



**AERO**  
SOUTH AFRICA



# The Next Hour – Digging Deeper Into The Pilot's Plan



**Neil Piper**

Head of Content: Messe Frankfurt  
South Africa

**Opening**





**Annelie Reynolds**

*Show Director: Aero South Africa*

**Welcome**



# PANELISTS



**Andre Roos**

Aviation Risk  
Specialist, Claims and  
Accident Investigator



**Lauren Smith**

Weather SA



**Caroline Koll**

Owner at The  
Essential Pilot





# Agenda

- Speaker Session: Caroline Koll – The Essential Pilot
- Speaker Session: Lauren Smith – Weather SA
- Speaker Session: Andre Roos - Aviation Risk Specialist, Claims and Accident Investigator
- Q&A
- Closing



# Caroline Koll

ESSENTIAL PILOT



**ESSENTIAL PILOT**


*Keeping flying fun!*



# READY FOR DEPARTURE ?



CAROLINE KOLL



**What do you think  
about before take-off?**



# What do you think of before Take-off?

- Did I remove the pitot cover?
- Do my passengers look nervous?
- Where did I put the sick bags?
- Did I switch the Go-Pro on?
- Is my car locked, and where did I put the keys?
- Are the aircraft documents onboard?
- The aircraft behind me is waiting to take-off...
- I should have cleaned that smudge off the windscreen...

The background image shows a perspective view of a runway. A white center line and yellow edge lines lead towards the horizon. A massive, billowing cloud of white dust or smoke rises from the runway surface, partially obscuring the lower part of the sky. The sky above is a clear, vibrant blue with thin, white, wispy clouds.

# **Loss of Control - Take-off**

# Loss of Control on Take-off

- Most LOC accidents in General Aviation occur in the **take-off phase**.

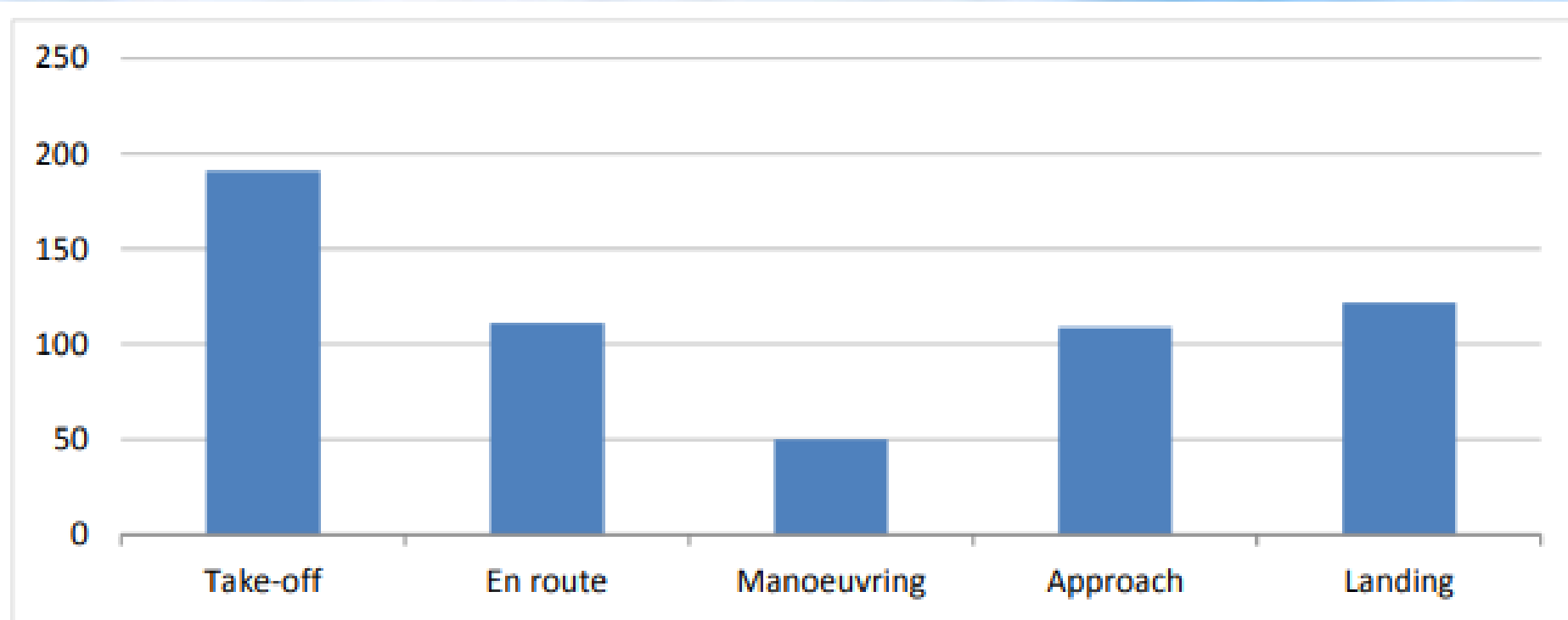


Figure 3 - LOC-I accidents 2011-2015 per flight phase



# Why do pilots lose control on Take-off?

- Distraction
- In most loss of control cases on take-off, there is a failure to promptly **detect**, **recognise** and **recover** from a of deviation from normal operations.

