

Investigation Report

Identification

Type of Occurrence:	Accident
Date:	11 July 2009
Location:	Near Stadtlohn
Aircraft:	Airplane
Manufacturer / Model:	Cessna / U206G
Injuries to Persons:	Passenger seriously injured
Damage:	Aircraft severely damaged
Other Damage:	Crop damage
Information Source:	Investigation by BFU
State File Number:	BFU CX008-09

Factual Information

History of the Flight

On the day of the accident several flights in sky diving operations were conducted. At 1745 hrs¹ the pilot took off for his ninth flight on that day. There were six occupants and the

¹ All times local, unless otherwise stated.

pilot on board the aircraft. One of the occupants wanted to watch his daughter's tandem parachute jump.

The 48-year-old passenger stated that he had asked the parachute training organisation if he could be a guest aboard the jump plane. This was granted after he paid a sum of money because there was one open seat in the airplane. He stated that no written contract of carriage was made. An assistant of the parachute training organisation helped him to don a parachute. Since the body harness of the first parachute did not fit he got the parachute of a student. The passengers stated the assistant checked the parachute and fastened the harness. The assistant said she was a sky diver herself. She also stated she had not deactivate the Automatic Activation Device (AAD) and had not spoken with the pilot about it. The tandem master, who was also head of sky diving operations, the passenger and the tandem passenger went to the jump plane which waited with the engine running. In the cabin three sky divers were already waiting. The passenger, the tandem passenger and the tandem master boarded the jump plane. The passengers was instructed to wait in the aircraft after the landing until he would be picked up.

The pilot stated that he had been told he had a passenger. He had assume that the passenger had received a briefing as to how to behave in and around the airplane.

The tandem master stated that after reaching 4,000 m AMSL three sky divers left the cabin and held on to the outside of the airplane. The tandem sky divers had initially sat next to the door. Shortly before the jump the tandem master closed the Cessna's door curtain.

The passenger kneeled next to the pilot. The pilot stated the passenger crawled toward the aft part of the Cessna to observe the sky divers through the left aft window. He had requested the passenger to come back up front and to hold on to the right handle of the airplane.

The passenger stated he had noticed a gap between the closed door curtain and the cabin floor through which he could see.

After he had dropped all sky divers in Flight Level (FL) 130 the pilot initiated the descent. During the approach to Stadtlohn Airport the reserve canopy opened and pulled the passenger from the airplane. The passenger was severely injured. The airplane was damaged and landed at the airport.

The pilot stated he had been in final approach to runway 29 in about 2,000 ft AMSL when he heard a bang and saw the parachute with the passenger being pulled from the airplane.

Personnel Information

The 30-year-old pilot was a German citizen. He held a Private Pilot's License (PPL A) issued on 14 June 1999 in accordance with JAR-FCL German. His licence listed the following ratings: Cessna SET, SE, TMG, night flight and Flight Instructor (FI) (PPL A). These ratings were valid to 25 May 2014. He also had a valid class 2 medical certificate issued in accordance with JAR-FCL 3 without restrictions. He had a total flight experience of 1,260 hours.

The pilot stated it was his third passenger in a row that day. According to his statement, during the first two flights the AADs of the passengers had not been activated.

During the sky diving operations flights the pilot had worn a emergency parachute.

Aircraft Information

The Cessna U206G „Stationair 6“ is a single-engine airplane with six seats and fixed landing gear. The accident airplane had a certificate of registration issued in the USA. Operator was a sky diving training organisation in Germany.

Manufacturer:	Cessna Aircraft Company, Soloy Turbine Conversion
Type:	U206G
Manufacturer's Serial Number (MSN):	U20605278
Year of manufacture:	1979
MTOM	1,633 kg

The aircraft was re-fitted with one engine in 1985 by Soloy Aviation Solutions. In 1987 the airplane was imported from the USA to Europe. Since 1998 the Cessna was operated in Germany.

The operator stated that the Eichenberger Skydiving Kit was fitted in Germany after import from the USA.

