AFEHRI File 19-10

Research Materials/Source Documents
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FILE TITLE: First Sergeant Lawrence Lambert: 1st Person to Eject from an Aircraft Using an Ejection Seat

Reviewed by:

AFEHRI Representative _____ **date** 1 AUG 97

EPC Representative _____ **date** 7 Jan 98

Scanner Operator _____ **date** 7 Jan 98

APPROVED BY: _____
GARY R. AKIN, CMSgt, USAF
Director
Air Force Enlisted Heritage Research Institute

1st Sgt. Lawrence Lambert: 1st American to Eject from a ~~Super~~Sub sonic aircraft

On 17 August 1946, a 29 year old Army Air Force Sergeant became the first human in the United States to be shot out of a high speeding aircraft with the aid of the newly developed pilot ejection seat.

Flying in a P-61 at a speed of more than 300 miles per hour and at an al- altitude of 6,000 ft., First Sergeant Lawrence Lambert, Berkeley, West Va., while flying onver Patterson Field, Dayton, Ohio, squeezed the handle that started a series of automatic events which catapulted him from the plane, sep- parated him from his seat in mid-air, and then caused the parachute to open automatically permitting him to land safely on the ground.

Stationed at Wright Field's Air Materiel Command Parachute Brance, Per- sonal Equipment Laboratory since April 1946, Lambert has been in the Army Air Force 11 years. He had 9 years experience in parachute jumping. This jump was his 59th. He served in the Asiatic-Pacific Theatre during the war.

Lambert was thrown approximately 40 feet in the air at a speed of nearly 40 miles an hour for that distance. The purpose of this and future experi- ments by Air Materiel Command's various laboratories are to develop the safest and most satisfactory aircraft of the future.

The ejection seat is necessary for the pilots to escape from the disabled plane without danger, to him, of being crushed against the tail of the air- craft by the terrific rush of air. Sergeant Lambert cleared the tail fin of the P-61 with about 20 feet to spare in his jump.

When Lambert squeezed the trigger of the seat as he passed over Patterson Field, he caused the ejector seat to be actuated, which threw him and the seat clear of the P-61's fuselage. Three seconds later an automatic small explo- sion took place releasing him from the seat, he was permitted to free fall for another three seconds before the last action in the chain of automatic events took place.

This was the automatic opening of his parachute by the Quilter Timer Par- achute Opener. The Quilter Timer, another development by A.M.C.'s various ex- perimental laboratories is pre-set to be actuated three seconds after the seat is released from the pilot. The Timer is actuated by a rip cord which is at- tached to the seat. As the pilot and seat separates, the cord is pulled. Three seconds later the Timer activates the cartridge which automatically opens the parachute.

The ejector seat shoots a pilot straight up at a speed of approximately 60 feet per second. Though this is only about 40 miles per hour, the speed must be reach almost instantly, and this entails a rapid acceleration and thus a terrific strain. The acceleration increases a man's weight momentari- ly. A 200-pound man might weigh nearly two tons at the acceleration used by the ejector.

The pilot is shot out of the aircraft while seated in his cockpit chair, and his seat goes with him. The gun is hooked to the seat back by a long tube which fills the gun barrel like a projectile. To insure inform acceleration, since the cartidges are designed for a weight of 300 pounds, the seats are

weighted, if necessary, so that man and seat together always weigh 300 pounds.

While in the act of firing a 37mm cartridge, the gun stretches, like a telescope. Because of limited space in the cockpit, the gun barrel is only 38 inches long, and the telescopic barrel allows the force of the powder explosion to be less and still obtain enough distgance for the polot to clear the plane.

As soon as the pilot and chair are in mid-air, another small cartridge is exploded by a time mechanism, causing the strap holding the pilot in his chair to be released, and a small parachute attached to the seat opens to pull the seat free of the pilot. As the seat separates, the rip cord attached to the Quilter Opener is pulled. This in turn fires a cartridge releasing the parachute automatically.

The automatic life saving chain of devices, the ejector seat, and the Quilter Timer Parachute Opener, both were developed by Air Material Command engineers of the Aircraft Aero Medical and Personal Equipment Laboratories in conjunction with the Frankfort Arsenal at Philadelphia, Pa.

THE P-61 WAS THE FIRST SPECIFICALLY DESIGNED NIGHT FIGHTER OF THE US AIRCRAFT INDUSTRY. THE FIRST PROTOTYPE FLEW ON 21 MAY 1942, BUT FULL SCALE PRODUCTION WAS DELAYED BY PROBLEMS WITH THE DESIGN OF THE AIRBORNE RADAR. IT FINALLY WENT INTO PRODUCTION IN 1944 AND A TOTAL OF ALMOST 700 WERE BUILT BY THE END OF WW II. IT REMAINED IN SERVICE UNTIL REPLACED BY JET AIRCRAFT IN 1952.

