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THE NEW SPIRIT OF AFRICA

A STAR ALLIANCE MEMBER

Aircraft Performance

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Aircraft Performance

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Lesson Topics

1. Factors affecting aircraft performance
2. Hydroplaning
3. Global Reporting Format (GRF)

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Performance by Phases of Flight

- **Take off**
- Climb
- Cruise
- Range
- Descent and
- **Landing**

1. Factors Affecting Aircraft Performance

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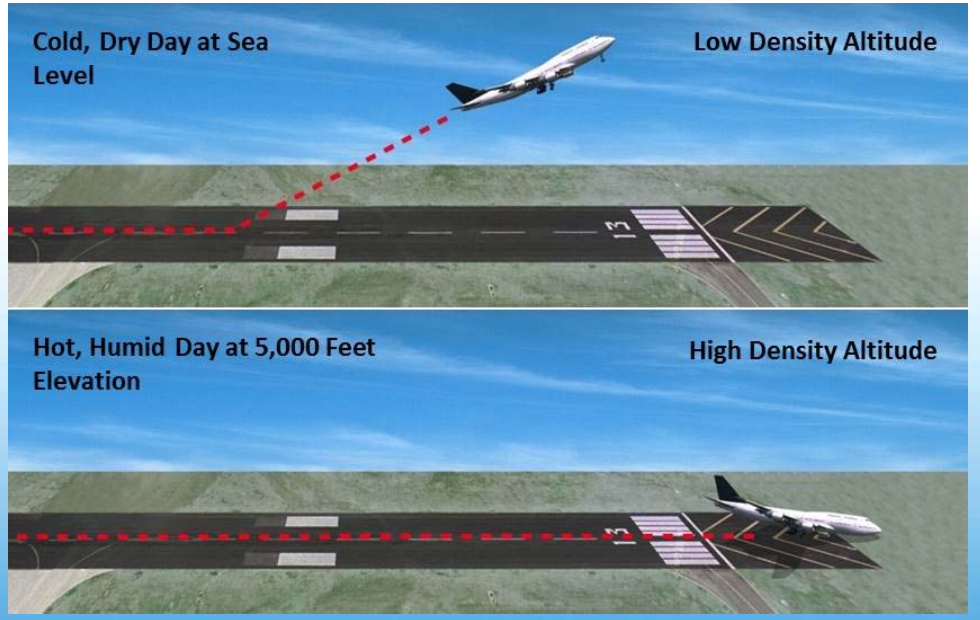
- **Density Altitude**
  - Pressure altitude
  - Temperature



1. Factors Affecting Aircraft Performance

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- **Environment**
  - Wind
  - Humidity
  - Adverse weather

1. Factors Affecting Aircraft Performance

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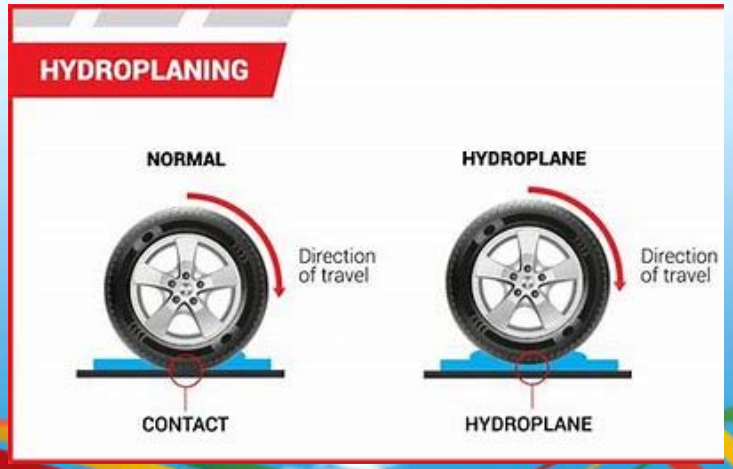
- **Runway Environment**
  - Runway slope
  - Runway condition

  (Dry/Wet, Paved/Unpaved etc.)
  - Aircraft design and configuration

  (flaps, landing gear, spoilers etc..)
  - Pilot Technique

2. Hydroplaning

- Hydroplaning is usually caused by **too much water between your tires and the runway**.
- This can cause your tires to lose contact with the surface and subsequently lose traction.



2. Hydroplaning

- **Types of Hydroplaning**
  - Dynamic
  - Viscous
  - Reverted Rubber

3. Global Reporting Format (GRF)

- The need for global reporting format
  - To standardize information to Operators, AIS/ATM, A/C manufacturers and aerodromes.
  - Improve safety of airport operations
  - **Standardized method of reporting**

Standardized method of reporting

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Assessment Criteria		Control / Braking Assessment Criteria	
Runway Condition Description	**RWYCC**	**Deceleration or Directional Control Observation**	**Pilot Reported Braking Action**
→ Dry	6	-	-
→ Frost → Wet (includes damp and ⅛ inch depth or less of water) **3mm (⅛ inch) depth or less of:** → Slush → Dry Snow → Wet snow	5	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal	Good
-15°C and colder outside air temperature → Compacted Snow	4	Braking deceleration OR directional control is between Good and Medium	Good to Medium

Standardized method of reporting

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→ Slippery When Wet (wet runways) → Dry Snow or Wet Snow (any depth) over Compacted Snow **Greater than 3mm (⅛ inch) depth of:** → Dry Snow → Wet Snow **Warmer than -15°C outside air temperature** → Compacted Snow	3	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced	Medium
Greater than 3mm (⅛ inch) depth of: → Water → Slush	2	Braking deceleration OR direction control is between Medium and Poor	Medium to Poor
→ Ice	1	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced	Poor
→ Wet Ice → Slush over Ice → Water over Compacted Snow → Dry Snow or Wet Snow over Ice	0	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR direction control is uncertain	Nil

Correlation of runway condition code and pilot reports of runway braking action

Pilot report of runway braking action	*Description*	*RWYCC*
N/A		6
GOOD	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	5
GOOD TO MEDIUM	Braking deceleration OR directional control is between good and medium.	4
MEDIUM	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	3
MEDIUM TO POOR	Braking deceleration OR directional control is between medium and poor.	2
POOR	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	1
LESS THAN POOR	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	0

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4 - RWYCC for each runway third

5/5/2

2 - Date and time of assessment

09251400

1 - Aerodrome location indicator

WMKK

14L

3 - Lower runway designation number

50/50/50

5 - % coverage contaminant for each runway third *

6 - Depth of loose contaminant for each runway third

NR/NR/04

WET/WET/STANDING WATER

7 – Condition description for each runway third

8 – Width of cleared runway in metres to which the RWYCCs apply if less than published width

WMKK 09251400 14L 5/5/2 50/50/50 NR/NR/04 WET/WET/STANDING WATER

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Thank you

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