During a pre-buy check in 1999 it was recorder that a parakit of Eichenberger Aviation was fitted. The Federal Aviation Authority (FAA) stated there was no FAA approval or Supplement Type Certificate (STC) for the Eichenberger Aviation Kit. The last annual inspection was conducted on 31 March 2009 by an FAA certified examiner.

Equipment of the Airplane

According to the operations records the aircraft was fitted with a Cessna Skydiving Kit on 13 February 1987. The working record shows the following additional items: Static Line Attach Bolt, Cargodoor Step and changed Wingtips.

On 7 April 1992 the FAA released an aircraft operating limitation to the operator for the Cessna with removed cargo door. The appendix included indications as to jump operation (Advisory Circular 105-2, Sport Parachute Jumping). The FAA examiner working in Brussels from 1998 to 1999 classified the fitted Skydiving Kit as minor change.

According to the flight and operations manual the Cessna U206G was refitted with an Eichenberger with the STC number Z25-20-36 for six sky divers. This refitting basically included the removal of the cargo doors, the passenger seats of the second and third row and of the twin controls and the refitting of the co-pilot seat opposite the flight direction. A Spoiler Kit AK 206-1 was fitted to the door. The installation of the assembly kit ES 206-1 contained: a sliding curtain for the opening of the cargo door, a cross brace and a net to separate the cabin and a handle on the outer right cabin wall.

With the STC the operating limitations were set to 130 KIAS (Knots Indicated Airspeed).

The passenger sat in the Cessna on position six (Appendix Eichenberger Supplement No 1). According to the manual the reversed seat for the co-pilot was meant to be.

In the Eichenberger Supplement No. 1, sky diving operation for six sky divers, the flight manual, section 4, page 3 showed a Normal Procedures checklist. Pre-flight check item four stipulates that the co-pilot's control column is removed and closed with a sealing stud. Item five stipulates that the co-pilot's seat should be turned and secured against moving back and forth.



Cabin of the Cessna on the day of the accident, missing co-pilot's seat

Photo: BFU

The STC Z25-20-36 was not FAA approved and was only to be used in aircraft flying in the area of responsibility of EASA.

The skydiving kit approved by the FAA included the removal of the door (STC SA1255WE) with fitting of a spoiler equal to that of the Eichenberger kit. Diverging from the Eichenberger Kit a signal light console and a control unit are fitted. The light panel for the pilot is located on the upper part of the instrument panel. The number of sky divers aboard is limited to five. The right middle seat and the co-pilot's seat can be removed. The divers sitting in this position should seat back to back on the floor and be secured by an extra-long safety belt. For the other sky divers seats are required. It is recommended that the ones sitting in seats 5 and 6 wear helmets and protective goggles. The removal of the co-pilot's control column and seat is not required.

According to the handbook of the sky diving training organisation the pilot was responsible for opening and closing the door. The door was closed by velcro fastener on the door frame.

Parachute System of the Passenger

The parachute system of the passenger consisted of the main canopy Sabre 230 manufactured by Performance Design (PD) and the harness Javelin Student manufactured by Sunpath, year of manufacture 2005. The reserve canopy was a PD 235 with a Vigil AAD.

Meteorological Information

The Aviation Supervision Office stated visual meteorological conditions (CAVOK) prevailed. Wind was light and the barometric air pressure was 1,008 hPa.

The following weather data of two nearby airports of 1800 hrs was available:

Lingen

1600 30008G16KT 18 km SCT027 SCT060 19/09 Q1012=

Rheine-Bentlage

1600 27006KT 20 km FEW028 SCT050 18/12 Q1013=

Communication

Radio communications between the pilot and the Aviation Supervision Office and the air traffic control service were recorded and made available as transcript.

Aerodrome information

Stadthorn Airport is an elevation of 48 m height above sea level. There is one asphalt runway oriented 11/29 with a length of 1,080 m. At the time of the accident, at about 1810 hrs, runway 29 was in service.

Flight Recorder

The responsible air traffic control service recorded the radar data and made them available for analysis.

