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FLIGHT SECTION MEMORANDUM  
 REPORT SERIAL NO. NG-TSEFL-1803-A  
 11 September 1944

C-47B/per/1

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 WASHINGTON, DC 20560

PERFORMANCE FLIGHT TEST ON THE DOUGLAS  
 C-47B AIRPLANE, AAF NO. 43-16133

JUL -3 1984

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 Technical Services Division  
 Reference Branch  
 Wright-Patterson Air Force Base, O.

Prepared by JAMES L. RUST, JR., 2nd Lt. A. C.  
Engineer, Flight Test Engr. Branch

and by JACK W. WILLIAMS, Captain, A. C.  
Test Pilot, Training & Transport Test

Approved by MARK E. BRADLEY, JR., Colonel, A.C.  
Chief, Flight Section

Classification cancelled.

Auth: Par. 42, AFR 205-1, 3 Jan 56

By H. Biese

Date 3 Dec 57

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Flight Test Engineering Branch  
Memo Report No. Eng-TSEFL-1803-A  
11 September 1944

PERFORMANCE FLIGHT TEST ON THE DOUGLAS  
C-47B AIRPLANE, AAF NO. 43-16133

I. Introduction

Flight tests were conducted at Wright Field on the Douglas C-47B airplane, AAF No. 43-16133 at the request of 2nd Lt. H. Earinghaus, Project Engineer, Training and Transport Branch, Production Engineering Section in order to obtain performance value of this model of the C-47 type, equipped with a two-speed engine blower as compared to other model C-47 airplanes equipped with single speed blowers. All performance data was obtained at a take-off gross weight of 26,000 pounds. Approximately 26 hours were flown on this airplane during the period from 15 July 1944 to 17 August 1944 by Captain J. W. Williams as pilot and Lts. J. L. Rust Jr. and T. G. Morris Jr. as observers.

The AAF C-47B airplane, Douglas Model 467, is a low wing twin engine cargo-transport airplane. The chief modification between the C-47B and other models of the C-47 type airplane is the installation of R-1830-90c engines equipped with a two speed blower. There is no change in basic structural design. The airplane is designed chiefly as a cargo carrier with a gross weight of 26,000 pounds, but under alternate conditions it may be flown as a troop carrier or air ambulance with a gross weight of 29,000 pounds.

The normal crew complement for the airplane is three; a pilot, co-pilot, and radio operator. No provision is made for sleeping quarters for any members of the crew.

At the time these flight tests were conducted, no report on manufacturer's flight tests was available, and no performance guarantees have been listed in the airplane specification, Douglas Report No. 467, dated 1 April 1944. All power data was obtained with the use of torque meters.

II. Summary

A. The flight characteristics of the airplane are excellent for an airplane of this type. Stability is good about all axes, and there is sufficient trim to balance the airplane for all conditions of flight. The controls are effective, and the control forces are satisfactory for all speeds. Ground handling characteristics are good, but the pilot must take special care when landing or taxiing in a strong crosswind as the airplane has a tendency to "weather-cock" under this condition. Cockpit vision is good for all conditions. The service and absolute ceilings are increased considerably higher than those of other models of the C-47 airplane not having a two speed blower.

B. The principal airplane performance corrected to a standard weight at altitude (take-off gross weight less the weight of fuel used in normal rated climb to that altitude) is as follows:

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|                                                                                              |              |
|----------------------------------------------------------------------------------------------|--------------|
| High speed at sea level (normal rated power)                                                 | 203.0 MPH    |
| High speed in low blower at 7600 feet<br>(Critical altitude for normal rated power)          | 226.0 MPH    |
| High speed in high blower at 13,600 feet<br>(Critical altitude for normal rated power)       | 230.0 MPH    |
| Rate of climb at sea level<br>(Normal rated power)                                           | 1020 ft/min. |
| Service ceiling (normal rated power)                                                         | 26,900 ft.   |
| Absolute ceiling (normal rated power)                                                        | 28,600 ft.   |
| Single engine absolute ceiling<br>(Normal rated power)                                       | 13,600 ft.   |
| Take-off over 50 feet obstacle at 20,000 pounds<br>using 1/4 wing flaps (average two trials) | 1,800 ft.    |

### III. Condition of Aircraft Relative to Tests

A. The airplane was flown for all flights at a take-off gross weight of 20,000 pounds with the c.g. located at 19 percent of the M.A.C., wheels down. The weight of the airplane with full load of gas and oil was 23,322 pounds. In computing the final c.g. location, 600 pounds were allowed for the pilot, co-pilot, and engineer, and 2,078 pounds of ballast was loaded in compartment "F" of the airplane. This method of loading placed the final c.g. location at 19 percent of the M.A.C., wheels down. Limit of c.g. travel is from 11 percent to 28 percent M.A.C. Apparent c.g. location in flight with wheels up was 18.2 percent M.A.C.

B. The C-47B airplane is not fitted with any exterior guns or armament. The airplane's only means of defense is by small arms fire through a three inch diameter gun port in each of the 13 windows in the cargo compartment. These ports are equipped with removable transparent plugs which remain in place when the ports are not in use.

The transmitting and receiving radio antenna is attached to the leading edge of the vertical fin and the top of the fuselage. The directional radio antenna was attached under the bottom of the fuselage just below the cockpit and radio compartment.

The main landing gear units retract into the engine nacelles, but the lower part of the wheels project from the housing. The tail wheel does not retract. The oil coolers were attached below the engine nacelles.

C. The airplane was unpainted with the exception of a small area of fuselage immediately in front of the windshield. This area was painted with a non-glare paint. The airplane was equipped with rubber de-icer boots on the leading edge of the wing, stabilizer, and vertical fin.

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D. The airplane was equipped with two Pratt and Whitney R-1830-90c engines with a low blower ratio of 7.15:1 and a high blower ratio of 8.47:1. The engines were equipped with Stromberg pressure type PD-12F carburetors and exhaust system was composed of a collector ring and tail pipe for each engine. Two Hamilton standard 3-bladed, full feathering propellers, 11 feet 7 inches diameter, were installed on the airplane for all tests.

A calibrated Pioneer dual type flowmeter was used to measure fuel flow and all power readings were obtained with the use of torque meters. The tail cone was removed from the airplane for all flights. Unless otherwise stated, all flights were made with wing flaps neutral, gear up, oil cooler shutters wide-open, carburetor cold, and 100 octane fuel.

#### IV. Flight Characteristics

##### A. Taxiing and Ground Handling.

The taxiing and ground handling characteristics of the C-47B are good. The airplane can be taxied by using the throttles and brakes. There is a tendency for the airplane to "weather cock" when taxiing in a crosswind, but this tendency can be corrected easily by using the throttles and brakes. Vision from the cockpit is satisfactory for all ground handling and the brakes are easily applied for any rudder position.

##### B. Take-off.

The flight characteristics on take-off and initial climb are good. The ground roll is short, the initial climb is moderate, and the vision is good. There is very little propeller torque effect on take-off and the rudder becomes effective at a slow ground speed making the airplane easily controlled during take-off. The airplane handles satisfactorily during crosswind take-offs, but special care must be taken to correct for "drift".

##### C. Stability.

The airplane has good stability for all conditions of flight at this c.g. and loading condition. It is statically and dynamically stable longitudinally and directionally, and it is neutrally stable laterally. Lowering the landing gear and flaps, or opening the cowl flaps has no detrimental effect on the stability of the airplane.

##### D. Trim and Balance.

The airplane has sufficient trim adjustment to trim the airplane for all normal flight conditions. There is sufficient trim for single engine operation. Lowering of the landing gear and flaps, and opening of the cowl flaps cause a change in trim, but balance is easy to maintain.

##### E. Controllability.

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The C-47B airplane is comparable to the C-47A airplane for controllability. It has good control throughout the entire speed range. Control forces become heavier at higher speeds but the controllability is still good. Controllability is good on take-off and landing.

#### F. Maneuverability.

The C-47B, like the C-47A, is very maneuverable for an airplane of its class. However, it has limited maneuverability as it is restricted against aerobatics.

#### G. Stalling Characteristics.

With wheels up, flaps up, and power off, the airplane stalls at 73 MPH indicated airspeed. With wheels down, flaps full down, and power off, the airplane stalls at 63 MPH indicated airspeed. During power off stalls the airplane has good stalling characteristics. It has a straight ahead stall with no tendency to fall off on either wing, and there is a buffeting of the entire airplane to give sufficient warning of the approaching stall. With wheels up, flaps up, and 34.0 inches Hg. manifold pressure and 2550 RPM the airplane stalled at 62 MPH indicated airspeed at 8500 feet pressure altitude. The airplane drops off on the left wing in a power on stall but it can be straightened out by using the rudder and elevators.

#### H. Spinning Characteristics.

The C-47B airplane is restricted against intentional spinning. There is no tendency for the airplane to spin with abrupt use of the controls.

#### I. Diving Characteristics.

The C-47B airplane is restricted to a maximum indicated diving speed of 255 MPH. At this indicated airspeed the control forces are heavy but the airplane responds well to all movements of the controls.

#### J. Operation on Reduced Number of Engines.

The C-47B airplane handles well on single engine operation. As mentioned in paragraph D, there is sufficient trim to balance the airplane for single engine operation. The addition of the two speed blower improves the single engine performance and increases the former C-47 single engine ceiling.

#### K. High Altitude Trials.

The C-47B airplane was flown at 26,000 feet pressure altitude at an outside air temperature of  $-31^{\circ}\text{C}$ . At this altitude and temperature, the airplane handled satisfactorily. There was no tendency for the controls to "freeze" or become hard to operate. Slight frosting occurred on the windows but this was easily eliminated with the application of heat. The cabin heaters operated satisfactory. There was some smoke in the cockpit and navigators compartment caused by the heaters.

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but it was not of such quantity as to cause any of the crew members any discomfort or inconvenience. There was no opportunity to test the de-icing equipment.

L. Approaches and Landing.

The flight characteristics on the approach and landing are good. With wheels down and flaps down, at approach speeds and landing speeds, the airplane has good controllability and the control forces are light. There is no buffeting of the controls on airplane with the wheels and flaps down. For power off approaches the angle of glide is steep, but the vision is good on the approach and landing. The landing qualities are satisfactory, but special care must be taken for cross-wind landings because the airplane has a strong tendency to "weather-cock" into the wind. The pilot must be on the alert to correct this tendency and keep the airplane straight after landing. The airplane has a short ground roll after landing.

M. Night Flight.

No night flights were made on this airplane but lighting and night flying facilities are the same as in other models of the C-47 airplane.

N. Noise and Vibration Level Tests at Crew Stations.

Noise and vibration is not excessive in any part of the airplane. The noise level in the cabin is low and the vibration is slight. The navigation and radio compartment has the highest noise and vibration level, but in no case is it excessive. The cockpit has a comparative low level of noise for an airplane of its class.

O. Pilot's Report on Vision and Cockpit Layout.

The vision is good for all ground handling and flight conditions, except in steep turns. In a steep turn the pilot's visibility is limited by the narrow windshield and side windows. The cockpit layout is satisfactory. However, the control column is continually interfering with the operation of the pilots left leg, and the "bend" in the control column should be raised to allow pilots with long legs to have freer leg movement.

The landing gear control handle is located so low that it requires considerable effort on the part of either the pilot or the co-pilot to lower the handle to the "full down" position.

P. Crew Report on Individual Stations.

The cabin arrangement for carrying cargo, troops, or stretcher cases is satisfactory. There is ample room in the navigation and radio compartment for the equipment and movement of crew members. The stool for working at the navigation table is rigidly fastened to the floor and it is located in an inconvenient position for working at the table.

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Q. Emergency Systems.

1. Hydraulic System.

The location and operation of the emergency hydraulic system is satisfactory. It is sufficient for the extension of wheels and flaps in case of failure of the engine hydraulic pumps. It is easy to operate and easily understood.

