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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	<ul style="list-style-type: none"> — Equipment destroyed — Multiple deaths 	A
Hazardous	<ul style="list-style-type: none"> — 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	<ul style="list-style-type: none"> — 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	<ul style="list-style-type: none"> — Nuisance — Operating limitations — Use of emergency procedures — Minor incident 	D
Negligible	<ul style="list-style-type: none"> — 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
Intolerable region	5A, 5B, 5C, 4A, 4B, 3A	Unacceptable under the existing circumstances
Tolerable region	5D, 5E, 4C, 4D, 4E, 3B, 3C, 3D, 2A, 2B, 2C	Acceptable based on risk mitigation. It may require management decision.
Acceptable region	3E, 2D, 2E, 1A, 1B, 1C, 1D, 1E	Acceptable

3 System

A 3 system will be used when any Tandem pilot calls for a vote to reach consensus if it is safe to launch and land. The majority vote will stand. This vote can be redone in the event the conditions change and it becomes safe to launch or land. In the event a 3 is voted, the launch will be closed and any Tandem pilot who disregards this vote can face suspension from flying from Signal Hill or Lions Head if it is deemed appropriate by the Glen Paragliding Club Safety Officer or the Glen Club Committee.

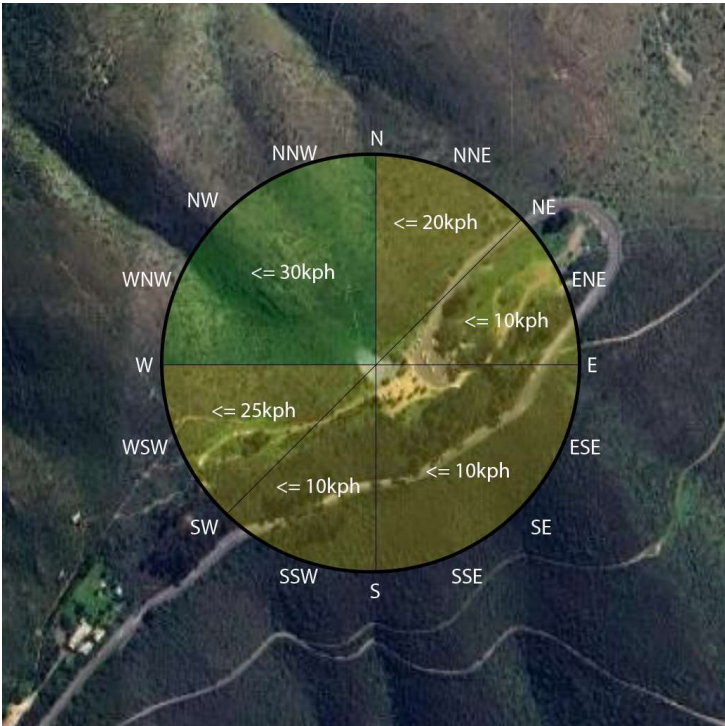
The 3 System is as follows:

- 1 Being flyable
- 2 Caution to be shown
- 3 Launch and Landing Closed.

The 3 system can never override the safe parameters of this Risk Assessment & Mitigation when a vote is called.



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)

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Risk Assessment & Mitigation

-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 (*Talker readings based on the Signal Hill iWeather mast reading*)

Mitigation

Wind speed on *launch IWeather station* is showing a positive anabatic flow of 5km/h, it will be in the Green Zone.

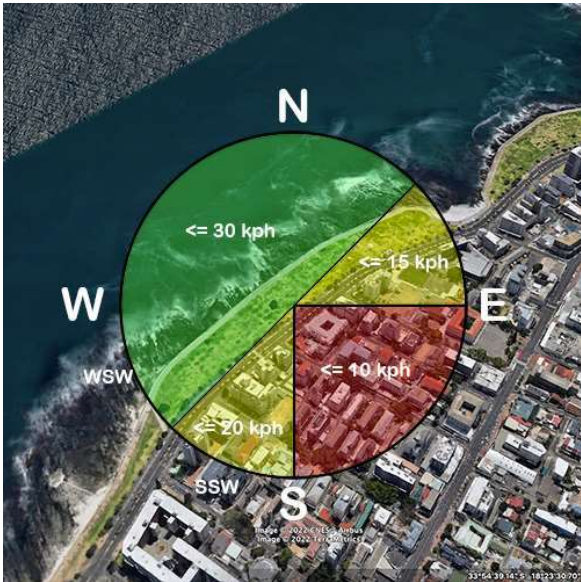
Porters will be used to assist take off.