Wreckage and Impact Information

The passenger impacted the ground with opened reserve canopy about 2.5 km east of the airport on a field close to Wesendorf. It was determined that neither the manual deployment handles nor the cutaway handle was activated.



Closed door and damages in the area of the door

Photo: BFU

The aft door frame of the Cessna had been dented on the lower part in an area of about 80 x 40 cm. The door frame and the outer skin were damaged.

1.13 Medical and Pathological Information

According to the medical report the passenger suffered multiple fractures in the area of the cervical and thoracic vertebrae as well as a craniocerebral trauma and leg injuries.

Tests and Research

The Vigil AAD of the parachute system was read out at the manufacturer. The AAD can be operated in three different modes: PRO, STUDENT or TANDEM.

In mode Pro the AAD is triggered in 256 m (840 ft) above airport elevation if free fall speed is equal to or higher than 35 m/s (78 mph / 6,900 ft/min).

In mode Student the AAD is triggered in 317 m (1,040 ft) above airport elevation if free fall speed is equal to or higher than 20 m/s (45 mph / 3,900 ft/min).

In mode Tandem the values are 622 m (2,040 ft) free fall speed equal to or higher than 35 m/s (78 mph / 6,900 ft/min).

The Student mode was selected on the AAD.

The AAD had recorded several jumps. For the accident the data from File Jump 5-8 were important. The recordings started in about 3,400 m and ended in about 100 m. The mean sink rate was between 30 and 15 m/s. Between 480 m and 420 m higher sink rates of more than 20 m/s were reached. The AAD activated in an altitude of 394 m / 1,292 ft at a sink rate of 23 - 24 m/s (4,500 - 4,700 ft/min). The data showed that about 4 seconds after the AAD had been triggered the passenger left the airplane. The graph shows that the sink rate increased due to the incompletely opened reserve canopy. The graph also shows that the sink rate became normal - 5 m/s - after the reserve canopy had opened. The recording ends in about 165 m (Graph Jump 5-8).



File Jump 5-8 read out from the AAD.

Organisations and their Procedures

The jump operations handbook of the sky diving training organisation regulated the transport of passengers and guests in the jump plane.

2 12 transport of guests and passengers in jump planes

The transport of guests in jump planes is only permitted in exceptional cases; the head of jump operations makes the decision.

A guest can only be taken aboard if he/she has a sufficient interest in sky diving .

In order to inform the passengers about any possible dangers, the [...] written contract of carriage is to be filled in and signed.

The passenger has to be donned with a parachute and the handling of it has to be explained.

So that the pilot can adjust the sink rate of the airplane to the trigger speed of the ADD he has to be informed about transporting passengers.

The passenger is sitting next to the pilot with the back in flight direction.

The handbook o stipulates the following concerning the operation of the door:

2 6 sliding door or curtain (Cessna 6 Soloy)

The Cessna 206 Soloy with cargo door is equipped with a curtain. The Codura roller blind is reinforced with aluminium bars. In order to fix the roller blind it has to fasteners. In the middle and in front.

Before boarding the airplane one sky diver rolls up the door and fixes it with the middle fastener. Be aware when approaching the airplane.

After boarding the airplane the door will be closed. The middle fastener is being loosened and then the roller blind rolled down. In the aft part the velcro can be closed for better sealing the area in the cold season. The door has to be closed completely and is not to be opened during the climb.

About 1 minute before the jump the roller blind is being opened by a sky diver after the pilot has given the instruction. Initially the velcro is opened, then the bottom part is turned over and then the roller blind rolled up tightly.

The roller blind is fixated solely with the upper fastener. The pilot can then close the door again for the descent after dropping the sky divers.

When jumping off the airplane one must bear in mind that the rolled up door is not a handle and cannot be used as such. Tandem guests have to be informed accordingly. When the tandem jumpers jump off the airplane help them to get through the door. Be aware of the goggles of the tandem.

After the sky divers have jumped off the airplane the pilot opens the front fastener and the door rolls down.

