AERO
SOUTH AFRICA

SAFETY FIRST AVIATOR

Pilots! What do you think about before take-off?

Pilot Clear!

Neil Piper

Head of Content: Messe Frankfurt South Africa

Opening

Annelie Reynolds

Show Director: Aero South Africa

Welcome

PANELISTS

Lauren Smith

SA Weather Services

Caroline Koll

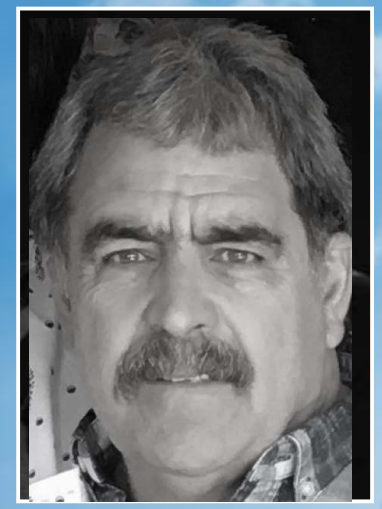
Essential Pilot

Santjie White

ICAO SAR EXPERT

Ari Levien

MayDay SA



Cobus Toerien

ALPA-SA

Franz Smit

MD: PilotInsure

Moderator

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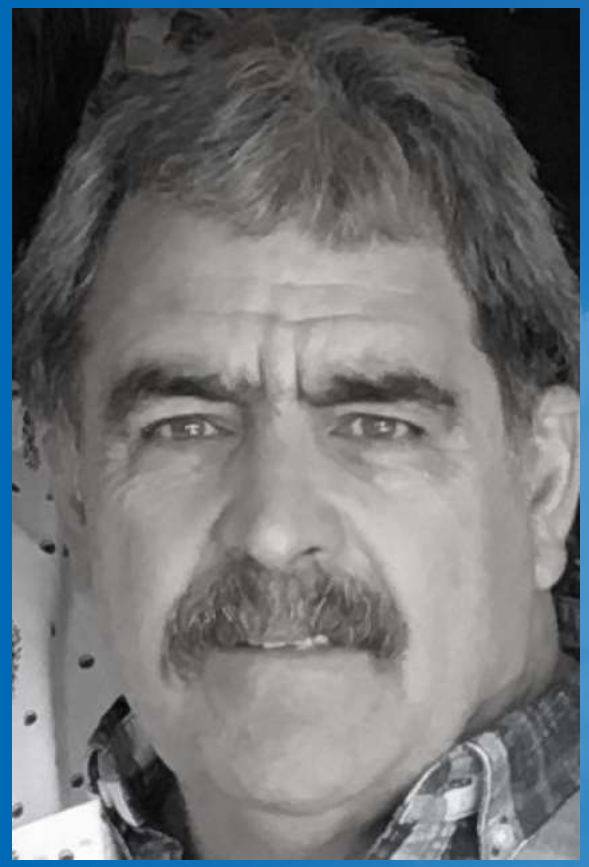

Cobus Toerien

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SAFETY FIRST AVIATOR CAMPAIGN 2021

August 2021

PROP CLEAR!!!

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The most important words in gaining and maintaining good teamwork and safe operations?

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Clear! Prop!

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What do you think ?

ALPA-SA

Clear! Prop

How?

By asking - what do you think:

- Are we fit to fly today?
- What about the WX forecast?
- What are our SAR options today?
- What do we do if unstable on the APP?

Why?

- It communicates that you are interested in your student / crewmember's ideas & opinions.
- It sets the tone for teaching effective communications from Day 1.

Annelie, what do you think?

" BRINGING IN "

CRM: 'Verbal Procedural Behaviour Categories"

"Behaviour which is a direct and positive attempt to involve another group or crewmember!"


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Just ask;
What do YOU think?
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Clear!
Prop

Ari Levien

MAYDAY SA

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Safety First Aviators campaign

MAYDAY-SA

AM I FIT TO FLY?

26 August 2021

Presented by Ari Levien

PLEASE - SAVE and SHARE

- Phone: **012 333 6000** (ask for MAYDAY)
- Website: www.mayday-sa.org.za
- Follow us on FaceBook: Mayday-SA
- Email: maydaysouthafrica@gmail.com

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AM I FIT TO FLY?

- Just because you have a valid medical DOES NOT mean you are fit to fly!
- IMSAFE checklist a good starting point
- THIS DOES NOT WORK IF YOU ARE NOT **HONEST** WITH YOURSELF
- READY, WILLING and ABLE to manage the worst possible challenge

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I: ILLNESS

- Physiological impact
  - Malaise
  - Pain
  - Fever
  - Swelling – esp sinus cavities – barotrauma is NOT fun
- Psychological impact
  - Inability to concentrate
  - Self-doubt

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M: MEDICATION

- ALL medications, vitamins and supplements have side-effects
- Just because you don't need a script doesn't mean you can take and fly
- Speak to your AME **AND** read the package insert!
- Common gotchas: vaccines, certain anti-malarials, oral contraceptives
- Sedation is not the only concern!

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S: STRESS

- Stress reduces your capacity to think and respond
- Chronic vs acute
- Major stressor examples:
  - Bereavement
  - Divorce/Marriage
  - Illness
  - Moving House
  - Job threat/change

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A: ALCOHOL

- 8 Hours is the LEGAL minimum between “bottle & throttle”
- Consider increasing this - at least 24 hours after significant consumption
- Studies have shown worse performance from “hung-over” pilots than inebriated ones
- “Recreational” use of pharmaceuticals is incompatible with aviation – many substances of abuse can take >3 days to be fully excreted

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F: FATIGUE

- Significantly debilitating
- Severe fatigue can be worse than alcohol
- Affects judgement more than motor skills
- Slows reaction
- Limit duty time
- Ensure sufficient sleep & rest
- Adequate hydration and nutrition

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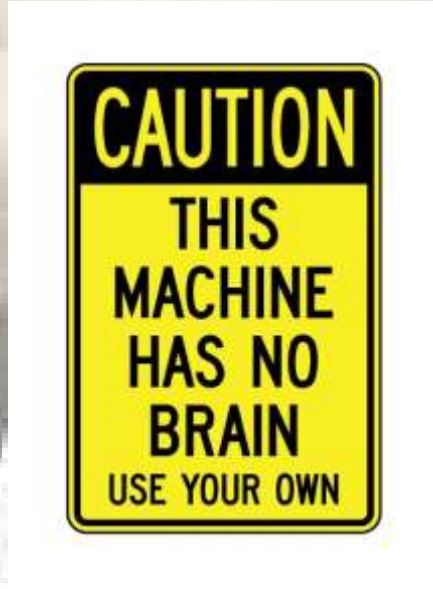
E: EMOTION

- Hardest one to judge for most people
- Some overlap with stress
- Dark side: anger, fear, hate, worry, mourning …

STILL UNSURE?

- Take an instructor/mentor pilot with you
- Discuss with a trusted mentor or instructor or DFE
- “If I don’t make this flight today, how much difference will it make in a year’s time?”
- BE HONEST



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Lauren Smith

SA WEATHER SERVICES

South African Weather Service

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PROP CLEAR!!!

Do you think about the Weather?

What are the weather components that are significant to you?

Surface winds?

Winds aloft/at cruising altitude?

Visibility at departure and destination aerodromes?

Cloud ceiling at departure and destination?

Weather on route?

Winds TS CAT Wind shear

QNH?

