



Loss of Control - Inflight (LOC-I)

Investigation Report

**Niviuk Artik R Paraglider
Ngong Ping, Ma On Shan,
Hong Kong
11 February 2025**

IVR-2026-04

AAIA Investigations

Pursuant to the Hong Kong Civil Aviation (Investigation of Accidents) Regulations (Cap. 448B), the sole objective of the investigation and the Investigation Report is the prevention of accidents and incidents. It is not the purpose of the investigation to apportion blame or liability.

The Chief Inspector instigated an inspector's investigation into the accident in accordance with the provisions in Cap. 448B.

This accident Investigation Report contains information of an occurrence involving a paragliding activity at Ngong Ping, Ma On Shan, Hong Kong on 11 February 2025.

The Hong Kong Observatory, the Government Flying Service, and Hong Kong China Paragliding Association provided assistance to the investigation team.

This Investigation Report supersedes all previous Preliminary Report and Interim Statements concerning this accident investigation.

All times in this Investigation Report are in Hong Kong Local Time unless otherwise stated.

Hong Kong Local Time is Coordinated Universal Time (UTC) + 8 hours.

Chief Accident and Safety Investigator

Air Accident Investigation Authority

Transport and Logistics Bureau

Hong Kong

October 2026

Synopsis

On 11 February 2025, a paraglider pilot arrived at the Ma On Shan Country Park launch site. Following equipment checks, he commenced his flight at 1210 hours, with the intention of landing back at the same field. After a flight of approximately 23 minutes, he returned to the field for his final approach.

During the landing approach, the pilot encountered rising air currents and realised he was too high for a safe landing. In an attempt to lose altitude, he initiated turns above the landing area. While executing a sharper turn with increased left-hand control, the left side of the wing stalled, inducing a violent left-hand spin.

The paraglider descended rapidly onto the grass area, with the pilot still attached. He sustained serious injuries and fell into a coma. Emergency services were notified and attended the scene. The pilot later regained consciousness and was airlifted by Government Flying Service helicopter to Pamela Youde Nethersole Eastern Hospital for treatment. Flight data from his variometer recorded the flight duration from 1210 to 1233 hours.

The investigation team has made one safety recommendation in this report.

Contents

AAIA Investigations	1
Synopsis	2
Contents	3
1. Factual Information	5
1.1. History of the Flight	5
1.2. Injuries to Persons	6
1.3. Damage – Paraglider	6
1.4. Other Damage	6
1.5. Personnel Information	7
1.5.1. General	7
1.5.2. Experience, Training and Qualifications	7
1.6. Paraglider Information	8
1.6.1. Paraglider	8
1.6.2. Harness	12
1.6.3. Reserve Parachute	13
1.7. Meteorological Factors	14
1.7.1. Hong Kong China Paragliding Association Site Guides	14
1.7.2. Weather Information from the Hong Kong Observatory	15
1.8. Navigation Aids	22
1.9. Communications	22
1.10. Paragliding Activity Area	22
1.11. Flight Recorders	23
1.11.1. Variometer	23
1.11.2. Flight Track	25
1.11.3. Video Recording	25
1.12. Wreckage and Impact	26
1.12.1. General	26
1.12.2. Canopy and Harness	26
1.12.3. Paragliding Reserve Parachute	26
1.12.4. Helmet	26
1.12.5. Other Equipment	27
1.13. Medical/Pathological Information	27
1.14. Smoke, Fire, and Fumes	27
1.15. Survival Aspects	28
1.15.1. Distress Call	28
1.15.2. Search and Rescue Operation	28
1.16. Tests and Research	28
1.16.1. Aging Check of Paraglider Lines	28
1.17. Organisation, Management, System Safety	28
1.17.1. Civil Aviation Department	28
1.17.2. Hong Kong China Paragliding Association Limited (HKPA)	29
1.17.3. International Paragliding Association (IPA)	30

1.18.	Additional Information.....	30
1.18.1.	EN 926-2 Test Methods for Paragliders.....	30
1.18.2.	Paragliders Owned by the Pilot	31
1.18.3.	Some Terminologies of Paragliding	32
1.18.4.	Human Factors - Negative Transfer	35
1.19.	Useful or Effective Investigation Techniques	37
2.	Safety Analysis	38
2.1.	Pilot Experience	38
2.2.	Weather on the Day of the Accident.....	38
2.3.	Flight Analysis.....	39
2.4.	Survivability.....	40
2.4.1.	Analysis of Injuries.....	40
2.4.2.	Survival Aspects	40
2.5.	Negative Transfer	41
2.6.	Mitigating the Risks of Negative Transfer	42
2.6.1.	Maintain Currency and Review Technical Documentation.....	42
2.6.2.	Recalibration through Ground Handling	42
2.6.3.	Conducting In-Flight Recalibration Exercises.....	43
3.	Conclusions	44
3.1.	Findings	44
3.2.	Cause	45
4.	Safety Recommendations	47
4.1.	Safety Recommendation SR-2026-04.....	47
5.	General Details	48
5.1.	Occurrence Details	48
5.2.	Pilot Details.....	48
5.3.	Aircraft Details	48
6.	Abbreviations	49
7.	Table of Figures, Photos, Tables	51
8.	Appendix.....	52
8.1.	BGD Epic Freestyle Vs Niviuk Artik R	52

1. Factual Information

1.1. History of the Flight

- (1) A paraglider pilot arrived at the take-off and landing field of the Ma On Shan paragliding activities area in Ma On Shan Country Park at approximately 1125 hours on 11 February 2025. After checking his equipment and preparing for the flight, he took off at 1210 hours.
- (2) The pilot (hereafter “the Pilot”) planned to top land¹ at the same field where he took off from. After flying for approximately 23 minutes, he returned to the field for landing. During his approach, he noticed rising air currents and realised he was too high for a safe landing. To lose excess altitude, he attempted to perform turns above the area.
- (3) As he applied more left-hand control for a sharper turn, the left side of the wing stalled, causing the paraglider to enter a left-hand spin. Simultaneously, the paraglider descended onto the grass area. He remained attached to the paraglider, sustained injuries, and fell into a coma.
- (4) The Hong Kong Police Force (HKPF) and the Hong Kong Fire Services Department were notified of the occurrence and later arrived at the scene for rescue.
- (5) The pilot later regained consciousness, and was airlifted to Pamela Youde Nethersole Eastern Hospital (PYNEH) by a helicopter of the Government Flying Service (GFS) for medical treatment.
- (6) According to the flight data in the Pilot’s variometer [refer to paragraph 1.11.1 (1)], the flight commenced at 1210:27 hrs and ended at 1233:31 hrs.

1 "Top land" in paragliding refers to the technique of landing on top of a mountain, hill, or specifically on the take-off site itself, rather than in the designated landing zone at the bottom of the hill.

1.2. Injuries to Persons

The Pilot was seriously injured in the accident.

Injuries	Crew	Passengers	Others
Fatal	-	-	-
Serious	1	-	-
Minor / None	-	-	-

Table 1: Injuries to Persons

1.3. Damage – Paraglider

There was no damage to the paraglider. Refer to paragraph 1.12.

1.4. Other Damage

No other damage was caused.

1.5. Personnel Information

1.5.1. General

Pilot	Male, aged 64
Weight	61 kg
Licence details:	- CTASA² P2 (Novice Pilot), P3 (Intermediate Pilot), P4 (Advanced Pilot), and P5 (Master Pilot) licences - APPI³ 3 and APPI 4 qualifications - HKPA⁴ 4 rating
Flying experience:	Approximately 500 hours since 2016 (as of the date of this accident)

Table 2: Pilot Information

1.5.2. Experience, Training and Qualifications

- (1) The Pilot first received paragliding training in 2016. Between 2016 and 2020, he obtained CTASA P2 (Novice Pilot), P3 (Intermediate Pilot), and P4 (Advanced Pilot) licences. In 2020, he achieved the APPI 3 qualification. In 2023, he got the CTASA P5 (Master Pilot) licence.
- (2) In 2024, he acquired APPI 4 qualification and got HKPA 4 (Intermediate Pilot) rating by conversion.
- (3) He also completed an SIV⁵ training in May 2024.

² Chinese Taipei Aerosports Association

³ Association of Paragliding Pilots and Instructors (APPI) is an international non-profit-making association founded in 2009 and is based in Switzerland. It develops worldwide and united education standards and systems with consistent quality for paragliding and powered paragliding pilots.

⁴ Hong Kong China Paragliding Association

⁵ SIV stands for 'Simulation d'Incidents en Vol' and roughly translated means simulating unstable situations in flight. The attendees will learn how to make the correct control inputs in unstable situations, progressively building up to more complicated manoeuvres. This must all be done over water with the use of buoyancy aids, radios, video equipment and support boats etc.

- (4) He has accumulated approximately 500 flying hours over the years.

1.6. Paraglider Information

1.6.1. Paraglider

- (1) The paraglider the Pilot used in the accident flight was an EN/LTF⁶-C certified Niviuk Artik R of size 21⁷. According to the manufacturer, it was produced in October 2023.

