REPUBLIC OF NAMIBIA

MINISTRY OF WORKS AND TRANSPORT

DIRECTORATE OF AIRCRAFT ACCIDENT INVESTIGATION

CIVIL AIRCRAFT ACCIDENT REPORT

ACCID/122415/1-03

OPERATION	:	**PRIVATE**
AIRCRAFT	:	**D-KTBS**
LOCATION	:	**STRYFONTEIN FARM**
DATE	:	**24 DECEMBER 2015**

REPUBLIC OF NAMIBIA

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Enquiries: T.H.Herman **Our Ref: 3/48** **Date: 15 March** 2017

To : Honorable Minister: Works and Transport

From : Director: Aircraft Accident Investigation

RE: AIRCRAFT INCIDENT REPORT

Please find attached the final report on the above subject incident. In accordance with the International Civil Aviation Organization Annex 13 – Aircraft Accident and Incident Investigation – Standard 6.13, final reports shall be published as soon as possible in the interest of accident prevention.

It is recommended that copies of these final reports be made available to the public and other interested parties upon request. Your approval is therefore sought to release the said reports.

Ericksson M. Nengola 15/03/2017
DIRECTOR: AIRCRAFT ACCIDENT INVESTIGATION

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FOREWORD

This report presents the factual information, data analysis, conclusions, and safety recommendations reached during the investigation. The purpose of the investigation was to establish the circumstances surrounding this accident.

In accordance with the Namibian Civil Aviation Act (act No. 6 of 2016) and the provisions of Annex 13 to the convention on International Civil Aviation Organization, the accident's analysis, conclusions, and safety recommendations contained therein are intended neither to apportion blame nor to single out any individual or group of individuals. The main objective was to identify the systematic deficiencies and draw lessons, from the occurrence, which might help to prevent accidents and incidents in the future. To this end, many a time, the reader may be interested in whether or not an issue was a direct cause of the accident (that has already taken place), whereas the investigator is mainly concerned with the prevention of future accidents/incidents.

As a result, usage of this report for any purpose other than (the latter and spirit of Annex 13 and other relevant statutes) prevention of similar occurrences in the future might lead to erroneous interpretations and applications.

ABBREVIATIION

LAPL	**-**	**Light Aircraft Pilot License Helicopter**
UTC	**-**	**Universal Time Co-ordinate**
AI	**-**	**Annual Inspection**
FDR	**-**	**Flight Data Recorder**
MTC	**-**	**Mobile Telecommunication**
CVR	**-**	**Cockpit Voice Recorder**
ELT	**-**	**Emergency Locater Transmitter**
SAR	**-**	**Search and Rescue**
ICAO	**-**	**International Civil Aviation Organization**
C of A	**-**	**Certificate of Airworthiness**
C of R	**-**	**Certificate of registration**
MHz	**-**	**Megahertz**

Ministry of Works and Transport

ACCID/12242015/01-03

DIRECTORATE OF AIRCRAFT ACCIDENT INVESTIGATIONS
ACCIDENT REPORT – EXECUTIVE SUMMARY

Aircraft Registration	D-KTBS	**Date of Accident**	24 December 2015	**Time of Accident**	12:48 UTC
Type of Aircraft	GLIDER VENTUS-2CM	**Type of Operation**	Private		
Pilot-In-Command License Type	Class 2 LAPL	**Age**	46	**License Valid**	Yes
Pilot-In-Command Flying Experience	Total Flying Hours	±650 hours	Hours on Type	Not available	
Last point of departure	Bitterwasser Glider base				
Next point of intended landing	Bitterwasser Glider base				

Location of the accident site with reference to easily defined geographical points (GPS readings if possible)

Stryfontein Farm, 23°44'28"S 17°50'33"E

Meteorological Information	Wind: North westerly, Wind speed ± 6 knots: Visibility: +10km, Temperature: 38°C Cloud cover: Not given, Cloud base: Not given, Dew point: Not known				
Number of people on board	1 + 0	No. of people injured	0	No. of fatalities	1

