OPERATIONAL ADDRESS:

Glen Paragliding Club

Victoria Road, Clifton

Cape Town

8005

SAHPA

No 4 Oost Rd
Mnandi
Centurion

CONTACT DETAILS

glenclub.co.za/paragliding

office@sahpa.co.za

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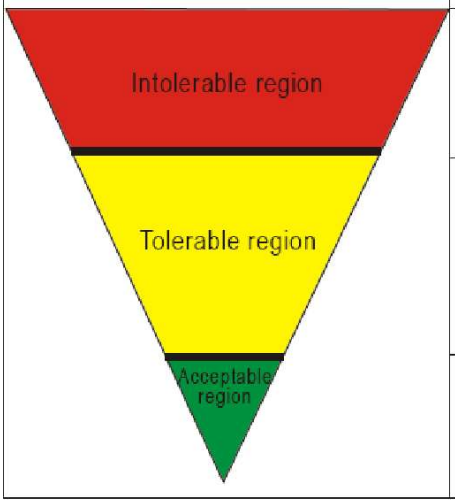
2. Risk Assessment & Mitigation

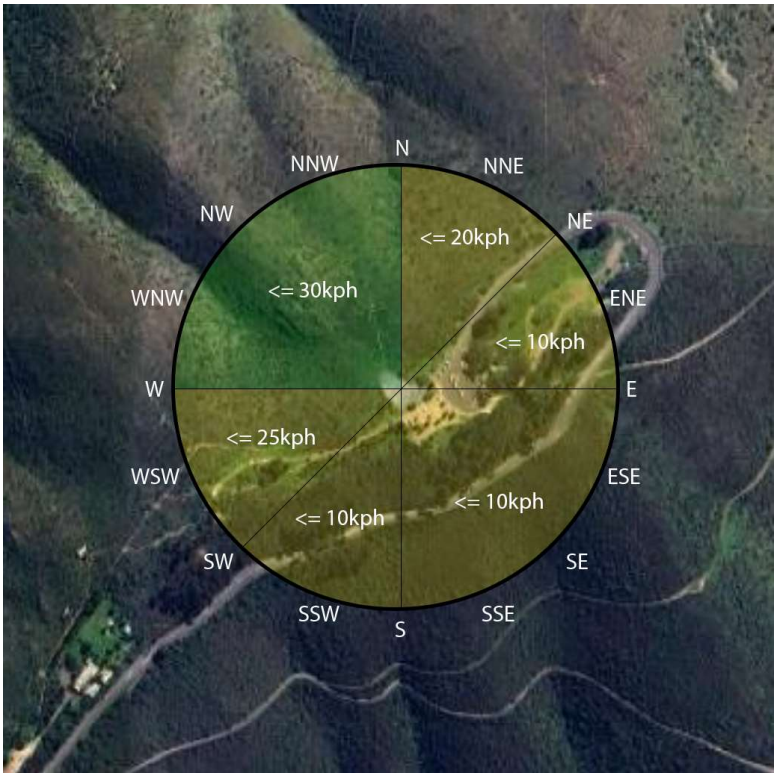
	Meaning	Value
Frequent	Likely to occur many times (has occurred frequently)	**5**
Occasional	Likely to occur sometimes (has occurred infrequently)	**4**
Remote	Unlikely to occur, but possible (has occurred rarely)	**3**
Improbable	Very unlikely to occur (not known to have occurred)	**2**
Extremely improbable	Almost inconceivable that the event will occur	**1**

Severity of occurrence	Meaning	Value
Catastrophic	— Equipment destroyed — Multiple deaths	**A**
Hazardous	— A large reduction in safety margins, physical distress or a workload such that the operators cannot be relied upon to perform their tasks accurately or completely — Serious injury — Major equipment damage	**B**
Major	— A significant reduction in safety margins, a reduction in the ability of the operators to cope with adverse operating conditions as a result of increase in workload, or as a result of conditions impairing their efficiency — Serious incident — Injury to persons	**C**
Minor	— Nuisance — Operating limitations — Use of emergency procedures — Minor incident	**D**
Negligible	— Little consequences	**E**

Risk probability		Risk severity				
		Catastrophic A	Hazardous B	Major C	Minor D	Negligible E
Frequent	5	5A	5B	5C	5D	5E
Occasional	4	4A	4B	4C	4D	4E
Remote	3	3A	3B	3C	3D	3E
Improbable	2	2A	2B	2C	2D	2E
Extremely improbable	1	1A	1B	1C	1D	1E

Suggested criteria	Assessment risk index	Suggested criteria
	5A, 5B, 5C, 4A, 4B, 3A	Unacceptable under the existing circumstances
	5D, 5E, 4C, 4D, 4E, 3B, 3C, 3D, 2A, 2B, 2C	Acceptable based on risk mitigation. It may require management decision.
	3E, 2D, 2E, 1A, 1B ,1C, 1D, 1E	Acceptable

2.1 Signal Hill



1. Green Zone – R001 (Low Risk of Launch Related Incidents).
-Wind Direction: West to North.
-Wind speed not exceeding 30kph

Caution advised: Strong NW forecast with high wind gradients.