2. Emergency Brakes.

There is no emergency on the braking system. However, should the normal hydraulic system fail, pressure can be built up in the accumulator by using the hand pump.

3. Vacuum.

Both engines are equipped with a vacuum pump. Should either engine fail, the vacuum pump on the other engine will supply the necessary suction.

4. Fuel System.

The fuel system is so designed that both engines can feed out of any one tank in any two separate tanks. Each engine is equipped with an electric boost pump which is used for starting, take-off, and landing, and for emergencies.

5. Electrical System.

Each engine is equipped with a generator. One generator is capable of operating the electrical system in the event of one engine or generator failure.

6. Fire Extinguishers.

A lux CO<sub>2</sub> pressure fire extinguisher system is installed in the airplane for extinguishing fires in either engines. The CO<sub>2</sub> bottle contains 7 1/4 pounds of CO<sub>2</sub> and is located back of the co-pilot's seat. The release handle and selector valve is located under the cockpit floor and may be reached quickly from the pilot's or co-pilot's seat by raising a small floor cover.

Two Pyrene hand fire extinguishers are installed in the airplane. One is located in the pilot's compartment and the other is located on the inside of the main cargo door.

R. Emergency Exits.

In flight all crew members must make emergency exits by moving to rear of the cabin and leave by way of the parachute exit. A hatch in the top of the pilots compartment and a baggage entrance immediately back of the pilots compartment may be used as an exit only when the airplane is on the ground. All passengers would be forced to exit through the parachute exit.

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S. General Functioning.

The airplane and all of its equipment functioned very satisfactorily during all flight tests. Only minor repairs and maintenance were required during the time of these tests.

V. Shipboard Tests

Not applicable.

VI. Performance Data

A. Airspeed calibration. (See Figure 1.)

B. Free air thermometer calibration. (See Figure 2.)

C. Altimeter position correction.

The altimeter position correction was calculated from the airspeed position error as follows: 
$$\frac{\Delta H(\text{Ft.})}{14.5} = \text{IAS}(\text{MPH}) \times \text{Pos. Error}(\text{MPH})$$

D. Maximum Speed vs. Altitude.

The following high speeds were obtained with the engines operating at normal rated power: 2550 RPM, mixture auto-rich; carburetor ram "on"; carburetor heat cold; cowl flaps closed; oil coolers wide open; gear and flaps up.

|                                                                                                                                      |           |
|--------------------------------------------------------------------------------------------------------------------------------------|-----------|
| High speed at sea level with 970 BHP/Engine                                                                                          | 203.0 MPH |
| High speed at low blower critical altitude (7600 ft)<br>for 41.0 inches Hg. manifold pressure and 2550 RPM<br>with 1050 BHP/Engine   | 226.0 MPH |
| High speed at high blower critical altitude (13,600 ft)<br>for 40.0 inches Hg. manifold pressure and 2550 RPM<br>with 930 BHP/Engine | 230.0 MPH |

Complete data on maximum speed vs. altitude, corrected to standard conditions, is shown on Figure 4, Page 16.

Original data, corrected for instrument error only, is given in Appendix A, Table I, Page 1.

E. Climb Data.

The following climb data was obtained with both engines operating at normal rated power: 2550 RPM; mixture auto-rich; carburetor ram "on"; carburetor heat cold; cowl flaps set wide open; oil coolers wide open; gear and flaps up; take-off gross weight of 26,000 pounds.

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|                                                                                                                                          |              |
|------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Rate of climb at sea level with 950 BHP/Engine                                                                                           | 1020 ft/min. |
| Rate of climb at low blower critical altitude (6800 ft)<br>for 41.0 inches Hg. manifold pressure and 2550 RPM, with<br>1005 BHP/Engine   | 1060 ft/min. |
| Rate of climb at high blower critical altitude (13,100 ft)<br>for 40.0 inches Hg. manifold pressure and 2550 RPM, with<br>920 BHP/Engine | 890 ft/min.  |
| Service ceiling of 26,900 feet (Rate of climb 100 ft/min.)                                                                               |              |
| Time to climb to service ceiling                                                                                                         | 51.5 mins.   |
| Absolute ceiling of 28,600 feet.                                                                                                         |              |

Complete data on maximum rate of climb vs. altitude, corrected to standard conditions is shown on Figure 11, Page 23.

Original data, corrected for instrument error only, is given in Appendix A, Table IV, Page 4.

#### F. Single Engine Ceiling.

The following single engine data was obtained in drift downs with the live engine operating in high blower at normal rated power: 2550 RPM; mixture auto-rich; carburetor ram "on"; carburetor heat cold; cowl flaps set "wide open" position; oil coolers wide open. The dead engine had its propeller feathered and cowl flaps closed. Gear up, flaps up, and take-off gross weight of 26,000 pounds. All data reduced to standard conditions.

##### 1. Left Engine, Live Engine.

Absolute ceiling of 14,150 feet with 38.1 inches Hg. manifold pressure, 879 BHP/Engine, true speed of 142 MPH, and 25,680 pounds gross weight.

##### 2. Right Engine, Live Engine.

Absolute ceiling of 13,600 feet with 38.2 inches Hg. manifold pressure, 892 BHP/Engine, a true speed of 141 MPH, and 25,695 pounds gross weight.

Original data corrected for instrument error only is given in Appendix A, Table V, Page 6.

#### G. Cruising Power Calibration and Range Survey.

This data was obtained with gear and flaps up; cowl flaps closed; carburetor ram "on"; carburetor heat cold; mixture as specified. All power required data was reduced to sea level altitude by using the formulae:

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$$(1.) P_{iw} = P_o \sigma^{1/2} \left[ \frac{W_s}{W_o} \right]^{3/2}$$

Where:  $P_{iw}$  = power required at sea level  
 $P_o$  = test power output  
 $\sigma$  = density ratio at altitude  
 $W_s$  = weight at sea level (26,000 pounds)  
 $W_o$  = test weight

$$(2.) V_{iw} = V_o \sigma^{1/2} \left[ \frac{W_s}{W_o} \right]^{1/2}$$

Where:  $V_{iw}$  = true speed at sea level  
 $V_o$  = test true speed  
 $\sigma$  = density ratio at altitude  
 $W_s$  = weight at sea level (26,000 pounds)  
 $W_o$  = test weight

Curve of power required at sea level is shown in Figure 6, Page 15.

1. Low Blower at 8690 Feet.

a. The power required curve at 8690 feet for 25,840 pounds gross weight, which is the standard weight at this altitude, is shown on Figure 5, Page 17.

b. Figure 7, Page 19 gives the fuel flow at various engine RPM's.

c. The cruising survey giving air miles per gallon vs. true airspeed at various RPM's is shown on Figure 8, Page 20 with the data corrected for standard conditions. This data shows that a maximum value of air miles per gallon of 2.42 was obtained at true speed of 152 MPH, IAS, 125 MPH at 1700 RPM and at a constant gross weight of 25,840 pounds. For a maximum fuel capacity of 555 U.S. gallons, this data gives the airplane, with a 3,723 pound cargo load, an absolute range of 1247 miles with an allowance of 40 U.S. gallons for warm-up, take-off, and climb to altitude, but no allowance for wind or reserve.

d. The original power required and fuel flow data, corrected for instrument error only, is given in Appendix A, Table II, Page 2.

2. High Blower at 14,900 Feet.

a. The power required curve at 14,900 feet for 25,690 pounds gross weight, which is the standard weight at this altitude, is shown on Figure 5, Page 17.

b. Figure 9, Page 21 gives the fuel flow at various engine RPM's.

c. The cruising survey giving air miles per gallon v. true airspeed at various RPM's is shown on Figure 10, Page 22 with the data corrected for standard conditions. This data shows that a maximum value of air miles per gallon of 2.39 was obtained at a true speed of 160 MPH, IAS, 119 MPH, at 1700 RPM, and at a constant gross weight of 25,690 pounds. For a maximum fuel capacity of 555 U.S.

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gallons, this data gives the airplane, with a 3,723 pound cargo load, an absolute range of 1178 miles with an allowance of 62 U.S. gallons for warm-up, take-off, and climb to altitude, but no allowance for wind or reserve.

d. The original power required and fuel flow data, corrected for instrument error only, is given in Appendix A, Table III, Page 3.

#### H. Stalling Speeds.

Stalling speeds, corrected for instrument error, under various configurations are tabulated below:

| Stall No. | Altitude Feet | Gear | Wing Flaps | Cowl Flaps | Manifold Pressure Inches Hg. | RPM  | IAS corrected for Instrument Error |
|-----------|---------------|------|------------|------------|------------------------------|------|------------------------------------|
| 1         | 16,500        | Up   | Up         | W.O.       | 35.1                         | 2550 | 62.0                               |
| 2         | 8,000         | Up   | Up         | W.O.       | 34.3                         | 2550 | 62.0                               |
| 3         | 3,000         | Up   | Up         | Closed     | Idling                       |      | 73.0                               |
| 4         | 3,000         | Down | Full Down  | Closed     | Idling                       |      | 63.0                               |

#### I. Take-off Tests.

All take-off tests were made from a dry concrete runway; wing flaps set as specified; cowl flaps wide open; carburetor ram "on"; oil cooler shutters wide open; carburetor heat cold; mixture auto-rich; propellers set for 2700 RPM; take-off gross weight 26,000 pounds. All data reduced to standard sea level and zero wind condition.

| Take-off No. | Type of Take-off | Flap Setting | Ground Roll Ft. | Air Dist. Ft. | Total Dist. Over 50' Obstacle | IAS MPH At T.O.-At 50' | True Speed MPH At T.O.-At 50' | Torque HHP Per Engine |
|--------------|------------------|--------------|-----------------|---------------|-------------------------------|------------------------|-------------------------------|-----------------------|
| 1            | Normal           | 0            | 1610            | 1370          | 2980                          | 80 95                  | 95 105                        | Ave. 1,2,3            |
| 2            | Normal           | 0            | 1690            | 1150          | 2840                          | 83 97                  | 91 105                        | 1062                  |
| 3            | Normal           | 0            | 1860            | 1010          | 2870                          | 83 99                  | 92 107                        |                       |
| 4            | Min. Safe        | 0            | 1500            | 460           | 1960                          | 78 80                  | 86 104                        | Ave. 4,5,6            |
| 5            | "                | 0            | 1460            | 520           | 1980                          | 79 82                  | 86 93                         | 1083                  |
| 6            | "                | 0            | 1430            | 520           | 1950                          | 80 79                  | 84 90                         |                       |
| 7            | Abs. Min.        | 0            | 1180            | 730           | 1910                          | 72 78                  | 77 93                         | Ave. 7,8,9            |
| 8            | "                | 0            | 1430            | 590           | 2020                          | 74 80                  | 84 89                         | 1150                  |
| 9            | "                | 0            | 1190            | 760           | 1950                          | 71 77                  | 79 88                         |                       |
| 10           | "                | 1/4          | 1190            | 630           | 1820                          | 70 76                  | 72 77                         | Ave. 10,11            |
| 11           | "                | 1/4          | 1120            | 650           | 1770                          | 66 71                  | 73 81                         | 1152                  |

The uncorrected, observed data for these tests is shown in Appendix A, Table VI, Sections 1 thru 11, Pages 7 thru 17.

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### J. Landing Tests.

All landing tests were made on a dry concrete runway; wing flaps set full down; cowl flaps closed; carburetor ram "on"; carburetor heat cold; engines idling at 2400 RPM. All data is reduced to standard sea level and zero wind. Average gross weight at landing was 25,750 pounds.

| Landing No. | Air Distance Ft. | Ground Roll Ft. | Total Distance Over 50' Obstacle | IAS MPH |             | True Speed MPH |             |
|-------------|------------------|-----------------|----------------------------------|---------|-------------|----------------|-------------|
|             |                  |                 |                                  | At 50'  | -At Contact | At 50'         | -At Contact |
| 1           | 920              | 980             | 1900                             | 84      | 69          | 98             | 76          |
| 2           | 990              | 990             | 1980                             | 82      | 66          | 91             | 80          |
| 3           | 670              | 940             | 1610                             | 81      | 66          | 89             | 75          |
| 4           | 490              | 1000            | 1490                             | 78      | 64          | 82             | 77          |

The uncorrected, observed data for these tests is shown in Appendix A, Table VI, Sections 11 thru 15, Pages 17 thru 21.