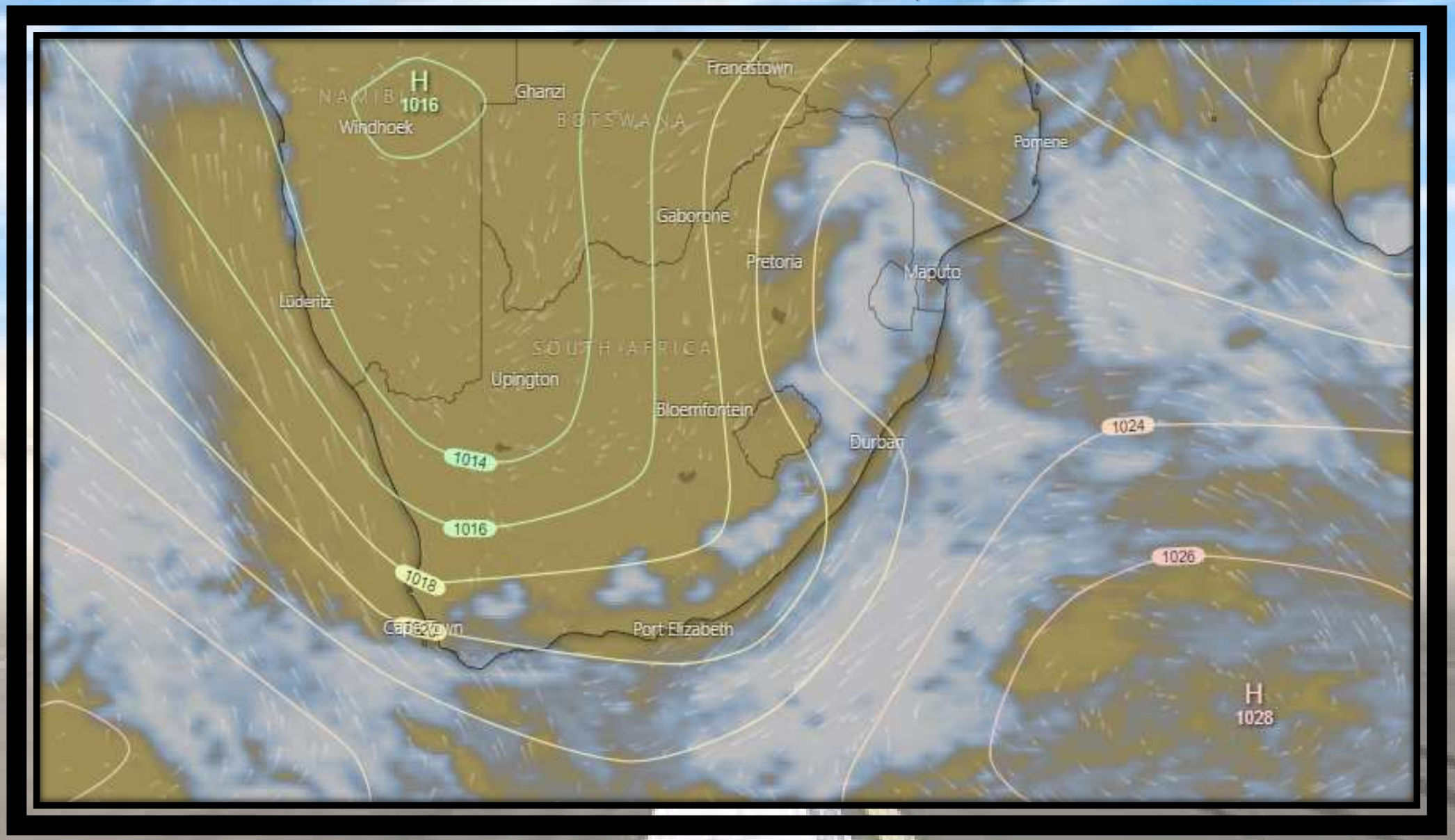
Surface temperature?

Freezing level?

Pressure gradients?

Example: August winds!

Where do find the weather forecast?
https://aviation.weathersa.co.za
WindyTV.com



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THANK YOU FOR YOUR TIME

South African Weather Service

lauren.smith@weathersa.co.za

PROP CLEAR!!!

Santjie White

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What is Search and Rescue

- SEARCH

  To locate persons in distress

- RESCUE

  Is the operation to retrieve persons in distress, provide for their initial medical or other needs, and deliver them to a place of safety

The hope is a Successful Search will result in a Successful Rescue

LETS THINK ABOUT OUR SAR OPTIONS – AUTOMATIC

All flights between aerodromes where air traffic services are provided.

All flights conducted in controlled airspace.

LETS THINK ABOUT OUR SAR OPTIONS - - SAR/NML

Must be indicated when the flight is bound for an aerodrome where an ATSU is in operation and must NOT be indicated when the flight is bound for an aerodrome where an **ATSU IS NOT** in operation.

This type of SAR shall mean the following: -

Search and rescue action will be instituted automatically in the event of a missed position report while the aircraft is flying within controlled airspace and/or in the event of non-arrival at destination.

Search and rescue action will not be provided while the aircraft is flying in uncontrolled airspace, except in an emergency.

LETS THINK ABOUT OUR SAR OPTIONS – SAR NML ENROUTE

RMK/SARNMLENROUTE may be indicated when the flight is bound for an aerodrome where an ATSU is in operation and the whole or portion of the flight is conducted outside controlled airspace and must not be indicated when the flight is bound for an aerodrome where an ATSU is not in operation.

This type of SAR shall mean the following: -

Search and rescue action will be instituted automatically in the event of a missed position report while the aircraft is flying within controlled airspace and/or in the event of a non-arrival at destination;

LETS THINK ABOUT OUR SAR OPTIONS – SAR NML ENROUTE

Search and rescue action will be instituted in the event of a missed position report while the aircraft is flying in uncontrolled airspace;

When requesting this type of SAR, the pilot-in-command of the aircraft must be reasonably certain that it will be possible to make position reports throughout the flight and that the required reports will be made

LETS THINK ABOUT OUR SAR OPTIONS – SAR AFTER A SPECIFIED TIME.

This type of SAR may be indicated when the flight is bound for an aerodrome where an ATSU is not in operation and shall be shown as follows: -

SAR/ (air traffic services unit to be notified of arrival) (time by which notification of arrival will be made). e.g. RMK/SARFACT0930. –

Meaning that FACT ATSU must be notified of ARRIVAL by 0930 (UTC).

LETS THINK ABOUT OUR SAR OPTIONS – SAR NIL

TIPS

Try and file SAR with the last ATC unit you speak to on the flight.

If you are flying from CT to PI – SAR FAOR or FAPP, if they are open.

Make sure you activate your flight plan if flying in uncontrolled airspace.

Make sure you notify the unit you have SAR with, is you divert even if you are landing at a manned ATSU and it is not the ATSU you filed SAR with.

Read AIP GEN 3.6 and AIC SERIES D – 010/2019

FLY SAFE, STAY SAFE AND IF YOU NEED A GUARDIAN ANGEL - PHONE ME, I WILL FLY WITH YOU!!!!

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Caroline Koll

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Keeping flying fun!