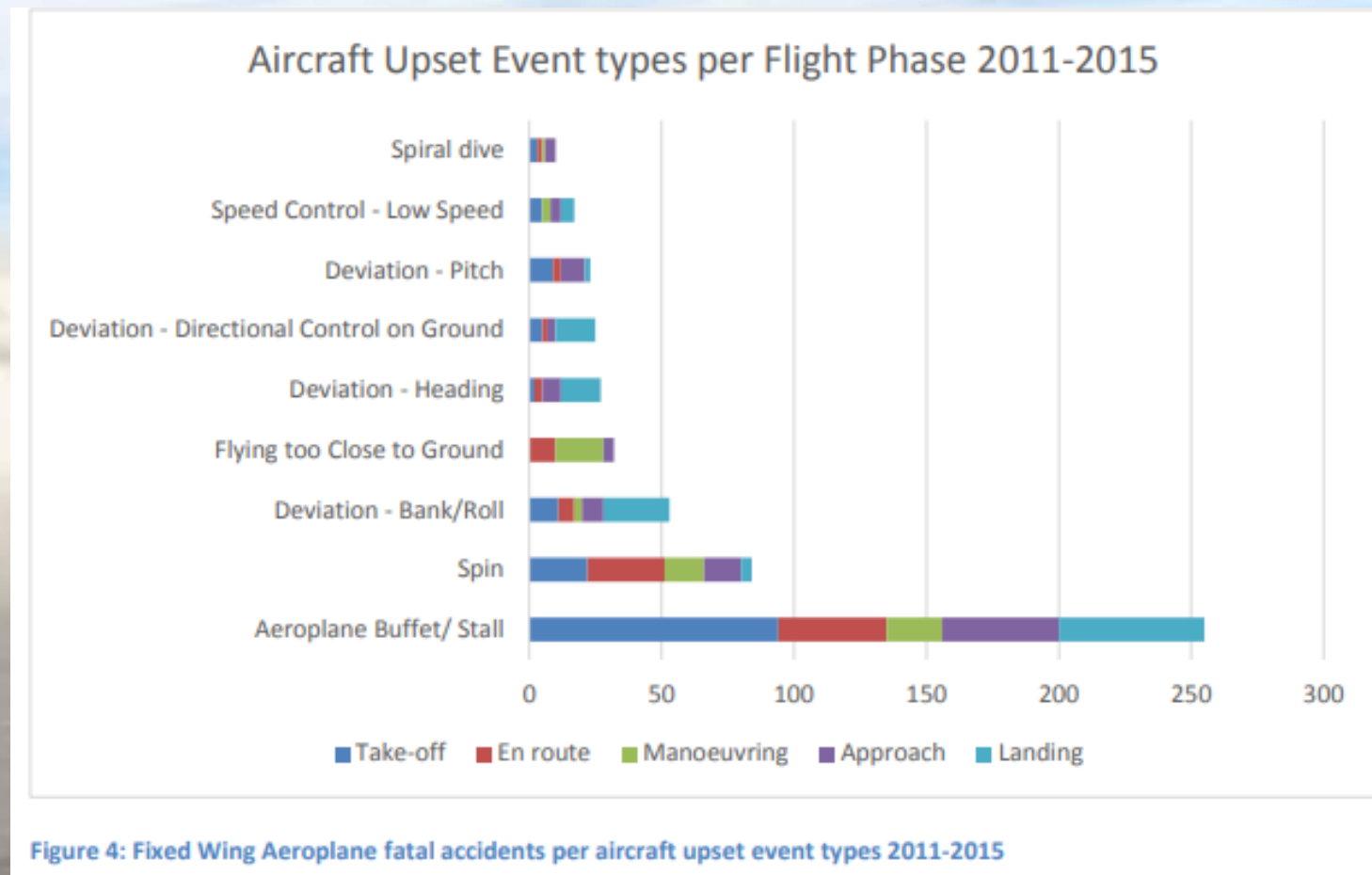


# Loss of control at take-off is often the result of the following factors:

- **Insufficient control** of the aircraft while still on the ground
- Incorrect **rotation speed**
- Wrong aerodynamic **configuration** (e.g. flap setting)
- Poor **loading** of the aircraft (or incorrect securing of cargo)
- **Crosswind** exceeding pilot or aircraft capability
- Incorrect **aircraft attitude** at rotation and during the initial climb phase.

# Loss of Control on Take-off

- The most common type of Aircraft Upset is an **aerodynamic stall** during take-off, and following are spins and rolls.






# Stall Training

- **Stall training** is conducted at safe altitudes, away from the runway, in a straight line and power off.
- Therefore, many pilots do not **associate** a stall as a deviation which could occur on take-off.
- A straight ahead, 1G stall is not a common sight in **accident records**.



A perspective view of a runway with a white center line receding into the distance. The sky is blue with wispy white clouds. The text "Planning your Take-off" is centered over the image.

# **Planning your Take-off**



# Airfield specifics – Obstacles

Does your aircraft have the **climb performance** to clear the obstacle?





# Airfield specifics – High Altitude

With impaired performance, will the runway be long enough for a take-off today?





# Airfield specifics – Runway surface and condition

Runway **conditions can vary** from day to day, assess the condition beforehand.