### K. Miscellaneous Tests.

#### 1. Carburetor Heat Check.

A carburetor heat check was made in level flight at a pressure altitude of \*12,935 feet; free air temperature \*-2°C. Airplane configuration was wheels up; wing flaps up; cowl flaps closed; oil cooler shutters wide open; auto-rich mixture. The observed data tabulated below is corrected for instrument error only.

| Carb. Heat | Throttle Setting | Ave. RPM | Ave. Manifold Pressure Inches Hg. | Ave. Carburetor Air Temp. ° C. | IAS   | Ave. Torque BHP Per/Engine |
|------------|------------------|----------|-----------------------------------|--------------------------------|-------|----------------------------|
|            |                  |          |                                   |                                |       |                            |
| Cold       | Part             | 2120     | 30.1                              | 1.8                            | 153.4 | 630                        |
| Full Hot   | Part             | 2120     | 26.8                              | ** 50.0 +                      | 144   | 504                        |

\* Pressure altitude and free air temperature corrected for instrument error only.

\*\* Indicator went off the scale. +50°C. was the highest reading obtainable.

#### 2. Carbon Monoxide Tests.

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Samples of air were tested for carbon monoxide content at a pressure altitude of 19,000 feet; free air temperature of  $-10.5^{\circ}\text{C}.$ ; engines operating at 1850 RPM with 22.5 inches Hg. manifold pressure; mixture auto-lean; normal level flight configuration.

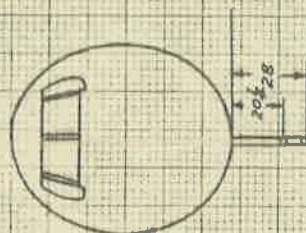
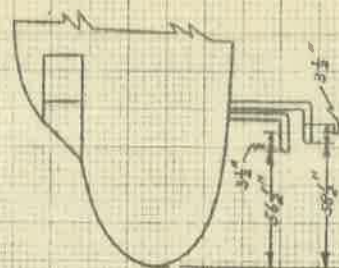
| Sample No. | Location                                           | % CO |
|------------|----------------------------------------------------|------|
| 1          | Above, and in front of, pilots head                | 0    |
| 2          | Above, and in front of, co-pilots head             | 0    |
| 3          | Below, and in front of, pilots and co-pilots knees | 0    |
| 4          | Behind, and above, pilot and co-pilot              | 0    |
| 5          | Left side, radio compartment                       | 0    |
| 6          | Right side, radio compartment                      | 0    |
| 7          | Center cargo compartment                           | 0    |

## VII. Curves.

- Figure 1, Page 13 Airspeed calibration.  
 Figure 2, Page 14 Free Air calibration.  
 Figure 3, Page 15 Standard weight at altitude.  
 Figure 4, Page 16 High speed vs. altitude.  
 Figure 5, Page 17 Power required.  
 Figure 6, Page 18 Sea level power required.  
 Figure 7, Page 19 Range survey (S.F.C.) low blower.  
 Figure 8, Page 20 Range survey, (air miles per gallon) low blower.  
 Figure 9, Page 21 Range survey, (S.F.C.) high blower.  
 Figure 10, Page 22 Range survey, (air miles per gallon) high blower.  
 Figure 11, Page 23 Maximum rate of climb.

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AIR SPEED CALIBRATION ~ C-47B #43-16133  
 O C-47B vs. P-39F #41-7246, 7-29-44  
 O C-47B vs. PT-26 #42-14289, 7-28-44  
 O, \* C-47B vs. PT-26 #42-14289, 7-28-44



UPPER PITOT HEAD: (DO-ALWAYS) LOWER PITOT HEAD: (PILOT)  
TIP OF NOSE LOCATED 56" AFT OF TIP OF NOSE LOCATED 56" AFT OF  
WINGS & 20 1/2" BELOW FUSELAGE. STATIC HOLES 28" BELOW FUSELAGE. STATIC  
HOLES LOCATED 31" AFT OF TIP OF NOSE. HOLES LOCATED 31" AFT OF TIP OF NOSE  
NOTE: STATIC LINES INTERCONNECTED

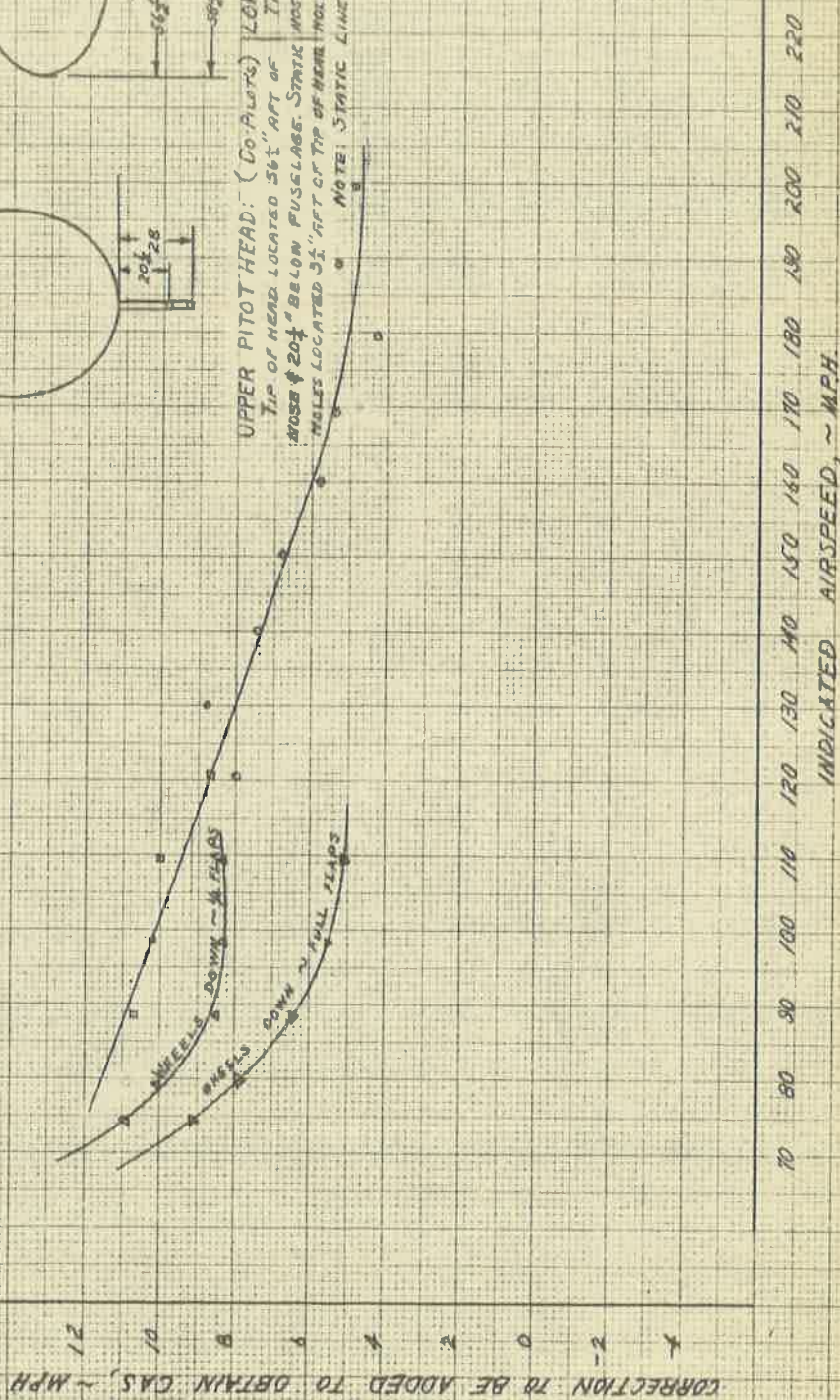


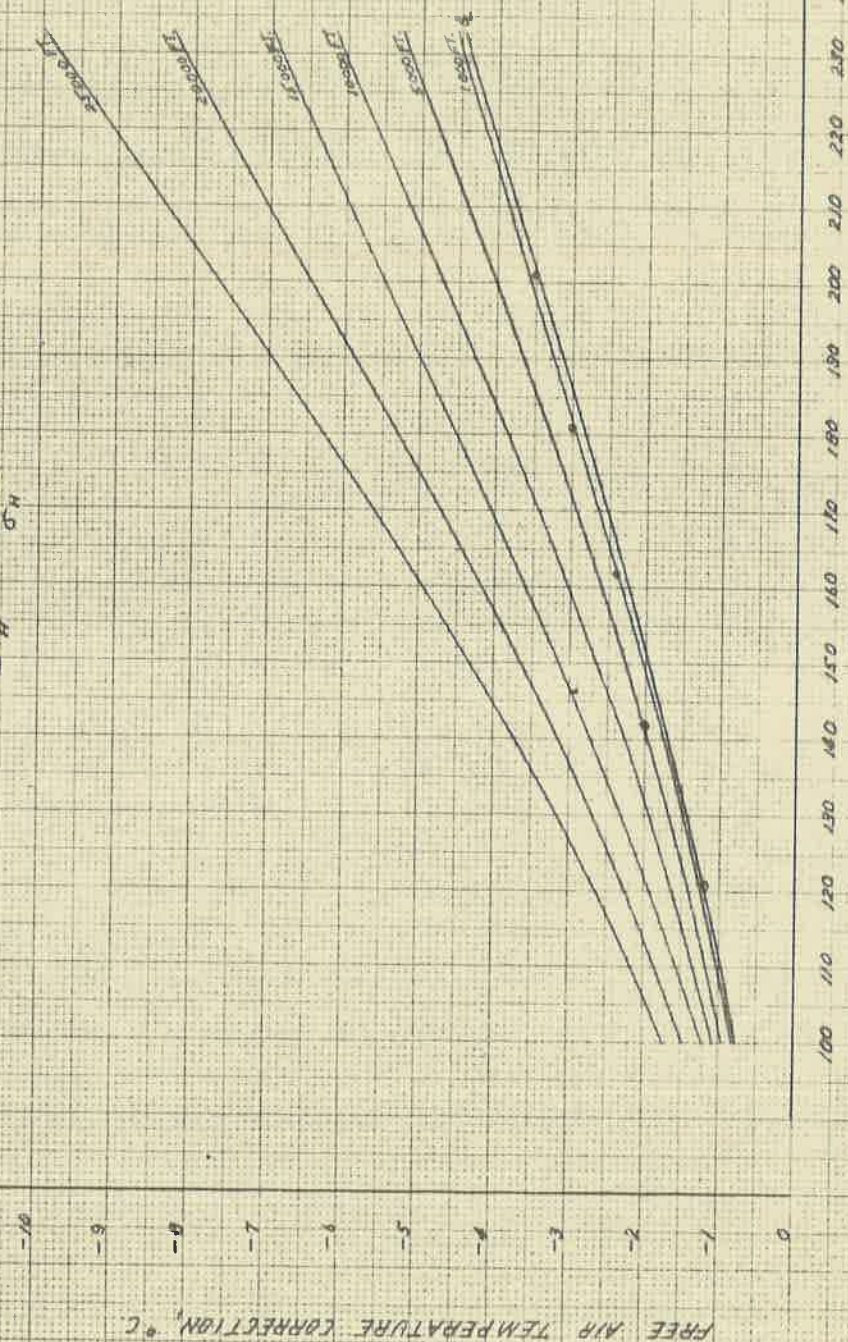
FIG. 1  
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1803-A  
11 September 1944