Synopsis

On the 24th December 2015, at 11:18 UTC a Glider (self launching) Ventus-2cM type took off from Bitterwasser on runway 13 for a recreation cross country private gliding flight with the pilot as a sole occupant. The glider crashed at Stryfontein farm after 1 hour and 30 minutes of flight. The Air Traffic Services reported the accident to the Directorate of Aircraft Accident Investigation telephonically on the 26th December 2015. The Investigation was organized and conducted by the Directorate of Aircraft Accident Investigation in the Ministry of Works and Transport. No accredited representative or observer were invited to take part in the investigation, however there was collaboration in some aspect of the investigation shared with Swiss Transportation Safety Investigation Board (STSB) and Bureau Enquetes Accidents (BEA) France. The Minister of Works and Transport was responsible for the release of the official final accident report.

Immediately after takeoff, the pilot made a power climb to 8195 feet before switching off the engine at 11:32 UTC. The glider made some circles in the Bitterwasser area to gain height. At 12:46 UTC after ten (10) circles the climbing stopped at 14947 feet, followed by uncontrolled maneuver and extreme descent. It impacted the ground in a steep inverted attitude. The aircraft was destroyed by impact forces and the pilot was fatally injured.

The weather was fine with a north westerly wind at a speed of about ± 6knots, temperature of 38ºC and good visibility.

The pilot was a holder of a class 2LAPL License and a valid medical certificate without restriction.

The last Annual Inspection (AI) was carried out by CAMO-Lindner DE. MG.0516 on the 27 January 2015 at a total of 320 airframe hours. The aircraft had accumulated 180 airframe hours since the last AI was certified.

Probable Cause

Loss of control

CONTRIBUTING FACTOR
Could not be determined

AIRCRAFT ACCIDENT REPORT

Name of Owner/Operator: Wilfried Grosskinsky
Manufacturer: Schempp-Hirth Flugzeugbau GmbH
Model: 2007
Nationality: Germany
Registration Marks: D-KTBS
Place: Stryfontein farm
Date: 24December 2015
Time: 12:48 UTC
All times given in this report is Co-ordinated Universal Time (UTC).

Disclaimer:

This report is given without prejudice to the rights of the Directorate of Aircraft Accident Investigations, which are reserved.

Purpose of the Investigation:

In terms of the Aviation Act (act No.6 of 2016) and ICAO Annex 13, this report was compiled in the interest of the promotion of aviation safety and the reduction of the risk of aviation accidents or incidents and ***not to apportion blame or establish legal liability****.*

This report contains fact relating to aircraft accidents or incidents which have been determined at the time of issue.
The report may therefore be revised should new and substantive facts be made available to the investigator(s).

1. FACTUAL INFORMATION

1.1 History of Flight

1.1.1 On the 24th December 2015, at around 11:18 UTC a Glider (self launching) Ventus 2cM type took off from Bitterwasser on runway 13 for a recreation cross-country private gliding flight with the pilot as a sole occupant.

1.1.2 The glider made a power climb up to 8195 feet and stop the power climb at that altitude at 11:30:52 UTC.

1.1.3 At 11:32:34 UTC the engine was switched off and retracted at 7637 feet.

1.1.4 At first the aircraft circled near the bitterwasser pan then at 11:57 flew westerly direction up to near Kentani pans where it circled from 8326 feet up to12303 feet at the climb rate of 2.0 m/s following the pan to the North.

1.1.5 At 12:16:28 the glider made four (4) circles over the north rim of the Kentani pans and there after change the course (direction) to the west of Uhlenhorst.

1.1.6 After three (3) circles were made on the west of Uhlenhorst the glider turned back at an altitude of about 11377 feet.

1.1.7 At 12:36:38 the Glider made a right hand circle in a good thermal and gain around 4543 feet from 10344 to 14888 feet at a medium climb of 2,4m/s after ten (10) circles.

1.1.8 At 12:47:08 the Glider stop climbing at 14947 feet and loss control of the flight there after followed by extreme descent which started at 1473 feet till the glider impacted the ground in an inverted high velocity steep vertical mode.

