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TECHNICAL REPORT - U.S. ARMY AIRCRAFT ACCIDENT

TYPE OF AIRCRAFT: OH-6A

UNIT: B Co, 9th AVN BN

SERIAL NUMBER: 67-16502

DATE OF ACCIDENT: 5 FEB 69

SECTION G-NARRATIVE OF ACCIDENT

1. GENERAL: Accident Investigation Board was selected and notified at 2130 hours on 5 Feb 69. The board assembled at 930 hours and proceeded to the crash site at 1400 hours on 6 Feb 69.

The wreckage was not located until 1000 hours on 6 Feb 69 in approximately 30 feet of water. The recovery of the wreckage was witnessed by the board. The wreckage was lifted from the water by a UH-1H helicopter and flown directly to Dong Tam Base ("C" Pad) where it was secured by the Military Police until the arrival of the board.

The board interviewed 2 survivors and 2 Vietnamese by means of an interpreter and recorded as translated orally by the interpreter.

2: IDENTIFICATION:

OH-6A:	SN: 67-16502
Pilot:	BURKHART, Willard H., WO1
Passengers:	1. PERRY, Frederick, C., Jr. CPT. 2. HERSCHLIP, William R., 1LT 3. O'STEEN, Charles R., SGT E-5
Location of Accident:	XS: 086844
Time:	O/A 1820, 5 Feb 69.
Material Damage:	1. Impact Damage; a. Fwd & rt. fuselage. b. Main rotor blades and head c. Tail cone. d. Engine compartment. 3. Right rear skid damper. 2. Secondary Damage: a. Major damage to base of instrument console. b. Right skid. c. Extensive fuselage damage during dragging. d. Water damage to major components.
Personnel injuries:	BURKHART: deceased 1. No traumatic injuries revealed by autopsy. PERRY: 1. Injuries denied, examination revealed none. HERSCHLIP: 1. Multiple minor contusions and abrasions primarily on lateral portion of right leg. 2. One contusion on right frontal area of forehead above hairline. 3. Minor back pains from muscle strains. X-rays showed no injury. O'STEEN: deceased 1. 6mm laceration behind left ear to the skull bone. No other cuts revealed on autopsy.

2. There were no external abnormalities or fractures.
3. The exact cause of death could no be precisely determined because of the decomposition of the bodies after 36 hours in the water. All evidence and testimony of the witnesses leads to suspect drowning.

3. DESCRIPTION OF ACCIDENT:

OH-6A SN 67-16502 departed Dong Tam Base camp, Dinh Tuong Province, RVN at approximately 1745 hours, 5 Feb 69 to perform an engineer recon of bridges on highway LTL 19 approximately 5-7 kilometers southwest of Moc Hoa, RVN. (See TAB_9_Picture 1)

While performing an aerial recon at grid coordinates XS 085843 the aircraft struck the water and sank at approximately 1817 hours.

The pilot had initiated flight following upon take-off with Army Aviation Element (AAE) 9th Inf Div and a position report was due at 1815 hours. The flight following service initiated a radio search at approximately 1830 hours. AAE notified 9th Aviation Bn Ops that an aircraft was suspected to be down in grid XS 084844. 9th Avn Bn Ops scrambled aircraft for search and rescue, but upon arrival at the site at 1900 hours they determined that the aircraft was lost in the river.

Two survivors had been recovered by the 216th RF Company immediately after the crash. Search operations for the aircraft and survivors continued until 0200 hours 6 Feb 69 when operations were suspended until daylight due to the tactical situation.

The search operations resumed after daybreak and the aircraft was located at approximately 1100 hours in 30 feet of water at grid XS 086844 by a Navy Seal Team.

The search was conducted jointly by 9th Avn Bn, Naval River Division, 535 PBR unit and by the 216th RF Company.

Capability for direct recovery was not available within 24-48 hours and the wreckage was dragged by PBR some 150-200 meters to shallow water where helicopter recovery was completed by a UH-1H. (See Tab_9_Picture 1a.)

All major components of the aircraft were recovered with the exception of the tail center cone section, 3 main rotor blades and the log book.

The occupants of the pilots compartment of the helicopter were missing in action until the bodies were recovered on 7 Feb 69.

