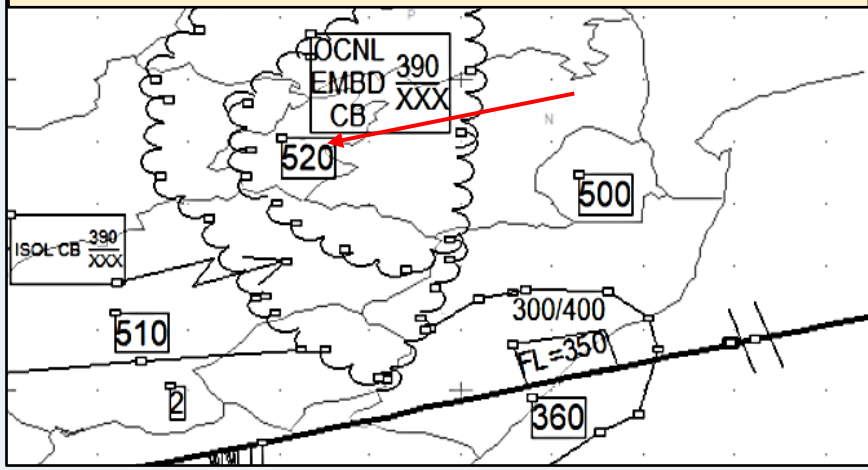
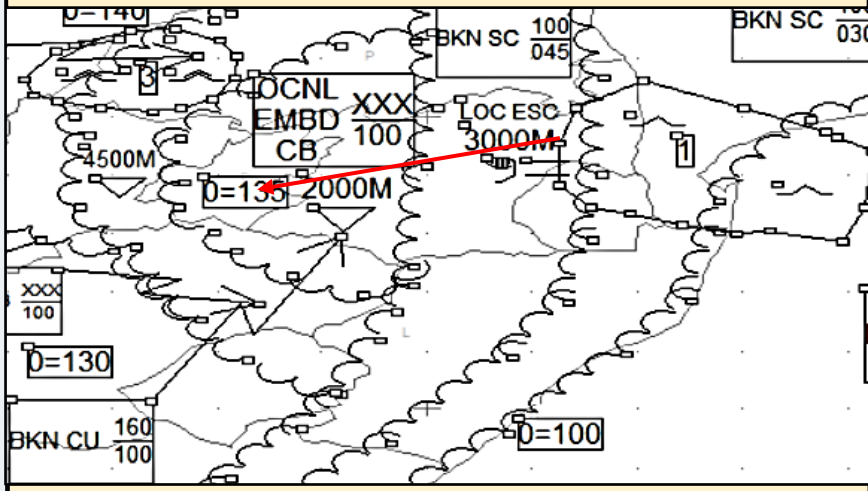


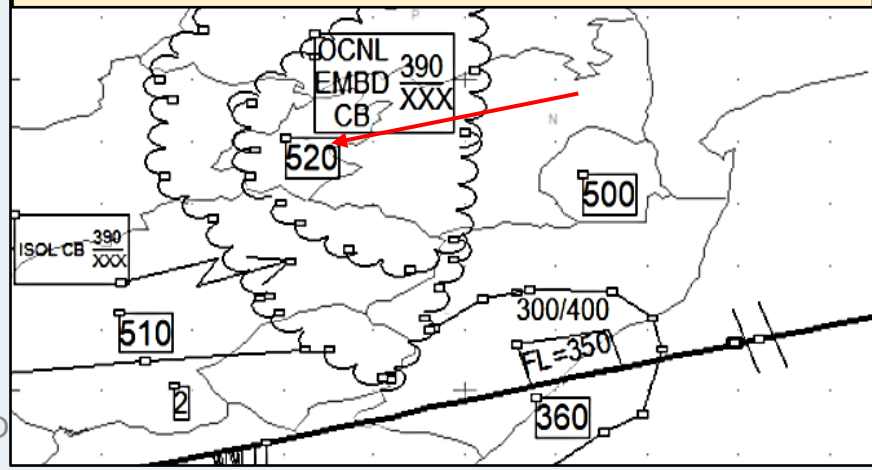
En Route weather over area 2 (Gauteng as per significant weather chart)

En Route weather over area 2 (Gauteng as per significant weather chart)	
En Route weather includes cloud type, base, top, significant weather and visibility between the departure aerodrome and the destination aerodrome aerodrome(draw a straight line between the takeoff and landing aerodrome). Information is obtained from the significant weather chart valid closest to the time of flight. Reference is made to geographical locations/town/provinces when providing the en route weather	
As you enter Gauteng, you can expect the same cloud as that which was expected over western Highveld of Mpumalanga.	
You may expect broken cumulus clouds to develop during the morning with a cloud base of 10000 feet am.s.l and a cloud top of 16000 feet a.m.s.l	
Occasional embedded Cumulonimbus clouds (or Charlie Bravo) clouds are expected with a cloud base of 10000 ft a.m.s.l and a cloud top of 39000 feet a.m.s.l	
The visibility is expected to be reduced to 2000 meters in showers.	

Low level sigwx chart, you issued at 08Z, which is valid for 12Z on 20 Dec 2018



High level sigwx chart, you issued at 08Z, which is valid for 12Z on 20 Dec 2018



En Route weather around landing aerodrome (FAOR)

En Route weather around landing aerodrome FAOR	
En Route weather includes cloud type, base, top, significant weather and visibility between the departure aerodrome and the destination aerodrome aerodrome (draw a straight line between the takeoff and landing aerodrome). Information is obtained from the significant weather chart valid closest to the time of flight. Reference is made to geographical locations/town/provinces when providing the en route weather	
The same weather can be expected around OR Tambo as give for Gauteng.	

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Landing Forecast (TAF) FAOR

TAF FAOR 201000Z 2012/2118 09013KT 9999 BKN040 FEW040CB
TX24/2012Z TN11/2103Z
TEMPO 2012/2019 2500 TSRA SCT035CB
BECMG 2018/2020 BKN015
PROB30 TEMPO 2023/2106 3000 BR BKN008
BECMG 2107/2109 SCT040=

Landing Forecast (TAF)	
The landing Forecast (TAF) is provided for FAOR referring to all applicable information valid at the time of the landing. Applicable information that must be included is: Wind direction and speed, visibility, weather and cloud and any probability groups applicable at the time of landing.	
TAF FAOR 201000Z 2012/2118 09013KT 9999 BKN040 FEW040CB TX24/2012Z TN11/2103Z TEMPO 2012/2019 2500 TSRA SCT035CB	

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Flight recommendation based on flight rules/warnings

Flight recommendation based on flight rules/warnings	
The recommendation/warning could have already been mentioned in the en route weather within the geographical areas. A recommendation can be: NIL VFR/IFR is recommended or not recommended. If NIL VFR is recommended then, the reasons needs to be given for the answer by referring to the NIL VFR criteria	
NIL VFR is recommended because:	
1) The visibility is less than 5000m along the route 2) Around the departure aerodrome (FAKN) the cloud amount is broken and the base of the cloud is less than 1500 ft above the ground. 3) Therefore, an IFR flight is recommended but do take warning of the occasional embedded CB which could cause severe turbulence and icing	

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References

- Latest edition of RTC-CN-020_Aviation Practical Course Notes
- RTC-PRE-082_Communication_AMF AC 5.2_4.1_En Route Weather

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