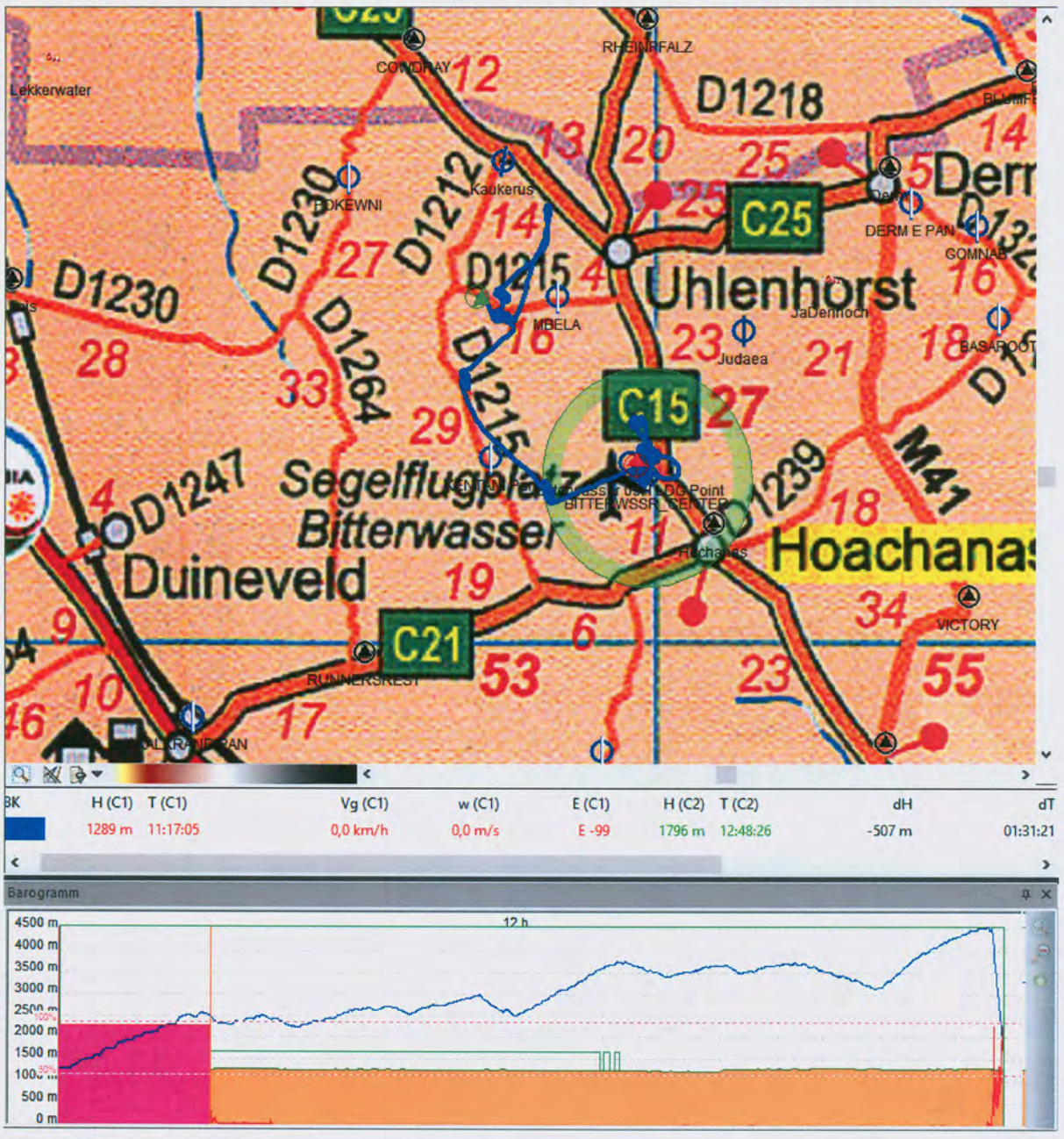

FIGURE1. showing the area and the flight path indicated in blue from takeoff at Bitterwasser till where the aircraft crashed.