It was determined by the witness testimony that all occupants survived the crash. This was not invalidated by the autopsy report.

4. INVESTIGATION:

At 2200 hours, 5 Feb 69, members of the board were notified of their positions on the board and that the aircraft wreckage had not been located and 2 survivors had been found. The board convened by the order of the President of the Board at 0730 hours, 6 Feb 69 at the S-3 Office, 9th Avn Bn.

All available transportation was used for search and rescue and transportation for the board was made available upon location of the wreckage.

LT HERSCHLIP was evacuated by Dustoff to the 9th Med Bn where members of the board interviewed him upon approval of the 9th Med Bn at 2330 hours on 5 Feb 69. CPT PERRY, the other survivor, was engaged in search and rescue at the crash site. Early positive identification of the aircraft was accomplished by the recovery of the inspection panel marked with the aircraft serial number which was found floating in the river.

After a check with Naval Operation at My Tho, it was determined that no vertical lift capabilities were available in the area of the crash for 24-48 hours. At this time CPT PERRY (a survivor) and the Vietnamese witnesses were present (TAB_9_Pic_1b.)

The board used the witnesses and the UH-1H to determine the actual flight path, altitude and attitude of the OH-6A at the time prior to and at the time of the accident. (See TAB_9_Pictures 2-9.)

Information obtained from Vietnamese witnesses indicated that something yellow, about the size of a "C" ration box (individual), was dropped from the aircraft into a sampan. Neither surviving passenger had any knowledge of anything being thrown or dropped from the aircraft into a sampan.

From the testimony of the witnesses it was determined that the recon was being performed at approximately 75 to 100 feet of altitude, 50 to 60 kts of airspeed and a right bank of 40° to 60 ° at the time of

impact. The aircraft passed over the bridge at approximately 75 ft in direction indicated TAB _9_Picture #2 and performed a slow descending right turn and hit the river.

The survivors stated that there were no unusual attitudes, movements, noises or other indications of aircraft malfunction or enemy actions, except for a sudden gust of wind immediately prior to impact. Both survivors stated that a sharp gust of wind came in the right passenger door dislodging a clipboard and papers from LT HERSCHLIP'S lap. Survivors stated that no abrupt control movements were noticed and the aircraft seemed to fly into the water in a slightly nose low, right bank. Both survivors stated that the engine was running and everything was functioning normally. The Vietnamese witnesses located on the bridge stated very definitely that the main rotor blade made first contact with the water.

5. ANALYSIS

a. Upon return of the board to Dong Tam at 1700 hours, 6 Feb 69 the aircraft was inspected and photographed on the new active runway. Under the supervision of the board, the aircraft was moved to B Co. 709th Maintenance Bn's hanger for technical analysis by the board. (See TAB 9 Pictures 10-11.)

Heavy deposits of mud and silt were removed from the interior and members of the board reconstructed the aircraft debris and components as much as possible.

From thorough technical analysis of the aircraft, no mechanical malfunctions could be determined. The engine, main transmission, and tail rotor transmission were removed and inspected and found to be operative. These components were forwarded to ARADMAC (Corpus Christi, Texas) for further analysis. A thorough analysis of the flight control systems revealed no malfunctions or missing components.

b. Further examination of the collective system revealed the following:

(1) Both pilot and co-pilot collectives were in full up position. (See TAB 9 Picture 12.)

(2) Pilot's collective was broken at electrical wire lightening holes. (See TAB 9 Picture 13.)

(3) The area surrounding the co-pilot's collective was totally free of impact damage. (See TAB 9 Picture 14.)

(4) Left side co-pilot's safety belt was found wedged between collective and left side panel of armor plating. (See TAB 9 Picture 15.)

(5) Collective stick cover, collective stick, FED STOCK # 1560-948-0374, located above the base of the co-pilot's collective was found bent and ripped from its screwed position upwards sticking the armor seat plating. (See TAB 9 Picture 16.)

(6) Main rotor hub assembly and remaining pitch hub was in full pitch position although all pitch change links were snapped. (See TAB 9 Picture 17.)

(7) Damage of collective push-pull tube system was determined to be from impact and secondary damage.