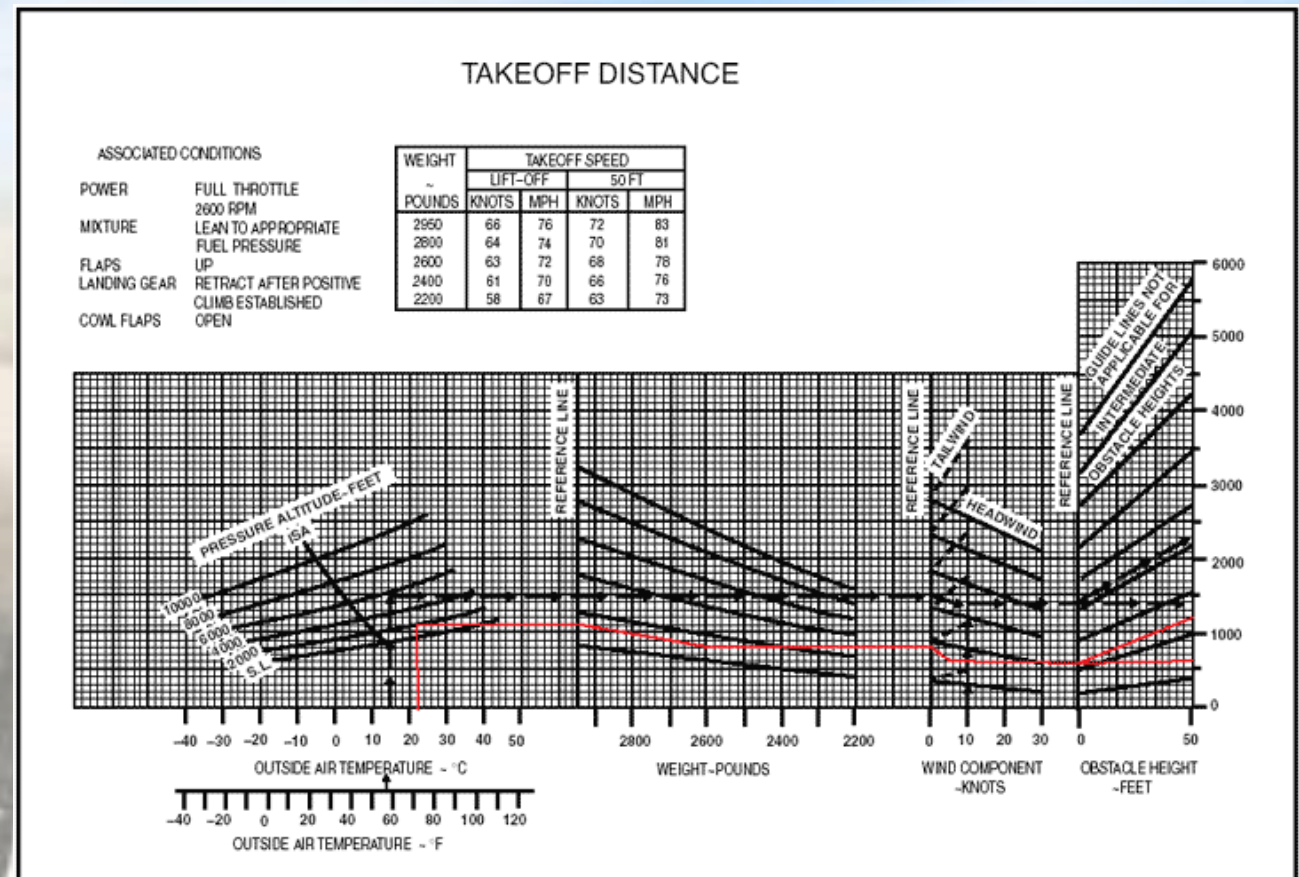


# Take-off Distance Required

Check that the **Take-Off Run Available** (TORA) does not exceed the **Take-Off Distance Required** (TODR) for your aircraft.

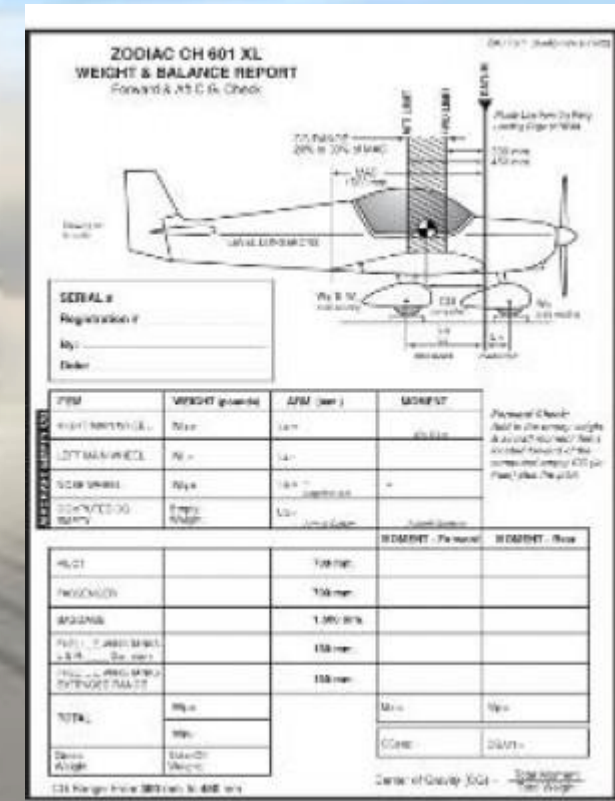
Affected by:

- Weight
- Temperature (density)
- Wind
- Humidity





- Check **compliance with the approved limits** provided by the aircraft manufacturer.
- Check **seat attachment points** and **secure all objects** to avoid unwanted movements during the acceleration phase, at rotation or during climb.