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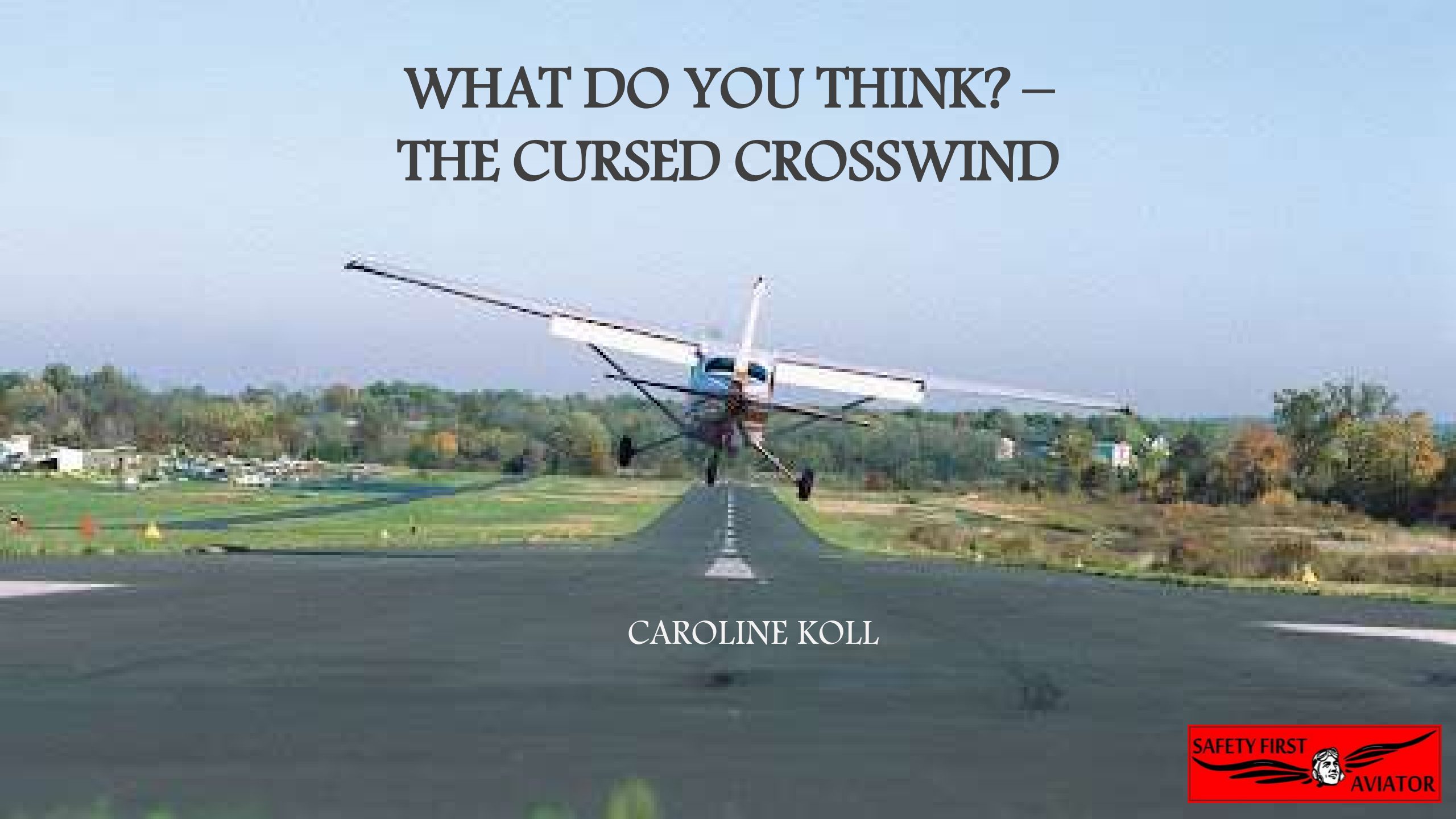
WHAT DO YOU THINK? – THE CURSED CROSSWIND



CAROLINE KOLL

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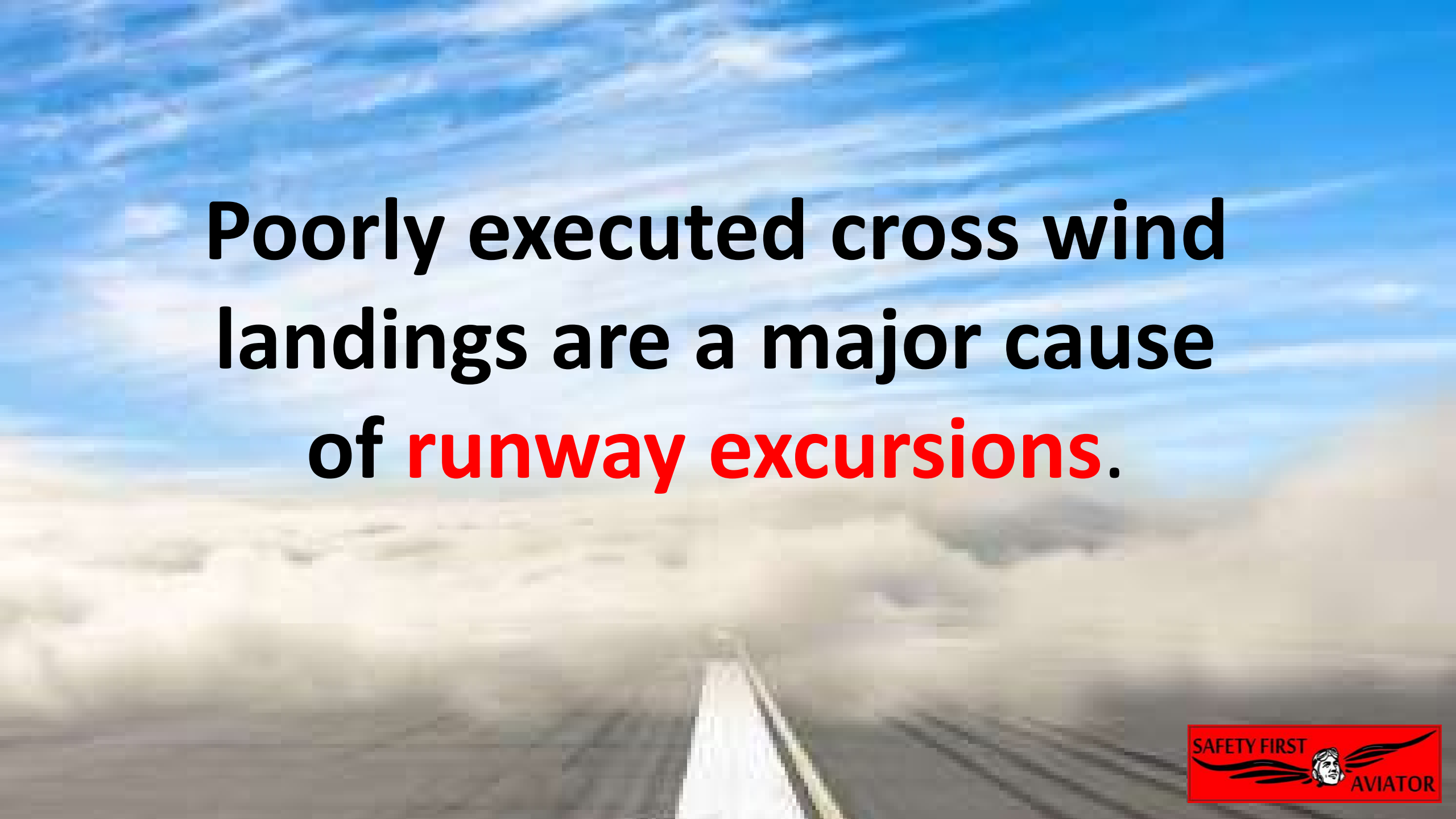
Poorly executed cross wind landings are a major cause of runway excursions.
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Why?

General aviation pilots are having problems landing their aeroplanes.

Crosswinds as a causal factor

Runway excursions on departure are less common, because pilots are more **likely** to assess the crosswind and associated conditions for **take off**.

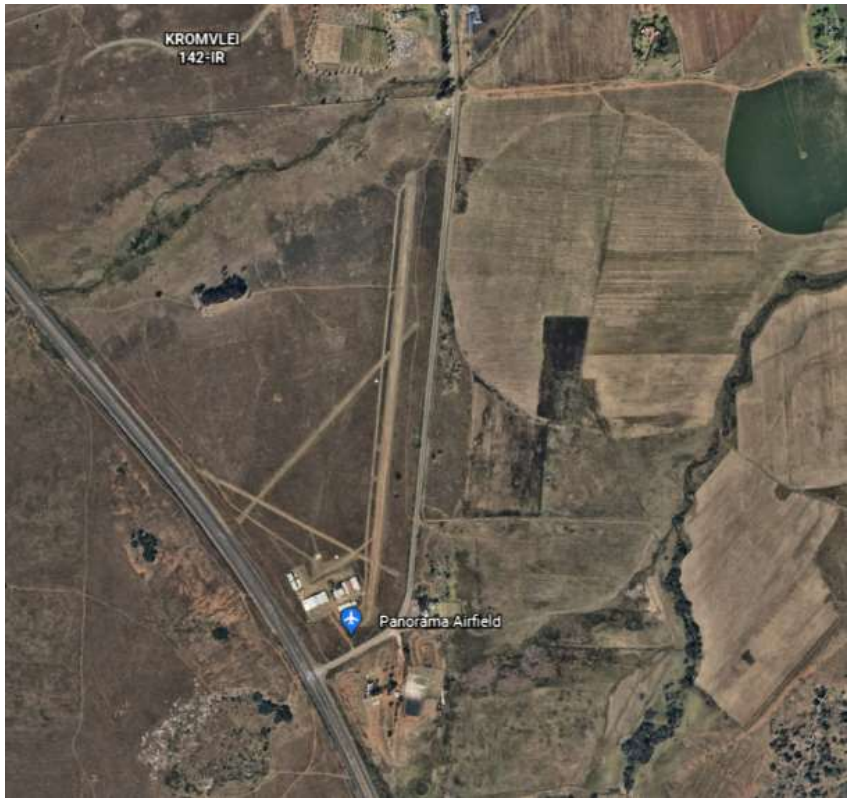
On landing, very few plan for the crosswind component and gusts.