The Deutsche Fallschirmsprung Verband (German sky diving organisation, DFV) had issued a recommendation regarding the transport of passengers in jump planes. According to which there should only be persons aboard which are necessary for the flight.

Excerpt from the DFV publication:

- *If persons interested in sky diving are taken aboard, the following rules should be adhered to:*
- *In all (smaller) jump planes including Pilatus Porter and Cessna Caravan the passengers (like pilots) should wear a parachute and should have been introduced as to its handling.*
- *Logically, the parachute of the passenger should have an activated (Expert) AAD and the size of the reserve canopy should preferably be that of a "Student".*
- *In addition, the pilot should be informed about the passenger and agree. (This should previously be discussed and fundamentally decided between the owner/operator of the jump plane and the pilot.*
- *Analogous to the tandem jump the passenger should receive an information leaflet and a kind of contract of carriage should be signed.*

The German Regulation on Operation of Aircraft (LuftBO) para 19 (2) stipulates:

(2) aircraft which are used for aerial work must be equipped with equipment and installations which allow a safe conduct of working flights. During sky diving operations flights the cabin floor can be used to seat them if it corresponds with the stipulations of the flight manual. In this case also a safety belt must be available for each sky diver at his seating position.

The NFL 243-76 refers to the LuftBO and stipulates that the transport of passengers during working flights is not compatible with para 3 of the LuftBO.

Para 3 Ground Rule for operation

(1) The operator of aerial sports equipment has to maintain and operate it such that no one is put in danger, is damaged or is hindered or troubled more than unavoidable given the circumstances.

In 1985, the BFU has issued a Flight Safety Information (V41) concerning this topic: Accident during sky diving operations. Sky diving operations represent a higher risk than normal cruise or sightseeing flight. In order to compensate the higher risk the BFU recommended:

- *During working flight only persons necessary for the conduct of the flight, the work or for orientation purposes should be aboard.*
- *During working flights the crew should wear parachutes insofar it is sensible for the conduct of the flight.*

The corresponding training guidelines for pilots or pilots of aerial sports equipment contain training items regarding the use of rescue parachutes or reserve canopies.

On 7 April 1992 the FAA published an operation limitation in the appendix to the airworthiness certificate of the Cessna. The deployment as jump plane with removed cargo door was permitted. During the sky diving operation all occupants must wear safety belts during take-off and landing. The Advisory Circular (AC 105-2C) Sport Parachute Jumping of 20 January 1991 was attached as appendix. Pilot Responsibilities, Item 14 (6) f refers to FAR, Section 91.14 according to which an approved safety belt shall be provided for each occupant and worn.

Analysis

General

The pilot held the required licenses and ratings. On the day of the accident he had already conducted flights with guests aboard.

The airplane suffered severe damage to the door area. The controls were not impaired. The airplane could continue with the approach and landed without further incident.

The damage to the door area and the injuries the passenger had suffered were attributed to the impact of the passenger while he was pulled from the cabin.

The passenger could not remember anything about the incident. The BFU is of the opinion that the passenger was incapable of acting from the time he was pulled from the cabin until he impacted the ground.

The weather conditions had no causal effect on the course of events.

Technical Aspects

According to the flight and operations manual the passenger should be seated with the back in flight direction and wear a seat belt. German as well as US American regulations stipulate that the passenger should have worn a safety belt. The required seat and safety belt were not available. The back rest of the seat would have prevented the reserve canopy from entering the aft part of the Cessna had the AAD been triggered.

The tandem master stated he had closed the roller blind. The statement of the passenger that he could see through a gap between the roller blind and the cabin floor indicates that the curtain was not completely closed.

The findings on the parachute system show that the reserve canopy was not opened manually but was triggered by the AAD. After the reserve canopy had been triggered in the cabin it got into the air stream due to the not completely closed door.

The read-out of the AAD data showed that it was activated and had deployed correctly in accordance with the selected Student mode. After the reserve canopy had deployed a normal rate of descent prevailed. It allows for the conclusion that there was no opening malfunction.