(8) The rigid connecting link (item 14 fig. 119 TM 55-1520-214-35P, FED STOCK # 1680-761-1729) was not damaged in any way. (See TAB 9 Picture 13.)

c. Examination of the seat retention system revealed:

(1) Passengers retention straps were utilized and did not fail.

(2) The pilot's seat belt and shoulder harness were utilized and did not fail.

(3) The co-pilot's seat retention systems presents and element of doubt as to whether it was properly fastened.

(a) The left strap of the lap belt was wedged between the collective stick and the left side armor plate.

(b) Both retention strap locking devices were in the unlocked position. The pilot's inertia reel had been activated to the automatic inertia locked position. The co-pilot's inertia reel had not been activated at the time of analysis. Test revealed that this unit was still operational. (See TAB 9 Picture 13.)

d. Analysis of the engine and power train system indicated that there were no apparent failures:

(1) Technical inspection confirmed that the power train system was operating normally. (See TAB 9 Picture 18).

(2) Direction of failure of engine drive coupling exhibits engine was under normal power (See TAB Picture 19).

(3) Throttle was in full open position.

(4) Main transmission was removed and had no apparent defects.

(5) Tail rotor transmission was removed and had no apparent defects.

(6) No information could be obtained from engine instruments due to water damage.

(7) Govenor assembly power turbine lever assembly indicator was in normal operating position indicating normal N1 output.

(8) Tail rotor struck upper and lower vertical fins of the empenage indicating tail rotor was being driven at the time of impact. (See TAB 9 Picture 22.)

e. Summary:

The board analyzed the above facts and developed the following hypothesis on how the accident occurred:

(1) At some time the lap belt of SGT O'STEEN became wedged between the co-pilot's collective and the left side of the seat armor. It cannot be determined whether SGT O'STEEN's seat belt was not fastened, or if it was first fastened and later unfastened for some unknown reasons. The witnesses stated that the pilot had made a visual check of the back seats to see if the belts were secured. The seat belt was found upon initial examination to be wedged between the co-pilot's collective and the left side armor plate. Marks on the armor and the collective stick, TAB 9 Drawing 16, indicate that some force was applied to some object in this location. The board compared different aircraft and found that when the collective is in low pitch and the seat belt is released and allowed to fall free, the belt adjusting buckle falls naturally into position between the collective and the left side armor plate. If the aircraft was in a descending right turn with the seat belt adjusting buckle wedged in this position, insufficient upward collective travel would have been available to arrest the descent. It is the opinion of the board that this situation caused the accident. If this demand was being made upon the pilot's collective when the aircraft hit the water, the shock could have jarred loose the object (s) binding the collective. This would allow the pilot to apply full force upward on the collective system and lock it in place during impact. Additional evidence in support of this theory is available. SGT O'STEEN's inertia reel did not lock upon impact as did the pilot's, although the inertia reel locking handles were in the identical unlocked position. There is a dent in the plastic console sun shield which may have been made by SGT O'STEEN's impacting the shield. The co-pilot's anti-torque pedal assembly was broken from the aircraft and lost. The front bubble on the co-pilot's side was smashed and the instrument console was broken from it's mounting on the left side. The pilot's collective stick was broken in an upward direction as indicated by the break and the lack of damage to the 'U' bracket which supports it from beneath. A sharp downward force would probably have deformed this bracket. SGT O'STEEN's autopsy revealed a cut behind the left ear which could have been made by the Plexiglas, (See TAB 9 Pictures 20-21.)

It is possible that much of this damage was made by the dragging operations. The board considered this possibility and concluded that although this is possible, no marks scratches or holes from the dragging apparatus are present. The collective push-pull rods showed secondary damage, but they were still intact and operational after they were straightened. The throttle linkage was not damaged except for the pilot's broken collective. The remainder of the system was intact and in the normal operating range. The autopsy reports do not confirm or deny any of these hypotheses.

(2) The aircraft was in an abrupt turn to the right as described in TM 55-1520-214-10, para 8-5b. In an abrupt reversal turn to the right at low altitude and low air-speed, the aircraft may yaw excessively into the wind during a 180 degree turn downwind. This may cause excessive nose down pitching which is aggravated by application of additional collective. The exact winds could not be determined at the time of the accident. The observations at the closest observation was from Tan Am, 45 kilometers from the accident.