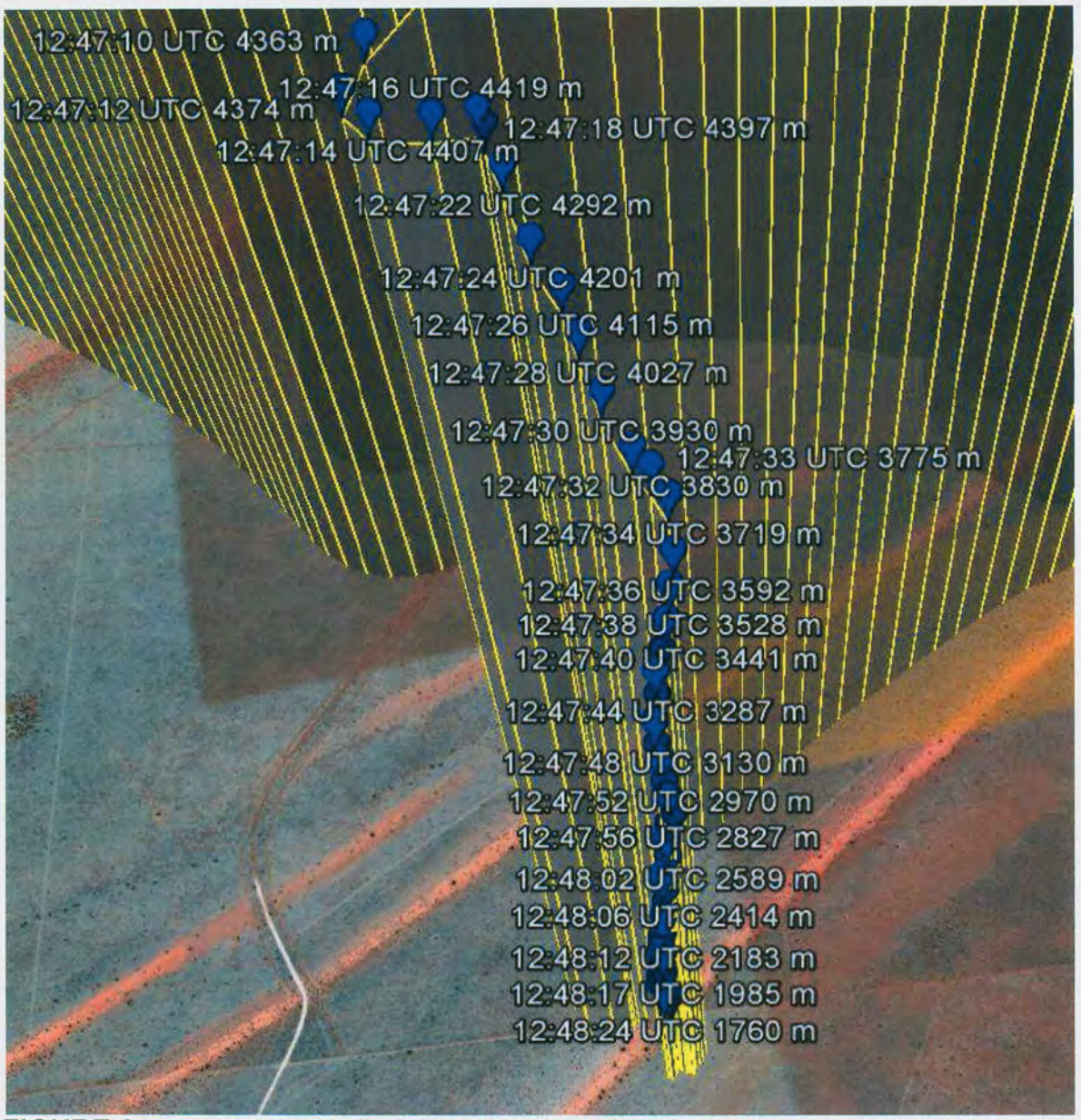

FIGURE 2 Shows uncontrolled descent – last phase

1.2 Injuries to Persons

Injuries	Pilot	Crew	Pass.	Other
Fatal	1	0	0	0
Serious	0	0	0	0
Minor	0	0	0	0
None	0	0	0	0

