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DESCRIPTION OF ACCIDENT

Brief narrative of accident. Include statement of responsibility and recommendations for action to prevent repetition)

NARRATIVE:

While taking off on an operational mission in aircraft A-26B No. 301, 2 January 1945, Lt. Clark crashed. Witnesses stated that although Lt. Clark cleared the ground and picked up his wheels, he was obviously having much difficulty holding his aircraft off the ground. A few hundred yards off the end of the runway he again hit the ground, slid along, hit a ditch which threw him a few feet into the air, and then crashed and exploded. When the aircraft exploded both crew members were killed.

Because aircraft of this Group have taken off in worse conditions of visibility, it is not felt that visibility was a contributing factor. However, the temperature of -10 degrees C, plus the existence of 100% humidity, resulted in excellent conditions for frost forming. Field conditions necessitated a long interval of time between start engines and take-off. Consequently, although aircraft were thoroughly cleaned of all frost before the engines were started, frost formed on fuselage, wings, and cockpit glass during taxiing. Because visibility from the cockpit was entirely restricted by ice, frost, and fogging, pilots reported that they could not observe frost on the wings. Pilots on the same mission with Lt. Clark reported extreme difficulty in becoming airborne. The air flow over the new laminar flow airfoil is affected more by any distortion, such as frost, than other airfoil sections. It is felt that the unpredictable rate of the forming of frost plus the extreme sensitivity of the airfoil section caused a condition which could not be anticipated from past experience. There is also a possibility that slight propeller icing resulted in decreased propeller efficiency and contributed to the difficulty of remaining airborne. There was no indication of carburetor icing or engine failure.

RESPONSIBILITY:

- Weather. Unforeseen weather phenomena conducive to frost forming caused much frost to be formed on wings, fuselage, and cockpit glass between start engines and take off time. The rapidity of the forming of frost and the extent to which any frost formation influences the airfoil characteristics of the new laminar flow wing were greater than had been anticipated from past experience.

RECOMMENDATIONS:

- At any time that both fog and under-cooling temperature exist, extreme caution should be exercised in reaching a decision as to clearance of even an operational mission. This should include careful observation of any frost formation, and is particularly applicable when aircraft with the sensitive laminar flow airfoil section are concerned.

It is also recommended that some system or equipment be devised which will insure that any frost formed during taxiing will be removed prior to the take-off run.

INCLOSURES: 5

- Incl. #1 - Statement of Witness.
- Incl. #2 - Statement of Engineering Officer.
- Incl. #3 - Statement of Crew Chief.
- Incl. #4 - Statement of Weather Officer.
- Incl. #5 - Photographs.

APPROVED:

Theodore R. Gylesworth
 THEODORE R. AYLESWORTH,
 Colonel, Air Corps,
 Commanding.

William J. Meng
 WILLIAM J. MENG, Lt. Col., Air Corps. (Investigating Officer)
Robert A. Clark
 ROBERT A. CLARK, Major, Air Corps.
Kenneth T. Roney
 KENNETH T. RONEY, Major, Air Corps.
Richard F. Shaefer
 RICHARD F. SHAEFER, Capt., Air Corps.

Date 5 January 1945

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669TH BOMBARDMENT SQUADRON (L)
Office of the Squadron Surgeon

M-8-5

APO #140, U. S. Army.
5 January 1945

S T A T E M E N T

The morning of 2 January 1945 I was on crash duty in my ambulance at the down wind end of runway 02. The driver parked the ambulance near the AA gun emplacement. This AA gun emplacement is located about two hundred (200) feet on the right side of runway 02 near its end.

After parking I noticed two (2) A-26 type airplanes, one headed East and the other West parked nose to nose just off runway. I went over to the two (2) planes to find out what was wrong. Before I was able to talk to the pilots of the two (2) planes other planes began to take off on the mission. I then walked to the North edge of the taxi strip to watch the planes take off.

Several planes had taken off and then an A 26 type craft took off, climbed about seventy five (75) feet and as it flew away from the field gradually lost altitude and approximately a mile from the field disappeared from view behind the top of a hill. Shortly after its disappearance over the hill, the sound of it crash landing was heard. The pilot of one of the airplanes on the taxi strip contacted the tower and reported the crash.