2a. Yellow Zone – R002 (Intermediate Risk of Take-Off Related Incidents)
-Wind Direction: South-West to West
-Wind speed not exceeding 25kph

Caution advised: Increased Turbulence due to the left side spur.
Increased possibility of being "flushed" down the left side gully as wind speed increases.

2b. Yellow Zone - R003 (Intermediate Risk of Take-Off Related Incidents)
-Wind Direction: North to North-East
-Wind speed not exceeding 20kph

Caution advised: Prefrontal forecasts that could produce above average "sinky" conditions.

3. Yellow Zone – R003 (Intermediate Risk of Take-Off Related Incidents)

-Wind Direction: North-East to South-West
-Wind Speed not exceeding 10kph

-When in the yellow zone in this scenario, a mandatory 3-system vote is to take place. For the purposes of record keeping, to provide proof should it ever be required, we recommend that an hourly, short video recording of a handheld anemometer be used or the reading from the launch anemometer be recorded.

Extreme Caution Advised: Even though wind could be flowing anabatic producing suitable cycles, visual aids such as shaking trees or descending clouds from Table Mountain need to be taken into consideration.

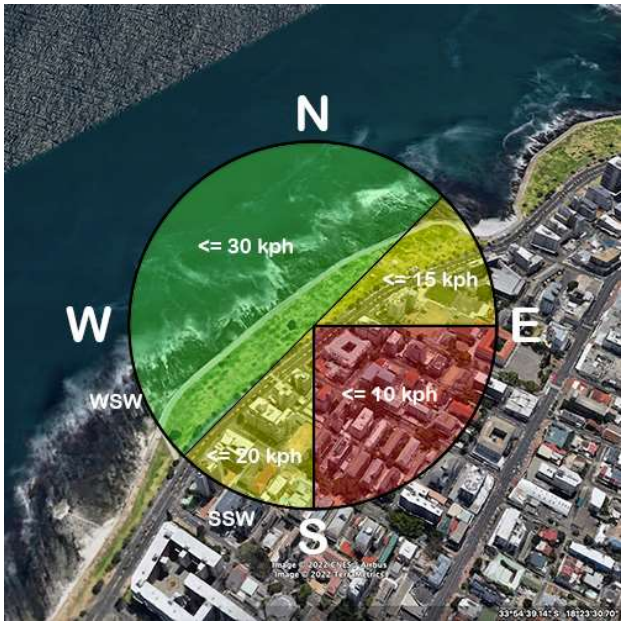
General: *General gust factor to be less than 15 kph.*

(Talker readings based on the Signal Hill iWeathar mast reading)

Risk No.	Safety Risk	Probability	Severity	Rating	Mitigation Action
R001	West - North Conditions flyable from a wind direction perspective but caution is required in terms of strength.	Improbable	Minor	2D Green	Mitigating action comprises assessment of pre-frontal forecasts and monitoring of wind strength and wind gradient.
R002	South West - West Increased risk of turbulence from left side spur and possibility of being flushed down the gully.	Occasional	Major	4C Yellow	Flyable in lower wind strengths .
R003	North – North East Increased risk of high sink rates in pre-frontal conditions, particularly over Sea	Remote	Minor	3D Yellow	Flyable in lower wind strengths

	Point.				
R004	<u>North East – South West</u> Wind is primarily over the back, but positive flow up the TO is still possible at low wind speeds.	Frequent	Major	4C Yellow	Mandatory 3-system vote is to take place.

<u>2.2 Sea Point</u>



<u>1. Green Zone</u> – R005 (Low Risk of Landing Related Incidents).

-Wind Direction: South-West to North-East.
-Wind speed not exceeding 30kph.

Caution advised: Be careful of strong NW forecasts with high wind gradients. Consider visual aids such as white caps on the ocean as well as low approaching clouds/fog. No Commercial Operations permitted unless VFR in VMC conditions.

<u>2a. Yellow Zone</u> – R006 (Intermediate Risk of Landing Related Incidents).

-Wind Direction: North-East to East
-Wind speed not exceeding 15kph

Caution advised: Increased Turbulence due to residential housing/hotels.