The documented rate of descent of the airplane of not more than 30 m/s was above the trigger value of the Student mode and below the Pro mode.

Operational Aspects

The passenger was not belted in during the approach which was contrary to the Aircraft Operating Limitations.

Contrary to the guest flights before, this passenger was equipped with a student parachute system. The AAD was activated. This was not noticed during pre-flight check.

The presented statements show that the aircraft's engine were running when the sky divers and the passenger boarded. This indicates that the sky diving operation was to commence without delay.

The pilot's statement that he had assumed the AAD was deactivated and the assistant's statement show that there was an insufficient communication between everyone involved. This allows for the conclusion that the pilot did not anticipate the activation of the AAD during the descent.

The descent after completion of the sky diving operation was conducted with a high rate of descent so that the next sky diving operation could commence without delay.

Defences

In the scope of this investigation, the term "Defences" means technical systems, actions, procedures and institutions which shall minimise the effects of technical and human errors to protect flight safety.

The AAD is a safety measure for parachute systems which shall open the reserve canopy under certain circumstances should the main canopy malfunction. In the case at hand the selected parameters were met during the descent and the reserve canopy was triggered inside the airplane.

Compared to normal cruise or sightseeing flight, sky diving operations flights bear a higher risk. The higher risk results from the danger that during sky diving operations sky divers collide with the aircraft which causes damage and inhibits controls but also injuries to the sky diver and damage to the jump equipment. This is counteracted, among other things, by the requirement that the pilot of a jump plane has to wear a parachute so that he can leave the airplane in case of an emergency. Pilots of jump planes and sky divers are aware of the risk whereas a passenger is not.

The BFU is of the opinion that all occupants of a jump plane should be equipped with a parachute system for emergencies and are familiar with its use. If an occupant is not a trained sky diver it would be best to use a rescue parachute system with automatic opening (static line). Would a regular parachute be used there would be the risk of the passenger unintentionally operating it.

Organisation / Procedures

Contrary to the procedural instructions of the sky diving training organisation the passenger had not been made aware of the dangers in writing.

Initially the passenger had received a parachute system which did not fit. Then the parachute system was changed. The conducted check of the AAD was not sufficient. The statement of the assistant that the AAD should have been deactivated was in contradiction to the procedures of the sky diving training organisation.

The BFU is of the opinion that the statement of the pilot, he had assumed the AADs of passenger parachutes were deactivated, showed that he had not been sufficiently familiar with the procedures of the sky diving training organisation regarding the use of AADs.

The insufficient communication between the head of jump operations and the pilot regarding the parachute of the passenger contributed to the assumption of the pilot that the AAD was deactivated. This resulted in the fact that he did not adjust the rate of descent accordingly.

According to the jump operations handbook the pilot was responsible for the closing of the door. In this case, the tandem master closed the door as he was leaving the airplane. It is not known whether or not the pilot noted the incompletely closed door. He did not have the option of closing the door completely during the descent.

Stipulations of the German Sky Diving Organisation

The stipulations of the DFV and the ones from the sky diving training organisation were contradictory. The DFV stipulated an activated AAD selected to Expert mode and a reserve canopy for students; the sky diving training organisation required merely that the pilot be informed of an activated AAD.

From the BFU's point of view it is doubtful that a desire to shoot or photograph the tandem jump of someone constitutes a "sufficient interest" in sky diving sports or parachute jumping. The BFU is of the opinion that such an interest would be detectable if someone wanted to do a tandem jump as a guest.

The BFU is also of the opinion that the DFV should stipulate precise procedures in regard to the transport of passengers during sky diving operations.

Regulations Concerning Airworthiness

The aircraft was registered in the USA and therefore was subject to FAA regulation in regard to its airworthiness.

In spite of the annual inspection by a FAA certified examiner the equipment of the jump plane which did not correspond with the type certification was not noted or criticised.