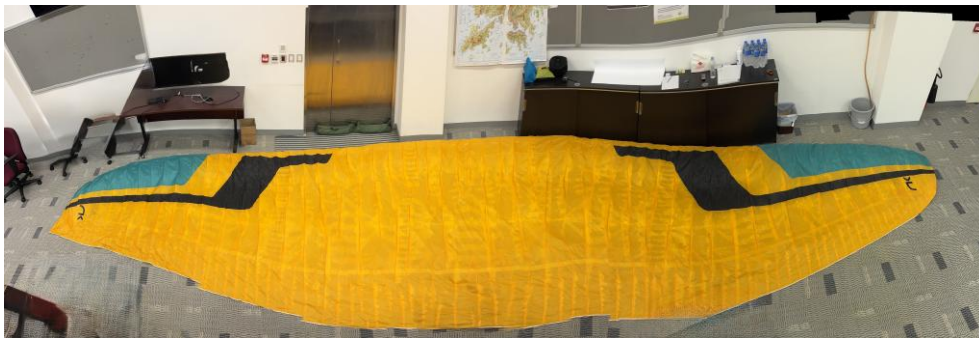


Figure 1: The Pilot's Niviuk Artik R Paraglider

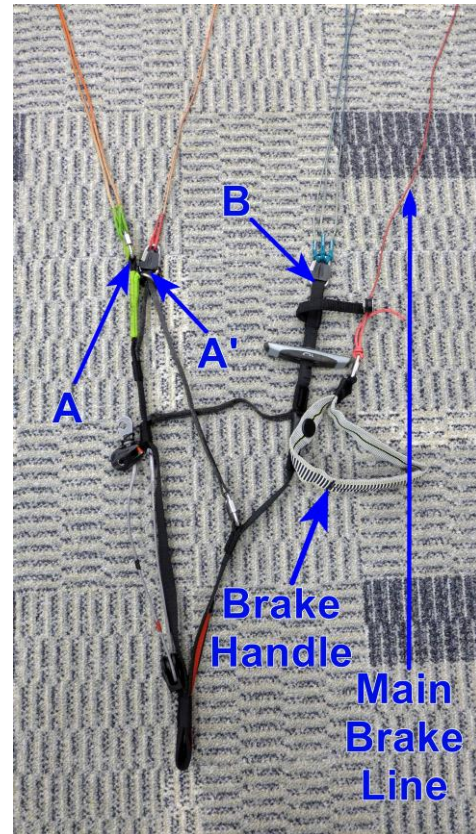
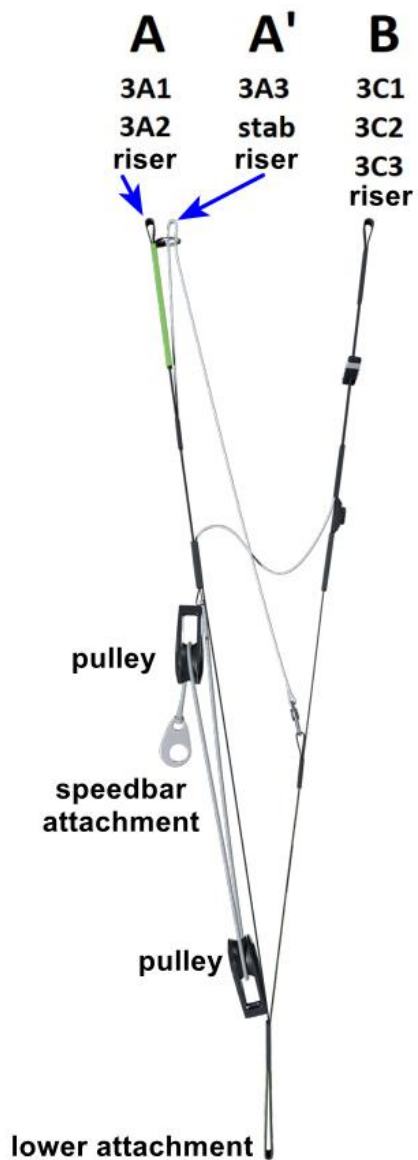
Model Artik R		Serial # S1560651
		Size 21
Niviuk Gliders		
Number of seats 1	Projected area 18,36 m²	Certification EN/LTF - C
Total weight in flight 70-85 kg	Number of risers 2	Conformity name Niviuk Quality Control Dept.
Glider weight 4,45 kg	Trimmers NO	Conformity date Date of invoice
Testing laboratory Air Turquie SA		Check Frequency 100 hours or 24 months
MADE IN VIETNAM	www.niviuk.com	

Figure 2: Data Labels of the Pilot's Paraglider

⁶ European Norm / Lufttüchtigkeits-Prüfung

⁷ Niviuk Artik R has five sizes and 21 is the smallest one.

- (2) The Niviuk Artik R is a high-performance EN-C class paraglider designed for experienced pilots seeking a balance between competitive performance and manageable handling. It sits in the "upper middle" of the EN-C category, engineered to be more accessible and predictable than top-end competition wings while significantly outperforming mainstream EN-B gliders.
- (3) A hybrid two-line design simplifies the riser system for more direct and intuitive brake feel. Its construction utilizes lightweight cloth for the upper and the lower surfaces and optimized line sets to reduce weight and improve responsiveness. The wing is known for its solid pitch stability, precise and consistent turning behaviour, and a forgiving recovery from collapses, which are characteristic passive safety advantages within its class.
- (4) Compared to EN-B gliders, the Artik R offers a substantial performance gain in glide ratio, speed range (with higher trim and top speeds accessible via the accelerator), and reactivity. It provides more direct feedback and requires more active piloting, rewarding precise input with superior cross-country and climb performance.
- (5) The splitting control lines or brake lines are connected to the trailing edge of the canopy at points br1 to br12. These lines do not carry any weight. They are combined as the main brake line (BRmain) which is connected to a brake handle, sometimes referred to as the control or toggle (refer to Figure 4).



Left hand shown, right hand opposite

Figure 3: Riser Diagram of Niviuk Artik R Paraglider

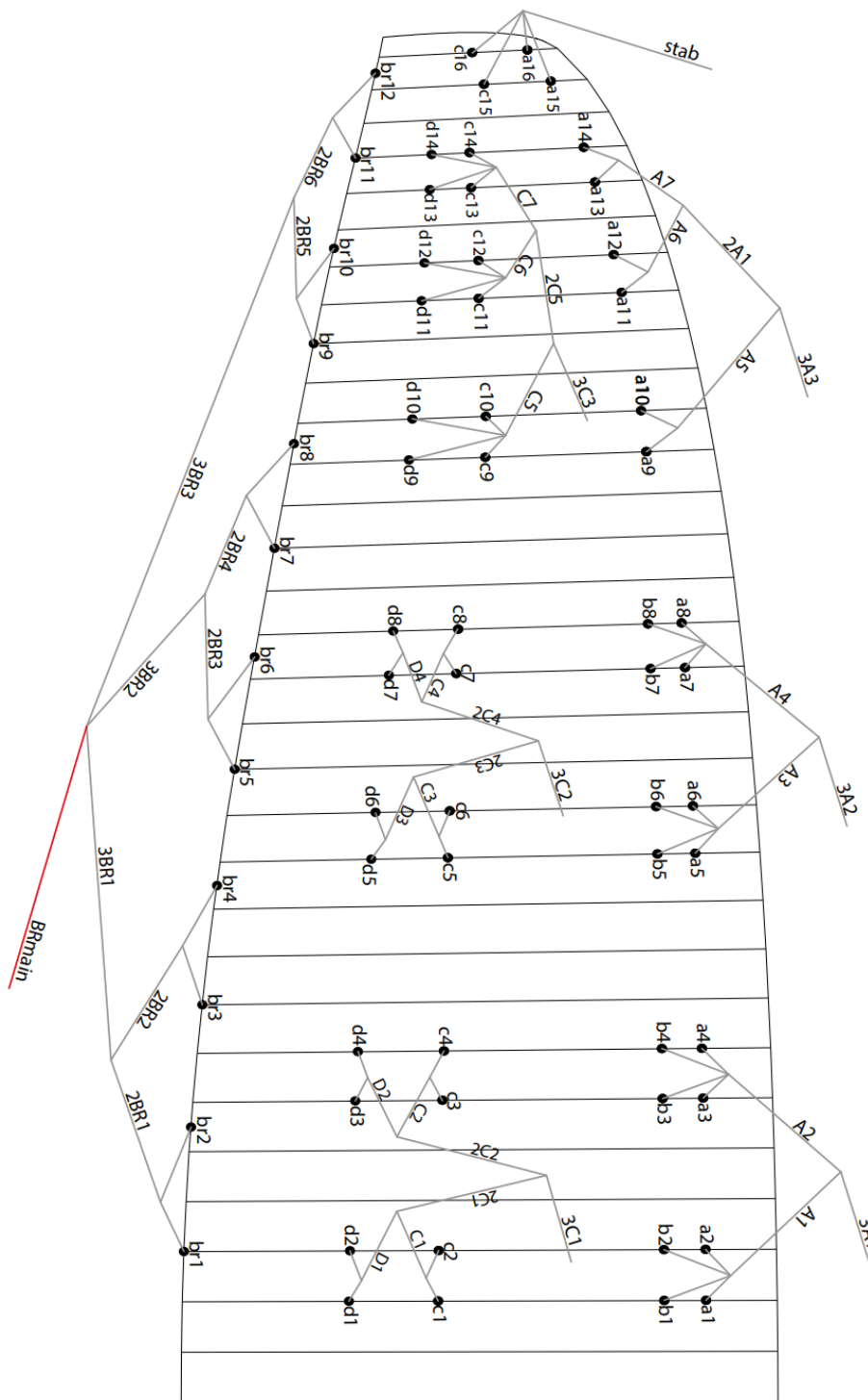


Figure 4: Line Diagram of Niviuk Artik R Paraglider

- (6) EN is a 4-level paraglider certification system, namely A, B, C and D. According to the British Hang Gliding & Paragliding Association (BHPA),

EN-C paragliders are “Designed for pilots familiar with recovery techniques, who fly “actively” and regularly, and understand the implications of flying a glider with reduced passive safety. (For pilots who are Advanced Pilot rated, have several hundred hours logged (many of these in thermic conditions), have completed SIV courses, are flying 10 or more hours a month, and enjoy dealing with large asymmetric collapses etc.)”⁸.

Class	Description of flight characteristics	Description of pilot skills required (BHPA expanded version)
A	Paragliders with maximum passive safety and extremely forgiving flying characteristics. Gliders with good resistance to departures from normal flight.	Designed for all pilots including pilots under all levels of training. <i>(For all pilots especially those in their first year of flying and for experienced pilots with limited currency, for example those who fly less than 25 hours a year.)</i>
B	Paragliders with good passive safety and forgiving flying characteristics. Gliders with some resistance to departures from normal flight.	Designed for all pilots and may be suitable for pilots under training if recommended by the manufacturer. <i>(There are a wide range of gliders produced in this category. Some are closer to 'A' class gliders. Others are for pilots who have gained more than 30 hours mixed flying (at least ten in thermic conditions) and hold a 'Pilot' rating. B class gliders are also suitable for experienced pilots who fly less than 50 hours a year.)</i>
C	Paragliders with moderate passive safety and with potentially dynamic reactions to turbulence and pilot errors. Recovery to normal flight may require precise pilot input.	Designed for pilots familiar with recovery techniques, who fly “actively” and regularly, and understand the implications of flying a glider with reduced passive safety. <i>(For pilots who are Advanced Pilot rated, have several hundred hours logged (many of these in thermic conditions), have completed SIV courses, are flying 10 or more hours a month, and enjoy dealing with large asymmetric collapses etc.)</i>
D	Paragliders with demanding flying characteristics and potentially violent reactions to turbulence and pilot errors. Recovery to normal flight requires precise pilot input.	Designed for pilots well practised in recovery techniques, who fly very actively, have significant experience of flying in turbulent conditions, and who accept the implications of flying such a wing. <i>(For pilots who have been flying for many years, fly more than two hundred hours a year often in strong thermic conditions and are masters of the various SIV skills.)</i>

Figure 5: EN Classes of Paragliders Published by the BHPA

(Source: https://www.bhpa.co.uk/pdf/En_PG_Classes.pdf)

1.6.2. Harness

The harness used by the Pilot was a SUP’AIR Strike 2 harness manufactured on 8 November 2022. It is certified to LTF 91/09 EN1651:1999.