May experience high sink rate on landing approach.

2b. Yellow Zone – R007 (Intermediate Risk of Landing Related Incidents)

-Wind Direction: South to South-West
-Wind speed not exceeding 20 kph

Caution advised: Increased Turbulence due to residential housing/hotels
May experience high sink rate on landing approach.

3. Red Zone – R008 (High Risk of Landing Related Incidents)

-Wind Direction: East to South
-Wind Speed not exceeding 10kph (*as recorded by hand held* anemometer)

Extreme Caution advised: Recommendation to not operate commercially.

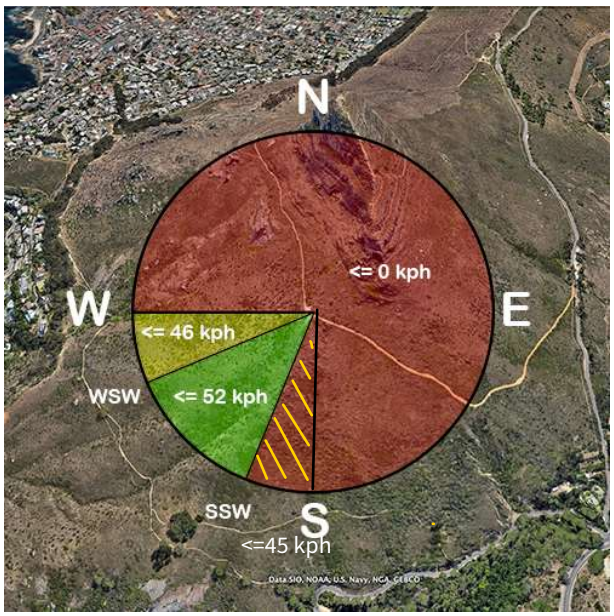
Risk No.	**Safety Risk**	**Probability**	**Severity**	**Rating**	**Mitigation Action**
R005	South West- North East Unobstructed wind direction although risk of variability or strong wind.	Improbable	Minor	2D Green	Unobstructed wind direction, caution required regarding wind strength, visibility of white caps, ground staff and wind meters.
R006	North East – East Increased risk of turbulence from buildings with possibility of high sink rates.	Remote	Minor	3D Yellow	Flyable in lower wind strengths.
R007	South – South West Increased risk of turbulence from buildings with possibility of high sink rates.	Remote	Minor	3D Yellow	Flyable in lower wind strengths.
R008	East – South	Frequent	Major	5C	No tandem flying in

	High risk of wind rotor off the buildings.			Red	these conditions.

1. Steep turns/aerobatics /acro as allowed/recommended by the glider manufacturer
2. No aerobatics/wingovers/spirals/steep turns over the landing approach zone (yellow area)
3. No aerobatics/wingovers/spirals/steep turns below 100m ASL
4. Hook knives mandatory for Tandem Pilots flying from Signal Hill
5. **Landing approach** Downwind Base Final - right in anything southerly, left in anything northerly.

No wingovers, spirals, steep turns are allowed in yellow area (landing approach zone)

2.3 Lions Head



1. Green Zone – R009 (Low Risk of Launch Related Incidents).

-Wind Direction: South-South-West to West-South-West.
-Wind speed not exceeding 52 kph (Lions Head Talker – Situated in the venturi).

Caution advised: Strong SW forecast with high wind gradients. Consider visual aids such as white caps/streaks on the ocean as well as low approaching clouds/ fog. No Commercial Operations permitted unless VFR in VMC conditions. Strong South and getting pinned at the boulder. Compression areas on left and right-hand sides of the mountain.

2a. Yellow Zone - R010 (Intermediate Risk of Launch Related Incidents).

-Wind Direction: West-South-West to West
-Wind speed not exceeding 46 kph (Lions Head Talker – Situated in the venturi).

Caution advised: Increased Turbulence on launch due to the rotor from the right side falling away. Increased Turbulence due to wind flowing across big boulders.

2b. Yellow zone

Directions SSW 202.5 to S 180.0 is a yellow zone and only permissible under the following conditions:
- Wind equal or less to 45 kph
- The general airflow mass is South westerly
- The bottom talker remains in original spec

Extreme Caution advised: No commercial operations permitted.