THE P-61 CREW SAT IN TANDEM WITH THE PILOT FORWARD AND THE GUNNER IMMEDIATELY BEHIND HIM IN THE RAISED COCKPIT. THE RADAR OPERATOR WAS IN THE REAR POSITION. THE TOP TURRET COULD BE OPERATED REMOTELY BY ALL CREW MEMBERS, BUT THE GUNNER USUALLY OPERATED THE FOUR .50S FOR VISUAL CONTACTS.

GUNNERS ON AAF NIGHT FIGHTERS ARE THE ONLY GUNNERS OFFICIALLY CREDITED WITH AERIAL VICTORIES IN WW II AS EACH CREW MEMBER RECEIVED CREDIT FOR DOWNING AN ENEMY AIRCRAFT. THE HIGHEST SCORING GUNNER ACCORDING TO OFFICIAL RECORDS WAS SSGT EMIL K. WEISHAR, 421ST NIGHT FIGHTER SQUADRON IN THE SOUTHWEST PACIFIC THEATER OF OPERATIONS.

ON 17 AUGUST 1946, ARMY AIR FORCES FIRST SERGEANT LAWRENCE LAMBERT WON THE DISTINGUISHED FLYING CROSS WHEN HE BECAME THE FIRST HUMAN IN THE UNITED STATES TO EJECT FROM THE P-61 AIRCRAFT USING THE NEWLY DEVELOPED PILOT EJECTION SEAT. LAMBERT WAS SHOT OUT OF THE AIRCRAFT BY A 37MM CARTRIDGE AND EXPERIENCED 12 TO 14 G'S AS HE CLEARED THE TAIL FIN BY ABOUT 20 FEET. HIS ACTIONS HELPED SOLVE ONE OF THE MOST ACUTE PROBLEMS IN THE AAF, THE ESCAPE OF PERSONNEL FROM HIGH SPEED AIRCRAFT.

SERGEANT LAMBERT'S CITATION READS:

> HIS COURAGEOUS ACTION IN THE FACT (SIC) OF UNKNOWN FACTORS THAT MIGHT HAVE CAUSED SERIOUS INJURY OR LOSS OF

LIFE, HAS CONTRIBUTED IMMEASURABLY TO AERONAUTICAL AND MEDICAL KNOWLEDGE OF THE EJECTION METHOD OF ESCAPE FROM HIGH SPEED AIRCRAFT.

Awarded & presented Apr 9, 1947

Mrs Herron's File
Please return to Mrs Herron
TSPRO-5- Bldg 262
Post 201 S.

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File Hrs
16-C-9
X16-D-6

TSPRO-5B/MJH/dk

29 August 1946

M I
Lambert, Lawrence

SUBJECT: Recommendation for the Award of the Distinguished Flying Cross to First Sgt. Lawrence Lambert

TO: Commanding General
Air Materiel Command
Thru: Decorations and Awards Unit
Personnel and Training Division

1. The award of the Distinguished Flying Cross is recommended in accordance with AR 600-45, 22 September 1943, to First Sergeant Lawrence Lambert for extraordinary achievement in aerial flight.

2. In accordance with A.A.F. Regulation 35-7, 17 July 1946, paragraph 2, the following information is submitted:

(a) First Sergeant Lawrence Lambert, Air Corps, 6653991, is a member of the Parachute Branch, Personal Equipment Laboratory, Engineering Division, Hqs. Air Materiel Command. His duties in the Parachute Branch are two-fold; Instructor of Air Crew Synthetic Trainer and Jumper in live testing of parachutes. Home address: 24 Bell Street, Dayton, Ohio. He belongs to the regular Army and separation from the service is not anticipated. He entered the Army from West Virginia and has served with the AAF for 11 years.

(b) He has been assigned to his present duty since 6 April 1946. His efficiency rating is Superior. His services subsequent to the date upon which the action took place for which he was recommended have been honorable.

(c) No other individuals are or will be recommended for participation in the same act.

(d) No previous awards. No other awards pending.

3. Narrative Statement. — (a) A pilot's ejection seat developed for the escape in emergency of pilots from very high speed aircraft had been tested with dummies to the stage where it was considered that knowledge involving human reactions and effects was essential. First

Sergeant Lambert, with full knowledge of the equipment and of the fact that the tests conducted with dummies indicated that severe charges might be induced against the body by violent tumbling action, that there was definite possibility of failure of explosive charges or danger of malfunctioning of any one of several complicated automatic devices, unhesitatingly volunteered to be the human subject for the test. He also subjected himself to the necessary and difficult indoctrination tests, required prior to the test. Fully cognisant that the operation might result in serious physical injury or loss of life, Sergeant Lambert prepared for the test unflinchingly.