Several more planes took off and then an A 26 type plane took off, but did not gain altitude. The motors of this plane did not seem to have any power. The plane continued about seventy five (75) yards off the runway, the left wing tilted toward the ground, then the plane leveled up, struck the ground on its belly, slid approximately fifty (50) yards, bounced into the air approximately five (5) feet and then struck the ground nose first and immediately exploded.

Garland D. Murphy, Jr.
GARLAND D. MURPHY, Jr.,
Captain, Medical Corps,
Squadron Surgeon.

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RESTRICTED

Incl. 1.

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2 January 1945

S T A T E M E N T

A-26B-10 Airplane, A.A.F. Serial Number 43-22301 was in the best possible mechanical condition prior to its crash on 2 January 1945. On the pre-flight inspection, the morning of 2 January 1945, the airplane was functioning properly, and was ready for any mission. Both the wings and horizontal stabilizers were swept clean of frost, and the windshield was as clear as it was possible to wipe it.

A fifty (50) hour inspection on this airplane was completed seven (7) flying hours prior to its crash. The daily inspection was accomplished prior to its flight the morning of 2 January 1945, and no defects were found.

Charles H. Stewart
CHARLES H. STEWART,
Capt., Air Corps,
Engineering Officer.

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Encl. 2.

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2 January 1945

S T A T E M E N T

On the morning of 2 January 1945 I accomplished the pre-flight inspection and ground "run-up" of A-26B-10 Airplane, AAF Serial Number 43-22301, and to the best of my knowledge there were no malfunctions. This pre-flight inspection included a thorough check of all the instruments and controls that can possibly be checked during ground operation. The flight controls were checked for freedom of movement, and were found to be functioning properly and smoothly.

I, with the help of my crew, completed a fifty (50) hour inspection of this airplane approximately seven (7) flying hours before its crash on 2 January 1945. During this inspection, the complete airplane was checked for defects, and no major discrepancies were noted. All minor defects were corrected, and the airplane was in first class mechanical condition.

Hugo A. Gehrels

HUGO A. GEHRELS
T/Sgt., Air Corps,
Crew Chief.

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Incl. 3

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STATION WEATHER OFFICE
STATION A-55

APO 696, U.S. Army,
5 January 1945.

SUBJECT: Weather Report - Aircraft Accident Investigation.

TO : Director of Weather, Headquarters, Ninth Air Force,
APO 696, U.S. Army.

THRU: Staff Weather Officer, Headquarters,
IX Bombardment Division (M), APO 140, U.S. Army.

1. Three A-26's of the 416th Bomb Group (L), crashed during a mission take-off from Station A-55 between 0843 and 0907 hours, 2 January 1945. A complete investigation was made by the Station Weather Officer.

2. The synoptic weather situation was a ridge of high pressure from the Atlantic extending over all bases, targets and England. A weak warm front at 0700 hours was located through central Denmark, Manston, Cherbourg and Brest and was moving south-eastward at 15-18 mph. Weak warm frontal conditions were expected to move into the local area during the late afternoon.

3. Nil clouds had been present and visibilities had been 2 to 3 miles during the night. Visibilities during the morning were expected to be generally 1-2 miles except 1000-2000 yards in scattered light fog patches.

4. The local weather recorded at this station was as follows:

	0600	0700	0800	0900	1000
Visibility	2 miles	2 miles	2 miles	550-1100 yards	100-250 yards
Temp/D.P.	21/21	19/19	20/20	20/20	23/23
Sfc. Winds	Calm	Calm	350°/1-3	280°/1-3	Calm
Clouds	None	None	None	1/10 Medium abv 10,000 feet.	3-4/10 Medium abv 10,000 ft.

The two other group stations within this wing had visibilities of 2-3 miles all morning and no fog patches, but visibilities at A-55 were restricted by fog patches and haze throughout the morning.

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Ltr. subj: Weather Report - Aircraft Accident Investigation;
datd 5 Jan 45, cont'd

5. Engineering Officers stated that "Kill-Frost" had been used on all planes prior to engine starting time to remove the heavy frost which had accumulated on the planes during the night. The planes began to taxi out at 0754 hours and heavy fog patches, base 15 feet, tops 75-100 feet, seemed to roll in from the southwest at 0805 hours, giving visibilities estimated to be 150-200 yards. Windshields frosted over rapidly and planes had difficulty in taxiing into position. Pilots did not mention ice formation upon wings to Operations or Weather personnel because windshield frost and fogginess prevented its detection.