# Wind Conditions

- Observe wind conditions so as to take-off with a headwind (unless special procedures or circumstances prevent this).
- Be prepared for **crosswinds** or **unstable winds** (gusts)





# Take-off Parameters

- Review power settings
- Flaps configuration (if any)
- Mixture control (when applicable)
- Speeds





# Passenger Brief

Giving a passenger brief is not just a **legal requirement**, but a **necessity** for safety, particularly in emergencies when the workload is high.





# Check Approach and Runway

- Check that the approach and runway are free of incoming or outgoing traffic.
- Make a radio call to announce your intentions (uncontrolled airfield).



A perspective view of a runway stretching towards the horizon. The runway is dark asphalt with a white center line and yellow edge lines. The sky is a vibrant blue with scattered, wispy white clouds. The overall scene is bright and clear.

# **Plan for abnormalities during Take-off**



# Rejected Take-Off Brief

This will increase your preparedness and your ability to manage unexpected situations.

## 1. Any abnormalities **BEFORE ROTATION**

- Close throttle
- Apply brakes
- Vacate the runway



# Rejected Take-Off Brief

2. Any abnormalities AFTER ROTATION with **SUFFICIENT RUNWAY**

- Lower the nose
- Close the throttle
- Apply flaps as required
- Land back on the runway
- Apply brakes

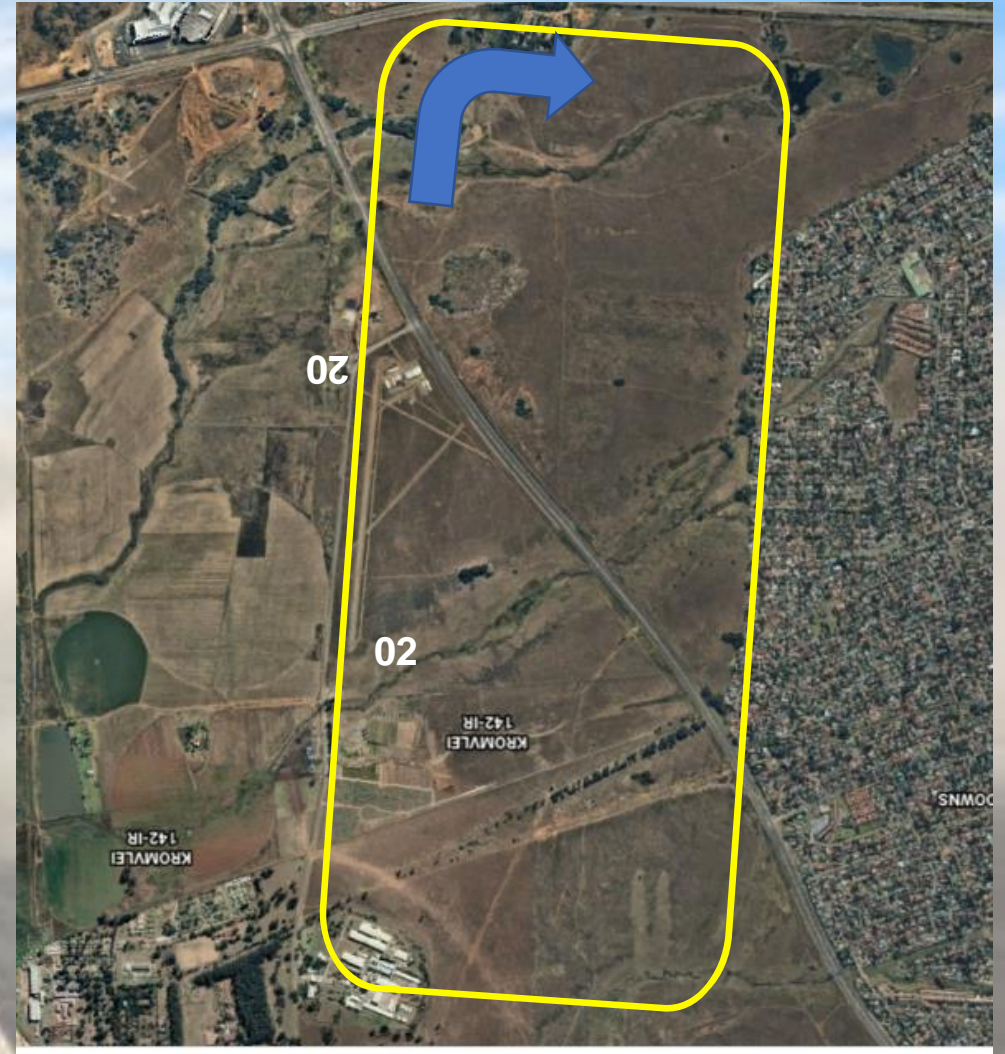




# Rejected Take-Off Brief

3. Any abnormalities AFTER ROTATION  
with **INSUFFICIENT RUNWAY**

- Lower the nose for the best glide speed which is **\_\_kts and trim.**
- Pick a landing area within 30° of the nose, **which on this runway is on my left / right / straight ahead**
- Close the throttle
- Apply flaps as required
- Switch of fuel and spark







**Ready for Take-off?**

# The Take-Off

- Align properly on the runway centreline to initiate the take-off.
- Anticipate directional control needs when adding power.