FREE AIR CALIBRATIONS

C-47B #43-16133

7-28-44

$$\Delta T_H = \frac{\Delta T_A}{\sigma_H}$$



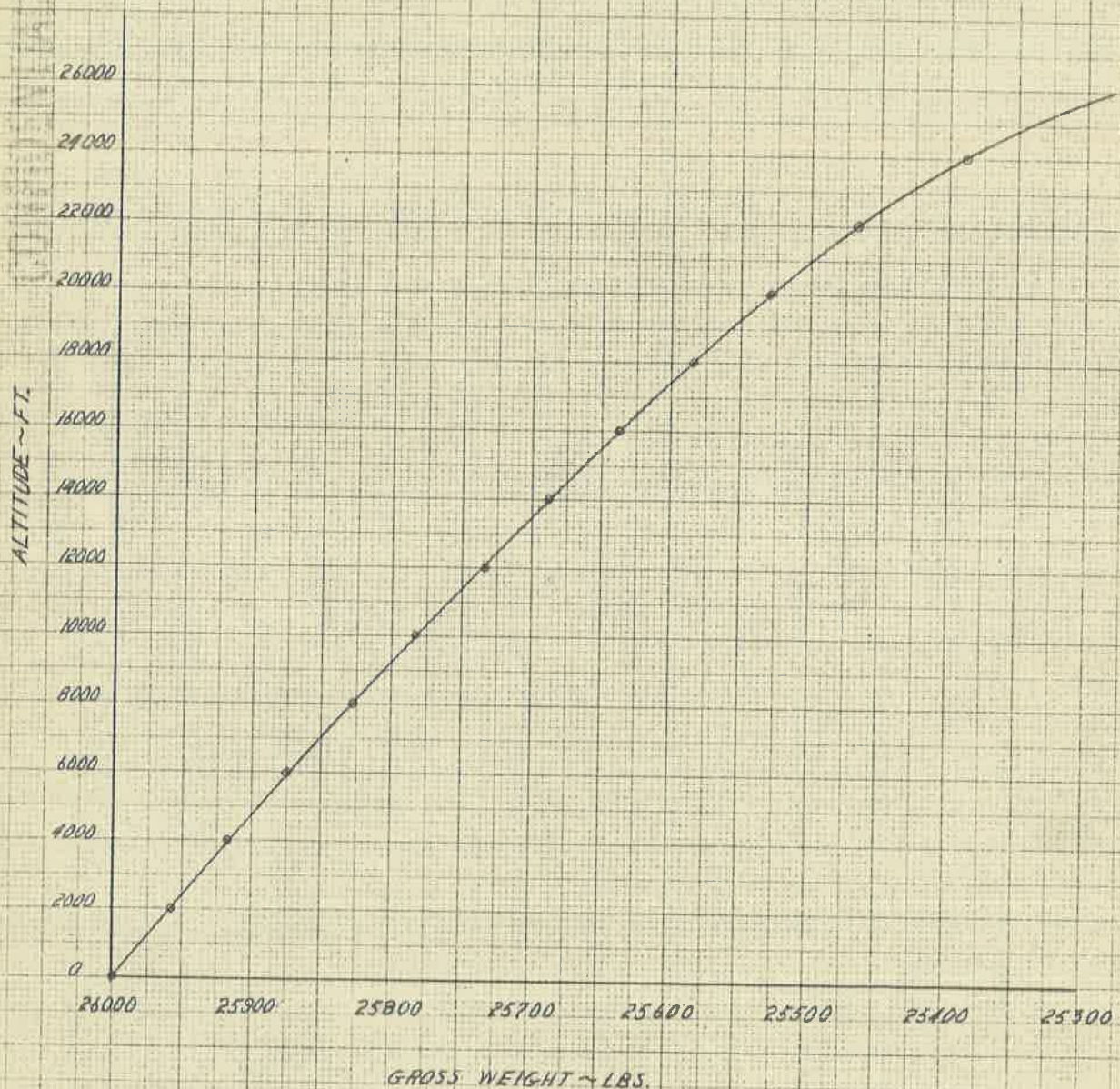
INDICATED AIRSPEED ~ MPH.

# STANDARD WEIGHT AT ALTITUDE

C-47B #43-16133

TAKE OFF GROSS WEIGHT 26,000LBS.

NOTE: FOR NORMAL RATED POWER  
CLIMB TO ALTITUDE



HIGH SPEED VS. ALTITUDE  
C-47B  
26,000 LBS. @ TAKE-OFF  
NORMAL RATED POWER

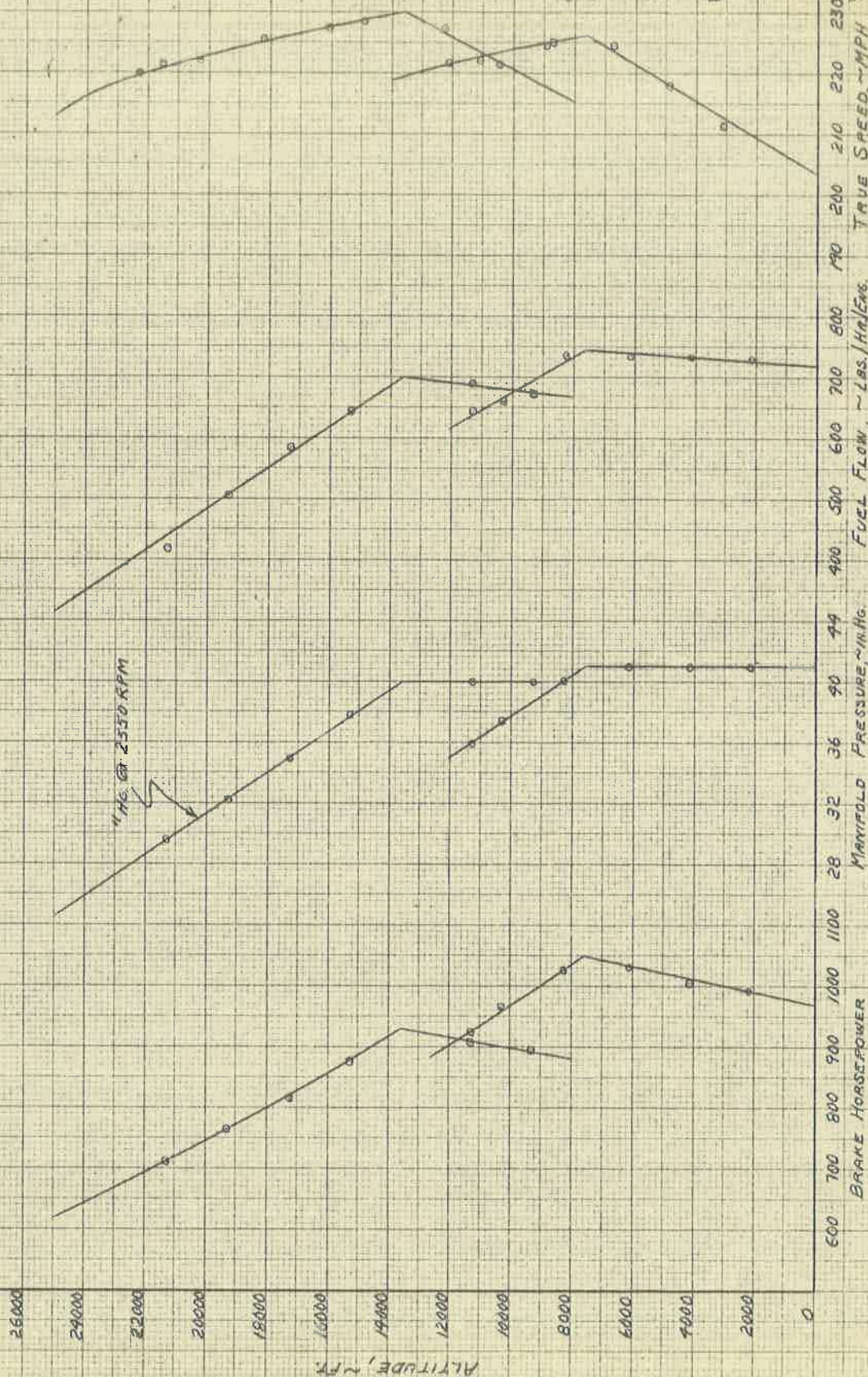


FIG. 4  
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C-47B #41-16193

C-47B #41-16193

1.0. GR. WT. + 26,000 LBS.  
CORR. TO STD. WT. @ ALTITUDE



+ 8880 FT. LOW BLOWER, 7-28-44, 25,690 #  
 + 14900 FT. HIGH BLOWER, 7-27-44, 25,670 #  
 + 21570 FT. HIGH BLOWER, 9-7-44, 23,480 #

FLIGHT TEST ENGINE BRANCH, WFE 3444 HIR

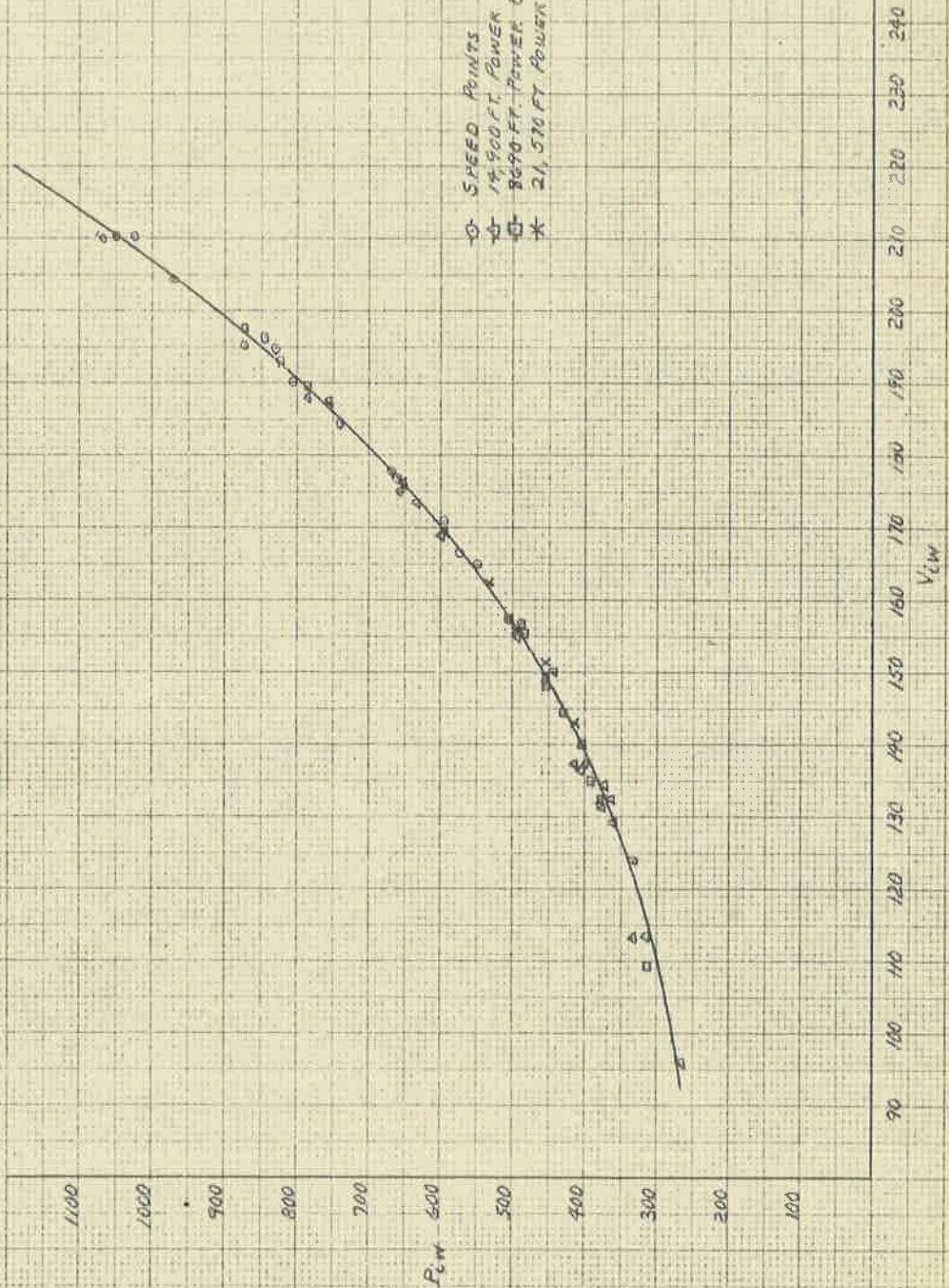
Y-59486

KEUFFEL & ESSER CO., N. Y. NO. 359-14  
 Millimeters, mm. also printed, cm. line heavy  
 MADE IN U. S. A.