Risk No.	Safety Risk	Probability	Severity	Rating	Mitigation Action
R001	<u>West - North</u> 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	<u>South West - West</u> 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	<u>North – North East</u> Increased risk of high sink rates in pre-frontal conditions, particularly over Sea	Remote	Minor	3D Yellow	Flyable in lower wind strengths



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

2.2 Sea Point



1. Green Zone – 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 flying permitted unless VFR in VMC conditions.

2a. Yellow Zone – 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.

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Risk Assessment & Mitigation

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.

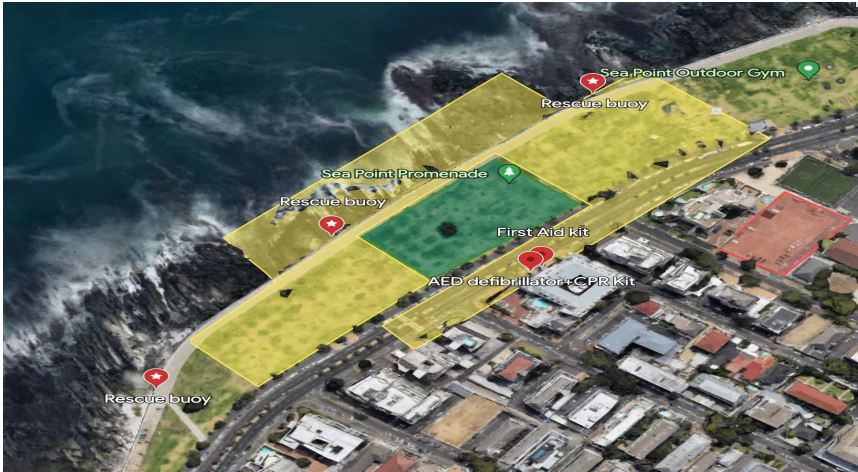
Risk No.	Safety Risk	Probability	Severity	Rating	Mitigation Action
R005	<u>South West- North East</u> Unobstructed wind direction although risk of variability or strong wind.	Improbable	Minor	2D Green	Unobstructed wind direction, caution required regarding wind strength, visibility of white caps, ground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

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	rotor off the buildings.			Red	
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Additional Mitigation

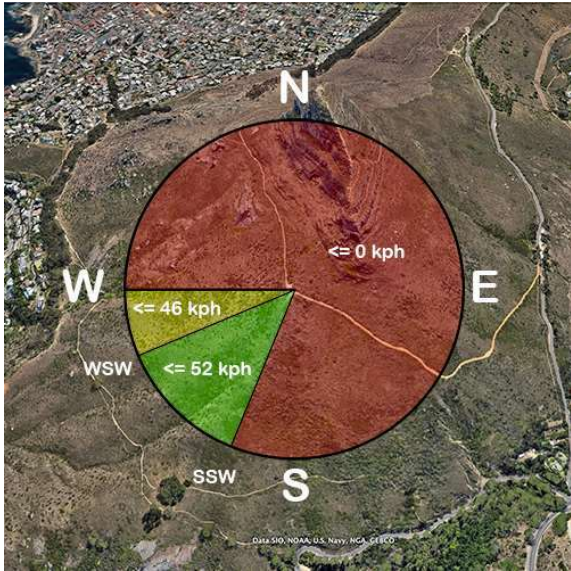
1. Steep turns/aerobatics /acro as allowed/recommended by the paraglider manufacturer.
2. No aerobatics/wingovers/spirals/steep turns over the landing approach zone (yellow area).
3. No aerobatics/wingovers/spirals/steep turns below 100m ASL.
4. Hook knives fit for purpose and affixed to the harness in a position to allow immediate use by the pilot, are mandatory for Tandem Pilots flying from Signal Hill.
5. **Landing approach** Downwind Base Final - right hand turns in anything southerly, left hand turns in anything northerly.
6. In the event that all the available wind stations are not operational, then it will be the responsibility of the CFI or nominated person of each school to assess and perform a new risk assessment with a handheld anemometer for a period of 2 minutes.
7. All wind readings are based on the Signal Hill Mast lweather station unless otherwise stipulated.



No wingovers, spirals, steep turns are allowed in yellow area

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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 flying permitted unless VFR in VMC conditions.

Strong South and cause no forward speed 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 (As displayed or recorded 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.



Risk Assessment & Mitigation

3. Red Zone – R011 (High Risk of Take-off Related Incidents)

-Wind Direction: West to South-South-West via the North

Extreme Caution advised: No flying permitted.

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

Possible Increased Turbulence during flight from flying in the lee.