Considerations for a crosswind landing

Airport Geography

Factors affecting the wind speed around an airport:

- Obstacles
- Surface roughness
- Topography – Is the airport surrounded by mountains?



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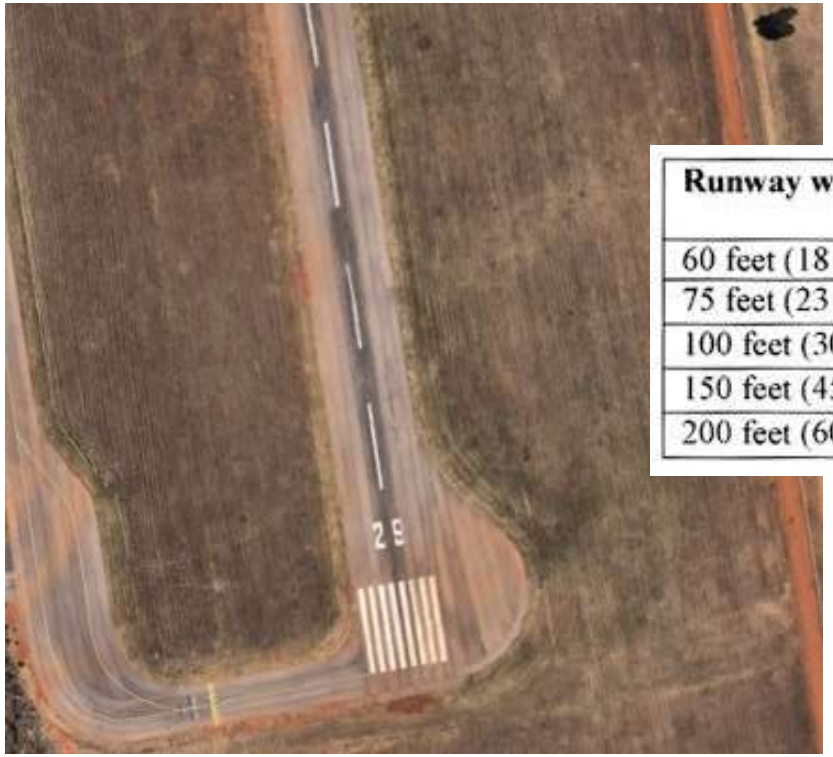
Runway Surface Conditions

- Aircraft manufacturers define recommended crosswind limits.
- These do not take into account runway surface conditions and contamination.
- Directional control can be severely affected.

Runway Width

Crosswinds can cause aircraft to drift:

- Narrow runways will provide little room for drift.
- Maintain the centreline, and if you can't, then it is unlikely that you will land safely on the runway without drifting off.



Runway width	Number of threshold stripes
60 feet (18 m)	4
75 feet (23 m)	6
100 feet (30 m)	8
150 feet (45 m)	12
200 feet (60 m)	16

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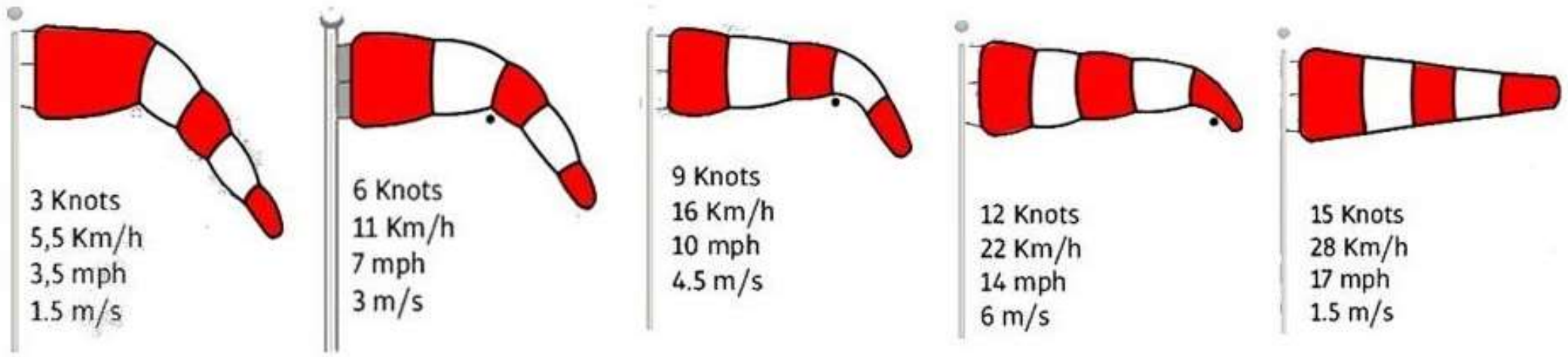
Wind Direction & Speed

ATIS and METAR are useful for planning, however, closer to landing, the wind report by an ATC should take precedence.

Wind Direction & Speed

- At unmanned airports careful observation, and interpretation of the windsock is essential.
- Pay attention to a windsock that is not holding a steady direction or speed!