6. Visibility was at its poorest (150-200 yards) when the first two ships successfully took off at 0824. After a very slight delay, visibility improved to 800-1200 yards and the other planes continued to take off. Three of the planes crashed at the end of the runway on take-off; one exploding immediately and one exploding a little later.

7. The Aircraft Accident Committee held an extensive meeting and detailed discussion of the accident on the afternoons of 2 January and 4 January 1945. Besides the usual members, pilots and gunners of two of the planes that crashed, plus pilots of some of the planes that had taken off on the mission, as well as technical representatives were present.

8. All pilots agreed that their planes felt heavy and extremely sluggish at take-off. It was only with difficulty that most of them got the planes into the air. The planes simply would not take off with the normal take-off speed and most of the runway was needed to get them into the air. Only one pilot noticed his manifold pressure drop and that was due to complete power failure of one engine. This indicates possible carburetor icing in this one case.

9. Due to frost on the windshields, most of the pilots followed instrument take-off procedures and therefore outside visibility was not considered as a hazard to their take-off. All pilots that crashed had kept his windshield clear by use of a heater and even though he got his plane into the air, he had to put it down on the end of the runway because he felt that it just wasn't going to fly.

10. Temperature and dew point were both at twenty (20) degrees fahrenheit during the period of time under consideration. Winds were very light and nil clouds were present. Undoubtedly, super-cooled water droplets were present under such conditions.

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As the planes warmed their engines, slight air disturbances and dust particles could easily have caused these super-cooled droplets to form fog, ice and/or frost. This was noticed in that the patchy fog (base 15 feet, tops 75-100 feet) swept across the field and also that several planes which had not taken off because of the frost on the windshield were later found to have a coating of ice on the wings and propellers.

11. Tech Inspectors stated that the shape of an A-26 wing made it possible that a slight amount of frost or ice would greatly affect the air flow and aerodynamic qualities of the wing. A-20's were not so greatly affected. No mention of frost or ice by the pilots was made prior to take-off mainly because windshield frosting prevented any detection of possible icing on wings and propellers. Carburetor icing was considered but generally eliminated because all pilots, except the one with one engine failure, considered motor performance normal.

12. The Committee, after hearing all of the evidence, believed that visibility was not a main factor in the accidents. Icing and frost upon wings and propellers was felt to have been the main cause of the accidents. The frost and ice must have accumulated during the interval from "Kill-Frost" time at hard-stand to take-off time. This interval varied from 1 to 2½ hours.

13. It previously had not been suspected that rapid enough accumulation of ice or frost could be picked up during this interval to greatly hinder the planes in taking off. Undoubtedly under this unusual case, sufficient icing was accumulated upon wings and propellers during this interval and greatly hindered the planes taking off. The possibility of the planes getting into the air in spite of the icing, providing the pilots had visibility through windshields and had not been taking off on instruments, was also discussed.

14. In the future, all planes will receive a complete check at the apron of the runway prior to take-off when weather conditions are conducive to icing. It was also anticipated that windshield heaters be installed in each plane.

15. An additional and unusual weather condition was observed after the time of the accidents when several officers noticed very fine ice flakes floating earthward from a clear sky at approximately 1000 hours. Concussion or impact caused by the explosions prior to this time was given as a possible explanation for the precipitating or settling out of these ice particles.

A TRUE COPY

Richard F. Shaefer
RICHARD F. SHAEFER,
Capt., Air Corps.

/s/ Henry W. Chidley
/t/ HENRY W. CHIDLEY
Capt., Air Corps
Station Weather Officer

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(GAO-41-9-416) (27 Jan 44) (A-26-CRASH)

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April 5.

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H E A D Q U A R T E R S
416TH BOMBARDMENT GROUP (L)
Office of the Commanding Officer

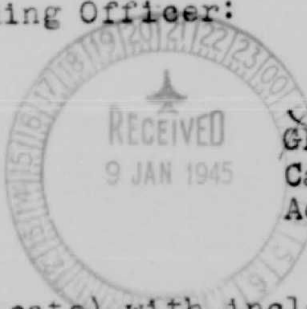
APO 140, U.S. Army.
7 January 1945.