SEA LEVEL POWER REQUIRED  
 C-47B #43-16133  
 GROSS WT. 26,000 LBS.

SPEED POINTS  
 O 14,500 FT. POWER CALIBRATION  
 □ 8050 FT. POWER CALIBRATION  
 \* 21,570 FT. POWER CALIBRATION

FIG. 6  
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FLIGHT TEST ENGR. BRANCH, W.F. 9-5-44 J.S.R.

Y-59236

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RANGE SURVEY  
 C-47B #43-1683  
 1500 FT. ~ 23,000 LBS  
 LOW BLOWER

2550 RPM  
 2500 RPM  
 2450 RPM

2550 RPM  
 2500 RPM  
 2450 RPM

2550 RPM  
 2500 RPM  
 2450 RPM  
 2400 RPM  
 2350 RPM  
 2300 RPM

BHP<sub>TEST</sub>

CONFIDENTIAL

SFC ~ #/BHP-HR

9-58-26

**RANGE SURVEY**  
 C-47B #43-16133  
 8690 FT. ~ 25850 LBS  
 7-27-44  
 LOW BLOWER

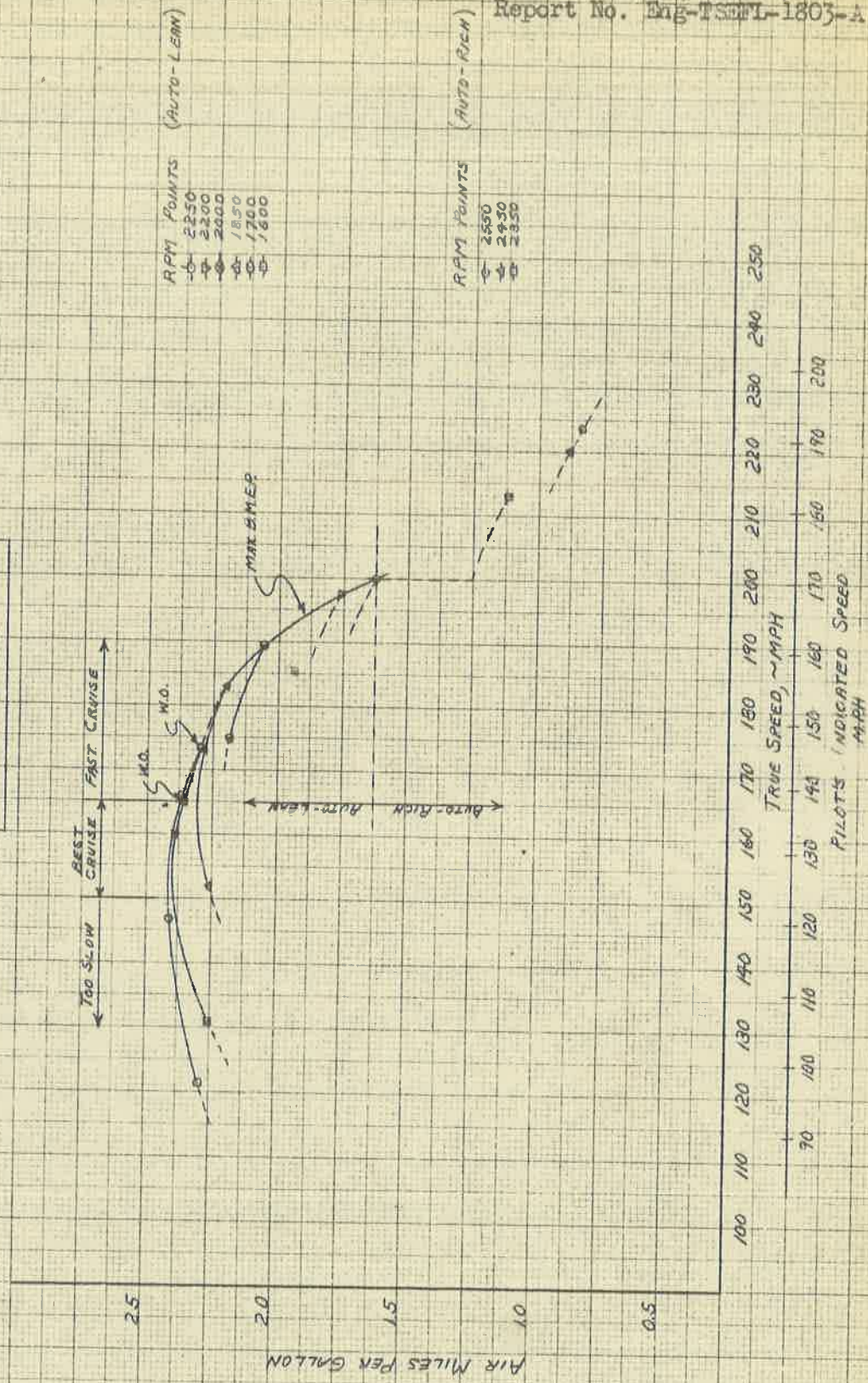
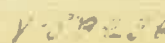


FIG. 8

Y-58256



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RANGE SURVEY

C-47B #43-16133  
 13,550 LT ~ 25,700 LBS  
 T-27-44  
 HIGH BLOWER

← Too Slow → BEST CRUISE → FAST CRUISE →

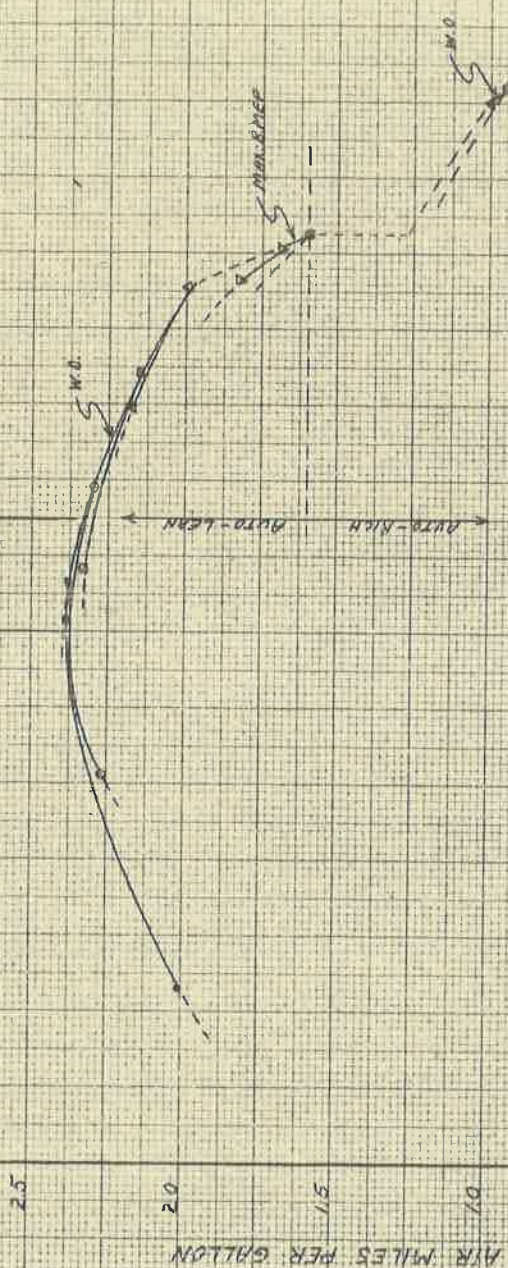
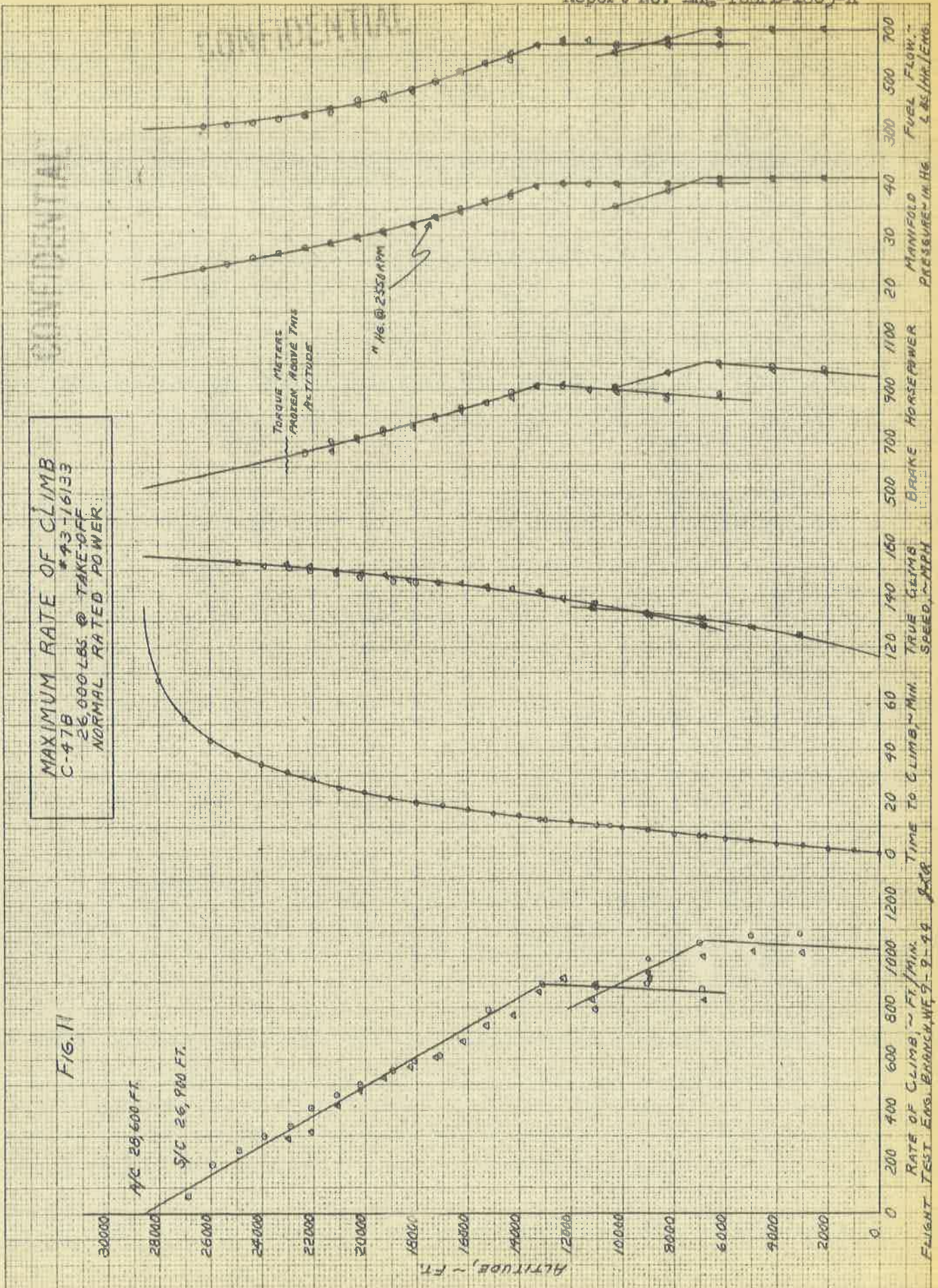


FIG. 10  
 TRUE SPEED - MPH  
 PILOT'S INDICATED AIRSPEED  
 MPH

8-58256



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### VIII. Conclusions.