⁸ https://www.bhpa.co.uk/pdf/En_PG_Classes.pdf



Figure 6: The Pilot's SUP'AIR Strike 2 Harness

(Source: SUP'AIR Strike 2 User Manual)

1.6.3. Reserve Parachute

- (1) The Pilot also carried a reserve parachute in his harness. The model was "SQR Prime 100" made by Companion / Evotec Ltd with the date of first installation on 1 August 2024. It was certified to EN 12491:2015⁹ and NfL II 91/09¹⁰. It could carry a maximum weight of 100 kg in flight.



Figure 7: Data Labels of the Pilot's Reserve Parachute

- (2) During the examination of the Pilot's equipment, it was noted that the reserve parachute was still stored in a pocket of the harness. It was not deployed in the accident.

⁹ EN 12491:2015 Paragliding equipment - Emergency parachutes - Safety requirements and test methods

¹⁰ LTF NfL II 91/09 is the 2009 edition of the medium-to-high performance class certification standard for paragliders, developed by the German and Swiss Air Sports Associations.



Figure 8: Reserve Parachute Stored in the Harness

1.7. Meteorological Factors

1.7.1. Hong Kong China Paragliding Association Site Guides

The HKPA provided the following site guides of Ma On Shan to paraglider pilots at the time of the accident.

1.7.1.1. Wind Direction

“Flyable wind direction: East (NE-E-SE)”

1.7.1.2. Wind Force

“Winds to look for on the HKO website are Tate’s Cairn ENE to SE force 3-4 and Sai Kung E to SE force 2-3. Never takeoff a paraglider in force 5 and above wind condition.”

(Note: Wind force 2-3, 3-4, and 5 are equivalent to wind speed of 7-19 km/h, 13-30 km/h, and 31-40 km/h respectively.)

“Ma On Shan becomes unflyable if the wind turns northerly.”

1.7.1.3. Required Pilot Rating

“Solo: HKPA 3 holders or above

Under instruction: HKPA 2 holders or above

Tandem operation: HKPA T1 holders or above”

1.7.2. Weather Information from the Hong Kong Observatory

At 0930 hrs on 11 February 2025, the HKO issued the following weather forecast for local aviation.

1.7.2.1. General

- (1) According to the forecast, there was “SIGNIFICANT WEATHER WITHIN 100 KILOMETER RADIUS OF H.K : STRONG WINDS AND SEV TURB”. This means there would be strong winds and severe turbulence within 100 km of Hong Kong.
- (2) The synopsis of the weather situation was “AN EASTERLY AIRSTREAM IS AFFECTING THE SOUTH CHINA COASTAL AREAS.”

1.7.2.2. Aviation Forecast for 100-Kilometre Radius Around Hong Kong from 1000 to 2000 hrs

1.7.2.2.1. Wind Direction, Speed, and Temperature

- (1) The surface wind would be 15 knots (kt) (28 km/h) from the 90 degrees (east) direction. The temperature would be between 18-20 degree C.
- (2) The wind at 2,000 ft (610 m) would be 20 kt (37 km/h) from the 120 degrees (east / south east) direction. The temperature would be 13 degree C.

1.7.2.2.2. Weather

There would be sunny intervals.

1.7.2.2.3. Cloud (Height above Mean Sea Level)

The cloud would be 1 to 2 oktas¹¹ (1/8 to 2/8 of the sky covered by cloud) at 3,000 feet (ft), and 3 to 4 oktas at 4,500 ft.

¹¹ Oktas are a unit of measurement used in meteorology to describe the extent of cloud cover in the sky. The sky is divided into eight parts (oktas), and each okta represents one-eighth of the sky covered by clouds. This system provides a standardized way to report and interpret cloud cover, which is crucial for aviation operation.

1.7.2.2.4. Visibility

The visibility was 10 km.

1.7.2.2.5. Turbulence

There would be moderate to severe turbulence.

1.7.2.2.6. Further Outlook

The winds would be moderate easterly winds. It would be cloudy with a few rain or mist patches.

1.7.2.3. Wind Data from Nearby Weather Stations

- (1) The wind data collected by the HKO automatic weather stations at Tate's Cairn (TC) and Sai Kung Marine East (SKG) provided a good reference for the meteorological situation in the Ma On Shan paragliding activities area.
- (2) The "10-minute mean wind" data between 1200 hrs and 1300 hrs of 11 February 2025 are presented in Table 3 below.

Time (in HKT)	10-minute mean wind direction (degree, round to nearest 10)		10-minute mean wind speed (km/hr)		10-minute maximum gust (km/hr)	
	SKG	TC	SKG	TC	SKG	TC
1200	100	110	10	22	16	30
1210	190	110	10	23	16	29
1220	190	110	7	21	14	30
1230	130	110	8	23	17	33
1240	130	110	10	23	15	32
1250	130	110	10	25	18	31
1300	140	110	10	24	14	29

Table 3: 10-minute Mean Wind Speed and Maximum Gust Data

- (3) The data between 1210 to 1240 hrs from SKG automatic weather station indicated that the mean 10-minute mean wind speeds were 7 to 10 km/h (equivalent to wind force 2, light). The wind was blowing from the south east (SE, 130 degrees) to south (S, 190 degrees). The 10-minute maximum gust was 14 to 17 km/h (equivalent to wind force 3, moderate).
- (4) The data between 1210 to 1240 hrs from TC automatic weather station indicated that the mean 10-minute mean wind speeds were 21 to 23 km/h (equivalent to wind force 4, moderate). The wind was blowing from the east / south east (E / SE, 110 degrees). The 10-minute maximum gust was 29 to 33 km/h (equivalent to wind force 4-5, moderate to fresh).
- (5) The “1-minute mean wind” data between 1210 to 1240 hrs on 11 February 2025 are presented in Table 4 below.

Time (in HKT)	1-minute mean wind direction (degree, round to nearest 10)		1-minute mean wind speed (km/hr)		1-minute maximum gust (km/hr)	
	SKG	TC	SKG	TC	SKG	TC
1200	100	110	12	19	15	23
1210	190	110	12	22	13	23
1220	200	110	6	25	9	30
1230	120	110	12	23	16	25
1240	120	110	9	24	10	30
1250	150	100	12	26	18	29
1300	150	110	10	24	14	27

Table 4: 1-minute Mean Wind Speed and Maximum Gust Data

- (6) The data between 1210 to 1240 hrs from SKG automatic weather station indicated that the mean 1-minute mean wind speeds were 6 to 12 km/h (equivalent to wind force 1 to 2, light). The wind was blowing from the east / south east (E / SE, 120 degrees) to south / south west (S / SW, 200 degrees). The 1-minute maximum gust was 9 to 16 km/h (equivalent to wind force 2 to 3, light to moderate).

- (7) The data between 1210 to 1240 hrs from TC automatic weather station indicated that the mean 1-minute mean wind speeds were 22 to 25 km/h (equivalent to wind force 4, moderate). The wind was blowing from the east / south east (E / SE, 110 degrees). The 1-minute maximum gust was 23 to 30 km/h (equivalent to wind force 4, moderate).

1.7.2.4. Rainfall Rate, Cloud Base, and Visibility

- (1) According to the Constant Altitude Plan Position Indicator (CAPPI) radar image of 64-km range at a height of 3 km Above Mean Sea Level (AMSL) above Hong Kong at 1230 hrs on 11 February 2025, the rainfall rate was zero near Ma On Shan.

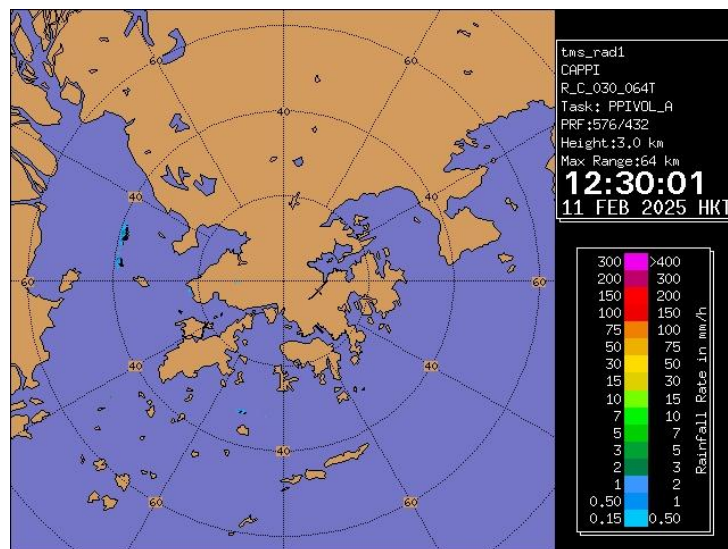


Figure 9: 3-km CAPPI Radar Image of 64-km Range at 1230 hrs on 11 February 2025

- (2) According to the weather photo taken at Sai Kung Marine East Station (looking towards the northwest) at 1230 hrs of 11 February 2025, the hill top of Ma On Shan was fully clear of cloud.