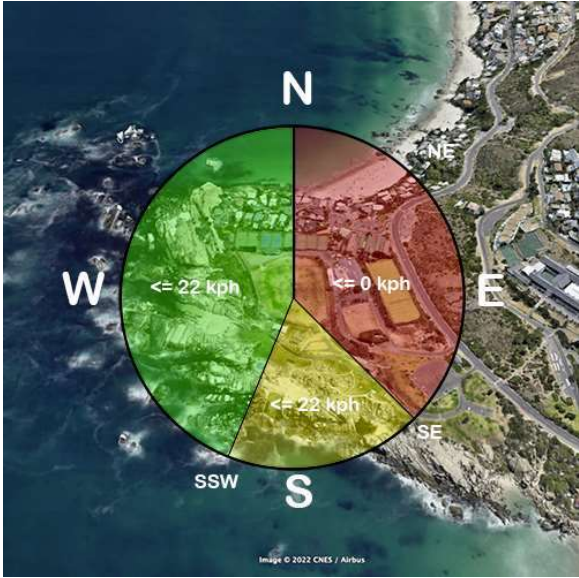
General: Gust factor to be less than 15 kph
(Talker readings based on the IWeather Lion’s Head reading located in the venturi)

Risk No.	Safety Risk	Probability	Severity	Rating	Mitigation Action
R009	<u>South South West - Wet South West</u> 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	<u>West South West – West</u> Increased risk of turbulence on launch from ridge/fall away to the right	Occasional	Major	4C Yellow	Flyable in lower wind strengths.
R011	<u>West – South South West</u> High risk of backwind and rotor on launch with high turbulence in the air from 12 Apostles and flying in	Occasional	Hazardous	4B Red	No tandem flying in these conditions.



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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

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 flying 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.

Risk Assessment & Mitigation

3. Red Zone – R014 (High Risk of Landing Related Incidents)

-Wind Direction: North to South-East

Extreme Caution advised: No flying permitted.

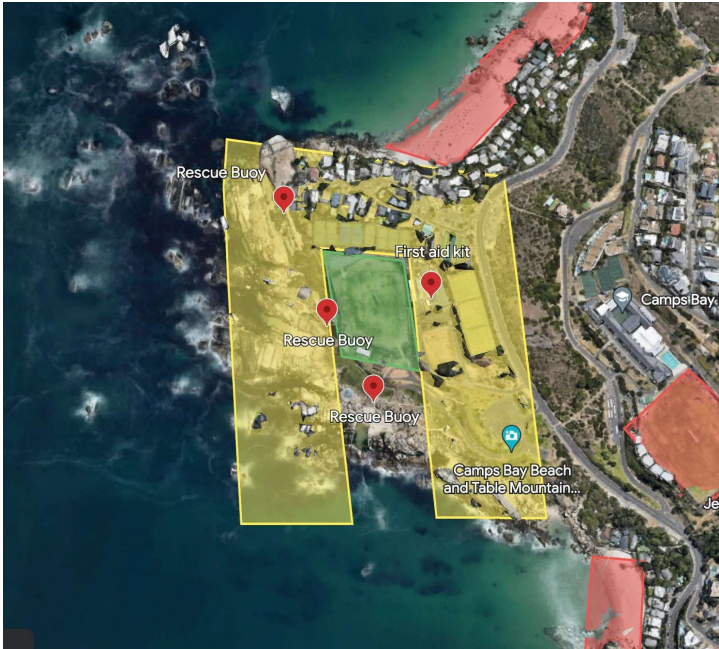
(Talker readings based on the Glen Club PWS weather reading)

Risk No.	Safety Risk	Probability	Severity	Rating	Mitigation Action
R012	<u>South South West - North</u> 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	<u>South South West – South East</u> 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	<u>North – South East</u> High risk of incidents and accidents on landing due to rotor	Frequent	Major	5C Red	No tandem flying in these conditions.

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Additional Mitigation

- 1. Steep turns/aerobatics /acro as allowed/recommended by the paraglider 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 fit for purpose and affixed to the harness in a position to allow immediate use by the pilot, are mandatory for Tandem Pilots flying from Lions Head.
- 5. Landing approach: Downwind Base Final.
- 6. Avoid flying over the tennis courts when landing, lose height over the ocean.
- 7. In the event that all the available wind stations are not operational, then it will be the responsibility of the CFI or nominated person of each school to assess and perform a new risk assessment with a handheld anemometer for a period of 2 minutes.
- 8. All wind readings are based on the Lions head lweather upper launch wind station and the Glen Landing Field wind station.



No wingovers, spirals, steep turns are permitted in yellow area

Risk Assessment & Mitigation

The End

Date Signed 10 October 2023



Christopher Bond
Glen Paragliding Club Safety Officer



Michele Lodi-Fe
Glen Paragliding Club Chairman



~~Louis Stanford~~ Louis Stanford
SAHPA Chairman



Kevin Storie
NSO SAHPA