# Critical Checks

On the ground roll, check:

- Airspeed alive
- Engine RPM
- Temperatures and Pressures



# The Take-Off

**Pay attention to the airspeed and aircraft attitude!**

- Pull gently on the stick/yoke to take-off.
- Excessive pitch can lead to a stall.
- Control airspeed and aircraft attitude with **reference to the horizon** “attitude flying”.





# Have a safe flight!





**Want to brush up your skills?**

**Contact:**

**Caroline +27849615511**

**info@essentialpilot.co.za**





# Lauren Smith

Weather SA

# SAFETY FIRST AVIATOR CAMPAIGN 2022



The Next Hour



# IMC to VMC

Instrument meteorological conditions (IMC) are Met conditions expressed in terms of visibility, distance from cloud, and ceiling, **LESS** than the minima specified for visual meteorological conditions (VMC). (ICAO Annex 2)

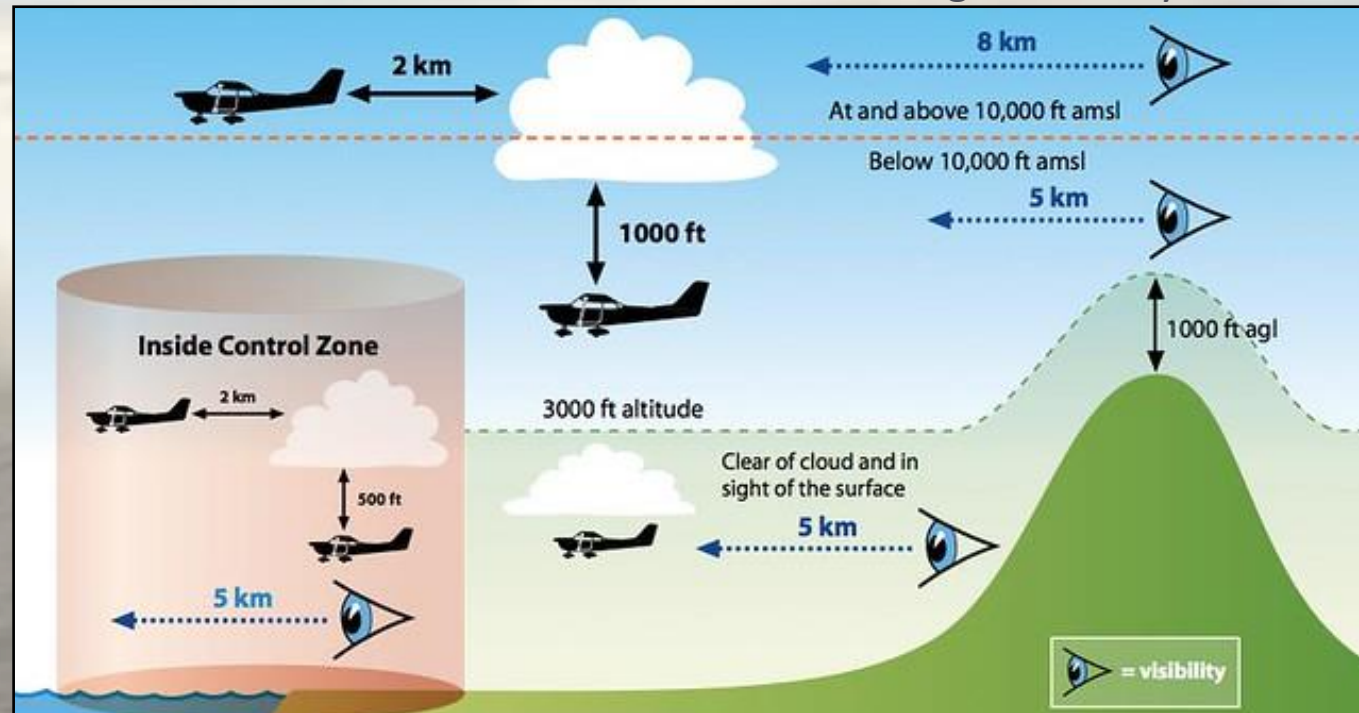
**VMC** (ICAO Annex 2: Rules of the Air, Chapter 4: Visual Flight Rules)

• When above 3,000ft or 1,000ft above terrain:

- 1500m horizontally and 1,000 ft vertically from cloud;
- Flight visibility 5km below 10,000ft and 8km above 10,000ft.

When below 3,000ft or 1,000ft above terrain:

- \* Clear of cloud and in sight of the surface;
- \* Flight visibility 5km.



# Poor Visibility

- Low visibility procedures exist to support Low Visibility Operations at Aerodromes
- Necessary transition to visual reference during the final approach critical & reduce the risk of a Runway Excursion.
- The potential for runway incursions increases.