Figure 10: Landmark Reference

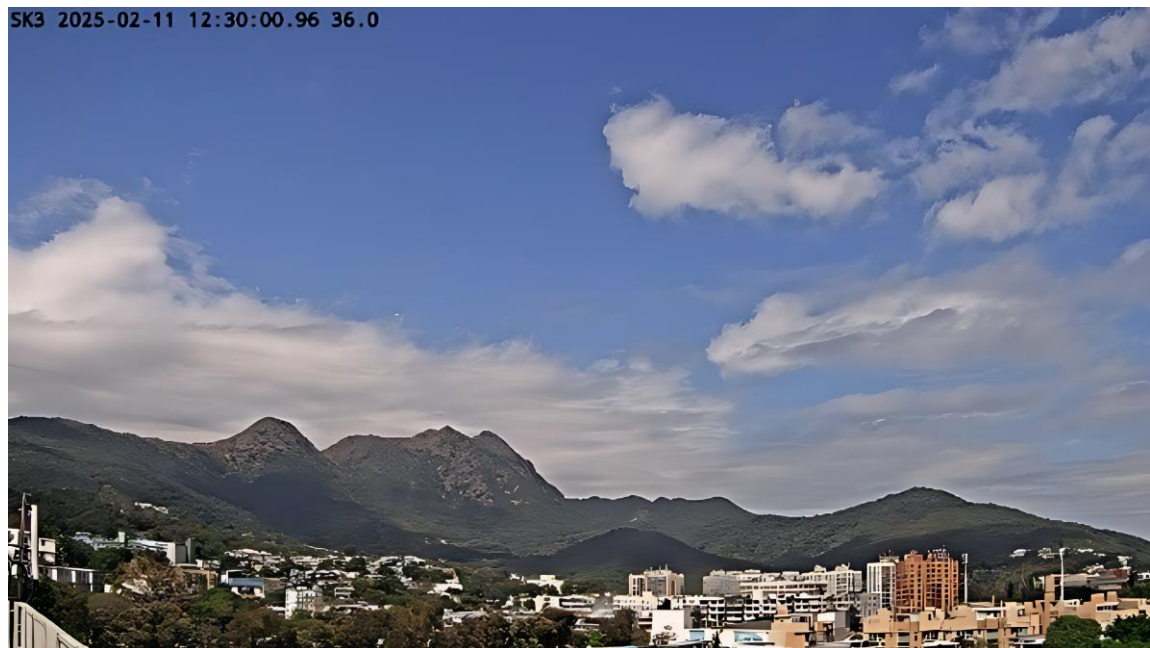


Figure 11: Photo of Ma On Shan Taken at 1230 Hrs of 11 February 2025

- (3) According to the tephigram¹² at 0800 hrs on the day of the accident, the dew point temperature (red line) and the air temperature (black line) were equal at a height of about 1,535 m, which means the air was saturated with water vapour. This indicated that cloud might form at this level, well above the height of Ngong Ping plateau at approximately 400 m above sea level. Although this tephigram was produced by using temperature, dew-point temperature, wind speed and wind direction data measured by radiosonde at King's Park of Hong Kong at 0800 hrs, it still provided a good reference for the possible cloud formation at Ma On Shan (refer to Figure 12).

¹² <https://www.hko.gov.hk/en/education/meteorological-instruments/automatic-weather-stations/00504-assessing-atmospheric-stability-by-tephigram.html>

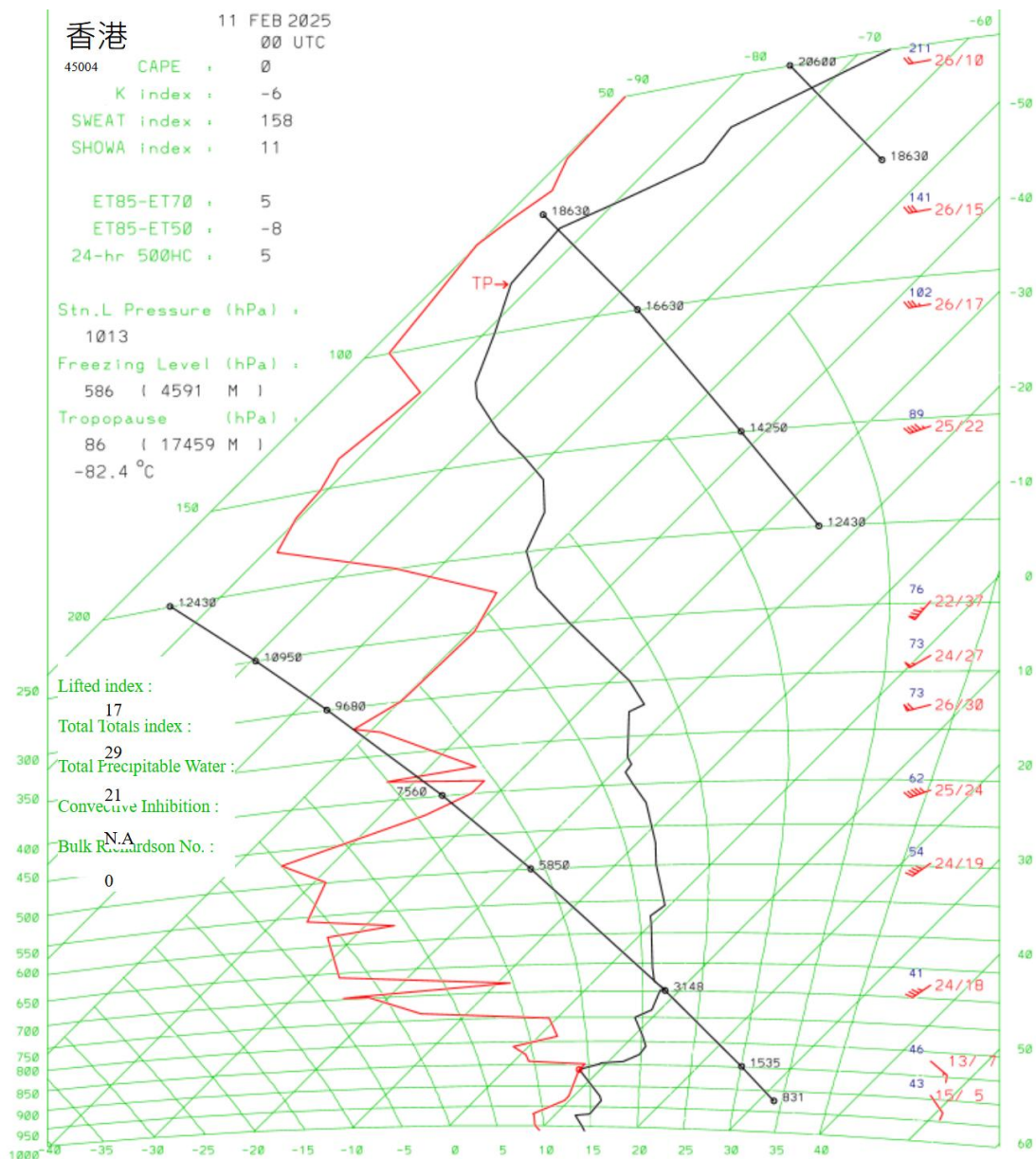


Figure 12: Tephigram at 0800 hrs on 11 February 2025

1.7.2.5. In-situ Weather Conditions

During the interview, the Pilot advised that the wind speed prior to his take-off was approximately 7 to 15 km/h which was gentle and suitable for paragliding launch. After becoming airborne, the wind direction was perceived to be east-northeasterly. At the time, visibility, ambient conditions and thermal activity were all highly favourable. There was sunshine, though not excessively intense.

1.8. Navigation Aids

Not applicable.

1.9. Communications

The Pilot carried a two-way radio transceiver. During the examination by the investigation team, it was noticed that the active and the standby channels were set to 144.425 MHz and 145.9875 MHz (HKPA's local safety frequency) respectively. The transceiver was tested and functioned normally.



Figure 13: The Pilot's Transceiver and the Pre-set Frequencies

1.10. Paragliding Activity Area

- (1) The Ma On Shan paragliding activities area is within the Ma On Shan Country Park which is located in the central neck of the Sai Kung Peninsula in the eastern New Territories of Hong Kong. It is one of the locations where paragliding activities are frequently conducted. Its boundary and operating altitude can be found in Section ENR 5.5 of the Aeronautical Information Publication Hong Kong (AIP HK) published by the Civil Aviation Department (CAD).

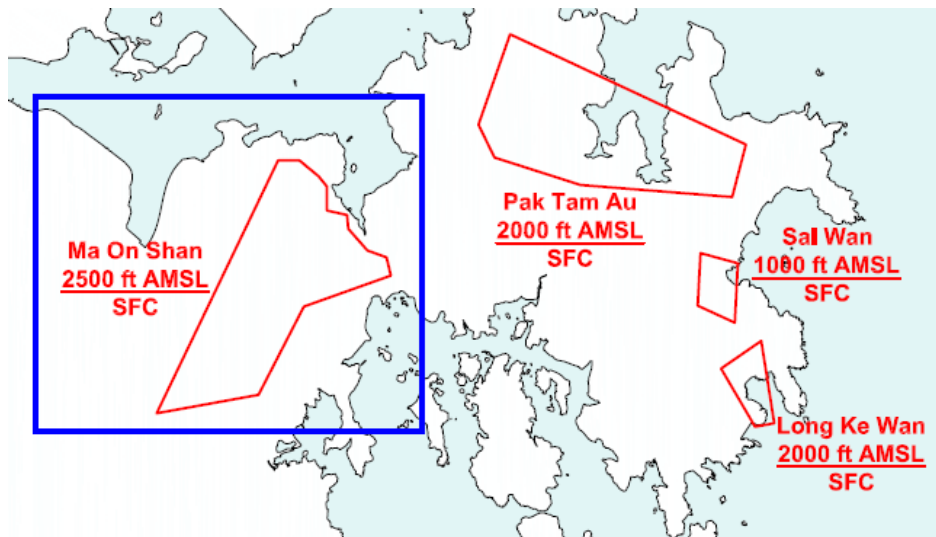


Figure 14: Ma On Shan Paragliding Activities Area

- (2) The operating altitude of the area was from the ground surface (SFC) to 2,500 ft (762 m) AMSL at the time of the accident.
- (3) The take-off area of the accident flight was at a height of about 1,280 ft (390 m) AMSL.

1.11. Flight Recorders

1.11.1. Variometer

- (1) A variometer is an integrated device with altimeter, compass and Global Positioning System (GPS) functions. It provides and records not only signals of rates of climb and descent, but also GPS positions and pressure altitudes for paragliding activities.
- (2) The Pilot's variometer is a Syride SYS'NAV XL. The flight information is displayed on the screens. Pressing on the main button allows a pilot to record his position and obtain the GPS coordinates, the distance, the vertical gain, the time that has elapsed since the pointing of this point as well as an indication of the route to follow to return to this position.
- (3) Data is stored in the International Gliding Community (IGC) file in the variometer.

Note: The IGC file type is primarily associated with the Global Positioning System by the Fédération Aéronautique Internationale (FAI). "IGC" comes

from "the International Gliding Commission". IGC-files provide a standard for exchanging data logs from GPS flight recorders.



(Source: <https://www.syride.com/en/instruments/XL>) (The Pilot's Variometer)

Figure 15: Variometer Used by the Pilot

- (4) Basic data in an IGC file contains information on
 - UTC time;
 - GPS location in longitude/latitude; and
 - Pressure altitude and GPS altitude (in metres).
- (5) For some models of variometer with capabilities of presetting waypoints and routes, their corresponding data will also be recorded in the IGC file.
- (6) The Pilot's variometer was stored in the flight deck and turned on throughout the accident flight. The data in the Pilot's variometer was downloaded successfully for flight track analysis.
- (7) The data covered a total of 69.7 flying hours in 107 flights, including the accident flight, between January 2024 and February 2025. The flights included 73 (32.5 hrs) at Ma On Shan, 13 (9.6 hrs) at South Lantau East, 11 (16.5 hrs) at Shek O, and 10 (11.1 hrs) overseas.
- (8) The duration of the IGC data of the accident flight was 23 minutes and 4 seconds (1210:27 – 1233:31 hrs).

