Wire Strike Accidents

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Power lines can be fatal!

Please be on a look out

1 Introduction

1.1 Background of the report

The aim of the study is to provide an analysis of wire strike accidents in the South African General Aviation community. It is also aimed at increasing the awareness of the flying community and initiating practical prevention strategies.

The South African Civil Aviation Authority Accidents and Incidents Investigations division has identified 117 wire strike accidents between 1990 and 2008. This is what has been reported to the AIID.

This study was prompted by a series of wire strike accidents in the General Aviation community in recent years. Most of these accidents occur during private operations.

2 Data used

2.1 Accidents Database

The AIID is responsible for the investigation of serious incidents and accidents in South Africa. The aviation industry has an obligation to report all serious incidents and accidents to the AIID. Therefore data explored in this study emanates from what has been reported to the AIID by the industry in terms of the Civil Aviation Regulations (CARs part 12).

3 Wire strike accidents in General Aviation

The AIID accidents database contains 117 reported wire strike accidents (both fatal and non-fatal accidents) in the General Aviation sector. These accidents include private operations, training operations, and aerial operations). The breakdown is detailed below:

Type of Operation									
	Private	Training	Agriculture	Game Capture	Aerial Work	Commercial	Law Enforcement	Other	Total
TOTAL	50	11	12	5	7	9	3	20	117

4 Fatalities and injuries resulting from wire strikes.

Wire strike accidents often lead to serious injuries and possible loss of life. Most of these accidents could have been avoided if pilots adhered to the regulations. 32 fatalities and 19 serious injuries were reported to the AIID as outlined below:

Injuries and Fatalities			
	Fatalities	**Injuries**	**Total**
1990	0	0	**0**
1991	0	0	**0**
1992	4	0	**4**
1993	1	0	**1**
1994	0	0	**0**
1995	0	0	**0**
1996	2	0	**2**
1997	0	0	**0**
1998	3	0	**3**
1999	5	3	**8**
2000	1	4	**5**
2001	3	5	**8**
2002	3	1	**4**
2003	0	0	**0**
2004	1	0	**1**
2005	4	0	**4**
2006	0	2	**2**
2007	1	2	**3**
2008	4	2	**6**
TOTAL	32	19	**51**

5 Aerial Operations

- ***Game capture*** – (Darting, mass capture, culling, game counts).
- ***Agricultural Operations*** – these include crop spraying and dusting.
- ***Aerial Surveying*** – Aerial survey is a geomatics method of collecting information by utilising aerial photography. It can also refer to the chart or map made by analysing a region from the air. This is typically done using aeroplanes and helicopters**.**
- ***Search & Rescue*** – Search for, assist and where appropriate, effect a rescue operation for a survivor of aircraft crashes or forced landings.
- ***Air ambulance operation*** **-** An air ambulance is an aircraft used for emergency medical assistance in situations where either a traditional ambulance cannot easily or quickly reach the

scene or the patient needs to be repositioned at a distance where air transportation is most practical.

- Law enforcement and vehicle tracking operations.

6 Data Analysis

The data gathered shows that wire strike accidents are more prevalent in private operations; followed by agricultural operations, then training.

Some causes of wire strike accidents in private operations:

6.1 Wire strike accident reports revealed the following as some of the causes of wire strike accidents:

- Non-adherence to specified minimum altitude (unlawful low flying).
- Some of these accidents occur when a pilot attempts an emergency landing in a field which may have high tension wires crossing the approach path.
- Failure to look out and or due to distractions.
- Poor visibility (low clouds, fog, sun).

6.2 Why are there fewer accidents with regard to aerial operations in comparison with private operations?

Following consultation with various operators involved in low flying operations, the following was uncovered:

- Pilots share information regarding dangers/hazards.
- Prevalent safety culture and no compromise on safety.
- Multi-crew operations – an extra pair of eyes to enhance look out.
- Strict adherence to regulations.
- Situational awareness.

7 Recommendations

- Adherence to prescribed minimum heights and refrain from illegal low flying
- Always be on the look-out
- Share information re. danger zones with fellow pilots
- Proper planning using up-to-date maps
- Ask people who are familiar with the area about any wires
- Always do an observation flight prior to low flying operations
- Be on look the look-out for high tension wires in valleys.

The following images are examples of how fatal wire strikes can be.

The aircraft collided with high tension wires spanned across a road.

During the descent, the pilot collided with power lines and crashed in the front yard of a house in a residential area.

Aircraft collided with the power lines and telephone lines and crashed. Pilot failed to see power lines.

The aircraft inadvertently collided with the high tension wires.

The aircraft collided with electrical wires.

The pilot was low on the approach for landing and collided with high tension wires.

The aircraft failed to gain height as a result of a possible down draft and collided with obstacles on the ground after landing.

The pilot became fixated with the activity on the ground in the attempt to arrest the suspects and failed to maintain an adequate lookout for hazards, which caused the aircraft to collide with the electrical conductors.

Collision with a high tension electrical earth cable before impacting with the ground.

During the short final approach for landing at an unlicensed private runway, the aircraft collided with power lines and crashed on the right-hand side of the runway.

The pilot collided with power lines on final approach for landing at a game lodge

The aircraft collided with high tension electrical wires, whereafter the pilot lost control and the aircraft collided with the ground.

During the climb phase of the flight the aircraft collided with Eskom power lines and crash-landed

The helicopter collided with an electrical wire that was spanned across a dam.