1. The installation of R-1830-90C engines with two speed blowers in the C-47 airplane definitely improves the airplane's high altitude and single engine performance at a take-off-gross weight of 26,000 pounds, without affecting the good handling characteristics of the C-47 airplane. The flight characteristics of the airplane at this weight condition are good, and the airplane is well suited for its design purpose as a cargo and troop carrier, or an air ambulance.

### IX. Recommendations.

1. It is recommended that something be done to remedy the interference of the control column with the pilots legs so that a pilot with long legs may have freer leg movement.

2. It is recommended that the landing gear control lever be raised to a level that will be more convenient for the pilot, or co-pilot to operate the lever.

3. It is recommended that the present rigidly fastened navigation bench stool be replaced with an adjustable chair or stool.

### X. General Dimensions and Photographs.

#### A. General Dimensions.

|                                   |                     |
|-----------------------------------|---------------------|
| 1. Span                           | 95 feet.            |
| 2. Length                         | 65 feet, 9 inches.  |
| 3. Overall height                 | 16 feet, 11 inches. |
| 4. Root chord                     | 170 inches.         |
| 5. Tip chord                      | 51.375 inches.      |
| 6. M.A.C.                         | 138.1 inches.       |
| 7. Wing area (including ailerons) | 987 square feet.    |
| 8. C.G. limits                    | 11 % - 28 % M.A.C.  |

#### B. Photographs.

|                              |              |
|------------------------------|--------------|
| 1. Front view                | No. 154,951. |
| 2. 3/4 front view            | No. 154,952. |
| 3. Left side view            | No. 154,953. |
| 4. 3/4 rear view             | No. 154,954. |
| 5. 3/4 rear view, flaps down | No. 154,955. |

154251

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1. Front View - C-47B, AAF No. 43-16133

Y-58236

Classification cancelled.

Auth: Par. 42, AFR 205-1, 3 Jan 56

By

Edith J. R. Ferguson

Date

8 Mar 1961



2. 3/4 Front View - C-47B, AAF No. 43-16133

Classification cancelled.

Auth: Par. 42, AFR 205-1, 3 Jan 56

By

William J. Fugere

Date

8 Mar 1961

154253

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3. Left Side View - C-47B, AAF No. 13-16133

Y-50286

Classification cancelled.

Auth: Par. 42, AFR 205-1, 3 Jan 56

By

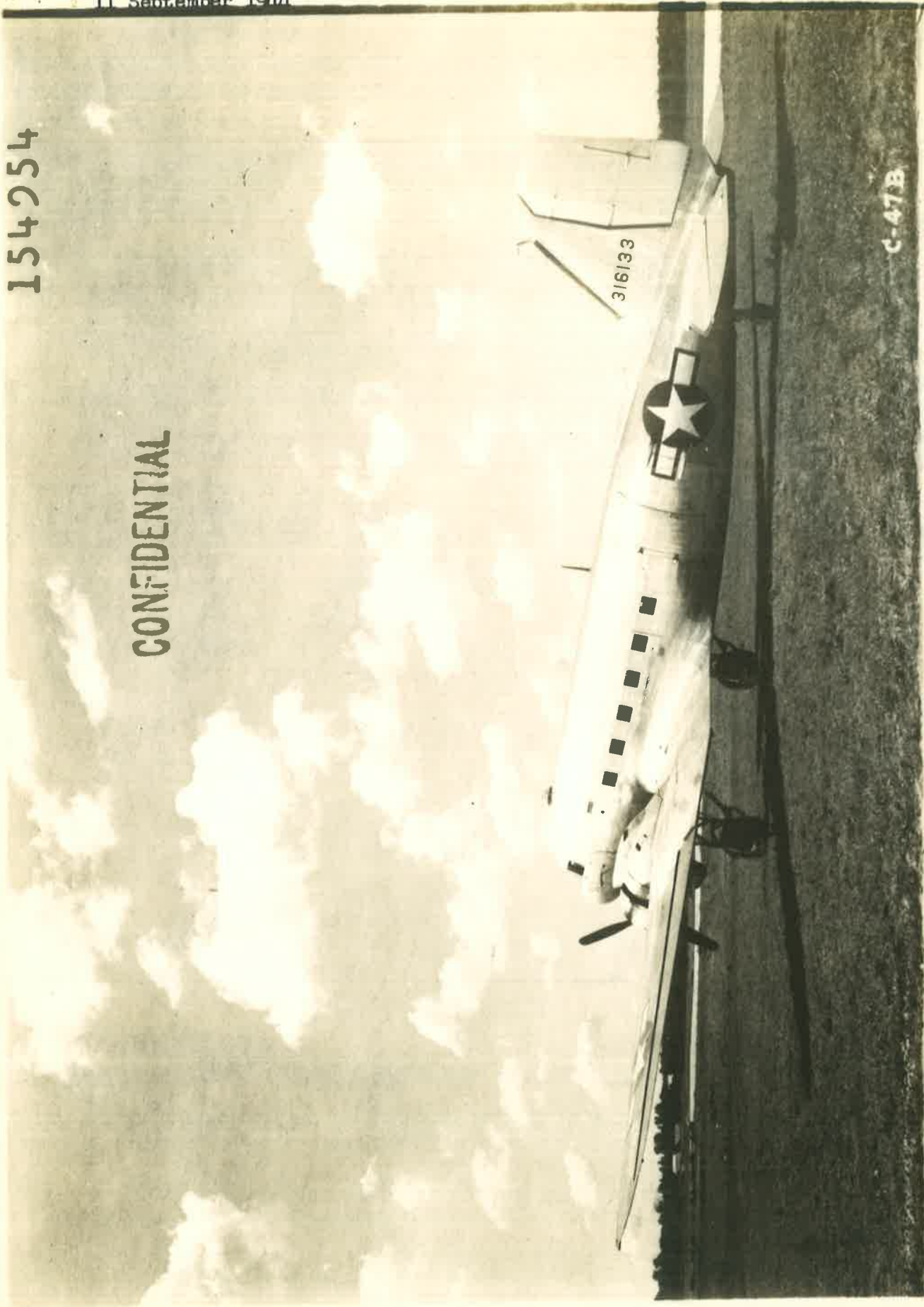
Betty-Jane R. Ferguson

Date

8 Mar 1961

154254

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C-47B

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4. 3/4 Rear View - C-47B, AAF No. 43-16133

Y-50256

Classification cancelled.

Auth: Par. 42, AFR 205-1, 3 Jan 56

By Betty-Jane P. Ferguson

Date 8 Mar 1961

154255

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C-47B

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5. 3/4 Rear View, Flaps Down - C-47B, AAF No. 43-16133

4-58236

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Auth: Par. 42, AFR 205-1, 3 Jan 56

By

Betty-Jane D. Ferguson

Date

8 Mar 1961

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APPENDIX A

|                     |                                              |
|---------------------|----------------------------------------------|
| Table I             | Observed data, level flight.                 |
| Table II            | Observed data, cruising power (low blower).  |
| Table III           | Observed data, cruising power (high blower). |
| Table IV            | Observed data, climbs No. 1 and 2.           |
| Table V             | Observed data, single engine ceiling.        |
| Table VI            |                                              |
| Sections 1 thru 11  | Observed Take-off data.                      |
| Sections 12 thru 15 | Observed landing data.                       |

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7-92-6

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Table I.

C-47B Level flight test data, corrected for instrument error only.  
 Configuration: Gear up, wing flaps up, cowl flaps closed, carburetor ran "on", carburetor heat cold, mixture auto-rich.

| Run No. | Pressure<br>Altitude<br>Ft. | Free Air<br>Temp.<br>°C. | I.A.S.<br>M.P.H. | Average<br>Manifold<br>Pressure<br>" Hg. | Average<br>Torque<br>#/sq. in. | Average<br>RPM | Average<br>Carburetor<br>Temp.<br>°C. | Average<br>Fuel Flow<br>Lbs./Hr. | Throttle | Blower | Gross<br>Weight<br>Pounds |
|---------|-----------------------------|--------------------------|------------------|------------------------------------------|--------------------------------|----------------|---------------------------------------|----------------------------------|----------|--------|---------------------------|
| 1       | 2,110                       | 22.0                     | 196.4            | 41                                       | 219.5                          | 2550           | 24                                    | 707                              | P        | L      | 23,800                    |
| 2       | 4,110                       | 16.0                     | 198.0            | 41                                       | 223.5                          | 2550           | 19                                    | 727                              | P        | L      | 24,000                    |
| 3       | 6,120                       | 11.0                     | 199.0            | 41                                       | 229.5                          | 2550           | 14                                    | 727                              | P        | L      | 24,400                    |
| 4       | 8,150                       | 8.0                      | 193.8            | 39.9                                     | 226.5                          | 2550           | 10                                    | 722                              | W.O.     | L      | 24,550                    |
| 5       | 10,170                      | 6.0                      | 185.3            | 37.1                                     | 210.5                          | 2550           | 8                                     | 656                              | W.O.     | L      | 24,700                    |
| 6       | 11,170                      | 4.0                      | 184.9            | 35.6                                     | 200.5                          | 2550           | 7                                     | 637                              | W.O.     | L      | 24,800                    |
| 7       | 9,150                       | 11.0                     | 184.3            | 40                                       | 197.0                          | 2550           | 14                                    | 637                              | P        | H      | 24,150                    |
| 8       | 11,170                      | 6.0                      | 183.8            | 40                                       | 201.5                          | 2550           | 8                                     | 684                              | P        | H      | 24,150                    |
| 9       | 15,170                      | -4.0                     | 174.7            | 37.5                                     | 192.0                          | 2550           | -1                                    | 628                              | W.O.     | H      | 24,550                    |
| 10      | 17,160                      | -7.0                     | 167.3            | 34.6                                     | 177.5                          | 2550           | -5                                    | 576                              | W.O.     | H      | 24,800                    |
| 11      | 19,160                      | -11.0                    | 158              | 32.0                                     | 167.1                          | 2550           | -7                                    | 490                              | W.O.     | H      | 25,450                    |
| 12      | 21,160                      | -15.0                    | 149.8            | 29.3                                     | 154.5                          | 2550           | -11                                   | 404                              | W.O.     | H      | 25,800                    |
| 13      | 20,150                      | -13.0                    | 154.6            | 30.7                                     | 161.0                          | 2550           | -8                                    | 456                              | W.O.     | H      | 25,700                    |
| 14      | 20,150                      | -13.0                    | 147.6            | 28.8                                     | 150.0                          | 2550           | -9                                    | 379                              | P        | H      | 25,650                    |
| 15      | 20,150                      | -13.0                    | 143.0            | 26.7                                     | 139.0                          | 2550           | -9                                    | 321                              | P        | H      | 25,600                    |
| 16      | 20,150                      | -13.0                    | 133.2            | 24.5                                     | 124.0                          | 2550           | -10                                   | 296                              | P        | H      | 25,550                    |

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Table II

C-47B cruising power test data, low blower, corrected for instrument error only.  
Configuration: Gear up; wing flaps up; cowl flaps closed; carburetor ram "on"; carburetor heat cold; mixture as specified.