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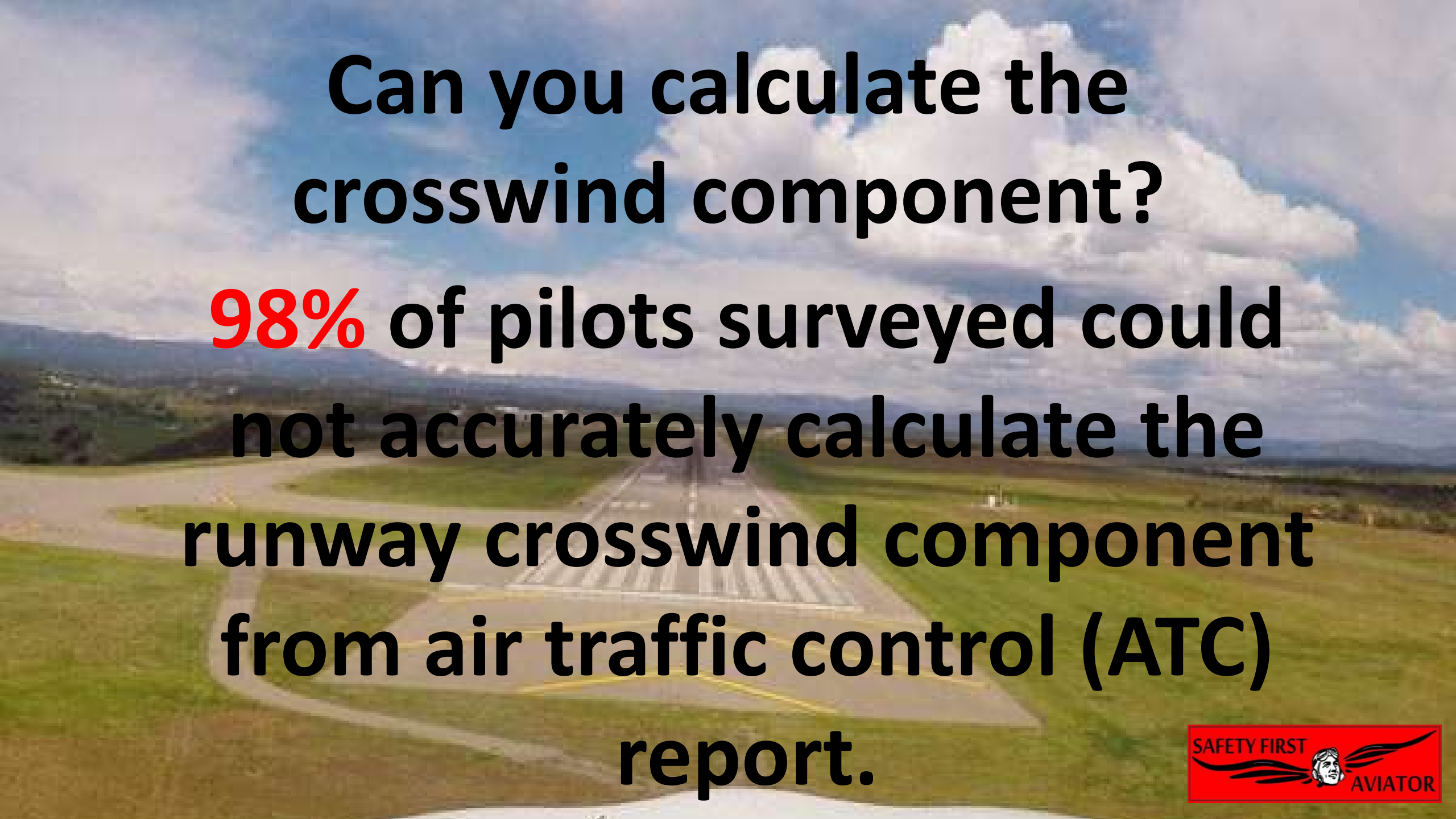
Can you calculate the crosswind component?
98% of pilots surveyed could not accurately calculate the runway crosswind component from air traffic control (ATC) report.
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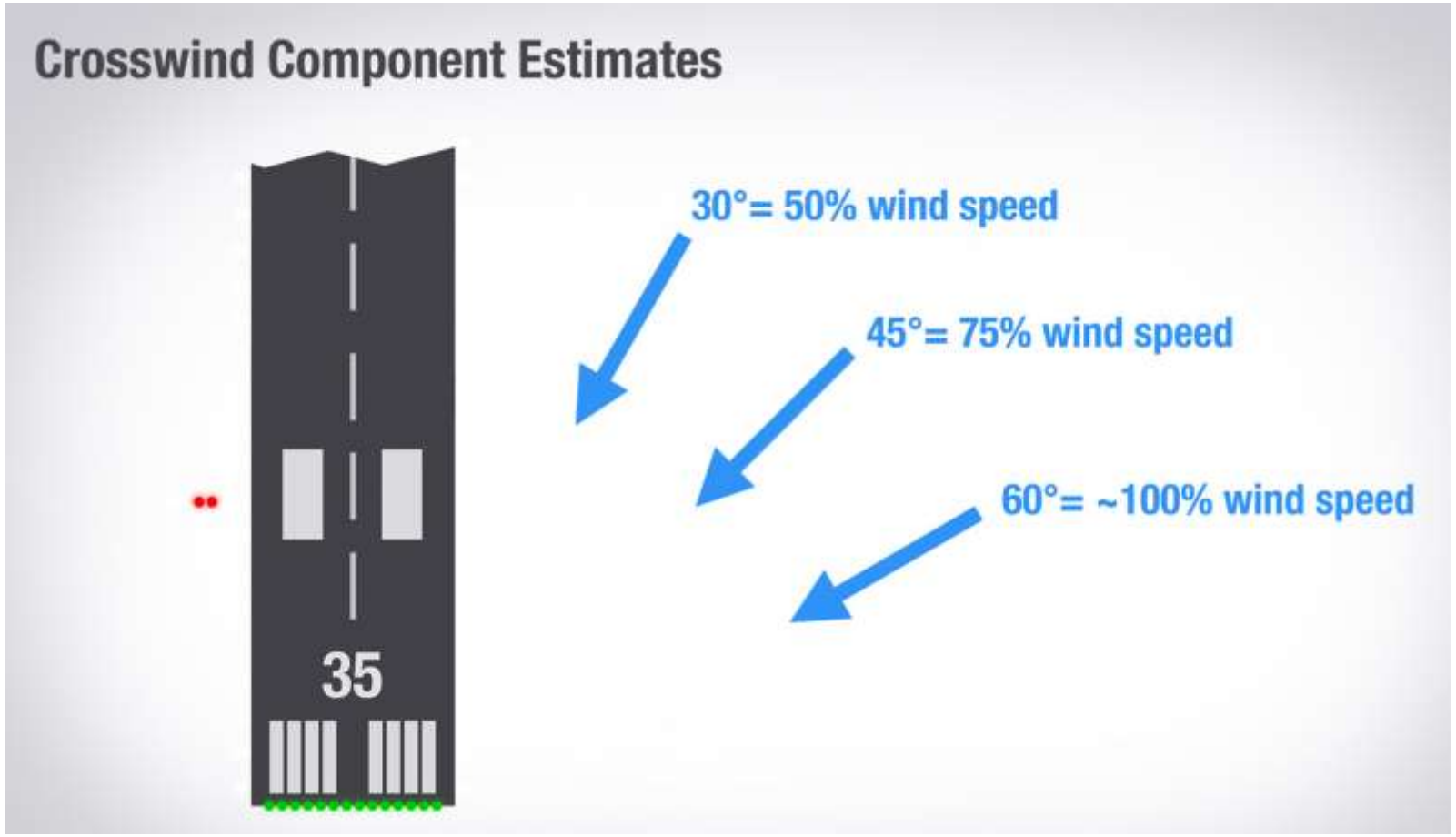
Calculating the Crosswind Component

Rule of Thumb Method:



Angular difference with RWY heading	% of wind velocity
15°	25%
30°	50%
45°	75%
60°	100%

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Calculating the Crosswind Component

Formula:

Crosswind component: Windspeed (V) x (Sine Angular difference)

Example:
RWY 21 – W/ V 240/20

The angular difference is 30°, and the sine of 30° is 0.5.
This means that half the wind strength is crosswind