1.11.2. Flight Track

The following accident flight track was generated by using the IGC flight data retrieved from the Pilot's variometer (refer to Figure 16). The data indicated that the Pilot fell onto the grass area from 27 m of height just seven seconds before the end of the flight.

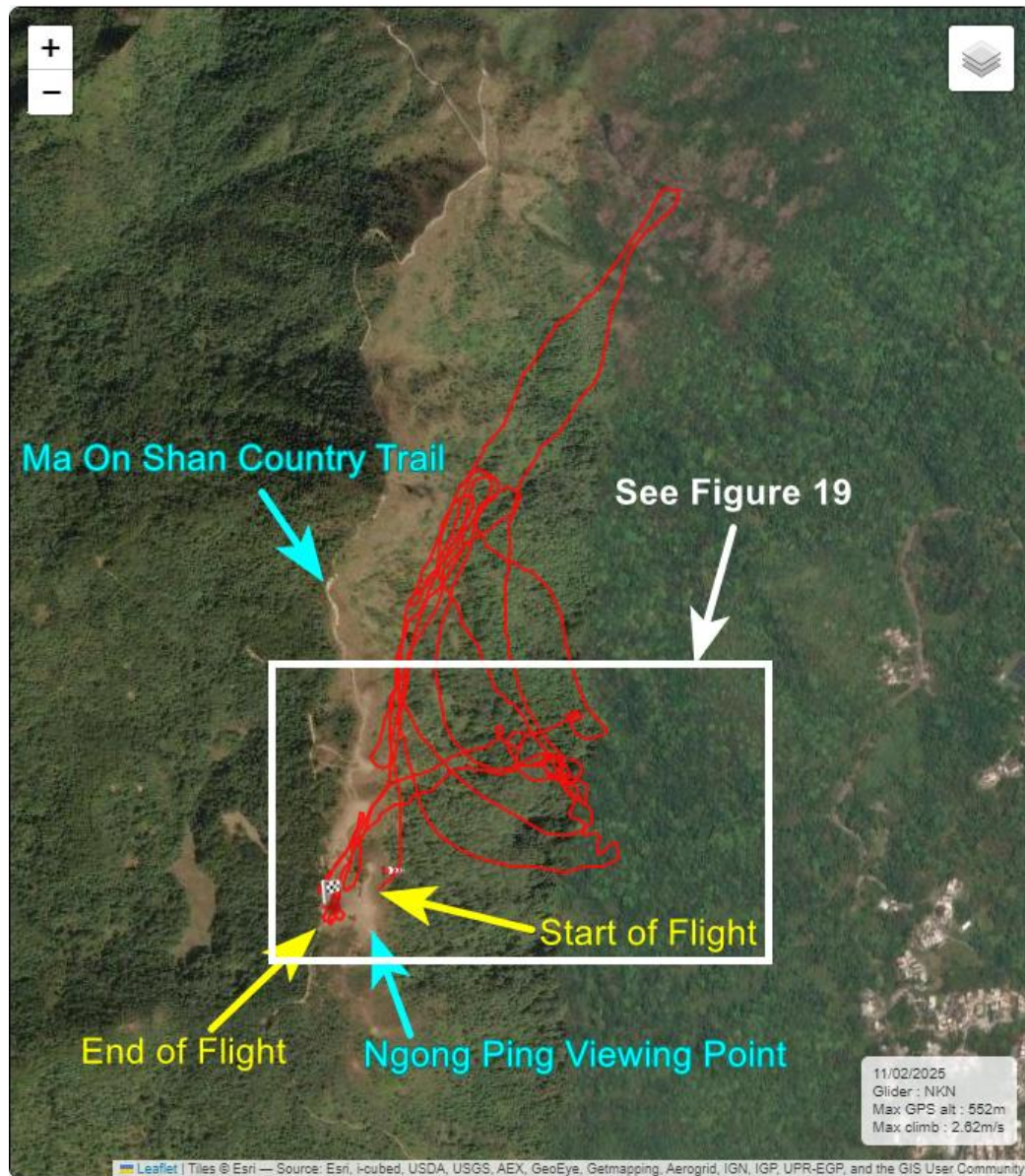


Figure 16: The Accident Flight Track

1.11.3. Video Recording

There was no video recording of the accident flight.

1.12. Wreckage and Impact

1.12.1. General

The paraglider and the associated equipment were preserved by the HKPF. A detailed examination of them was conducted by the investigation team with the assistance of an HKPA expert.

1.12.2. Canopy and Harness

There was no damage found on the paraglider during the closed examination. A line check was conducted with reference to the manufacturer's information and the results are presented in paragraph 1.16.1.

1.12.3. Paragliding Reserve Parachute

The investigation team examined the reserve parachute and did not identify any abnormal findings.

1.12.4. Helmet

- (1) The helmet of the Pilot is a BNDGIMA ski helmet, model "BH-58A" of size M.
- (2) No damage was found on the helmet.



Figure 17: The Pilot's Helmet

- (3) According to a label on the helmet, it was certified to EN 1077. It met one of the specifications recommended by the CAD on their Safety Guidance on Paragliding Activities (CAD Safety Guidance) website.
- (4) According to the Pilot, the helmet was procured in November 2024.

1.12.5. Other Equipment

The Pilot carried an external flight deck which accommodated his variometer.



Figure 18: External Flight Deck of the Pilot

1.13. Medical/Pathological Information

- (1) The Pilot lost consciousness for four minutes after the impact with the grass area and suffered multiple bone fractures. Computed Tomography (CT) brain scan showed falx subdural hematoma, and CT thorax scan showed left-sided pulmonary contusion.
- (2) According to the medical report, the cause of injuries was accidental falling from height.

1.14. Smoke, Fire, and Fumes

Not applicable.

1.15. Survival Aspects

1.15.1. Distress Call

Several hikers, bystanders, and paraglider pilots observed the Pilot's fall from a height at the spot. The 999 hotline soon received reports after the accident.

1.15.2. Search and Rescue Operation

The Government Flying Service (GFS) received a callout from the Fire Services Communications Centre (FSCC) at 1241 hrs. The rescue helicopter airlifted the Pilot and landed at Pamela Youde Nethersole Eastern Hospital at 1333 hrs.

1.16. Tests and Research

1.16.1. Aging Check of Paraglider Lines

- (1) An aging check of paraglider lines was carried out to determine their conditions with the assistance of the HKPA expert.
- (2) The results indicated that the canopy was intact. There were various levels of shrinking on the left and right A lines, C lines, and D lines. However, they were all within the limit¹³ specified in the manufacturer's the Line Measurements session of the user manual.

1.17. Organisation, Management, System Safety

1.17.1. Civil Aviation Department

- (1) The CAD regulates civil aviation activities in Hong Kong. In view of the increasing popularity of paragliding activities in Hong Kong, the CAD has

¹³ According the user manual, any difference in line length must be less than 50 mm, except that the difference is only on one side.

taken initiatives to publish the Safety Guidance on Paragliding Activities on their website¹⁴.

- (2) The safety guidance relevant to this accident at the time of the accident was published on 30 May 2024. It included, but was not limited to, the following safety measures.
- (a) *“Be familiar with the site particulars, including the boundaries of paragliding sites as published on the HKAIP¹⁵, the suitable take-off/landing areas of the site, and the potential hazards.”*
 - (b) *“Conduct a risk assessment, including but not limited to the prevailing site conditions, and understand the risk of the activity. Pay extra attention on risks associated with changing weather conditions, inclement weather and under emergency situations, and take corresponding mitigation measures according to the risk assessment.”*
 - (c) *“Ensure that the paraglider, harness, helmet and safety equipment are in good condition with no tears, broken lines, or frayed webbing. Operate the paraglider and harness within their weight limits at all times and wear helmet which is certified to either EN966 (air sports), EN1077 A & B, ASTM2040 or SNELL rs98 (snow sports) to strengthen protection. Follow manufacturer’s instructions to properly maintain and replace equipment by the end of their lifespan or validity.”*
 - (d) *“Fly within the limits of their abilities and those of the paraglider equipment.”*

1.17.2. Hong Kong China Paragliding Association Limited (HKPA)

- (1) The HKPA, formerly the Hong Kong Paragliding Association Limited, was established in 1990 to promote and encourage paragliding activities. It was renamed as Hong Kong China Paragliding Association Limited in May 2023.

¹⁴ <https://www.cad.gov.hk/english/paragliding.html>

¹⁵ Aeronautical Information Publication Hong Kong

- (2) The HKPA was recognised by the Sports Federation & Olympic Committee of Hong Kong, China (SF&OC) as the National Sports Association for paragliding activities in Hong Kong. Operating under the provisions of the Societies Ordinance, the HKPA represents the interest of paraglider pilots and ensures the safe conduct of paragliding activities in Hong Kong.
- (3) The HKPA publishes safety guidance on their website, including, but not limited to the following safety measures.
 - (a) The minimum equipment for flight is:
 - (i) airworthy paraglider;
 - (ii) airworthy harness;
 - (iii) a helmet certified to either EN966 (airsports), EN1077 A & B, ASTM2040 or SNELL rs98 (snow sports);
 - (iv) a reserve/emergency parachute attached appropriately to their harness; and
 - (v) radio set to our local safety frequency 145.9875 MHz.
 - (b) Pilots should consider carrying a position tracking device with SOS function.

1.17.3. International Paragliding Association (IPA)

The IPA was established as a non-profit organisation under Societies Ordinance in 2023. The Association promotes the sport of paragliding in Hong Kong and enhances members' knowledge in the use of paragliding equipment.

1.18. Additional Information

1.18.1. EN 926-2 Test Methods for Paragliders

- (1) "EN 926-2: Paragliding equipment - Paragliders - Part 2" is the European Standard specifying the requirements and test procedures for classifying

the flight safety characteristics of paragliders in terms of the demands on pilot flying skills.

- (2) After test, a paraglider is classified into one of the four classes (A, B, C, and D) (refer to Figure 5).

1.18.2. Paragliders Owned by the Pilot

- (1) According to the Pilot, he possessed five paragliders, including the Artik R, for paragliding, of size S or size 21. Their key parameters are tabulated as follows:

Model	EN/LTF)	Weight Range (kg)	Flat Aspect Ratio	Glider Weight (kg)	No. of Risers (Each Side)
SUP' AIR LEAF	EN/LTF-B	75-95	5.4	4.7	3
Ozone Rush 5	EN/LTF-B	65-85	5.55	5	3
PHI Tenor	EN/LTF-B	65-85	5.14	4.4	4
Niviuk Artik R	EN/LTF-C	65-85	6.5	4.35	2
BDG Epic Freestyle	EN/LTF-B	60-80	5.01	4.6	3

Table 5: Comparison of Paragliders

- (2) According to the Pilot, he flew with his BDG Epic Freestyle paraglider a few days before the accident. A comparison of the flight safety characteristics of this paraglider and the Niviuk Artik R paraglider in accordance with EN 926-2 is presented in Table 6 in paragraph 8.1 of the Appendix.