6. CAUSE FACTORS:

a. Cause – Unknown.

b. Possible cause factors:

(1) Design.

(a) Co-pilot's left safety belt buckle wedged between collective and left side armor plate.

(b) Object (s) unknown wedged between co-pilot's collective and collective stick cover causing loss of collective control.

(c) Abrupt turn to the right produced vertical lift on the horizontal stabilizer surface causing aircraft to pitch nose down and aggravate bank angle to the right. NOTE: (As described in para 8-5b TM 55-1520-214-10.) (2) Duty: If the co-pilot's seat belt was in fact unfastened this represents failure of the pilot to properly care for the safety of his passengers.

SECTION H-WITNESS STATEMENT

Name of Witness: Frederick C. PERRY, Jr. CPT

Occupation: U.S. Army
Age: UNK
Address: Co A, 15th Eng Bn
9th Inf Div
APO San Francisco 96370
Date of Accident: 5 February 1969
Date Statement Made: 6 February 1969
Aviation Experience and Background: None
Interviewer: Major John C. PHILLIPS, Jr.

This statement may not be used as evidence or to obtain evidence in determining line of duty status of any personnel; as evidence before evaluation boards; as evidence to determine liability in claims against the government; or as evidence to determine pecuniary liability. The sole purpose of this statement is to aid in the prevention of accidents. (Reference Section 1. Paragraph 4, AR 385-40.)

We stopped at the first wooden bridge and made a recon. The helicopter took off and fame to pick us up when we were finished. We took off for the second bridge and SGT O'STEEN said to circle the bridge a couple of times before going back to Dong Tam.

We made one loop over the bridge at 75-100 feet in a slight bank to the right. It couldn't have been too steep, I could still see the far bank.

A gust of wind jarred the recon sheets loose. I reached for it and the ship fell. I thought, "What the hell's that guy doing, stunting?" The next thing we were in the water, I think about 10-15 feet because I distinctly remember feeling the pressure on my ears. I remember having trouble either reaching my seat belt or releasing it. It may have been the water pressure. I distinctly remember seeing 3 people on the surface. I went under to shed extra ammo. When I came up I didn't see anyone else. I was so exhausted, I can't remember how I got to the mud bank on the stream. The Vietnamese had sampans in the water and I heard an American voice. I yelled and someone yelled back. A RF soldier found me and a sampan picked me up and brought us back to the bridge.

I estimate from the gust to the water was 3-4 seconds. We fell some 75 feet to the water without a gradual descent. I looked at my watch on the bank and it was 1825. I think the skids hit the water first.

This was my fourth or fifth time in the LOH. I estimate the airspeed to be slower than cruise and faster than take off-speed.

SECTION H-WITNESS STATEMENT

Name of Witness: William R. Herschlip, 1 LT
Occupation: U.S. Army
Age: UNK
Address: Co A, 15th Eng Bn
9th Inf Div
APO San Francisco 96370
Date of Accident: 5 February 1969
Date Statement Made: 6 February 1969
Aviation Experience and Background: None
Interviewer: CW4 COWAN & Major John C. PHILLIPS, Jr.

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1LT HERSCHLIP could you tell us the sequence of events, in your own words, of the total flight to the time of your recovery from the water?

We had departed Dong Tam about 1730 and proceeded to the first bridge site to be reconned. I was sitting in the right/rear, CPT PERRY in the left/rear and SGT O'STEEN was in the left/front seat. The pilot landed at the first site, dropped us off and took off. We called him back in about 10 minutes, and then