## How to recover?

### Low cloud together with fog/mist and precipitation

- Taxi-out and taxi-in in low visibility conditions is demanding of all-weather operations.
- The following good practices should be considered:
1. A good briefing for the taxi-out or taxi-in phase (route)
  2. All checks could be done at a standstill;
  3. Have the taxi chart available;
  4. If there is any doubt about the position of the aircraft whilst taxiing before take-off or after landing, could inform ATC immediately for guidance;
  5. Never cross a lit red stop bar;
  6. Study the weather forecast before take-off and get update before landing



# Local special reports and SPECI



## Criteria:

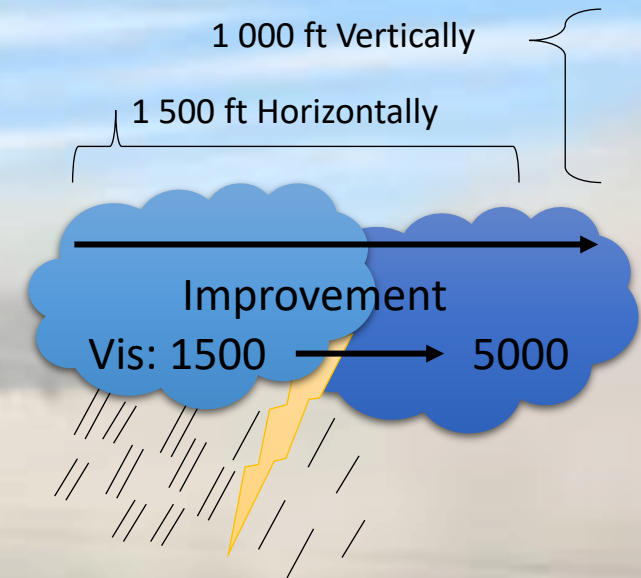
\*) when the amount of a cloud layer below 450 m (1 500 ft) changes:

- 1) from SCT or less to BKN or OVC; or
- 2) from BKN or OVC to SCT or less.

\*) When the height of base of the lowest cloud layer of BKN or OVC is lifting and goes to or through, or when the extent is lowering and passes through one or more of the following values:

- 1) 30, 60, 150 or 300 m (100, 200, 500 or 1 000 ft); and
- 2) 450 m (1 500 ft), in cases where significant numbers of flights are operated in VFR

\*) when the sky is obscured and the vertical visibility is improving and goes to or through or when the vertical visibility is deteriorating and passes through one or more of the following values:  
30, 60, 150 or 300 m (100, 200, 500 or 1 000 ft)



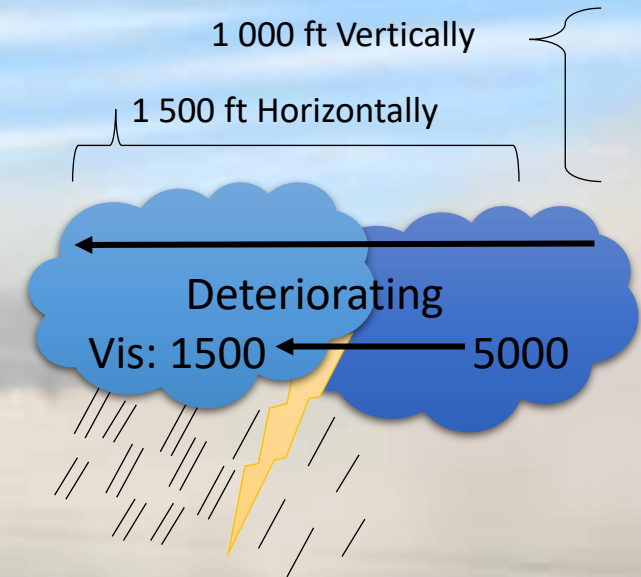
\*) There requires a change in RUNWAY(s) in use; due to significant wind changes  
And indicate that the runway tailwind and crosswind components have changed

\*) when the RUNWAY(s) visibility is improving and changes to or passes through one or more of the following values, or when the visibility is deteriorating and passes through one or more of the following values:

- 1) 50, 175, 300, 550, 800, 1 500 or 3 000 m; and
- 2) 5 000 m, in cases where significant numbers of flights are operated in VFR

```
TAF FAOR 231000Z 2312/2418 VRB03KT 9999 BKN030
TX22/2313Z TN14/2404Z
PROB30 TEMPO 2313/2321 -TSRA FEW030CB
BECMG 2322/2324 CAVOK
PROB30 TEMPO 2400/2406 4000 BR BKN005
BECMG 2408/2410 34008KT BKN015
PROB30 TEMPO 2413/2418 -TSRA FEW030CB=
```


```
FAOR 231400Z 34009KT 300V020 9999 SCT030 21/13 Q1026 NOSIG=
FALA 231400Z 33005KT 310V010 9999 SCT035 23/13 Q1025 NOSIG=
FAIR 231400Z 32004KT 9999 SCT030 22/14 Q1025=
FAWB 231300Z 21005KT 9999 SCT025 24/14 Q1022=
```