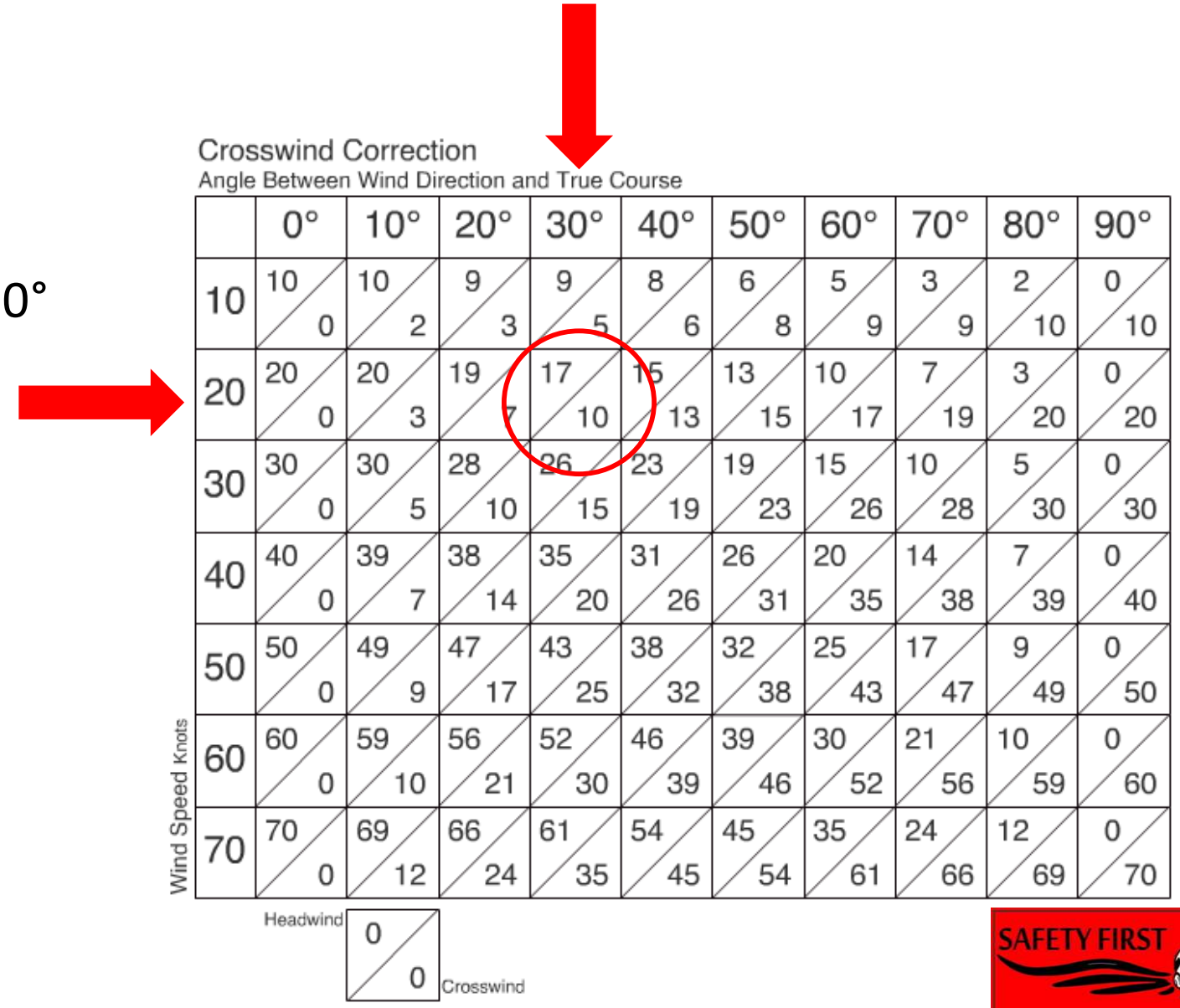
XWC = 20 × 0.5 = 10kts

Angular difference with RWY heading	% of wind velocity
15°	25%
30°	50%
45°	75%
60°	100%

Calculating the Crosswind Component

Whizz wheel:

Example:
RWY 21 – W/ V 240/20
The angular difference is 30°



Crosswind Correction
Angle Between Wind Direction and True Course

Wind Speed Knots	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°
10	10 / 0	10 / 2	9 / 3	9 / 5	8 / 6	6 / 8	5 / 9	3 / 9	2 / 10	0 / 10
20	20 / 0	20 / 3	19 / 7	17 / 10	15 / 13	13 / 15	10 / 17	7 / 19	3 / 20	0 / 20
30	30 / 0	30 / 5	28 / 10	26 / 15	23 / 19	19 / 23	15 / 26	10 / 28	5 / 30	0 / 30
40	40 / 0	39 / 7	38 / 14	35 / 20	31 / 26	26 / 31	20 / 35	14 / 38	7 / 39	0 / 40
50	50 / 0	49 / 9	47 / 17	43 / 25	38 / 32	32 / 38	25 / 43	17 / 47	9 / 49	0 / 50
60	60 / 0	59 / 10	56 / 21	52 / 30	46 / 39	39 / 46	30 / 52	21 / 56	10 / 59	0 / 60
70	70 / 0	69 / 12	66 / 24	61 / 35	54 / 45	45 / 54	35 / 61	24 / 66	12 / 69	0 / 70

Headwind 0 / 0 Crosswind

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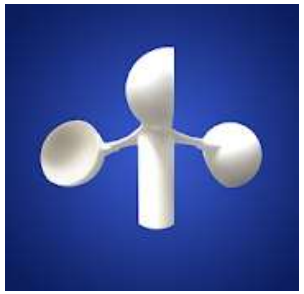
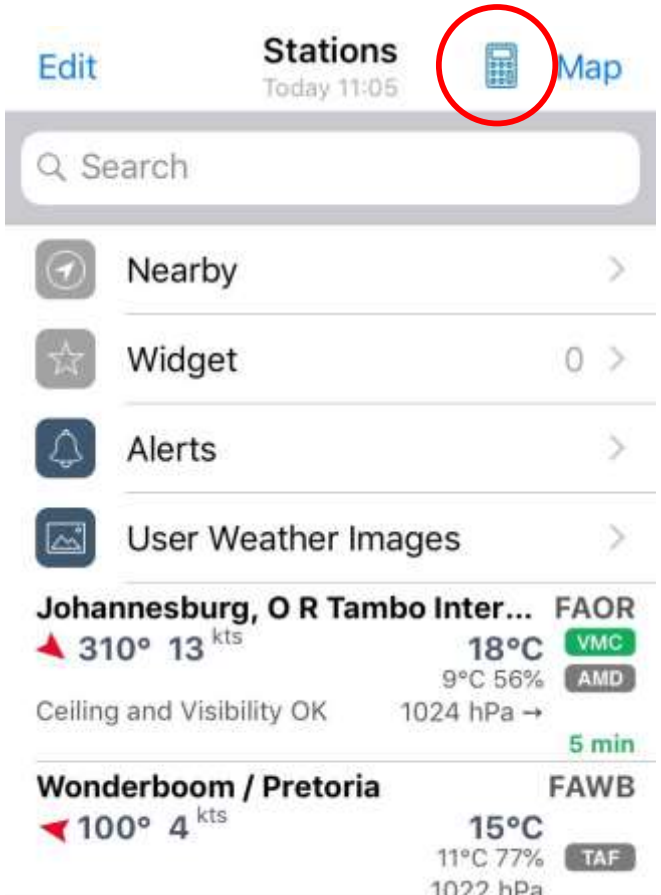
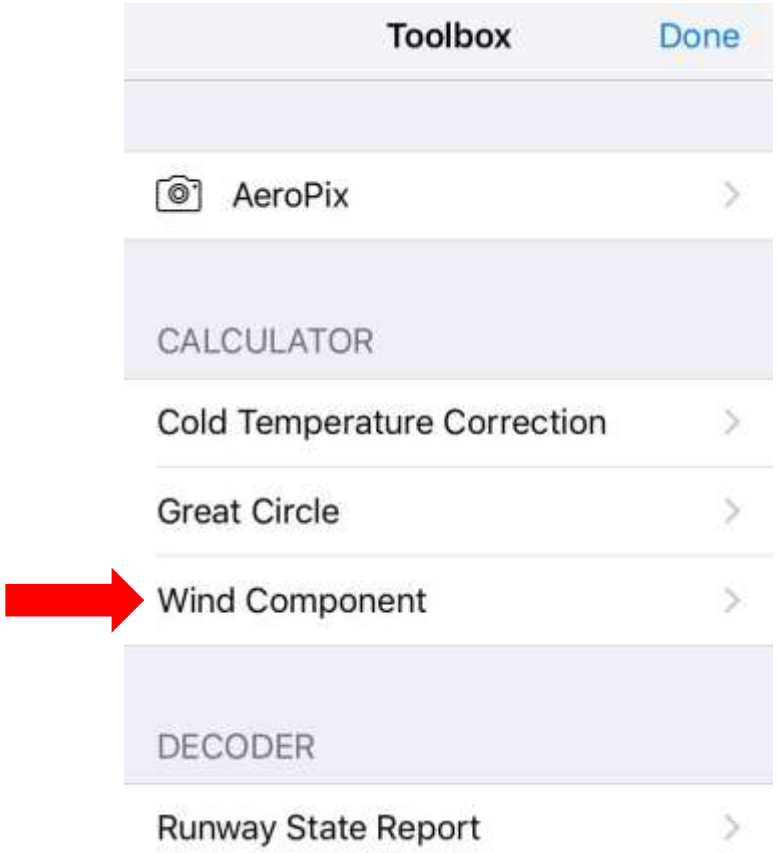
Calculating the Crosswind Component