- (3) BDG Epic Freestyle is specifically designed as a highly forgiving and confidence-building EN/LTF-B wing for pilots keen to learn and progress in freestyle, SIV, and entry acrobatic flying. It is fully capable of everyday use and XC flights. It scored 21 Class B in item 14 Asymmetric Collapse in the flight test. All other 21 flight safety characteristics are classified as A with item 23 not applicable.
- (4) In contrast, the Niviuk Artik R has 11 flight safety characteristics classified as A, 6 characteristics as B, and 4 characteristics as C. Items 19 and 23 are not applicable.
- (5) Among the flight safety characteristics, items 4 (Control Movement) and 14 (Asymmetric Collapse) are relevant to the accident. Niviuk Artik R requires less control input movement from a pilot, and takes a few seconds more to re-inflate its wing in a collapse in the air.

1.18.3. Some Terminologies of Paragliding

1.18.3.1. Ground Handling and Kiting

- (1) Ground handling in paragliding means all the operations and control of the glider on the ground, including inflation of the canopy, before stepping into the air. Controlling the glider well on ground is the key to expert piloting skill.
- (2) Kiting is the act of lofting the glider and maintaining the inflation with a typical minimum wind speed at 8 km/h. Kiting can be practised in both the forward and reverse positions. As the wind is often slightly varying, a pilot will need to use some control inputs to balance the glider and maintain it above his head without variations. Different classes of gliders have different control input travels and response.
- (3) Ground handling and kiting allow a pilot to have a good understanding of his wing. Mastering proper inflation of the wing, navigation of the glider, and learning what to do in all kinds of situations on ground is a fundamental key to re-familiarization of the control characteristics of a glider and having a safe flight.

- (4) In paragliding, negative transfer occurs when a pilot applies skills or muscle memory from a lower-level wing (e.g. EN-B) that are inappropriate or dangerous for a higher-level wing (e.g. EN-C). Higher-rated wings are more responsive, have longer recovery times, and require more precise active flying.
- (5) When switching wings, a pilot should spend significant time kiting it on the ground. This safely retrains his muscle memory for the wing's specific inflation speed and stall point before he takes it into the air.

1.18.3.2. Speed Controlling, Steering, and Stabilising¹⁶

- (1) A paraglider is controlled primarily via its control lines (also known as brake lines). These lines are used to adjust speed, steer, and stabilise the wing in the event of a collapse. The lines act like the combined functions of a car's brakes and steering wheel. Each control line runs from one side of the trailing edge of the wing, through a ring or pulley (known as a 'keeper') on the rear riser, and ends in a brake handle (often called a control handle or toggle) (refer to Figure 3).
- (2) Pulling down on one of the brake handles deflects the trailing edge of the wing on that side downwards into the airflow like a flap or an aileron on an aircraft. This slightly increases the angle of attack on that side, generating more lift. However, it also creates a much more significant increase in drag, which reduces the airspeed on that side. For a paraglider canopy, this drag is far more dominant than any opposing lift effect, so the wing always turns towards the deflected side.
- (3) Applying both brakes together slows the wing evenly and can also generate a little extra lift. The further the brakes are pulled, the greater the drag and the slower the wing flies. If pulled too far, the canopy's angle of attack becomes so high that the wing will stall.
- (4) Naturally, if the wing is already flying slowly, raising one brake—effectively reducing input on that side—will also initiate a turn. The steepest turns are

¹⁶ Touching Cloudbase – The Complete Guide to Paragliding, by Ian Curren, 6th Edition, Air Supplies Publishing

achieved by a combined input: pulling down one brake while simultaneously raising the other. It is possible to stall one side of the wing this way, which can lead to a spin.

- (5) The brake handles have three additional key uses. Firstly, during ground-handling or a reverse launch, they are used to manipulate the wing's position and the height of the inflating leading edge. Secondly, they are used to collapse the canopy after landing or if you are being dragged. Thirdly, they are vital for recovering from various unstable situations, such as frontal or asymmetric collapses.

1.18.3.3. Stall

- (1) A paraglider stall occurs when the wing's angle of attack becomes excessively high, typically from excessive brake input, causing airflow to separate and the wing to cease generating lift. The forward airspeed drops to zero, resulting in a near-vertical descent.
- (2) A paraglider stalls as a result of flying below its minimum airspeed, a condition that can be exacerbated by factors such as wet fabric, wing profile deformation due to line ageing, or sudden changes in the direction of the relative airflow.
- (3) A deliberate full stall involves pulling the brakes until the stall point, at which point the airflow separates from the aerofoil. This manoeuvre is generally reserved for controlled training environments. Pilots should not perform a full stall when the paraglider is close to the ground or terrain, as it might not have enough time or altitude to resume normal flight.

1.18.3.4. Spin

- (1) A spin is an aggravated, unstable condition where one side of the wing remains stalled while the other continues flying, inducing a rapid, often violent rotation around the canopy's vertical axis. It is typically induced inadvertently by applying deep brake on one side while raising the opposite control – commonly during slow flight, such as when thermalling or when turning tightly on the downwind leg of a landing approach with marginal airspeed. Pilots should not perform a spin when the paraglider

is close to the ground or terrain, as it might not have enough time or altitude to resume normal flight.

- (2) Risks include canopy collapse, line twists that may compromise brake control, and a significant loss of altitude. Recognition is key: a sudden loss of brake pressure signals the onset, and recovery must be initiated promptly to avoid escalating danger.

1.18.3.5. Recovery

- (1) To recover from a spin, a pilot should immediately release both brakes fully to allow the wing to regain flying speed and cease rotation. As airspeed returns, gently steer out of the turn. Caution is required because the recovery can generate a surge forward, risking an aggressive dive or "tuck"¹⁷ that must be dampened with measured brake input.
- (2) If line twists occur and control is lost, deploying the reserve parachute is advised. Spins and their recovery are best practised in dedicated Safety Training (SIV) courses; in normal flight, pilots should avoid the combination of deep braking and asymmetric control input that provokes the manoeuvre.

1.18.4. Human Factors - Negative Transfer

- (1) Negative transfer occurs when skills, habits, or control responses learned on one aircraft type are inappropriately applied to a different aircraft with dissimilar response characteristics, resulting in errors, degraded performance and/or accidents.^{18, 19} The differences between similar aircraft can be subtle but critical. It is particularly hazardous in aviation,

17 A "tuck" is a forward canopy collapse caused by an excessively low angle of attack. This reduces internal pressure, deforms the aerofoil, and unloads the front lines. While easily induced on the ground, in flight it can occur during an aggressive recovery from a stall or in turbulent conditions.

18 Blume, B. D., Ford, J. K., Baldwin, T. T., & Huang, J. L. (2010). Transfer of training: A meta-analytic review. *Journal of Management*, 36(4), 1065–1105. <https://doi.org/10.1177/0149206309352880>

19 Pennings, H. J., Landman, A., & Groen, E. (2025). Factors related to negative transfer of training in safety-critical professions: An interview study. *International Journal of Training and Development*, 29(2), 222–230. <https://doi.org/10.1111/ijtd.12358>

where aircraft often have nuanced handling differences where inappropriate reactions can lead to a loss of control.²⁰

- (2) The likelihood of negative transfer or habit interference is highest among aircraft (e.g., paragliders) that share similar characteristics but different response or strategic components (e.g., actuating a brake control requires the same or similar movement in a paraglider but the rate or degree of brake handle displacement differs between paragliders for the same or similar effect or conversely the paragliders respond differently to the same or similar rate or degree of brake displacement).²¹
- (3) Factors that can influence the manifestation of negative transfer include aircraft design²² (e.g., layout, location, and pilot interaction with instruments, displays, switches, automation, and flight controls), proficiency and recency on particular aircraft types, time pressure, distractions, and stress.^{23, 24}
- (4) For example, negative transfer is more likely when a pilot's skill set has been primarily developed or recently practiced on one aircraft type but then the pilot subsequently operates a relatively new aircraft type that is similar enough to the old one for the established skill set to be used in error.²⁵ Negative transfer is also more likely when the unexpected occurs, such as an emergency.²⁶

20 Lyall, B., & Wickens, C. D. (2005, September). Mixed fleet flying between two commercial aircraft types: An empirical evaluation of the role of negative transfer. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 49(1), 45–48. SAGE Publications. <https://doi.org/10.1177/154193120504900111>

21 Rayman, W. E. (1982). Negative transfer: A threat to flying safety. *Aviation, Space and Environmental Medicine*, 53(12), 1224–1226.

22 Braune, R. (1989). *The common/same type rating: Human factors and other issues* (SAE Technical Paper 892229). SAE International. <https://doi.org/10.4271/892229>

23 Butler, C., Bell, J., Dean, W. H. H. (2018). *Human factors in air displays: Transfer of behaviours and error path study* (HRT/2018/08). UK Health and Safety Laboratory. <https://www.caa.co.uk/publication/download/16694>

24 Rayman, W. E. (1982). Negative transfer: A threat to flying safety. *Aviation, Space and Environmental Medicine*, 53(12), 1224–1226.

25 Civil Aviation Authority. (2023). *Flight crew human factors handbook (CAP 737)* (2nd ed.). UK CAA. <https://www.caa.co.uk/our-work/publications/documents/content/cap-737/>

26 Pennings, H. J., Landman, A., & Groen, E. (2025). Factors related to negative transfer of training in safety-critical professions: An interview study. *International Journal of Training and Development*, 29(2), 222–230. <https://doi.org/10.1111/ijtd.12358>

- (5) Problems arising from negative transfer can be mitigated and/or are often recoverable. While aircraft design changes are most effective in mitigating the likelihood of errors induced by negative transfer, that option is not often available.²⁷
- (6) Strategies that may reduce the likelihood of negative transfer include: maintenance of proficiency on aircraft types operated; flight planning and assessment to identify and address differences in the movement patterns of flight controls; mental rehearsal or visualisation of proposed flights; recurrent training, variability of practice, supervision, peer review, mentoring and/or explicit guidance on the similarity and differences between aircraft types; refreshing aircraft limitations, highlighting differences and handling characteristics on newer aircraft type; aircraft refamiliarization techniques such as the use of mnemonics; highlighting relevant visual, auditory, and kinaesthetic cues; positive use of checklists; and post-flight reflections to identify areas for improvement.^{28, 29, 30}

1.19. Useful or Effective Investigation Techniques

Not applicable.