# Aviation Website: <https://aviation.weathersa.co.za>





Designated Aeronautical Meteorological Authority

HOME FORECAST **OBSERVATION** DOMESTIC

AEROSPORT ABOUT

Colour Coded METAR

METAR

Recent METARs

Recent METAR/TAFs

Metar History

**Radar**

**Satellite**

SPECI

Weather Map

**Web Cams**

## Gauteng


FAOR 091430Z 17008KT 130V210 CAVOK 25/M02 Q1027 NOSIG=  
FALA 091400Z 18007KT 120V200 CAVOK 27/01 Q1026 NOSIG=  
No data for FAJB  
FAIR 091400Z 22004KT CAVOK 27/01 Q1026=  
FAWB 091400Z VRB02KT CAVOK 28/05 Q1024=  
FAWK 091400Z AUTO 19006G17KT /// / /// / 27/02 Q1027=  
FAGC 091400Z 22005KT CAVOK 26/M01 Q1027=  
FAGM 091400Z 20010KT CAVOK 24/M04 Q1028=  
FASI 091200Z AUTO 24003KT /// / /// / 25/02 Q1031=  
FAVV 091200Z AUTO 16003KT /// / /// / 25/01 Q1030=

## Webcams

Available webcams with direction the camera is facing in brackets:

<a href="#">George</a> (North)	<a href="#">Cape Point</a> (DEA&DP - North North-east)
<a href="#">Kruger Mpumalanga</a> (East)	<a href="#">Richards Bay</a> (South)
<a href="#">Pietermaritzburg</a> (North-west)	<a href="#">Skukuza</a> (South)
<a href="#">King Shaka</a> (North-east)	<a href="#">Tzaneen</a> (North-west)
<a href="#">King Shaka</a> (South-east)	<a href="#">Constantiaberg</a> (North-east)

\* - webcam not available  
Note: Use Ctrl+F5 to ensure the most recent image is downloaded.



## Radar Images

### Individual Images

FABL	FABM	FACT	FADN	FADY	FAEO
FAEL	FAGG	FAIR	FAPP	FAPE	FAUT
FASZ	OTD				

### Individual 50km Images

FABL	FABM	FACT	FADN	FADY	FAEO
FAEL	FAGG	FAIR	FAPP	FAPE	FAUT
FASZ	OTD				

### Individual 75km Images

FABL	FAIR	FAUT
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### Composite Images

Aviation General Radar/Satellite Merge

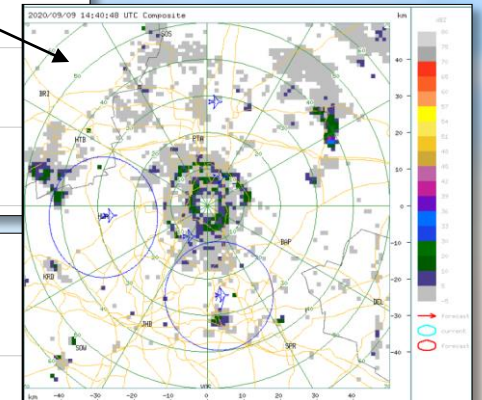
## Radar/Satellite Merge with forecast Model Winds