1.3 Damage to Aircraft

1.3.1 The Glider was destroyed in the accident.

1.4 Other Damage

1.4.1 There was no other damage caused.

1.5 Personnel Information

Nationality		Swiss			
Licence No	D.FCL.785	Gender	Male	Age	46
Licence valid		Yes	Type Endorsed	Yes	
Ratings		None			
Medical Expiry Date		10 July 2017			
Restrictions		None			
Previous Accidents		Not known			

Flying Experience:

Total Hours	**±650 hours**
Total Past 90 Days	90 hours
Total on Type Past 90 Days	Not available
Total on Type	Not available

Although the pilot has flown several glider aircraft, there is no information to the introductory training of the pilot nor his flying experience on the type.
NOTE: The pilot flying experience obtained from the pilot logbook indicated that the pilot has flown 52:04 in the last 12 month calculated from 01/01/2015 till 12/12/2015. However, records from Bitterwasser indicates that the pilot had flown around ± 25 hours prior to the crash, but this information was not logged in the pilot logbook.

1.6 Aircraft Information

Airframe:

Type	Self propeller Ventus 2cM	
Manufacturer	Schempp- Hirth Flugzeugbau GmbH	
Aircraft Serial Number	199	
Year of Manufacture	2007	
Total Airframe Hours (At time of accident)	500Hrs.	
Last Annual Inspection (Date & Hours)	27January2015	320 Hrs
Hours since Last Annual Inspection	180Hrs.	
C of A (Issue Date)	28June 2007	
A.R.C Expiry Date)	27January2016	
C of R (Issue Date) (Present owner)	27May2015	
Operating Categories	F	

Engine:

Type	Solo Kleinmotoren GmbH 2625-01
Engine Serial Number	Nil
Hours since New	Nil
Hours since Overhaul	Nil

Propeller

Type	Technoflug KS-1G-152-R-122
Propeller Serial Number	N/A
Hours since New	N/A
Hours since Overhaul	Nil

1.7.1 Meteorological Information

1.17 The following weather information was obtained from Bitterwasser flying club.

Wind direction	North Westerly	Wind Speed	±6 knots	Visibility	10 KM
Temperature	38°C	Cloud cover	Not given	Cloud base	Not given
Dew point	Not known				

1.8 Aids to Navigation

1.8.1 The aircraft was equipped with standard Navigation Aids applicable for this type.

1.9 Communications.

1.9.1 There was no communication problem reported. The pilot was transmitting on unmanned frequency124.8 MHz.

1.10 Aerodrome Information

N/A(the aircraft did not crash at an aerodrome)

1.11 Flight Recorders

1.11.1 The aircraft was not equipped with Flight Data Recorders (FDR) or Cockpit Voice Recorder (CVR)
nor was it required by the regulation for this type of aircraft.

1.12 Wreckage and Impact Information

1.12.1 The aircraft was destroyed. The site where the accident occurred was a flat ground area with vegetation and dry grass. The glider was in a normal flight configuration with the engine and wheels stowed in their normal positions and other flight controls were found in their normal flight configurations after the impact. The glider impacted with the ground in a vertical steep inverted high speed mode with the left wing making a significant impact mark on the ground and a hole of about 0.5 metres deep was made by the nose section after the impact. The glider's fuselage broke in several parts but the wreckage was attached together, the small parts that detached from the main wreckage was distributed in a 10 metres radius from the main wreckage.

1.12.1 During the examination of the wreckage the canopy locking mechanism handle was in it's locking position and the pilot parachute not open.

Figure 1. A photo showing the destroyed glider when it impacted with the ground in a vertical inverted steep high-speed mode.

1.13 Medical and Pathological Information

1.13.1 The pilot was a holder of a class 2 Private Pilot Glider plane Licence. His Medical Certificate was valid at the time of accident.

1.13.2 The high degree decomposition of the body and non availability of major body organs which were severely damaged with lacerations, the post mortem autopsy carried out on the pilot could not determine or rule out any pre-factors that may have played a role in the accident .Physiological factors or incapacitation that may have affected the performance of the pilot could not be determined or ruled out. According to the post mortem autopsy the cause of death was an aircraft crash related polytrauma, The post mortem was carried out by a qualified medical doctor however is not trained in Aviation medicine as per ICAO Manual of Aviation Medicine Doc 8984.