| Pressure<br>Altitude<br>ft. | Free Air<br>Temp.<br>°C. | 90 IAS<br>°C. | Average<br>RPM | Average<br>Manifold<br>Pressure<br>"Hg. | Average<br>Torque<br>Pressure<br>#/in. | Throttle<br>Position | Mixture<br>Setting | Average<br>Carburetor<br>Temp.<br>°C. | Average<br>Fuel Flow<br>#/hr. | Estimated<br>Gross<br>Weight<br>Lbs. | IAS<br>KPH |
|-----------------------------|--------------------------|---------------|----------------|-----------------------------------------|----------------------------------------|----------------------|--------------------|---------------------------------------|-------------------------------|--------------------------------------|------------|
| 7440                        | 10.5                     | 2550          | 41.0           | 210.5                                   | W.O.                                   | AR                   | 16                 | 16                                    | 727                           | 25,700                               | 1913       |
| 7440                        | 10.5                     | 2450          | 39.4           | 211.5                                   | W.O.                                   | AR                   | 16                 | 16                                    | 665                           | 25,650                               | 185.8      |
| 7440                        | 10.5                     | 2450          | 36.8           | 208.5                                   | P                                      | AR                   | 16                 | 16                                    | 561                           | 25,550                               | 182.3      |
| 7440                        | 10.5                     | 2250          | 32.3           | 185.5                                   | P                                      | AL                   | 16                 | 16                                    | 365                           | 25,450                               | 170.5      |
| 7440                        | 10.5                     | 2200          | 32.2           | 185.0                                   | P                                      | AL                   | 15                 | 15                                    | 336                           | 25,350                               | 167.5      |
| 7440                        | 10.5                     | 2000          | 32.4           | 184.5                                   | P                                      | AL                   | 15                 | 15                                    | 276                           | 25,300                               | 162.9      |
| 7440                        | 10.5                     | 2000          | 27.6           | 153.5                                   | P                                      | AL                   | 14                 | 14                                    | 237                           | 25,250                               | 145.2      |
| 7440                        | 10.5                     | 1850          | 32.0           | 183.0                                   | P                                      | AL                   | 15                 | 15                                    | 246                           | 25,200                               | 155.9      |
| 7440                        | 10.5                     | 1850          | 28.8           | 162.0                                   | P                                      | AL                   | 15                 | 15                                    | 227                           | 25,150                               | 145.9      |
| 7440                        | 10.5                     | 1850          | 23.9           | 129.5                                   | P                                      | AL                   | 14                 | 14                                    | 197                           | 25,100                               | 123.3      |
| 7440                        | 10.5                     | 1700          | 30.3           | 175.0                                   | W.O.                                   | AL                   | 14                 | 14                                    | 222                           | 25,050                               | 145.2      |
| 7440                        | 10.5                     | 1700          | 28.4           | 161.5                                   | P                                      | AL                   | 14                 | 14                                    | 207                           | 25,000                               | 138.5      |
| 7440                        | 10.5                     | 1700          | 24.6           | 135.0                                   | P                                      | AL                   | 14                 | 14                                    | 177                           | 24,950                               | 120.8      |
| 7440                        | 10.5                     | 1700          | 21.7           | 111.0                                   | P                                      | AL                   | 13                 | 13                                    | 157                           | 24,900                               | 97.3       |
| 7440                        | 10.5                     | 1500          | 23.6           | 170.5                                   | W.O.                                   | AL                   | 13                 | 13                                    | 207                           | 24,850                               | 137.1      |
| 7440                        | 10.5                     | 1600          | 28.2           | 161.0                                   | P                                      | AL                   | 14                 | 14                                    | 197                           | 24,825                               | 132.7      |
| 7440                        | 10.5                     | 1500          | 23.2           | 124.5                                   | P                                      | AL                   | 14                 | 14                                    | 167                           | 24,800                               | 112.0      |
| 7440                        | 10.5                     | 1500          | 23.7           | 162.0                                   | W.O.                                   | AL                   | 13                 | 13                                    | 187                           | 24,775                               | 127.8      |
| 7440                        | 10.5                     | 1500          | 27.3           | 152.5                                   | W.O.                                   | AL                   | 13                 | 13                                    | 177                           | 24,750                               | 120.8      |

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Table III

C-47B cruising power test data, high blower, corrected for instrument error only.  
Configuration: Gear up; wing flaps up; cowl flaps closed; carburetor ram "on"; carburetor heat cold; mixture as specified.

| Pressure<br>Altitude<br>ft. | Free Air<br>Temp.<br>°C. | Average<br>RPM | Average<br>Manifold<br>Pressure<br>Hg. | Average<br>Torque<br>#/in <sup>2</sup> | Throttle<br>Position | Mixture<br>Setting | Average<br>Carburetor<br>Temp.<br>°C. | Average<br>Fuel Flow<br>#/hr. | Estimated<br>Gross<br>Weight<br>Lbs. | IAS<br>MPH |
|-----------------------------|--------------------------|----------------|----------------------------------------|----------------------------------------|----------------------|--------------------|---------------------------------------|-------------------------------|--------------------------------------|------------|
| 13,480                      | 1                        | 2550           | 40.0                                   | 203.0                                  | W.O.                 | AR                 | 5                                     | 683                           | 24,900                               | 182        |
| 13,480                      | 1                        | 2450           | 38.0                                   | 203.0                                  | W.O.                 | AR                 | 5                                     | 619                           | 24,800                               | 180        |
| 13,480                      | 1                        | 2320           | 33.1                                   | 184.0                                  | P                    | AL                 | 5                                     | 394                           | 24,750                               | 168        |
| 13,480                      | 1                        | 2250           | 33.1                                   | 184.5                                  | P                    | AL                 | 4                                     | 375                           | 24,700                               | 164        |
| 13,480                      | 1                        | 2250           | 31.4                                   | 172.5                                  | P                    | AL                 | 5                                     | 321                           | 24,650                               | 171        |
| 13,480                      | 1                        | 2100           | 31.7                                   | 181.0                                  | W.O.                 | AL                 | 5                                     | 296                           | 24,550                               | 159        |
| 13,480                      | 1                        | 2100           | 28.4                                   | 153.0                                  | P                    | AL                 | 5                                     | 250                           | 24,525                               | 144        |
| 13,480                      | 1                        | 1950           | 30.1                                   | 167.5                                  | W.O.                 | AL                 | 4                                     | 250                           | 24,500                               | 147        |
| 13,480                      | 1                        | 1950           | 24.4                                   | 132.0                                  | P                    | AL                 | 4                                     | 207                           | 24,450                               | 134.2      |
| 13,480                      | 1                        | 1800           | 28.2                                   | 159.5                                  | W.O.                 | AL                 | 4                                     | 217                           | 24,400                               | 146.5      |
| 13,480                      | 1                        | 1800           | 26.8                                   | 150.0                                  | P                    | AL                 | 4                                     | 207                           | 24,350                               | 139.5      |
| 13,480                      | 1                        | 1800           | 21.2                                   | 113.0                                  | P                    | AL                 | 4                                     | 177                           | 24,300                               | 102.5      |
| 13,480                      | 1                        | 1700           | 27.0                                   | 153.0                                  | W.O.                 | AL                 | 4                                     | 207                           | 24,275                               | 124.5      |
| 13,480                      | 1                        | 1700           | 25.1                                   | 142.5                                  | P                    | AL                 | 4                                     | 197                           | 24,250                               | 122        |
| 13,480                      | 1                        | 1700           | 19.5                                   | 100.0                                  | P                    | AL                 | 4                                     | 157                           | 24,200                               | 84         |
| 13,480                      | 1                        | 1600           | 25.7                                   | 145.5                                  | W.O.                 | AL                 | 4                                     | 157                           | 24,175                               | 120        |
| 13,480                      | 1                        | 1600           | 25.1                                   | 143.0                                  | P                    | AL                 | 4                                     | 177                           | 24,150                               | 116.5      |
| 13,480                      | 1                        | 1500           | 24.4                                   | 140.0                                  | W.O.                 | AL                 | 3                                     | 177                           | 24,050                               | 101        |

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Table IV

C-47B climb performance data, corrected for instrument error only.  
Configuration: Gear up; flaps up; carburetor ram "on"; carburetor heat cold; cowl flaps set "wide-open"; oil cooler wide open; mixture auto-rich; take-off gross weight 26,000 pounds.

| Pressure<br>Altitude<br>Ft. | Temp.<br>Frag Air<br>°C.<br>IAS | Average<br>RPM | Average<br>Manifold<br>Pressure<br>"Hg | Average<br>Torque<br>Pressure<br>#/sq. in. | Throttle<br>Position | Average<br>Carburetor<br>°C. | Average<br>Fuel<br>Flow<br>#/hr. | IAS   | Time  | Blower |
|-----------------------------|---------------------------------|----------------|----------------------------------------|--------------------------------------------|----------------------|------------------------------|----------------------------------|-------|-------|--------|
| 2,120                       | 20.0                            | 2550           | 41.0                                   | 212.5                                      | P                    | 22                           | 693                              | 111.5 | 0     | L      |
| 4,120                       | 15.0                            | 2550           | 41.0                                   | 216.5                                      | P                    | 17                           | 693                              | 111.5 | 2.08  | L      |
| 6,130                       | 10.5                            | 2550           | 40.5                                   | 220.5                                      | W.O.                 | 12                           | 693                              | 111.  | 4.06  | L      |
| 8,150                       | 6.5                             | 2550           | 38.1                                   | 209.0                                      | W.O.                 | 8                            | 641                              | 109.5 | 6.11  | L      |
| 10,170                      | 3.0                             | 2550           | 35.1                                   | 195.5                                      | W.O.                 | 4                            | 539                              | 107.5 | 8.19  | L      |
| 6,130                       | 10.0                            | 2550           | 40.0                                   | 193.0                                      | P                    | 12                           | 632                              | 109   | 0     | H      |
| 8,150                       | 6.0                             | 2550           | 40.0                                   | 194.0                                      | P                    | 8                            | 637                              | 109   | 2.46  | H      |
| 10,170                      | 2.5                             | 2550           | 40.0                                   | 198.0                                      | P                    | 3                            | 637                              | 109   | 4.90  | H      |
| 12,170                      | -0.5                            | 2550           | 40.0                                   | 202.5                                      | P                    | 1                            | 641                              | 107.5 | 7.26  | H      |
| 14,170                      | -4.0                            | 2550           | 37.1                                   | 188.5                                      | W.O.                 | -2                           | 566                              | 105.5 | 9.70  | H      |
| 16,170                      | -8.5                            | 2550           | 34.1                                   | 177.0                                      | W.O.                 | -7                           | 515                              | 103.5 | 12.73 | H      |
| 17,160                      | -11.0                           | 2550           | 33.1                                   | 170.5                                      | W.O.                 | -9                           | 491                              | 102.5 | 14.48 | H      |
| 18,110                      | -13.5                           | 2550           | 31.6                                   | 164.5                                      | W.O.                 | -12                          | 452                              | 101.5 | 16.26 | H      |
| 19,160                      | -14.0                           | 2550           | 30.1                                   | 158.5                                      | W.O.                 | -12                          | 438                              | 100.5 | 18.15 | H      |
| 20,150                      | -17.0                           | 2550           | 28.2                                   | 152.5                                      | W.O.                 | -15                          | 409                              | 99.5  | 20.37 | H      |
| 21,160                      | -19.0                           | 2550           | 28.2                                   | 143.5                                      | W.O.                 | -17                          | 365                              | 98.5  | 22.86 | H      |
| 22,150                      | -27.0                           | 2550           | 27.2                                   |                                            | W.O.                 | -19                          | 360                              | 97.5  | 25.80 | H      |
| 23,150                      | -24.0                           | 2550           | 26.2                                   |                                            | W.O.                 | -22                          | 345                              | 96.5  | 29.01 | H      |
| 24,150                      | -26.0                           | 2550           | 25.2                                   |                                            | W.O.                 | -24                          | 331                              | 95.5  | 32.95 | H      |
| 25,130                      | -28.0                           | 2550           | 24.2                                   |                                            | W.O.                 | -26                          | 326                              | 94.5  | 37.67 | H      |
| 26,120                      | -30.0                           | 2550           | 23.2                                   |                                            | W.O.                 | -28                          | 315                              | 93.5  | 45.73 | H      |

