

Aviation Meteorological Forecaster Competency 3

Warn of Hazardous Weather Phenomena

AIRMET Case Study

AMF AC 3.1.1, 3.1.3, 3.1.4, 3.2 and 3.3

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AIM OF THIS PRESENTATION

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

RTC-PRE-085 AMF AC 3.2 Warn of Hazardous Phenomena Formats

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

- **Compile** warnings for AIRMET and use it to demonstrate competency in **AMF AC 3.1.1, 3.1.3, 3.1.4 – Thunderstorms, Turbulence and Icing**
- **Compile** warnings for AIRMET in the correct format and consistent across boundaries to demonstrate competency in **AMF AC 3.2 and 3.3**
- **Complete** weekly quizzes related to the issue of AIRMET warnings using this presentation as an example.
- **Construct** AIRMET warnings charts electronically for submission using the MS Word programme



Introduction

Example Task for Case Study 20 Oct 2018:

- Issue any **AIRMET** warnings and **graphically depict them electronically** in the word document for the Johannesburg and Cape Town FIR **issued at 08Z valid up to 12Z** in the correct format (**AMF AC 3.2**) on 20 Oct 2018 (**AMF AC 3.1.1, 3.1.2**).

Ensure the warnings are consistent across both FIR of responsibility (**AMF AC 3.3**).

- If necessary, **update or cancel existing AIRMET** warnings for 20 Oct 2018 or issue new ones.

Start with the AIRMET followed by the SIGMET by first considering if any warnings were observed at 08Z and then whether they need to be extended to 12Z – Refer to Competency 1 where the observed part would have been addressed.



AIRMET expected at 08Z for low cloud (AMF AC 2.1.4), vis (AMF AC 2.1.5, 2.1.6 and 2.1.7) and moderate turbulence (AMF AC 3.1.2) and moderate icing AMF AC 3.1.4)

- Consider your answer you provided in AMF Competency 1 and what AIRMETs you observed in the analysis and diagnosis of the weather situation at 08Z.
- You can now also revisit your answer from AMF Competency 1 and update if necessary to ensure you capture the correct AIRMETs

OBS AIRMET SFC VIS < 5000m due to mist, drizzle, fog or light rain

OBS AIRMET MT OBSC

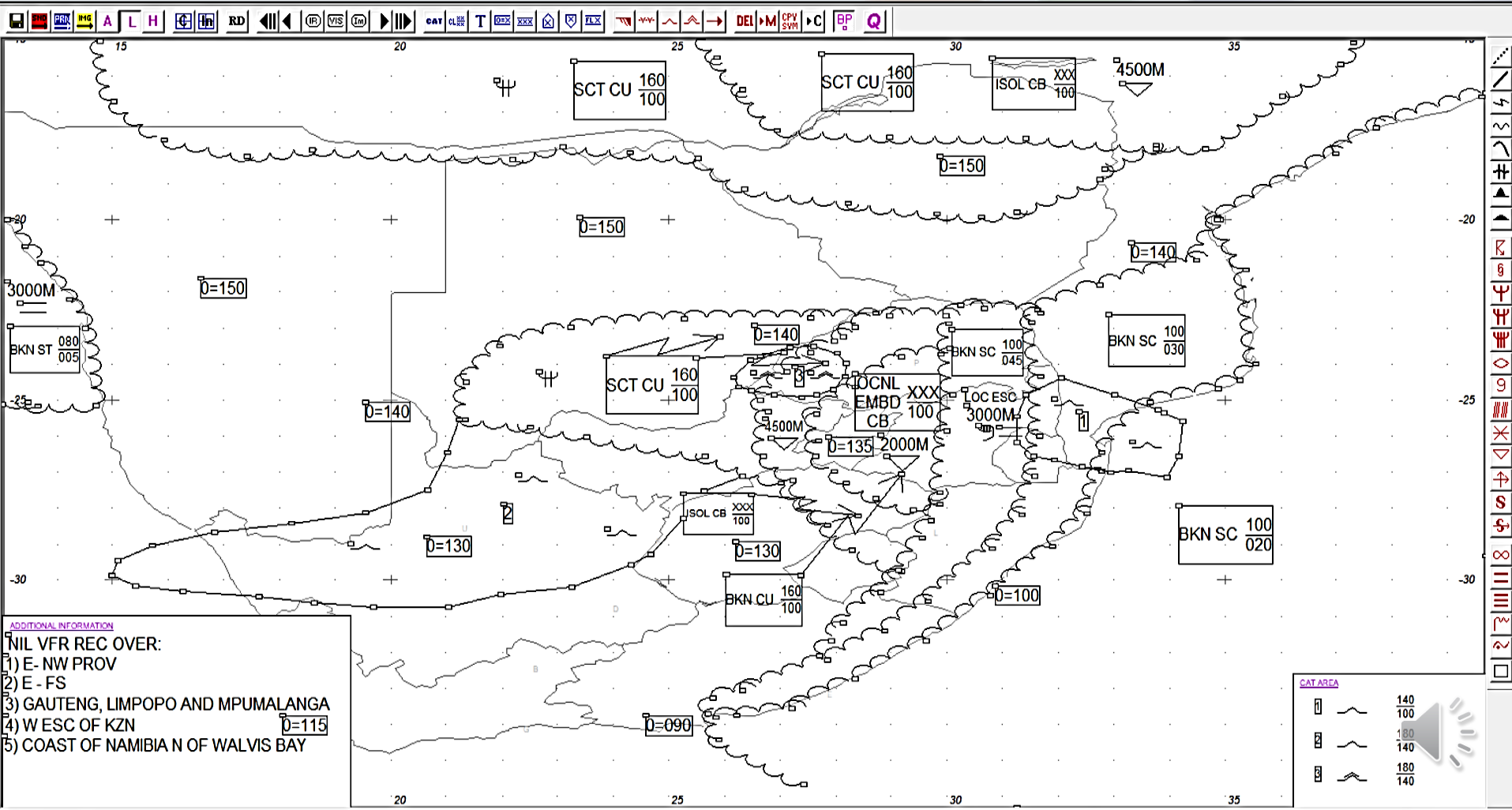
OBS AIRMET BKN CLD <1000ft

No OBS AIRMET for widespread surface wind speed >30kt



AIRMET now-cast for 12Z for low cloud, icing and turbulence

You have issued a low and high level significant weather chart valid for **12Z** which provides you with a 4 hour nowcast of your AIRMET.