27 Hancock, P. A. (2024). When is a key not a key? Performance transfer issues encountered when using innovative designs. *Ergonomics In Design*, 32(4), 36–41. <https://doi.org/10.1177/10648046221081924>

28 Butler, C., Bell, J., Dean, W. H. H. (2018). *Human factors in air displays: Transfer of behaviours and error path study* (HRT/2018/08). Health and Safety Laboratory. <https://www.caa.co.uk/publication/download/16694>

29 Landman, A., Mol, D., & Emmerik, M. L. van, & Groen, E. L. (2022). *Negative transfer of training: Simulator study into effects of going beyond alarms during stall recovery training* (DOT/FAA/TC-22/10). Federal Aviation Administration. <https://doi.org/10.21949/1524474>

30 Landman, A., Pennings, H., Blankendaal, R., van den Bosch, K., & Groen, E. (2022). *Negative transfer of training of suboptimal degrees of variability in the training of procedures* (DOT/FAA/TC-22/11). Federal Aviation Administration. <https://doi.org/10.21949/1524477>

2. Safety Analysis

The Safety Analysis provides a detailed discussion of the safety factors identified during the investigation, providing the evidence required to establish the findings, causes, contributing factors and the safety recommendations.

2.1. Pilot Experience

- (1) The Pilot has accumulated approximately 500 flying hours since 2016. In addition, he acquired APPI 4 qualification and got HKPA 4 (Intermediate Pilot) rating in 2024. He also completed an SIV training in the same year.
- (2) His experience and qualifications were sufficient to operate an EN-C paraglider.

2.2. Weather on the Day of the Accident

- (1) The wind data from SKG and TC automatic weather stations indicated that the wind directions were from the south east to south (SE to S) and the east / south east (E /SE). They were within the wind directions in the HKPA site guidance.
- (2) The 10-minute mean wind speeds measured at SKG and TC were at wind force 2 and 4 respectively. The 10-minute maximum gusts at SKG and TC were at wind force 3 and 4 respectively at the time the paraglider took off. The wind speeds were also within the HKPA site guidance.
- (3) During the periods before and after the accident flight, there was no precipitation in the Ma On Shan paragliding activities area. It could be seen from the weather photo taken at Sai Kung Marine East Station the area was sunny and not covered by any cloud with good visibility.
- (4) It can be extrapolated that the weather at the Ma On Shan paragliding activities area was not a factor in this accident.

2.3. Flight Analysis

- (1) The IGC data of the flight was recorded from 1210:27 hrs to 1233:31 hrs and the duration was 23 minutes and 4 seconds. The maximum altitude achieved was 462 m above sea level (GPS altitude 552 m).
- (2) During the approach to land, the paraglider returned to the take-off field at 1228:09 hrs at an altitude of 365 m (point A), which was about 55 m above ground, and it then turned to the northeast. Due to rising air currents, its altitude increased to 412 m when it was at point B (1229 hrs). After that, it flew towards the east and the Pilot made a series of turns towards the northwest in order to lose altitude. It was at an altitude of 328 m when it was at point C (1230:16 hrs).

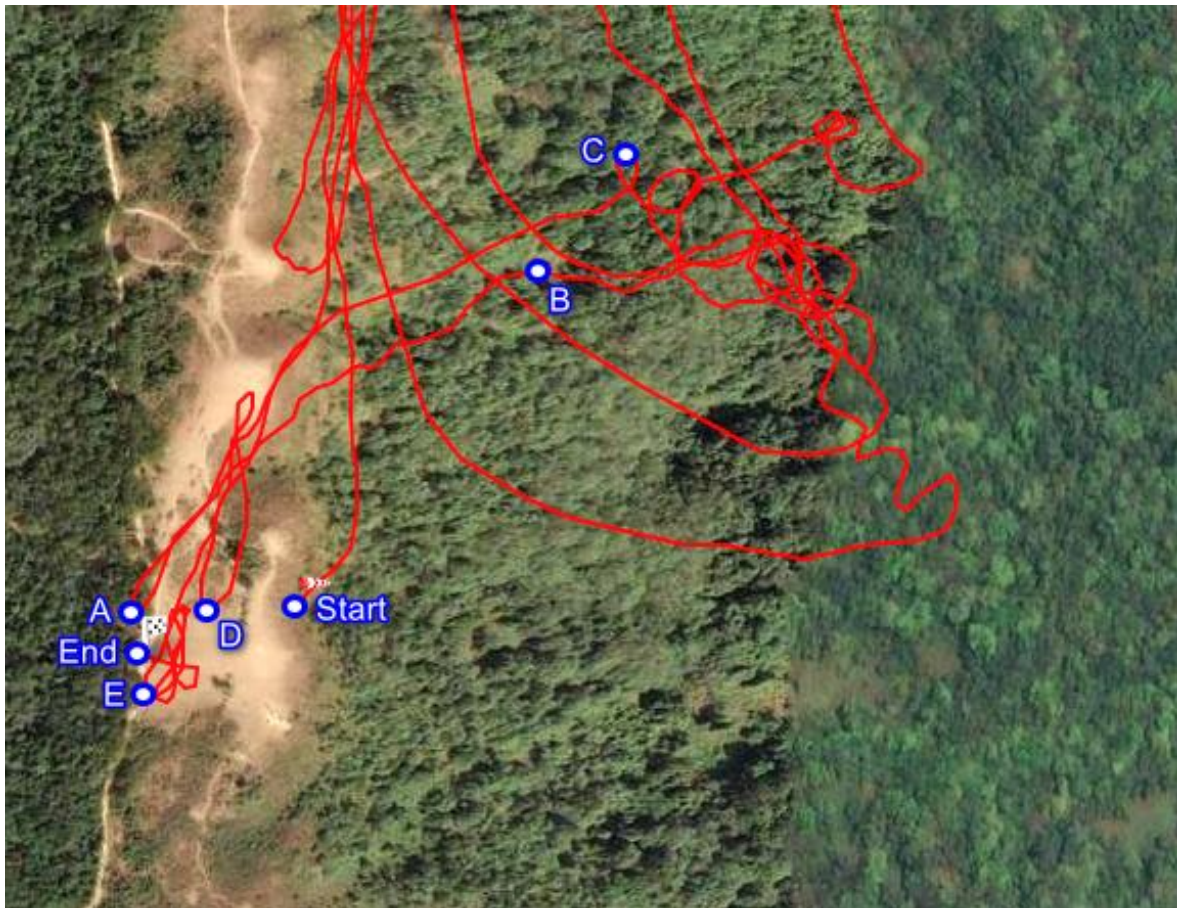


Figure 19: Flight Path during Approach for Landing

- (3) The paraglider then turned back to the take-off field again but again became higher in altitude, reaching 363 m at point D (1230:59 hrs). The Pilot steered the paraglider to the north and made an “8” shaped manoeuvre in order to lower the paraglider which ended up at point E (1231:51 hrs) at an altitude of 340 m.
- (4) The Pilot then made two more “8” shaped manoeuvres above the area and reduced the altitude to 334 m at 1232:41 hrs.
- (5) Afterwards, the Pilot made a left turn from track angle 180° and reached track angle 0° at 1232:45 hrs, i.e. a sharp turn within 4 seconds. The vertical speed of the paraglider was 0.8 m/s upward at that moment.
- (6) After this point, the paraglider started to fall. According to the Pilot, he made too much left control handle input, causing the left side of the wing to stall. Subsequently, the paraglider entered a left-hand spin and was falling down rapidly. The paraglider impacted the ground at a terminal speed of 3.4 m/s.

2.4. Survivability

2.4.1. Analysis of Injuries

The Pilot lost consciousness upon hitting the ground. He came round four minutes later. According to the medical report, he suffered multiple bone fractures. Computed Tomography (CT) brain scan showed falx subdural hematoma, and CT thorax scan showed left-sided pulmonary contusion.

2.4.2. Survival Aspects

2.4.2.1. Reserve Parachute

- (1) The paraglider entered into a spin after stall at an altitude of 337 m, 27 m above the ground, at about 1233:31, and it impacted the ground 46 seconds later. It is highly probable that a reserve parachute cannot open in time within this short vertical range.

- (2) In addition, since the downward speed of the paraglider was not high, with a terminal speed of 3.4 m/s, even the parachute had been deployed, it would not have ameliorated the situation.

2.5. Negative Transfer

- (1) The vast majority of the Pilot's paragliding experience was on EN-B type paragliders. In addition, the Pilot's most recent flight before the accident was on an EN-B type paraglider.
- (2) EN-B type paragliders have more forgiving flight characteristics compared with EN-C type paragliders, which are more sensitive or responsive to flight control inputs. For example, EN-B type paragliders require relatively more brake input displacement to effect a turn.
- (3) The EN-B's relatively longer brake displacement meant that the Pilot was accustomed to applying larger brake inputs to achieve desired manoeuvres without the risk of stalling the paraglider. The EN-C type paraglider operated during the accident required a shorter brake displacement range for equivalent control effects.
- (4) The Pilot's control habits, brake range expectations, and motor memory were conditioned or calibrated by his predominant experience on EN-B type paragliders. It was likely that the Pilot had insufficient muscle memory on EN-C type paragliders to fully adapt to its more sensitive handling, particularly the relatively shorter brake range required to perform a standard manoeuvre. That increased the risk of overcontrolling the EN-C type paraglider.
- (5) The Pilot decided to employ a series of descending left-hand turns to correct his overly high approach profile for landing. He applied an excessive amount of left brake to turn the EN-C type paraglider, which resulted in the left side of the canopy stalling. The paraglider subsequently entered an uncontrollable spin and collided with terrain.
- (6) It was likely that the Pilot reverted to EN-B handling techniques when he applied an excessive amount of left brake on the EN-C paraglider to correct his approach to land. That reversion to a brake application that was not appropriate for an EN-C type paraglider during a critical phase of

flight was likely the result of negative transfer from his extensive and recent experience on EN-B type paragliders.

2.6. Mitigating the Risks of Negative Transfer

- (1) Pilots transitioning between different classes of gliders should be aware of the risks associated with negative transfer — where learned behaviours from one glider type can adversely affect performance in another. To support flight safety, pilots are encouraged to adopt the defensive measures in the following sub-paragraphs.
- (2) Pilots are reminded that adopting these proactive measures can significantly reduce the likelihood of handling errors when transitioning between glider classes, thereby contributing to overall air safety.