1.14 Fire

1.14.1 There was no evidence of pre or post impact fire.

1.15 Survival Aspects

1.15.1 When the aircraft was due to return to Bitterwasser at sunset and did not, Bitterwasser started the search and rescue on the same date 24 December 2015 by informing the Namibian Police as well as the two other gliding centre, namely Kiripotib and Pokweni. Additionally assistance was also requested from the ATC on duty at Eros Airport in Windhoek for any report of a distress calls or ELT and for any relay radio communication with overflying commercial airliners to stretch radio reach.

1.15.2 Bitterwasser collected FLARM data (anti-collision device) from active pilots of that day and forwarded those to the FLARM centre in Europe to be analyzed for any contact with the FLARM equipment on board D-KTBS.

1.15.3 By the morning of 25 December 2015, there was still no contact with the pilot and Bitterwasser again ask the assistance from ATC in Windhoek and MTC Namibia furnished information to the Namibian police that the pilot's cell phone was receiving short messages (SMS) from its Duineveld tower, that gave SAR efforts an effective radius in which to search for the aircraft.

1.15.4 During the day of 25 December 2015, Bitterwasser launched several gliders within declared sectors to search for the missing aircraft and by early afternoon the Namibian police assisted the SAR effort by sending the police helicopter to bitterwasser and picked up a knowledgeable glider pilot to keep a lookout for the glider and none of the SAR effort of that day located the missing aircraft.

1.15.5 On the morning of 26 December 2015, at about 05:45 UTC the owner of farm Stryfontein, west of Uhlenhorst was making a routine drive on his farm and located the pilot in the wreckage.

1.15.6 The ELT and the SPOT (personal tracking device) on board the aircraft were located at the crash site, both found turned off.

1.15.7 This was not a survivable accident because the impact forces were beyond human body tolerance and the compression of the cabin compartment from the impact made it even harder for any possibility of survival even though the pilot was securely strapped in with the aircraft safety belt and safety harnesses.

1.16 Tests and Research.

1.16.1 The FLARM device that was in the aircraft was send to BEA France through SUST Switzerland for data download. The download was successful and all the data pertaining to the accident flight were retrieved.

1.16.2 The FLARM device does not record the aircraft airspeed and the flight control positions or pilot input to them however it does record the time and the aircraft position.

1.17 Organizational and Management Information

1.17.1 Bitterwasser Flight Centre posted warning information on their website which is very crucial to pilot whom intend to use their establishment for gliding activities to uphold for their safety which stated:*"In Namibia, day temperature can climb up to 40°c during the season, but it is a dry agreeable heat. However, the extreme temperature difference stresses the human body particularly on arrival day, therefore a pilot cannot fly on the day of arrival at the centre as a pilot in command (PIC)."*

1.17.2 Operator:
This was a Private flight.

1.17.3 The aircraft belonged to Wilfried Grosskinsky.

1.17.4 Certification and Licensing authority:
Both Certificates (C of A and C of R and the Airworthiness Review Certificate) were valid at the time of the accident.

1.17.5 Maintenance Organizations:
CAMO-Lindner DE.MG 0516 was responsible to carried out Annual Inspection (AI).

1.18 Additional Information

1.18.1 The interview conducted with the pilot helper, revealed that the pilot did not look ready to fly on that day because he was making some mistakes and at some point shivering he was asked if he is okay and ready to continue with the flight which he answer yes, but the helper further revealed that he observed that the pilot was wearing his parachute wrongly which he pointed out for correction.

1.19 Useful or Effective Investigation Techniques

1.19.1 None

2. ANALYSIS

2.1.1 On the 24th December 2015, the glider aircraft departed Bitterwasser flight centre at around 11: 18 UTC for a private gliding flight with the pilot as a sole occupant, with the intention of landing back a Bitterwasser air field before sunset on the same day.