reloaded the aircraft in the same seating positions. We then flew to bridge site #2 and after flying over it once we turned around and flew over the bridge at approximately 75 feet and out over the river. We started a right turn, about 70 ° bank, and then the aircraft struck the water. I felt a strong gust of wind just prior to the aircraft hitting the water. In fact it was so strong it blew my clip board and papers out of my lap. The aircraft sank immediately. I tried to pull at the shoulder straps to release myself and then realized that I had to release the safety belt first. I was laying on my right side and as I released myself from the aircraft I felt CPT PERRY or some object in my path upwards. As I surfaced I had lost my glasses and could not see too well, but I did see three other persons in the water. SGT O'STEEN was next to me and was saying "I can't swim", "I can't swim." He then grabbed my shoulder causing me to go back under the water. I swallowed more water and came back up puking and awful weak. I could hardly move my arms. I laid on my back and relaxed. SGT O'STEEN had disappeared. A sampan went by, but I could not reach it. Another sampan came by a short time later and I grabbed the side and he pulled me to shore. We walked about a mile to the bridge (later determined to be 150-200 meters.) A Navy boat came and I was lifted on it close to the shore. CPT PERRY was also lifted on board the Navy boat. My back was hurt and I was taken by helicopter to Dong Tam.

Q. Did you know the equipment by type that each passenger had on board the aircraft?
A. Yes, it was mostly maps and clipboards. I had a rifle and a PRC-25 radio. CPT PERRY had a side arm .45 and a rifle. SGT O'STEEN had only a .45 pistol.
Q. Was there anything unusual about the flight?
A Nothing, it was smooth and no sounds to indicate any type of trouble. In fact it felt as if the flight into the water was intentional. It was so surprising that I didn't even have time to take a deep breath.
Q. What about ground fire? Did you hear or feel any rounds hit the aircraft? Have you ever heard rounds striking an aircraft?
A. This was my first OH-6A ride and I have never heard rounds striking an aircraft. I did hear some small arms fire, but it seemed far away and I paid very little attention to it.
Q. Did you notice anything wrong with SGT O'STEEN, an injury or anything?
A. Yes, I noticed blood coming from his head above his eyes. I didn't have my glasses as I said, and could not see his wounds.
Q. Do you feel the aircraft failed in any manner?
A. No.

SECTION H-WITNESS STATEMENT

Name of Witness: Nugyen (sic) Thang Tung & Le Ninh Trang
Occupation: ARVN
Age: UNK
Date of Accident: 5 February 1969
Date Statement Made: 6 February 1969
Aviation Experience and Background: None
Interviewer: CW4 COWAN & CPT HENRY

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Questions were relayed through a very poor interpreter.

Q. Could you tell us what you know of this accident?
A. The helicopter came over me at the north end of the bridge and it was very low (about 17M). I watched him fly out to the sampan and something yellow like a "C" ration carton (small individual container size) came out of the helicopter and went into the boat. About 2 meters after passing the boats the helicopter was leaning to the right and the big blades hit the water. It went under and a minute later four (4) people came to the surface. As soon as the sampans started for them, I saw two of the four people drown. They went down and did not come up. We had no time to do anything. The sampan reached the other two and got them on the

way to shore. When the helicopter hit the water, the bridge security force opened fire on the bank to keep any V.C. away.
Q. Could you direct that helicopter in the same flight path? (UH-1H used by accident board.)
A. Yes. (He did this by means of interpreter and radio.)
Q. Did you hear any gun fire prior to the helicopter hitting the water?
A. No.

PART III-FLIGHT SURGEON

SECTION A-GENERAL INFORMATION

7. It is difficult to completely ascertain injury factors in this accident.

The likely sequence of events may be inferred from witness statements, the narrative summary and autopsy report.

The aircraft entered the water with a minimum of decelerative forces felt by the survivors. We know that all 3 passengers and pilot survived the immediate crash, were able to escape and surface, and that the 2 front seat passengers then disappeared under the water.

In SGT O'STEEN's case it is suspected he was not wearing his lap belt and/or shoulder harness. There is no autopsy evidence to confirm or refute this. His safety belt was wedged between the co-pilot's collective and the armored plate.

His one laceration could have been produced during the crash especially if he were not wearing a seat belt, but it is more likely that this was acquired during escape from the aircraft. We have no autopsy evidence that his head injury was significant. He may, however, have been stunned by a blow on the head, been able to escape and surface and remove his pistol and other equipment and then became unconscious or so weakened he was unable to move and was therefore carried under and downstream to drown.

In WO1 BURKHART's case it may be assumed that he survived the crash intact but dazed and was so weakened in the attempt to remove his heavy equipment and fight the current that he drowned.

There was no water crash survival equipment available on the aircraft.