SUBJECT: Transmittal of AAF Form 14.

TO : Commanding General, 9th Bombardment Division (M),
APO 140, U.S. Army.

Transmitted herewith is AAF Form 14 (in quadruplicate) with inclosures covering accident of Lt. Hiram B. Clark in aircraft A-26B-10 ACSN 43-22301 on 2 January 1945.

For the Commanding Officer:



George Schenkein
GEORGE SCHENKEIN,
Captain, Air Corps,
Adjutant.

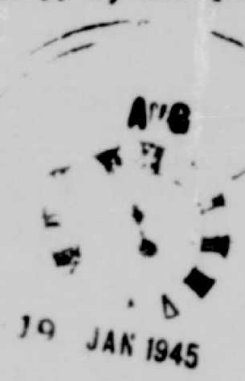
Incl: 1
AAF Form 14 (in quadruplicate) with inclosures.

360.33 1st Ind. E-Q-14
HEADQUARTERS 9TH BOMBARDMENT DIVISION (M), APO 140, U. S. Army, 13 January 1945.

TO: Commanding General, Ninth Air Force, APO 696, U. S. Army.

Submitted in compliance with Memorandum 55-1, Headquarters Ninth Air Force, dated 27 November 1944.

For the Commanding General:



S. L. Parmenter
S. L. PARMENTER,
CAPTAIN, A.C.
ASS'T ADJ. GEN.

1 Incl: n/c (1 cy w/d)

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2nd Ind.

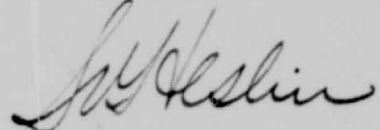
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HEADQUARTERS NINTH AIR FORCE, APO 696, US Army, 6 February 1945.

TO: Chief, Flying Safety, Army Air Forces, Winston-Salem 1, North Carolina.

Report and recommendation of Aircraft Accident Committee approved.

For the Commanding General:



S.V. HESLIN,
Major, A.G.D.,
Asst Adj. Gen.

1 Incl: n/c (2 cys w/d)

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NAME OF PILOT

CLARK, Hiram B.

CHARGED TO:

M.V.

Capt. Pauli

OUT

3-19

IN

17

TYPE OF PLANE

A-26B 43-22301

CHARGED TO:

OUT

IN

ACCIDENT NUMBER

45-1-2-529

CHARGED TO:

OUT

IN

Accident No. 45-2-579

Date

Checked by

Y.M.

3-6-15

Analyzed by

S.S.S.

3/7

Copied for Wright

Field by

Notes

Captain Bach

6 Apr 45 481

3589:10-44 FS

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GENERAL SERVICES ADMINISTRATION
NATIONAL ARCHIVES AND RECORDS SERVICES
WORLD WAR II RECORDS DIVISION

AIRCRAFT ACCIDENT AND
INCIDENT REPORTS

1941 THRU 1948

(Filed by Fiscal Year - Beginning 1 January 1941)

DECLASSIFIED

DOD DIR. 5200-9, Sept. 27, 1958

AWD by *[Signature]* date *May 6, 1960*

MICROFILMED BY

SECURITY AND SERVICES BRANCH

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GENERAL SERVICES ADMINISTRATION

MICROPHOTOGRAPHER'S REPORT

1. RECORDS OF (Name of agency and sub-division)	2. BRIEF TITLE OF RECORDS
	3. FILM SERIES OR JOB NO. D482-1
	4. REEL NO. 409

5. STARTS WITH
45-12-31-5

6. INTERMEDIATE POINTS	FLASH 45-1-1-1
	2
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	4
	5
	6

7. ENDS WITH
45-1-3-14

8. STARTED	9. FINISHED	10. TOTAL HOURS	11. TOTAL IMAGES
DATE 6-29-60	HOUR 4 ⁰⁰ DATE 6-30-60	HOUR 2 ⁰⁰	2414

12. PHOTOGRAPHED BY (Signature of camera operator)
Pauline R. Zehring

13. REPORT APPROVED BY (Signature of supervisor and date)