(b) To understand this test some knowledge of the equipment is essential. The cockpit seat, containing the pilot, is actually shot out of the aircraft. The gun is hooked to the seat back by a long tube which fills the gun barrel like a projectile. The gun, which is activated by the pilot pressing a trigger, is fired by a 37 mm. cartridge providing sufficient force to shoot the seat containing the pilot 40 feet in the air. Though the speed of ascent is only 40 miles per hour, this speed is reached almost instantly, entailing terrific acceleration and body strain. Three seconds after the explosion, an automatic timing mechanism releases a harness which holds the pilot in his seat and also acts to pull the seat away from the pilot, allowing him to fall free in the air. As the seat separates, a third automatic device is actuated, and three seconds later opens the parachute. It is estimated that the acceleration of the ejection into the air so increases bodily weight that a 200 pound person would momentarily weigh approximately two tons. Thus the body is exposed to from 12 to 14 G's.

(c) The test was conducted 17 August 1946 at 1202 hours over Patterson Field, Ohio. A P-61 airplane was used, the ejection being accomplished at an altitude of 6000 feet. The automatic mechanisms operated successfully. Sergeant Lambert cleared the tail fin of the airplane by about 20 feet.

(d) Sergeant Lambert's courageous acceptance of this responsibility and successful demonstration of the highly experimental equipment has helped to solve one of the most acute problems faced by the Army Air Forces—the escape of personnel from the high speed aircraft in present operation and aircraft of higher speeds to come. His achievement has immeasurably advanced aerodynamic and medical knowledge and will make possible improved methods of escape heretofore unknown. His accomplishment exemplifies the best tradition of the Army Air Forces.

4. As an eye witness of the test herein described, I certify to the accuracy and veracity of the account.

C. K. MOORE
Colonel, Air Corps
Chief, Aircraft Laboratory
Aircraft & Physical
Requirements Subdivision
Engineering Division

CITATION

First Sergeant Lawrence Lambert, Air Corps, 6653991, for extraordinary achievement in aerial flight as a volunteer for the test of human ejection from a high speed aircraft, 17 August 1946. His courageous action in the fact of unknown factors that might have caused serious injury or loss of life, has contributed immeasurably to aeronautical and medical knowledge of the ejection method of escape from high speed aircraft.

From Public Relations Office
Air Materiel Command
Wright Field, Dayton, Ohio

For Immediate Release

14/
Lambert,
Lawrence

WRIGHT FIELD, OHIO - A 29-year old Army Air Force Sergeant today became the first human in the United States to be shot out of a high speeding aircraft with the aid of the newly developed Pilot Ejection Seat, Air Materiel Command officials disclosed.

Flying in a P-61 at a speed of more than 300 miles per hour and at an altitude of 6,000 ft., First Sergeant Lawrence Lambert, Berkeley, West Va., while flying over Patterson Field, Dayton, Ohio, squeezed the handle that started a series of automatic events which catapulted him from the plane, separated him from his seat in mid-air, and then caused the parachute to open automatically permitting him to land safely on the ground.

Stationed at Wright Field's Air Materiel Command Parachute Branch, Personal Equipment Laboratory since last April 1946, Lambert has been in the Army Air Forces 11 years. He has had 9 years experience in parachute jumping. This jump today was his 59th. He served in the Asiatic-Pacific Theatre during the war. Lambert's stand-by for the jump was Col. Harry J. Berickheimer, Athens, Wisconsin.

The pilot for the plane from which Lambert was shot was Capt. J. W. McGuyrt, Canton, Ohio.

Lambert was thrown approximately 40 ft. in the air at a speed of nearly 40 miles an hour for that distance. The purpose of this and future experiments by Air Materiel Command's various laboratories are to develop the safest and most satisfactory Ejection Seat for pilots who will be flying the super-sonic speeding aircraft of the future.

The Ejector Seat is necessary for the pilots to escape from the disabled plane without danger, to him, of being crushed against the tail of the aircraft

by the terrific rush of air.

Sergeant Lambert cleared the tail fin of the P-61 with about 20 feet to spare in his jump today.

When Lambert squeezed the trigger (1) for the seat as he passed over Patterson Field, he caused the Ejector Seat to be actuated, which threw him and the seat clear of the P-61's fuselage. Three seconds later an automatic (2) small explosion took place releasing him from the seat while in mid-air. After his release from the seat, he was permitted to free fall for another three seconds before the last action in the chain of automatic events took place.

This was the automatic (3) opening of his parachute by the Quilter Timer Parachute Opener. The Quilter Timer, another development by A.M.C.'s various experimental laboratories is pre-set to be actuated three seconds after the seat is released from the pilot. The Timer is actuated by a rip cord which is attached to the seat. As the pilot and seat separates, the cord is pulled. Three seconds later (3) the Timer activates the cartridge which automatically opens the parachute.

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300 pounds.

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