2.1.2 According to the data retrieved from the FLARM device the flight was normal from take off for about 1:30 minutes then the thermalling stopped.

2.1.3 At 12:48:18 UTC at an altitude of 14744.09 feet the forward speed decreased close to zero. This was followed by a steep dive of up to 54 m/s all the way to the point of impact.

2.1.4 Looking at the sequence of the way the aircraft descended that suggested that there was no pilot input or it was ineffective to try and control the descent. That was evident by the steep and fast descent that was recorded by the FLARM device on board.

2.1.5 The aircraft impacted the ground in a vertical inverted steep mode with the left wing making a significant mark on the ground and all the aircraft parts were found within a ten (10) metres radius from the point of impact.

2.1.6 The canopy jettison mechanism was found in the locking position, an indication that the pilot did not try to jettison from the aircraft when the uncontrolled flight started.

2.1.7 The pilot helper whom helped the pilot on that particular day observed that the pilot was not comfortable for the flight he even noticed that the pilot was wearing his parachute wrongly but he was not empower to stop the flight for further investigation nor there is procedure to do so.

2.1.8 The autopsy was carried out by a qualified medical doctor, but it is in the view of the investigation that aircraft accident investigation autopsy should be carried out by Aviation Medical doctors whom understand and can interpret the effect on a human body resulting from an aircraft accident.

2.1.9 The flight recording in figure 01 shows that the aircraft was within gliding distance from Bitterwasser throughout the flight. Hence, stress situations a pilot could come across from long distance flights can be excluded as contributing factor.

2 CONCLUSION

3.1 Findings

3.1.1 The pilot's licence was valid at the time of the accident.

3.1.2 The pilot's medical certificate was valid.

3.1.3 The aircraft's Airworthiness Certificate(C of A) and Certificate of Registration (C of R) were valid at the time of the accident.

3.1.4 The pilot did not file a flight plan nor was any required.

3.1.5 The pilot was on a Private gliding flight from Bitterwasser and was to return back to Bitterwasser before sunset.

3.1.6 After the crash the ELT and SPOT on board the aircraft were located at the crash site, but both were found switch off which hampered the Search and Rescue because they could not provide the signal to location of the wreckage.

3.1.7 The canopy jettison mechanism was found in the locking position an indication that the pilot did not try to jettison from the aircraft when the uncontrolled flight started.

Figure 2. Showing the canopy jettison mechanism in the locked position.

3.1.8 The weather was fine with good visibility at the time of the accident and was not considered a factor contributing to the accident.

3.1.9 A qualified medical doctor who is not trained in aviation medicine carried out the post mortem autopsy.

3.1.10 During the wreckage investigation all the aircraft parts were found within the ten metre radius from the point of impact. All control surfaces were accounted for and damage to the aircraft was attributed to the severe impact.

3.1.11 Information from the flight recording indicates that the aircraft was within gliding distance from Bitterwasser throughout the flight.

3.2 Probable Cause/s

3.2.1 Loss of control.

3.3 Contributory Factors

3.3.1 Could not be determined.

4. SAFETY RECOMMENDATIONS

4.1 SAFETY RECOMMENTATION NUMBER:013/2016 D-KTBS
Bitterwasser Flight centre: It is recommended that the flight centre should set up a training program and procedures that will enable the glider helper to indentify safety

concerns and report them immediately to the flight operation office so that professional assessment can be made before the flight.

4.2 SAFETY RECOMMENDATION NUMBER:014/2016 D-KTBS
(NCAA): It is recommended that the Namibian Civil Aviation Authority should extend the mandate of their designated examiners in aviation medicine to be carrying out autopsy when required in an aircraft accident as detailed in ICAO Manual of Aviation Medicine (Doc 8984) chapter 1 which deals with medical factors in aircraft accident investigation.

Compiled by:

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T.H.Herman
Investigator-in-charge

Date: 16/03/2017

For: Director of Aircraft Accident and Investigation

Released by:

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Alpheus G. Naruseb, MP
MINISTER: MINISTRY OF WORKS AND TRANSPORT

Date: 2017/03/17

Ministry of Works and Transport
17 MAR 2017
Office of the MINISTER