The FAA examiner examining the aircraft 1999 during the annual inspection and the pre-buy-check classified the fitting of the Eichenberger Kit as minor change. This did not correspond with the FAA opinion which did not allow the fitting of an Eichenberger Kit. Between 1999 and the day of the accident the airplane had passed all annual inspection without irregularities in three European countries. The BFU is of the opinion that the inspection history shows

deficiencies in the quality of the inspections and in communication between inspection organisations.

Conclusions

The accident was due to

- The final approach was conducted with a descent profile which met the trigger value of the AAD.
- The pilot was not informed about the activated AAD mode.
- The passenger was on his knees and did not sit with the back in flight direction wearing a safety belt.
- The door was not completely closed so that the reserve canopy could get into the airflow.

Safety Recommendation

The BFU intends to issue the following Safety Recommendations:

The Deutsche Fallschirmsprung Verband (German sky diving organisation, DFV) should stipulate that during sky diving operations passengers cannot be transported.

The Federal Aviation Administration (FAA) should improve the quality of the inspections of US registered aircraft operated in Europe.

Investigator in charge: Knoll
Assistance: Lampert, Himmler
Field Investigation: Nemitz
Braunschweig: 1 May 2012

Appendices

SOLOY TURBINE PAC
FLUGHANDBUCH U/TU 206 G

EICHENBERGER SUPPLEMENT NO. 1
ABSETZEN VON 6 FALLSCHIRMSPRINGERN

ABSCHNITT 4

NORMALE BETRIEBSVERFAHREN

GESCHWINDIGKEITEN FUER NORMALEN BETRIEB

Die Höchstgeschwindigkeit ist auf 130 KTS IAS begrenzt, wenn die Frachttüren ausgebaut sind. Die übrigen Geschwindigkeiten bleiben unverändert.

NORMALVERFAHREN CHECKLISTE

VORFLUGKONTROLLE

1. Frachttüren ausgebaut
2. Passagiersitze 2. und 3. Reihe ausgebaut.
3. Armstützen 2. und 3. Reihe ausgebaut
4. Steuerhorn Copilot ausgebaut. Verschlusszapfen am Rohrstummel eingebaut und fest.
5. Copilotensitz gedreht und durch 2 Sitzstops gegen Verschieben nach vorn und hinten gesichert. Sitzlehne senkrecht gestellt, Kopfstütze entfernt.
6. Pilotensitz: Sitzstop so eingebaut, dass sich Sitz nur bis zum 3. Arretierloch von hinten bewegen lässt.
7. Querrohr im Gepäckraum eingebaut und fest.
8. Gurtzeug eingehängt und unbeschädigt.
9. Gepäckraum leer, alle losen Gegenstände aus Kabine entfernt.
10. Vorhang und Griffleiste eingebaut und unbeschädigt.
11. Velcrostreifen an den Türpfosten und Velcrobänder eingebaut und unbeschädigt
12. Handgriff an der rechten Aussenwand montiert und unbeschädigt.
13. Spoiler montiert und unbeschädigt.
14. Blechwinkel beim Klappenschalter am oberen Frachttürrahmen mit waagrecht-rechten Schenkel nach aussen montiert und fest.