AIRMETs issued at 08Z and valid from 08Z to 12Z (**JOHANNESBURG FIR**) for low cloud, vis, moderate turbulence and moderate icing

FAJA (JOHANNESBURG)

FAJA AIRMET **A01** VALID 200800/201200 FAOR-
FAJA JOHANNESBURG FIR **BKN CLD** 900/10000FT OBS AT 0800Z WI
MAP NC=

FAJA (JOHANNESBURG)

FAJA AIRMET **B01** VALID 200800/201200 FAOR-
FAJA JOHANNESBURG FIR **SFC VIS 4500M** BR DZ RA OBS AT 0800Z
WI MAP NC=

FAJA (JOHANNESBURG)

FAJA AIRMET **C01** VALID 200800/201200 FAOR-
FAJA JOHANNESBURG FIR **MT OBSC** OBS AT 0800Z WI MAP NC=

FAJA (JOHANNESBURG)

FAJA AIRMET **D01** VALID 201000/201200 FAOR-
FAJA JOHANNESBURG FIR **MOD ICE** FCST WI MAP FL140/160 STRN
NC=

FAJA (JOHANNESBURG)

FAJA AIRMET **E01** VALID 201000/201200 FAOR-
FAJA JOHANNESBURG FIR **MOD TURB** FCST WI MAP FL100/140 NC=

FAJA (JOHANNESBURG)

FAJA AIRMET **F01** VALID 201000/201200 FAOR-
FAJA JOHANNESBURG FIR **MOD TURB** FCST WI MAP FL140/180 NC=

- Consider the phenomena which has been **observed** at 08Z but is still expected to be there up to 4 hours later and on the 12Z sigwx chart.

- Consider the phenomena which have not been observed at 08Z but are **forecast** 1 up to 4 hours later on the 12Z sigwx chart.
- The first AIRMETs for this case will start with the numbering A01.
- Each area, for example AIRMET A01, will be tracked over the course of the day and changes to that area will be denoted by A02, A03...



AIRMETs issued at 08Z and valid from 08Z to 12Z (CAPE TOWN FIR) for low cloud, vis, moderate turbulence and icing

NIL for this case



AIRMETs issued at 08Z and valid from 08Z to 12Z (JOHANNESBURG FIR) for convection and related visibility

- Consider your answer in Competency 1 and what AIRMETs you observed in the analysis and diagnosis of the weather situation at 08Z.
- As far as convective cloud is concerned there is no observed TCU or CB on the satellite image.
- We noted that CB can be generated east of the upper trough later in the day

No OBS ISOL TCU, ISOL CB/ISOL TS/OCNL TS/OCNL CB or FRQ CB observed

Therefore, no OBS SFC VIS < 5000m

- You issued a low level and high-level significant weather chart valid for 12Z which provides you with the 4-hour forecast of your AIRMET phenomena.

FAJA (JOHANNESBURG)

FAJA AIRMET **G01** VALID 201000/201200 FAOR-
FAJA JOHANNESBURG FIR **OCNL TS** FCST WI MAP TOP FL390=

FAJA (JOHANNESBURG)

FAJA AIRMET **H01** VALID 201000/201200 FAOR-
FAJA JOHANNESBURG FIR **OCNL CB** FCST WI MAP TOP FL390=

FAJA (JOHANNESBURG)

FAJA AIRMET **I01** VALID 201000/201200 FAOR-
FAJA JOHANNESBURG FIR **SFC VIS** 2000M TSRA FCST WI MAP=

FAJA (JOHANNESBURG)

FAJA AIRMET **J01** VALID 201000/201200 FAOR-
FAJA JOHANNESBURG FIR **ISOL TS** FCST WI MAP
TOP FL390=

FAJA (JOHANNESBURG)

FAJA AIRMET **K01** VALID 201000/201200 FAOR-
FAJA JOHANNESBURG FIR **ISOL CB** FCST WI MAP
TOP FL390=

FAJA (JOHANNESBURG)

FAJA AIRMET **L01** VALID 201000/201200 FAOR-
FAJA JOHANNESBURG FIR **SFC VIS** 4500M TSRA FCST
WI MAP=



AIRMETs issued at 08Z and valid from 08Z to 12Z (CAPE TOWN FIR) for convection and related visibility

NIL for this case



Graphical depiction of AIRMET AREA

RTIC-TSK-Aeronautical Forecasting Practical 000.6_Case_20 Oct 2018_MEMO .docx - Word

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Block Arrows

Equation Shapes

Flowchart

Stars and Banners

Callouts

New Drawing Canvas

AIRMET MAP

FAJA Johannesburg FIR

FACA Cape Town FIR

Weather Service

In your word document, select 1, then 2 and use 3 for drawing free hand.



References

- Latest edition of RTC-CN-020 Aviation Practical Course Notes
- RTC-PRE-085 AMF AC 3.2 Warn of Hazardous Phenomena Formats