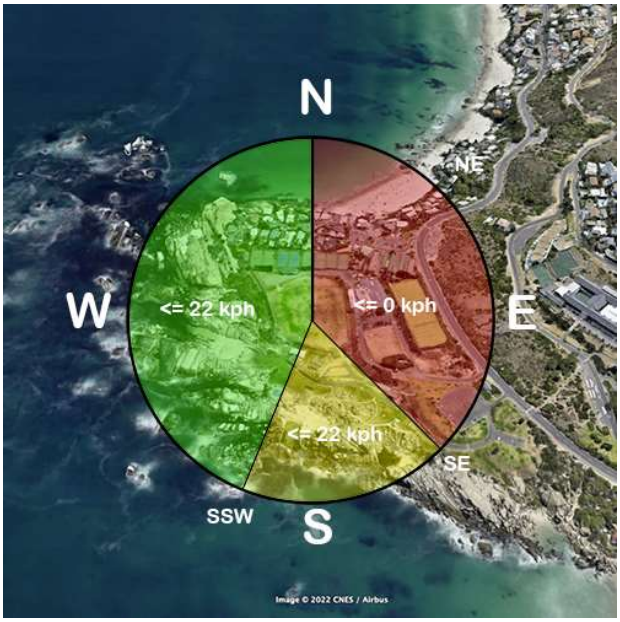
Increased Turbulence due to rotor from Wind flowing over the Twelve Apostles.

Possible Increased Turbulence during flight from flying in the lee.

General: *Gust factor to be less than 15 kph*
(Talker readings based on the iWeathar Lion's Head reading located in the venturi)

Risk No.	Safety Risk	Probability	Severity	Rating	Mitigation Action
R009	South South West - Wet South West Conditions flyable from a wind direction perspective but caution is required in terms of strength.	Improbable	Minor	2D Green	Mitigating action comprises assessment of pre-frontal forecasts and monitoring of wind strength and wind gradient.
R010	West South West – West Increased risk of turbulence on launch from ridge/fall away to the right	Occasional	Major	4C Yellow	Flyable in lower wind strengths.
R011	West – South South West High risk of backwind and rotor on launch with high turbulence in the air from 12 Apostles and flying in the lee.	Occasional	Hazardous	4B Red	No tandem flying in these conditions.

2.4 Clifton/Glen Country Club



1. Green Zone – R012 (Low Risk of Landing Related Incidents).

-Wind Direction: South South-West to North.
-Wind speed not exceeding 22 kph (Glen Country Club Wind Talker).
-Wind speed exceeding 22 kph will upgrade the risk zone to yellow and therefore mandatory 3-system voting is required.

Caution advised: Be careful of strong SW forecasts with high wind gradients. Consider visual aids such as white caps/streaks on the ocean as well as low approaching cloud/fog and cloud coming over the Twelve Apostles.

No Commercial Operations permitted unless VFR in VMC conditions.

2. Yellow Zone – R013 (Intermediate Risk of Landing Related Incidents)

-Wind Direction: South-South-West to South-East
-Wind speed not exceeding 22 kph (Glen Country Club Wind Talker).

Caution advised: Increased Turbulence due to rotor from Wind flowing over the Twelve Apostles.

Possible Increased Turbulence during landing approach and possible hard landings.

3. Red Zone – R014 (High Risk of Landing Related Incidents)
-Wind Direction: North to South-East

Extreme Caution advised: No commercial operations permitted.

(Talker readings based on the Glen Club PWS weather reading)

Risk No.	Safety Risk	Probability	Severity	Rating	Mitigation Action
R012	South South West - North Risk of wind strength turbulence particularly with strong wind forecasts and gradients.	Improbable	Minor	2D Green	Unobstructed wind direction, caution required regarding wind strength, visibility of white caps, ground staff and wind meters. **Should wind speed exceed 22 kph, mandatory 3-system voting is required.**
R013	South South West – South East Increased risk of turbulence due to 12 Apostles. Increased risk of hard landings	Occasional	Major	4C Yellow	Land with speed to reduce effects of turbulence.
R014	North – South East High risk of incidents and accidents on landing due to rotor	Frequent	Major	5C Red	No tandem flying in these conditions.

1. Steep turns/aerobatics /acro as allowed/recommended by the glider manufacturer
2. No aerobatics/wingovers/spirals/steep turns over the landing approach zone (yellow area)
3. No aerobatics/wingovers/spirals/steep turns below 100m ASL
4. Hook knives mandatory for Tandem Pilots flying from Lions Head
5. **Landing approach** Downwind Base Final
6. Do not fly over the tennis courts when landing, lose height over the ocean

No wingovers, spirals, steep turns are permitted in yellow area (landing approach zone)

The End

Date Signed _____

Christopher Bond	Michele Lodi-Fe
Glen Paragliding Club Safety Officer	Glen Paragliding Club Chairman

Louis Stannford	Kevin Storie
SAHPA Chairman	NSO SAHPA