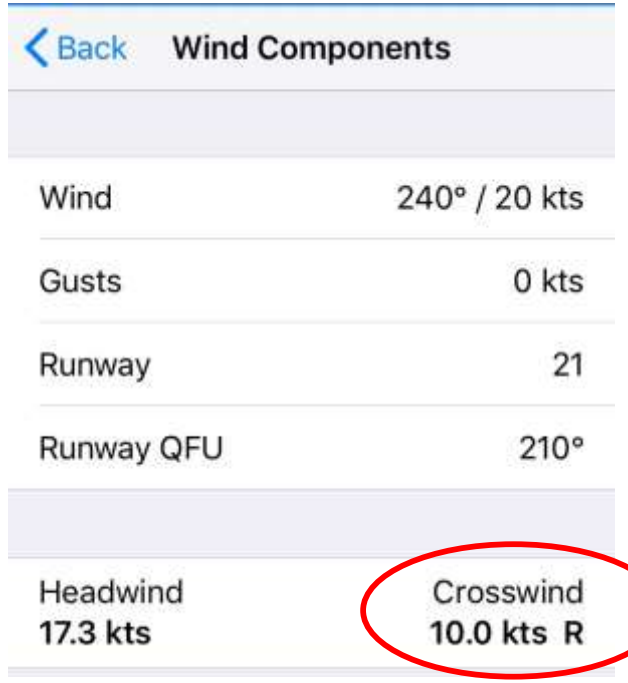
Apps:

Example:
Aeroweather









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Gusts

- Always anticipate the possibility of a gust.
- Apply a rule-of-thumb gust factor of 1.5 to the crosswind component to determine the worst case scenario.
- E.g. 10 x 1.5 = 15kts gust

Land

Sustained	G
<10 knots	**1.94**
10-15 knots	**1.57**
15-20 knots	**1.43**
20-25 knots	**1.38**
25+ knots	**1.37***

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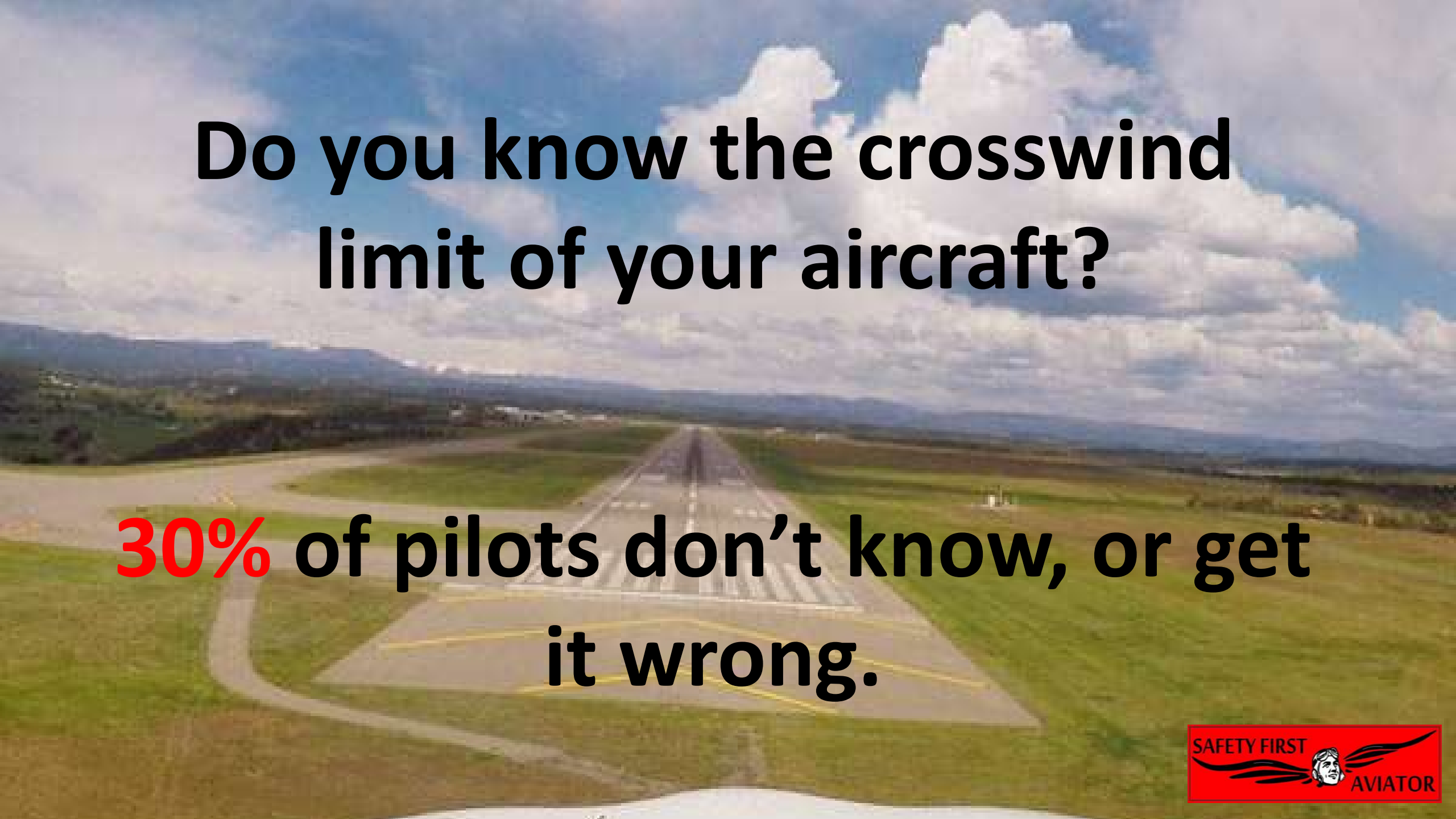
Do you know the crosswind limit of your aircraft?
30% of pilots don’t know, or get it wrong.
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Maximum Demonstrated Crosswind Limit

This is the figure at which factory testing has shown that directional control can still be maintained.

It is affected by:

- Size of the rudder, its distance from the C of G, and the availability of asymmetric braking.
- It should be modified by your technique, individual currency, and competency.

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Maintain Directional Control

This can be achieved using two methods, or a combination thereof:

Crabbed Approach-

- Aileron into wind, opposite rudder
- Briskly straighten above the runway

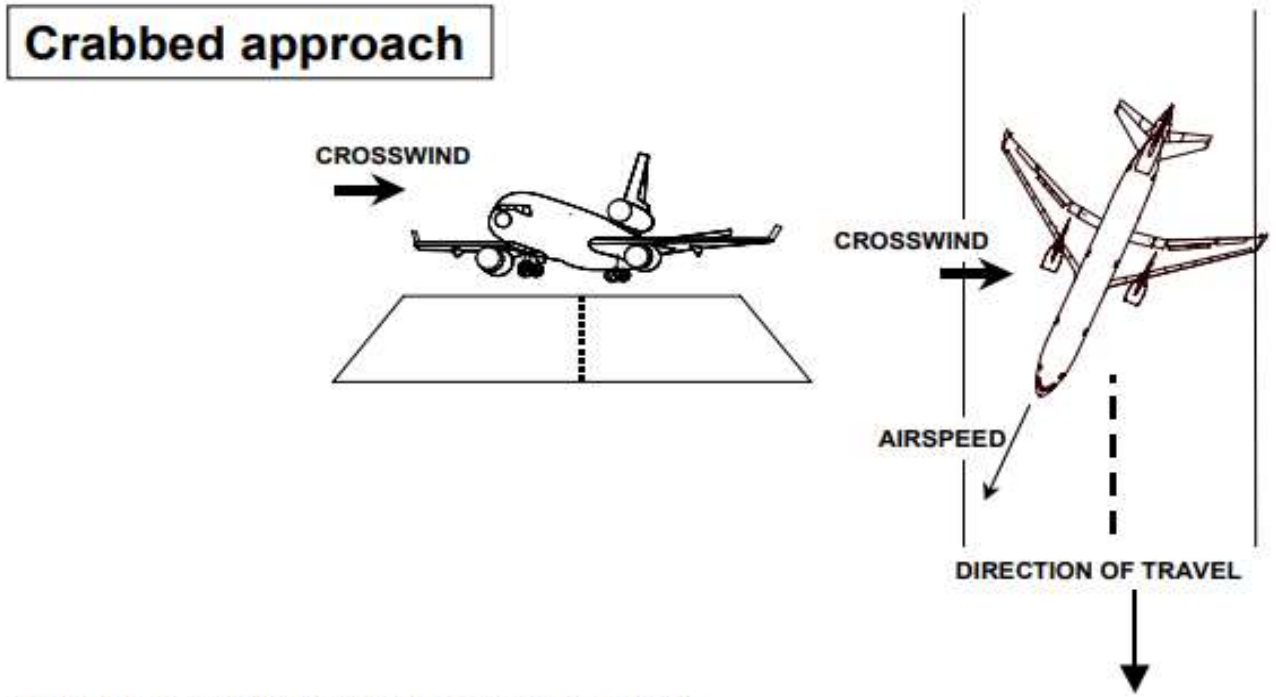

Figure 1:Crabbed approach for a crosswind landing.

