MINISTRY OF WORKS, COMMUNICATION & TRANSPORT

ACCIDENT INVESTIGATION BRANCH

CIVIL AIRCRAFT ACCIDENT NO. CAV/ACC/6/95

REPORT ON THE ACCIDENT TO STEMME S10-V MOTOR GLIDER AIRCRAFT REGISTRATION D-KGCX WHICH OCCURED ON 10 MARCH 1995 AT LAKE NDUTU AIRSTRIP, NOTHERN TANZNIA

(S 03 01 87, E 034 59 29)

AIRCRAFT ACCIDENT NO.CAV/ACC/6/95

Aircraft type	:	Stemme S10-V Motor glider
Nationality & Reg. Marks:		D - KGCX
Engines	:	One Limbach L2400 BID
Registered Owner	:	Stemme GMBH & Co. KG GUSTAV - Meyer - Allee 25 D - 133 55 Berlin, Germany
Operator	:	One - Killed
Passengers	:	None
Place of accident	:	Lake Ndutu airstrip, Ngorongoro District, Nothern Tanzania (S 03 01 87, E 034 59 29)
Date and time	:	10 March 1995 at 0800 hours

ALL TIMES UTC

SYNOPSIS:

Prior to an aerial photography mission scheduled for the afternoon of 10 March 1995 the pilot decided to make a short test flight. He took off solo at 0745 hours and flew south west of the Ndugu airstrip where he stayed for about 10 minutes. D - KGCX was subsequently observed to approach runway 05 of the airstrip with spoliers (with brakes) deployed. The gear was up. The pilot waved a party of observers as he flew past the runway. As it reached the end of the runway the aircraft was seen to pull up and and as it did so it executed a tight turn to the right and fell out of sky hitting the ground some 205 metres north east the end of the runway. The pilot sustained fatal injuries. The aircraft was destroyed by impact with the ground and trees.

The report concludes that the accident was caused by the pilot stalling the aircraft by initiating a climb and turn to the right while the spoilers were deployed. It also makes no recommendations.

1: FACTUAL INFORMATION:

1:1 History of the flight

The aircraft was scheduled to perform a film shooting exercise on the afternoon of 10 March 1995. The pilot and a photographer were on a mission to make a film on wildlife in the Serengeti National Park. The photographer said that they had decided to test fly the aircraft prior to the mission with the pilot flying solo on the first leg after which he would himself join the flight to test the photographic equipment.

Accordingly, the pilot took off solo at 0745 hours and flew south west of the airstrip. As part of the test flight he was expected to climb to altitude, shut down the engine (and retract the propeller) so that he could achieve a gliding pattern necessary for film shooting. He would subsequently re-start the engine and return to the airstrip to pick the photographer for the second leg.

The aircraft flew for about 10 minutes on the first leg after which it was observed to approach runway 13 with the spoilers deployed. The gear was, however, not lowered.

There were a number of people on the runway cutting grass. They moved out of the runway when they saw the aricraft approaching, thinking that it was going to land. When the pilot flew a beam and was about 50 ft (15m) above the level of the surrounding vegetation the pilot waved the people at the edge of the runway. One eye witness said the aircraft's speed appeared lower than normal. The aircraft was subsequently observed to pull up and executed a tight turn to the right from which it never recovered. D - KGCX fell out of the sky and crashed in a savannah forest some 672 ft (205m) north east of the runway.

There was no fire but the aircraft was destroyed by impact with the ground. The pilot was extricated from the wreckage alive but he died two hours later.

1.2 Injuries to Persons:

Injuries	Crew	Passengers	Others
Fatal	1	-	-
Non fatal	-	-	-
None	-	-	-

1.3 Damage to aircraft

The aircraft was destroyed.

1.4 Other damages

None

1.5 Crew information

The pilot, Mr. William J. Stedman, was a U.S.A. national born on 17 December, 1934 in the United States. He held an FAA Commercial Pilot's Licence No.13 66 720 which was validated by the German Federal Office of Civil Aernautics to enable him to fly the German-registered aircraft. By the time of the accident his licence was valid up to 17 March 1995.

His total flying experience was 9600 hours of which 85 were on the type. He had flown 10 hours in the last seven days.

The pilot was rated to fly multi-engined land, sea aircraft and gliders.

1.6 Aircraft information

The aircraft, a two seater Stemme S10-V motor glider serial Number 14-001 powered by one 93 hp Limbach L 2400 B 1.D engine was manufactured by the Stemme GmbH & Co. KG at Berlin, Germany in 1992.

It acquired a German registration D-KGCX on 16 September 1994 in the name of Stemme GmbH & Co. KG, Gustar - Meyer-Allee 25 D-13355 Berlin. A Certificate of Registration number L-19517 was issued.