Ausgabe: 01. Juni. 1989

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Checklist

SOLOY TURBINE PAC
FLUGHANDBUCH U/TU 206 G

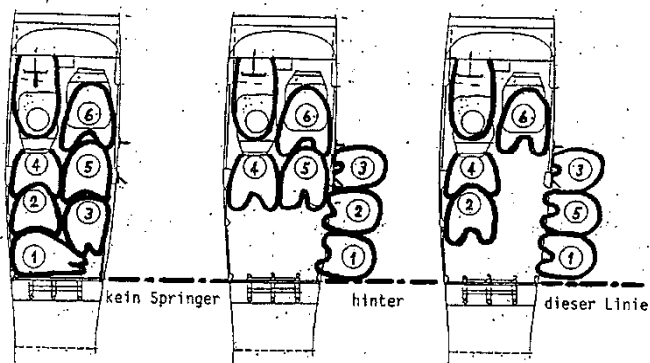
EICHENBERGER SUPPLEMENT NO. 1
ABSETZEN VON 6 FALLSCHIRMSPRINGERN

SITZORDNUNG, ABSETZEN

Springer Nr. 1 - 5 sitzen auf dem Kabinenboden, Nr. 6 auf dem gewendeten Copilotensitz. Der Vorhang bleibt bis zur Absetzhöhe heruntergezogen. Vor dem Absprung wird er aufgerollt. Er kann später durch den Piloten durch Losreißen der Fixierung heruntergelassen werden. Der Spoiler erzeugt den nötigen Unterdruck, um den Vorhang ohne Flattern anliegen zu lassen. Der Absprung erfolgt einzeln oder in Gruppen von höchstens 3. Dabei ist zu beachten, dass die restlichen 3 Springer ihre Plätze erst nach dem Absprung der 1. Gruppe verlassen dürfen. Es ist vorteilhaft, die schwereren Springer vorne im Flugzeug zu platzieren.

Sitzordnung

Zulässige Absprungvarianten



KLAPPENSTELLUNG BEIM ABSETZEN

Während dem Absetzvorgang bleiben die Klappen eingefahren, um Verletzungen und Beschädigungen zu vermeiden.

Ausgabe: 01. Juni. 1989

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~~Secured Office
for Civil Aviation~~

AIRCRAFT OPERATING LIMITATIONS

MAKE: Cessna
MODEL: 206
SERIAL NUMBER: U20605278
REGISTRATION NUMBER: N21SC

The aircraft described above may be flown with not more than one cabin door removed for the purpose of skydiving and photography, provided the aircraft is operated in accordance with the applicable Federal Aviation Regulations and the following limitations:


1. Maximum speed not to exceed any of the following:
 - The approved maneuvering speed
 - 70 percent maximum level flight speed
 - 70 percent maximum structural cruising speed
2. Acrobatic maneuvers are not permitted.
3. Maximum yaw angle 10 degrees; maximum bank angle 15 degrees.
4. An FAA (CAA) approved safety belt shall be provided and worn by each occupant during takeoff and landing and at all other times when required by the pilot in command in the interest of safety.
5. All occupants shall wear parachutes when intentional parachute jumping and skydiving operations are conducted.
6. Smoking not permitted.
7. When operations other than intentional parachute jumping and skydiving are conducted, a suitable guardrail or equivalent safety device shall be provided for the doorway.
8. All loose articles shall be tied down or stowed.
9. No baggage shall be carried.
10. Parachutist's static lines shall be kept free of pilot's controls and control surfaces.
11. Operations limited to VFR.
12. Cabin door hold-open clips installed on wing brace struts and/or under surface of wing shall be removed prior to conducting parachute jumping or sky diving operations.

13. When intentional parachute jumping, skydiving, or other specified operations are being conducted, the pilot at the controls shall hold at least a private pilot certificate rating.
14. This aircraft shall not be operated in solo flight by the holder of a student pilot certificate.
15. Operation of this aircraft with a door removed for any purpose other than that for which it is certificated is prohibited.
16. The following placard shall be placed on the instrument panel in full view of the pilot:

FOR FLIGHT WITH DOOR REMOVED, SEE
AIRCRAFT OPERATING LIMITATIONS DATED
APRIL 7, 1992.
17. A copy of these limitations shall be carried in the aircraft when flight operations are conducted with the door removed.
18. These operating limitations are a part of the airworthiness certificate.

DATE: April 7, 1992

FAA INSPECTOR:


Charlene E. Muth, ASI

FAA OFFICE: NM-FSDO-01

cc: AVN-450

This investigation was conducted

in accordance with the regulation (EU) No. 996/2010 of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation and the Federal German Law relating to the investigation of accidents and incidents associated with the operation of civil aircraft (Flugunfall-Untersuchungs-Gesetz - FIUUG) of 26 August 1998.

The sole objective of the investigation is to prevent future accidents and incidents. The investigation does not seek to ascertain blame or apportion legal liability for any claims that may arise.

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