2.6.1. Maintain Currency and Review Technical Documentation

- (1) Flying proficiency and decision-making accuracy diminish without regular practice. Pilots who are not current on a specific class of glider should thoroughly review the relevant user manuals and any applicable test reports published by the glider manufacturers.
- (2) This ensures familiarity with type-specific flight characteristics — such as the handling differences between 2-liner and 3-liner wings — as well as relevant warnings, cautions, and operational notes. It may also be beneficial to develop wing-specific mental checklists that reinforce recovery procedures prior to flight.

2.6.2. Recalibration through Ground Handling

Before flying a different class of glider, pilots should undertake a minimum of 30 minutes of ground handling, including kiting. This provides a safe environment in which to retrain muscle memory, recalibrate instinctive responses, and better understand wing-specific inflation behaviour and stall points prior to launch.

2.6.3. Conducting In-Flight Recalibration Exercises

Once airborne and at a safe altitude, pilots should dedicate the first 15 minutes to conducting controlled pitch and roll exercises, along with stall and spin recovery practice. These manoeuvres help to recalibrate internal sensitivity to brake pressure, travel, and reaction speed under the new wing profile.

3. Conclusions

3.1. Findings

From the evidence available, the following findings are made with respect to this occurrence. These findings should not be read as apportioning blame or liability to any particular organisation or individual.

- (1) The Pilot planned to top land at the same field where he took off from. After flying for approximately 23 minutes, he returned to the field for landing. [1.1 (2)]
- (2) He applied more left-hand control for a sharper turn, the left side of the wing stalled, causing the paraglider to enter a left-hand spin. [1.1 (3)]
- (3) Simultaneously, the paraglider descended and impacted the grass area. He remained attached to the paraglider, sustained injuries, and fell into a coma. [1.1 (3)]
- (4) The Pilot later regained consciousness, and was airlifted to Pamela Youde Nethersole Eastern Hospital by a helicopter of the Government Flying Service for medical treatment. [1.1 (5)]
- (5) The Pilot held P5 (Master Pilot) licence of CTASA, HKPA 4 rating, and APPI 4 qualification. He also completed an SIV training in May 2024. [1.5.1 and 1.5.2 (3)]
- (6) The Pilot flew with an EN/LTF-C certified Niviuk Artik R of size 21 in the accident flight. [1.6.1 (1)]
- (7) According to the weather photo taken at Sai Kung Marine East Station (looking towards the northwest) at 1230 hrs of 11 February 2025, the hill top of Ma On Shan was fully clear of cloud. [1.7.2.4 (2)]
- (8) The data in the variometer covered a total of 69.7 flying hours in 107 flights, including the accident flight, between January 2024 and February 2025. The flights included 73 (32.5 hrs) at Ma On Shan, 13 (9.6 hrs) at

South Lantau East, 11 (16.5 hrs) at Shek O, and 10 (11.1 hrs) overseas. [1.11.1 (7)]

- (9) According to the Pilot, he flew with his BDG Epic Freestyle paraglider a few days before the accident. [1.18.2 (2)]
- (10) It can be extrapolated that the weather at the Ma On Shan paragliding activities area was not a factor in this accident. [2.2 (4)]
- (11) The Pilot made too much left control handle input, causing the left side of the wing to stall. Subsequently, the paraglider entered a left-hand spin and was falling down rapidly. The paraglider impacted the ground at a terminal speed of 3.4 m/s. [2.3 (6)]
- (12) EN-B type paragliders have more forgiving flight characteristics compared with EN-C type paragliders, which are more sensitive or responsive to flight control inputs. For example, EN-B type paragliders require relatively more brake input displacement to effect a turn. [2.5 (2)]
- (13) The EN-C type paraglider operated during the accident required a shorter brake displacement range than that of an EN-B paraglider for equivalent control effects. [2.5 (3)]
- (14) It is likely the Pilot used EN-B style controls when he put on too much left brake to adjust his landing approach on the EN-C glider. This happened during a critical moment and was probably due to negative transfer from his extensive and recent experience flying EN-B paragliders. [2.5 (6)]
- (15) Maintaining currency and review technical documentation, recalibration through paraglider ground handling, and conducting in-flight recalibration exercises are defensive measures to mitigate the risks of negative transfer for pilots transitioning between different classes of gliders. (2.6)

3.2. Cause

The Pilot applied EN-B style controls when he put on too much left brake to adjust his landing approach on the EN-C glider, probably due to negative transfer from his extensive and recent experience flying EN-B paragliders. As a result, the left side of

the wing stalled, causing the paraglider to enter a left-hand spin and eventually impact the terrain. [3.1 (11) and 3.1 (14)]

4. Safety Recommendations

4.1. Safety Recommendation SR-2026-04

It is recommended that the Hong Kong China Paragliding Association (HKPA) and the International Paragliding Association (IPA) alert all participants of paragliding in Hong Kong, when transitioning between different classes of gliders, the importance of taking defensive measures to mitigate the risks of negative transfer. [3.1 (15)]

Safety Recommendation Owner: The Hong Kong China Paragliding Association; the International Paragliding Association

5. General Details

5.1. Occurrence Details

Date and time:	11 February 2025 at around 1233:31 hrs
Occurrence category:	Accident
Primary occurrence type:	Collision with Obstacle(s) during Take-off and Landing (CTOL)
Location:	Paragliding activities area in Ma On Shan Country Park, Hong Kong
Position:	22°23'30.68"N 114°15'8.33"E

5.2. Pilot Details

Licence details:	- CTASA P2 (Novice Pilot), P3 (Intermediate Pilot), P4 (Advanced Pilot), and P5 (Master Pilot) licences - APPI 3 and APPI 4 qualifications - HKPA 4 rating
Flying experience:	Approximately 500 hours (as of the date of this accident)

5.3. Aircraft Details

Manufacturer and model:	Niviuk Artik R Paraglider, Size 21	
Serial number:	S1560651	
Year of Manufacture:	October 2023	
Type of Operation:	Private	
Departure:	Ma On Shan paragliding activities area take-off field	
Destination:	Same as above	
Persons on board:	Pilot – 1	Passengers – 0
Fatalities:	0	
Injuries:	1	
Aircraft damage:	Nil	

6. Abbreviations

AAIA	Air Accident Investigation Authority
AGL	Above ground level
AIP HK	Aeronautical Information Publication Hong Kong
APPI	Association of Paragliding Pilots and Instructors
BHPA	British Hang Gliding & Paragliding Association
CAD	Civil Aviation Department
CAD Safety Guidance	CAD Safety Guidance on Paragliding Activities
Cap. 448B	Hong Kong Civil Aviation (Investigation of Accidents) Regulations
CAPPI	Constant Altitude Plan Position Indicator
CT	Computed Tomography
CTASA	Chinese Taipei Aerosports Association
EN	European Norm
FAI	The Fédération Aéronautique Internationale, FAI - The World Air Sports Federation
FSCC	Fire Services Communications Centre
GFS	Government Flying Service
GPS	Global Positioning System
HKFSD	Hong Kong Fire Services Department
HKO	Hong Kong Observatory
HKPA	Hong Kong China Paragliding Association
HKPF	Hong Kong Police Force
hrs	Hours
IGC	International Gliding Community
IPA	International Paragliding Association

km	Kilometre
km/h	Kilometres per hour
kt	Knot
m	Metre
min	Minute
PYNEH	Pamela Youde Nethersole Eastern Hospital
SF&OC	Sports Federation & Olympic Committee of Hong Kong, China
SFC	Ground surface
SIV	Simulation d'Incidents en Vol
SKG	Sai Kung Marine East
TC	Tate's Cairn
UTC	Coordinated Universal Time

7. Table of Figures, Photos, Tables

Figure 1: The Pilot's Niviuk Artik R Paraglider.....	8
Figure 2: Data Labels of the Pilot's Paraglider	8
Figure 3: Riser Diagram of Niviuk Artik R Paraglider.....	10
Figure 4: Line Diagram of Niviuk Artik R Paraglider	11
Figure 5: EN Classes of Paragliders Published by the BHPA	12
Figure 6: The Pilot's SUP'AIR Strike 2 Harness	13
Figure 7: Data Labels of the Pilot's Reserve Parachute	13
Figure 8: Reserve Parachute Stored in the Harness	14
Figure 9: 3-km CAPPI Radar Image of 64-km Range at 1230 hrs on 11 February 2025	18
Figure 10: Landmark Reference.....	19
Figure 11: Photo of Ma On Shan Taken at 1230 Hrs of 11 February 2025	19
Figure 12: Tephigram at 0800 hrs on 11 February 2025.....	21
Figure 13: The Pilot's Transceiver and the Pre-set Frequencies.....	22
Figure 14: Ma On Shan Paragliding Activities Area	23
Figure 15: Variometer Used by the Pilot.....	24
Figure 16: The Accident Flight Track.....	25
Figure 17: The Pilot's Helmet.....	26
Figure 18: External Flight Deck of the Pilot	27
Figure 19: Flight Path during Approach for Landing	39
Table 1: Injuries to Persons.....	6
Table 2: Pilot Information	7
Table 3: 10-minute Mean Wind Speed and Maximum Gust Data	16
Table 4: 1-minute Mean Wind Speed and Maximum Gust Data	17
Table 5: Comparison of Paragliders.....	31
Table 6: Comparison of Flight Safety Characteristics.....	53

8. Appendix

8.1. BGD Epic Freestyle Vs Niviuk Artik R

No.	Flight Characteristics	BGD Epic Freestyle (EN-B) ³¹	Niviuk Artik R (EN-C) ³²
1	Inflation/take-off	A	B
2	Landing	A	A
3	Speeds in straight flight	A	B
4	Control movement	A	C
5	Pitch stability exiting accelerated flight	A	A
6	Pitch stability operating controls during accelerated flight	A	A
7	Roll stability and damping	A	A
8	Stability in gentle spirals	A	A
9	Behaviour exiting a fully developed spiral dive	A	B
10	Symmetric front collapse	A	C
11	Exiting deep stall (parachutal stall)	A	A
12	High angle of attack recovery	A	A
13	Recovery from a developed full stall	A	C
14	Asymmetric collapse	B	C
15	Directional control with a maintained asymmetric collapse	A	A
16	Trim speed spin tendency	A	A
17	Low speed spin tendency	A	A
18	Recovery from a developed spin	A	B

³¹ <https://www.flybgd.com/en/paragliders/specifications-gliders-10-0-0.html>

³² https://para-test.com/storage/app/media/certificates/niviuk-gliders-air-games-sl/glider/artik-r/21/2023-01-20_Artik_R_21_en_EN.pdf

19	B-line stall	A	0
20	Big ears	A	B
21	Big ears in accelerated flight	A	B
22	Alternative means of directional control	A	A
23	Any other flight procedure and/or configuration described in the user's manual	0	0

Table 6: Comparison of Flight Safety Characteristics