Maintain Directional Control

This can be achieved using two methods, or a combination thereof:

Wing Down / Sideslip-

- Wing down into wind
- Aileron into wind, rudder to keep nose straight

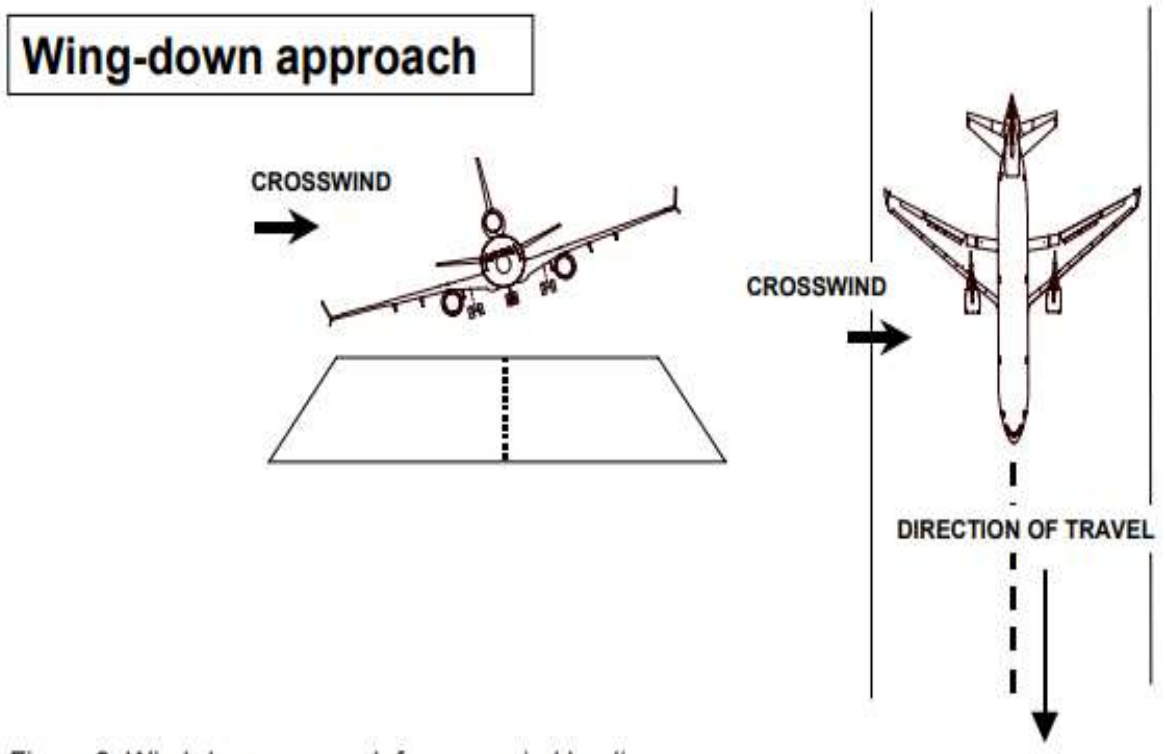

Figure 2: Wind-down approach for crosswind landing.

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Technique

Whether the crosswind is light or strong, always be prepared!

Correct technique –

Point the nose with your toes, ailerons to stay over the centreline.

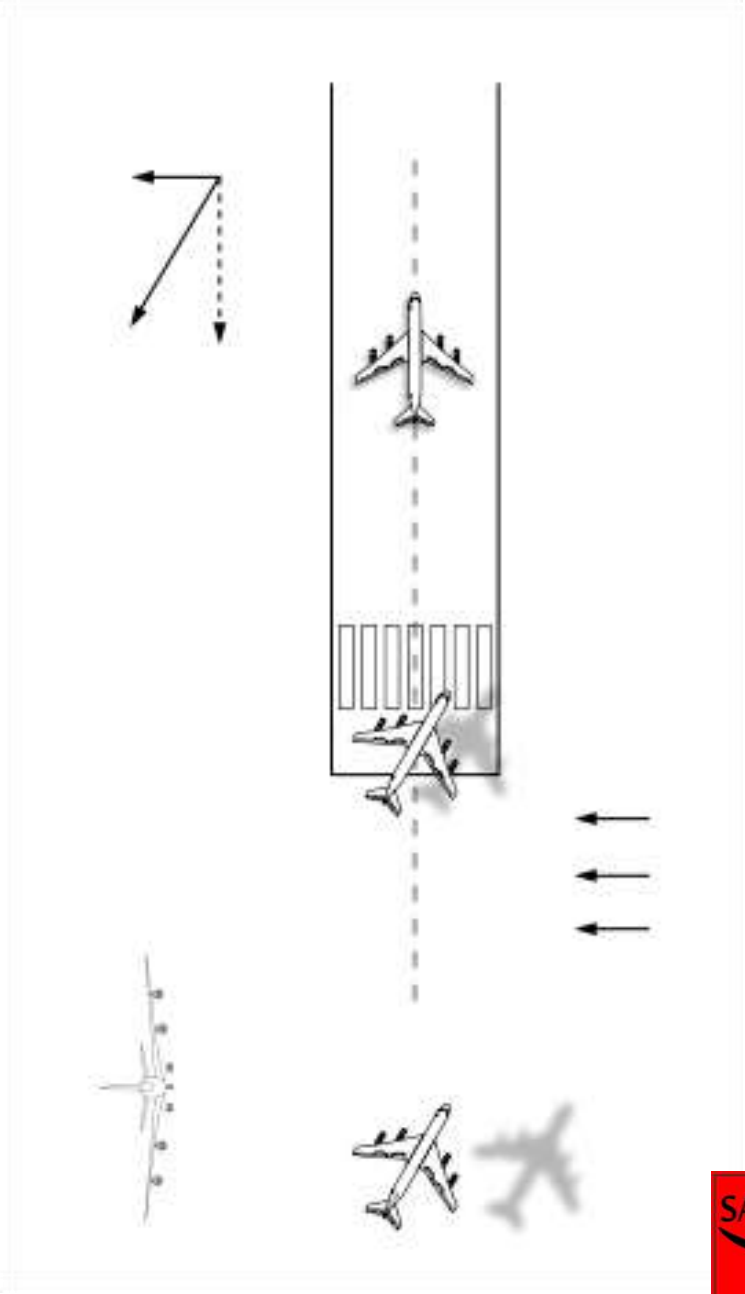
Remember your Stable Approach!

All criteria must be met by 500ft AAL (less if the circuit altitude is lower than 1000ft) for VFR approaches.

- **On runway track**
- On glide path (normally 3°)
- Correct speed
- Correct power setting
- Configured and briefed for landing

On Track

- On runway track
- Within 20° of the runway heading
- Within 10° of the runway centre line
- Wind drift appropriately managed with control inputs



Configuration

- As the crosswind component increases, the amount of flap used for the landing is normally reduced (Check your POH!)
- This reduces the surface area on which the crosswind can act after landing and therefore improves directional control.

Finally…

Ask yourself:

- How much training have you had in crosswinds?
- How long have you been flying, and where?
- How long have you been flying the particular aircraft?
- Have you flown it in gusty conditions before?
- When was the last time you flew in wind?

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Keeping flying fun!

Please send your questions/comments to Caroline:

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Q&A