A German Certificate of Airworthiness No.L-19517 was granted on 16 September 1994. By the time of the accident the C of A was still current. The aircraft was being operated in the Private Category.

D-KGCX arrived in the COuntry (Tanzania) on 28th September 1994 for a film project whose operations were based at Ndutu, Northern Tanzania. On 22 nd October 1994 the port wing of the aircraft was damaged when the left main gear sunk in a hyena pit at Lake Ndutu airstrip. The aircraft was repaired by Stemme engineers in February 1995. The propeller, the left wing outboard section and the left landing gear were replaced. This repairwork was certified by the German Federal Office of Civil Aeronautics on 3 March 1995. The aircraft was subsequently granted a three months permit to fly in the Country for the film project on 9 March 1995.

1.7 Meteorological information

The weather was good and is not considered to be a significant factor in this accident.

1.8 Aids to navigation

Not applicable.

1.9 Communications:

The aircraft was equipped with an HF radio which enabled it to communicate with the Ndutu camp. A vehicle parked on the edge of the runway was also equipped with the radio. The aircraft did not make any transmission during the flight.

1.10 Aerodrome and ground facilities

Not applicable.

1.11 Flight recorder:

No flight recorder was fitted or required.

1.12 Wreckage information

The wreckage was found 205 metres (672ft) north east of the end of runway 05. All the major structural parts of the aircraft were located and identified at the crash site. The wreckage did not show any signs of inflight separation of any component.

The damage to the propeller showed that the engine was developing power on impact. The flaps were found set at ZERO degrees. The ailerons were found separated from their cables and revealed no important information. The spoilers were found in the "DEPLOYED" position. The mechanical actuating mechanism was found still working so that it was still possible to retract and deploy them from the cockpit.

The elevators and the rudder were also still controllable from the cockpit. The variable pitch propeller lever was found in the "TAKE OFF" position.

1. 13 Medical and pathological information

The pilot's death was attributed to multiple fractures of the ribs and the crushing of the lungs. One member of the rescue team said that the pilot was found restrained by a safety belt. The rear vertical impact crushed the cockpit causing the controls and the panel to hit the pilot in the stomach and chest.

1.14 Fire

There was no fire.

1.15 Survival aspects

This was not a survivable accident.

1.16 Tests and research

Not applicable.

2. ANALYSIS

The damage to the aircraft, with the outboard section of the left wing leading edge showing signs of direct impact with ground together with the ground impact marks of the nose indicate that the aircraft was not under control during the final phase of the flight.

The shearing up of the fuselage aft of the cockpit and the damage to the tail section indicate the airctaft had entered a spiral dive before impact with the ground. This should imply that the aircraft stalled during the pull up and turn to the right.

There was no evidence of engine failure. Infact the damage to the propeller showed that the aircraft was powered on impact with the ground. The throttle control was found in the "FOUR FORWARD position."

The most notable feature of this accident flight was that, according to eye witnesses, the spoilers were deployed during the approach and the subsequent climb out. At first it appeared that D-KGCX was coming in to land. However, the landing gear was not lowered. If the pilot had deployed the spoilers to lose attitude, it is logical that he would have retracted them before a climb was initiated.

On the other hand he could have approahced the runway with the intention of landing but eventually discovered too late that the gear was up. This would have led him to make a missed approach and initiate a fresh attempt to land. This exercise would necessarily involve a pull up and turning down wind as part of a landing circuit. This again should have caused the pilot to retract the spoilers before a pull up was attempted.

Another hypothesis is that the landing gear may have failed to come down or the spoilers may have failed to retract after they were deployed. The landing gear lever was found in the "UP" position indicating that the pilot had no intention of landing. It is normal practice in bush airstrips for an aircraft to make a low pass before landing in order to ensure that no animals are in the perimeter of the runway.

The control for the spoilers was found in the "DEPLOYED" position. The entire mechanism was not damaged in the accident sequence. The spoilers could be retracted and deployed freely from the cockpit.

There are two warnings for the spoiler position in the "GEAR UP" configuration: One is acoustic and the other is visual. The electrical systems for both warnings were found to be functioning.

From the available eye witness evidence, there appears to have been no atmosphere of emergency on the part of the pilot. Indeed the pilot was reported to have waved people on the edge of the runway as he flew abeam shortly before the accident.

3: CONCLUSIONS:

(a) Findings:

(i) The aircraft was properly maintained and its documents were in order.

(ii) The pilot was properly licenced.

(iii) The pilot attempted a pull up and initiated a right turn with the spoilers deployed.
The configuration led to a stall and a spiral dive from which the aircraft did not recover.

(b) Cause

The accident was caused by the aircraft stalling and going into a spiral dive at low altitude. The reason for the stall was that the pilot initiated a climb and a turn with the spoilers deployed.

for C.M. NEWA

CHIEF INSPECTOR OF ACCIDENTS