FL020	FL040	FL060	FL080	L100	L130
L150	L180	L200	L220	L250	L270
L290	L310	L330	L350	L390	L430

## Radar Images

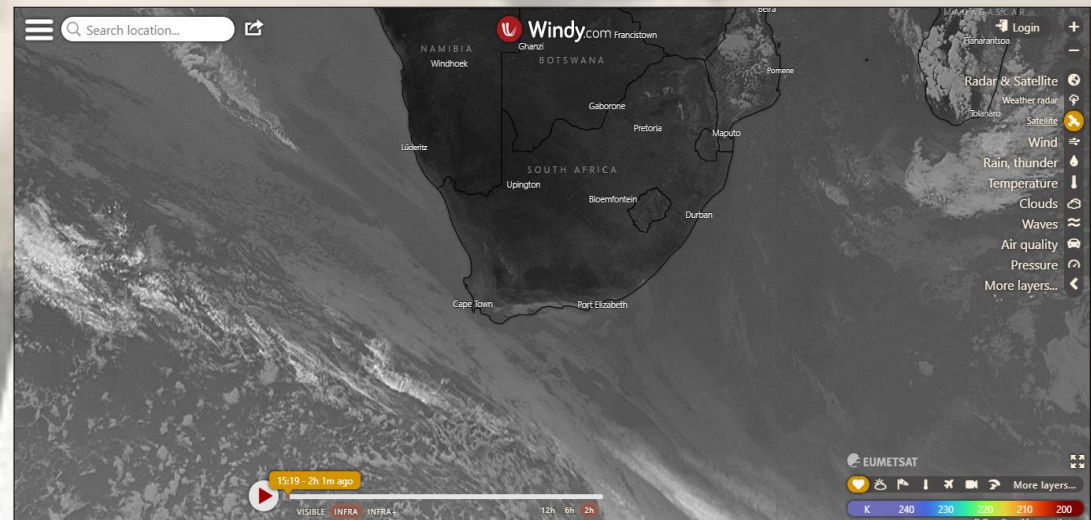
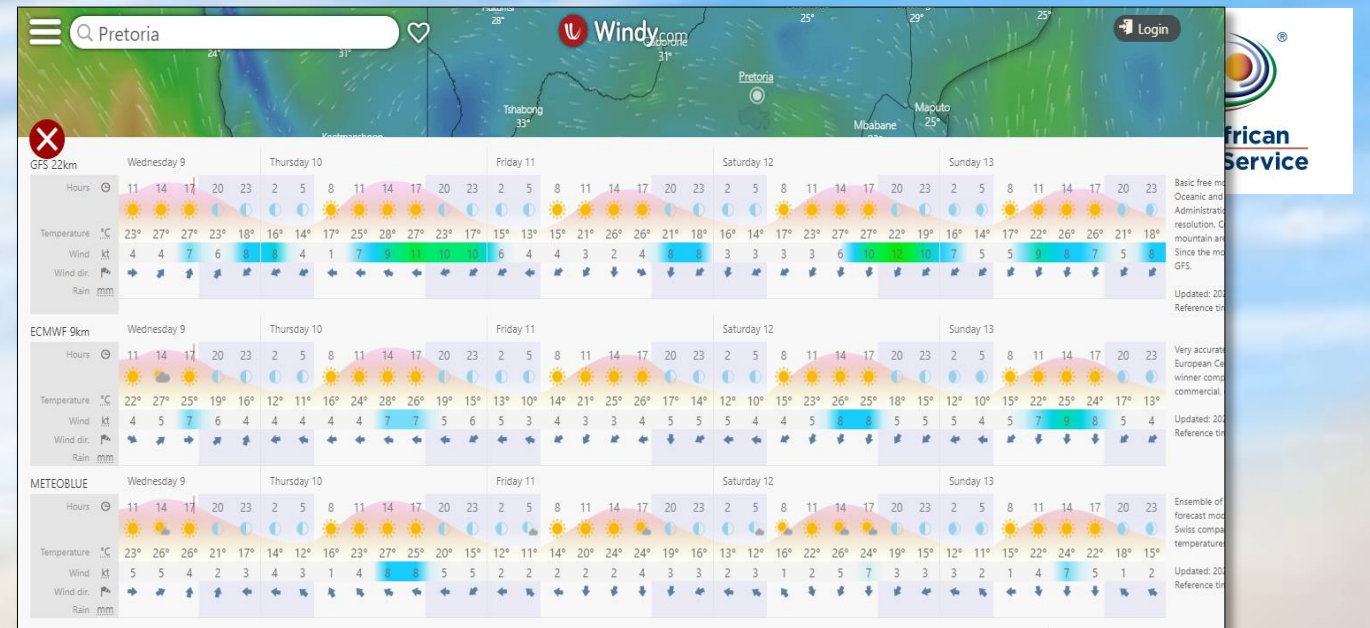
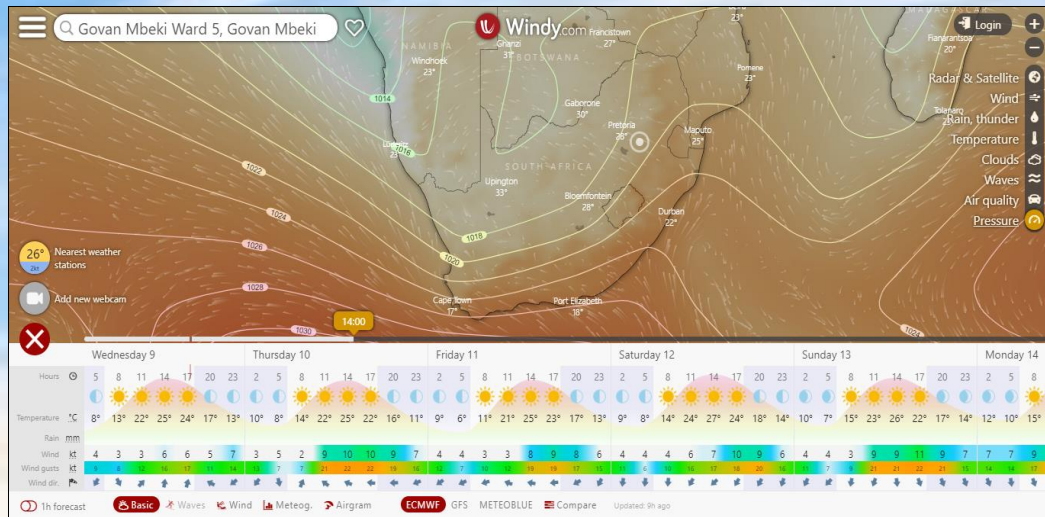
### RSA Central

FACT	FADN	FAEL	FAGG	FAOR	FAPE
AIR	AIR	AIR	AIR	AIR	AIR
FIS					
SIR(East)				SIR(East)	
SIR(West)				SIR(West)	
				FULL	
				FIS(North)	
				FIS(South)	
				SIR(North)	
				SIR(North East)	
				SIR(South East)	
				SIR(South West)	
				SIR(Central)	





# WindyTV.com





# Aviation Website & Contact details

- Aviation Website -  
<https://aviation.weathersa.co.za/#home>
- FACT: 064 798 6994
- FAPE: 066 186 4870
- FALE: 032 436 3818
- FABL: 063 095 5103
- DRR: 012 367 6025

**THANK YOU  
FOR YOUR  
TIME**



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# Andre Roos

Aviation Risk Specialist, Claims and  
Accident Investigator





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**Q&A**



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**Thank You**