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Table IV continued

| Pressure<br>Altitude<br>Ft. | Free Air<br>Temp.<br>105 IAS<br>°C. | Average<br>RPM | Average<br>Manifold<br>Pressure<br>" Hg. | Average<br>Torque<br>#/sq. in. | Throttle<br>Position | Average<br>Carburetor<br>°C. | Average<br>Fuel<br>Flow<br>#/hr. | IAS   | Time  | Blower |
|-----------------------------|-------------------------------------|----------------|------------------------------------------|--------------------------------|----------------------|------------------------------|----------------------------------|-------|-------|--------|
| 2,120                       | 19                                  | 2550           | 41                                       | 216.0                          | P                    | 21                           | 698                              | 111.5 | 0     | T      |
| 4,120                       | 14                                  | 2550           | 41                                       | 219.0                          | P                    | 15                           | 683                              | 111.5 | 2.1   | T      |
| 6,130                       | 9                                   | 2550           | 41                                       | 223.5                          | W.O.                 | 11                           | 674                              | 111   | 4.15  | T      |
| 8,150                       | 6                                   | 2550           | 39.5                                     | 209.5                          | W.O.                 | 8                            | 637                              | 109.5 | 6.30  | T      |
| 10,170                      | 4                                   | 2550           | 36.6                                     | 196.0                          | W.O.                 | 5                            | 580                              | 107.5 | 8.68  | T      |
| 6,130                       | 9                                   | 2550           | 40                                       | 196.0                          | P                    | 11                           | 637                              | 109   | 0     | H      |
| 8,150                       | 6                                   | 2550           | 40                                       | 191.5                          | P                    | 7                            | 655                              | 109   | 2.52  | H      |
| 10,170                      | 3                                   | 2550           | 40                                       | 199.0                          | P                    | 5                            | 637                              | 109   | 4.85  | H      |
| 11,180                      | 1                                   | 2550           | 40                                       | 199.0                          | P                    | 4                            | 651                              | 109   | 6.10  | H      |
| 12,180                      | 0                                   | 2550           | 40                                       | 202.5                          | P                    | 2                            | 655                              | 108.5 | 7.38  | H      |
| 13,180                      | -1                                  | 2550           | 39                                       | 197.0                          | W.O.                 | 0                            | 623                              | 107.5 | 8.70  | H      |
| 14,180                      | -4                                  | 2550           | 37.5                                     | 190.5                          | W.O.                 | 2                            | 584                              | 106.5 | 10.05 | H      |
| 15,170                      | -6                                  | 2550           | 36.1                                     | 184.5                          | W.O.                 | 4                            | 556                              | 105.2 | 11.53 | H      |
| 16,170                      | -8                                  | 2550           | 34.6                                     | 177.0                          | W.O.                 | 0                            | 515                              | 104.5 | 13.20 | H      |
| 17,160                      | -9                                  | 2550           | 33.1                                     | 171.5                          | W.O.                 | 8                            | 481                              | 103.5 | 14.77 | H      |
| 18,110                      | -12                                 | 2550           | 32.0                                     | 165.5                          | W.O.                 | 11                           | 443                              | 102.5 | 16.69 | H      |
| 19,160                      | -14                                 | 2550           | 30.6                                     | 160.0                          | W.O.                 | 13                           | 413                              | 101.5 | 18.80 | H      |
| 20,160                      | -17                                 | 2550           | 29.2                                     | 154.0                          | W.O.                 | 15                           | 390                              | 100.5 | 21.20 | H      |
| 21,160                      | -19                                 | 2550           | 29.2                                     | 150.5                          | W.O.                 | 18                           | 380                              | 99.5  | 23.94 | H      |
| 22,140                      | -22                                 | 2550           | 27.2                                     | 141.5                          | W.O.                 | 20                           | 346                              | 98.5  | 27.44 | H      |

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Table V

C-47B single engine ceiling test data, high blower, corrected for instrument error only.  
Configuration: Gear and flaps up; live engine; cowl flaps wide open; mixture auto-rich; carburetor heat cold, carburetor ram "on"; dead engine; cowl flaps closed; propeller feathered; throttle closed.

| Pressure<br>Altitude<br>ft. | Free Air<br>Temp.<br>107 IAS<br>° C. | Average<br>RPM | Average<br>Manifold<br>Pressure<br>"Hg. | Average<br>Torque<br>Pressure<br>#/sq. in. | Throttle<br>Position | Average<br>Carburetor<br>Temp.<br>° C. | Average<br>Fuel<br>Flow<br>#/hr. | Estimated<br>Gross<br>Weight<br>lbs. | IAS<br>MPH | Time<br>Hr.-Min. | Live<br>Engine |
|-----------------------------|--------------------------------------|----------------|-----------------------------------------|--------------------------------------------|----------------------|----------------------------------------|----------------------------------|--------------------------------------|------------|------------------|----------------|
| 13,690                      | 0                                    | 2550           | 38.0                                    | 190                                        | W.O.                 | 1                                      | 651                              | 25,100                               | 107        | 12:44            | Left           |
| 13,610                      | 0                                    | 2550           | 38.0                                    | 190                                        | W.O.                 | 1                                      | 651                              | 25,100                               | 107        | 12:46            | Left           |
| 13,570                      | 0                                    | 2550           | 38.1                                    | 190                                        | W.O.                 | 1                                      | 660                              | 25,075                               | 107        | 12:48            | Left           |
| 13,430                      | 0.5                                  | 2550           | 38.2                                    | 191                                        | W.O.                 | 1                                      | 651                              | 25,050                               | 107        | 12:50            | Left           |
| 13,370                      | 1.0                                  | 2550           | 38.3                                    | 192                                        | W.O.                 | 2                                      | 660                              | 25,025                               | 107        | 12:52            | Left           |
| 13,350                      | 1.0                                  | 2550           | 38.4                                    | 192                                        | W.O.                 | 2                                      | 660                              | 25,000                               | 107        | 12:54            | Left           |
| 13,310                      | 1.0                                  | 2550           | 38.5                                    | 192                                        | W.O.                 | 2                                      | 660                              | 24,975                               | 107        | 12:55            | Left           |
| 13,230                      | 0.5                                  | 2550           | 38.6                                    | 192                                        | W.O.                 | 2                                      | 660                              | 24,950                               | 107        | 12:58            | Left           |
| 13,270                      | 0.5                                  | 2550           | 38.6                                    | 191                                        | W.O.                 | 2                                      | 660                              | 24,950                               | 107        | 13:00            | Left           |
| 13,190                      | 1.0                                  | 2550           | 38.7                                    | 192                                        | W.O.                 | 2                                      | 670                              | 24,925                               | 107        | 13:02            | Left           |
| 13,210                      | 0.5                                  | 2550           | 38.6                                    | 192.5                                      | W.O.                 | 2                                      | 660                              | 24,900                               | 107        | 13:04            | Left           |
| 13,210                      | 0                                    | 2550           | 38.6                                    | 192.5                                      | W.O.                 | 2                                      | 660                              | 24,875                               | 107        | 13:06            | Left           |
| 13,170                      | 0                                    | 2550           | 38.8                                    | 193                                        | W.O.                 | 2                                      | 660                              | 24,850                               | 107        | 13:08            | Left           |
| 13,470                      | 0.5                                  | 2550           | 37.7                                    | 190                                        | W.O.                 | 2                                      | 641                              | 25,500                               | 107        | 12:10            | Right          |
| 13,400                      | 0.5                                  | 2550           | 37.9                                    | 191                                        | W.O.                 | 2                                      | 650                              | 25,500                               | 107        | 12:12            | Right          |
| 13,340                      | 1.0                                  | 2550           | 37.9                                    | 191.5                                      | W.O.                 | 3                                      | 650                              | 25,475                               | 107        | 12:14            | Right          |
| 13,250                      | 1.0                                  | 2550           | 37.9                                    | 194                                        | W.O.                 | 3                                      | 650                              | 25,450                               | 107        | 12:16            | Right          |
| 13,170                      | 1.0                                  | 2550           | 38.1                                    | 193                                        | W.O.                 | 3                                      | 650                              | 25,425                               | 107        | 12:18            | Right          |
| 13,070                      | 1.5                                  | 2550           | 38.1                                    | 194                                        | W.O.                 | 3                                      | 660                              | 25,400                               | 107        | 12:20            | Right          |
| 13,010                      | 1.5                                  | 2550           | 38.3                                    | 194                                        | W.O.                 | 3                                      | 660                              | 25,375                               | 107        | 12:22            | Right          |
| 12,950                      | 2.0                                  | 2550           | 38.4                                    | 194.5                                      | W.O.                 | 3                                      | 660                              | 25,350                               | 107        | 12:24            | Right          |
| 12,910                      | 2.0                                  | 2550           | 38.5                                    | 195                                        | W.O.                 | 3                                      | 669                              | 25,325                               | 107        | 12:26            | Right          |
| 12,860                      | 2.0                                  | 2550           | 38.6                                    | 195                                        | W.O.                 | 4                                      | 669                              | 25,300                               | 107.5      | 12:28            | Right          |
| 12,810                      | 2.0                                  | 2550           | 38.7                                    | 195.5                                      | W.O.                 | 4                                      | 660                              | 25,300                               | 107.5      | 12:30            | Right          |
| 12,750                      | 2.0                                  | 2550           | 38.8                                    | 196                                        | W.O.                 | 4                                      | 660                              | 25,275                               | 107.5      | 12:32            | Right          |

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Table VI - Section 1.

OBSERVED DATA OF TAKE-OFF

Take-off No.: 1 Airplane: C-47 Type: B AAT No.: 43-16133  
Date 2 August 1944 G.W. 26,000  
Wind 4.5 Ft/Sec 3° (incl) Configuration: Wing Flaps: 0°  
Barometer 29.173 Engine Cowl Flaps: W.C.  
Temperature: 24 °C Normal Take-off  
I.A.S. at T.O. 80 MPH Power Setting 16.5 " Hg. Man. Pr. 2065 RPM  
I.A.S. at 50' 95 MPH Runway Surface: Concrete

| Dist. From<br>Start of<br>Take-off - Ft | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. | Dist From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. |
|-----------------------------------------|-------------------------|----------------------------|-----------------------------------------|-------------------------|----------------------------|
| 0                                       | 0                       | 0                          |                                         |                         |                            |
| 349                                     | 9.11                    | 0                          |                                         |                         |                            |
| 762                                     | 14.08                   | 0                          |                                         |                         |                            |
| 1115                                    | 17.47                   | 0                          |                                         |                         |                            |
| 1422                                    | 20.05                   | 0                          |                                         |                         |                            |
| 1618                                    | 21.58                   | Off                        |                                         |                         |                            |
| 1649                                    | 21.85                   | 0                          |                                         |                         |                            |
| 1685                                    | 22.07                   | 1.                         |                                         |                         |                            |
| 1719                                    | 22.35                   | 2.                         |                                         |                         |                            |
| 1754                                    | 22.63                   | 2.5                        |                                         |                         |                            |
| 1789                                    | 22.87                   | 3.                         |                                         |                         |                            |
| 1823                                    | 23.15                   | 3.5                        |                                         |                         |                            |
| 1857                                    | 23.38                   | 4.                         |                                         |                         |                            |
| 1891                                    | 23.65                   | 4.5                        |                                         |                         |                            |
| 1996                                    | 24.38                   | 7.                         |                                         |                         |                            |
| 2101                                    | 25.17                   | 10.                        |                                         |                         |                            |
| 2261                                    | 26.44                   | 17.                        |                                         |                         |                            |
| 2461                                    | 27.68                   | 26.                        |                                         |                         |                            |
| 2630                                    | 29.18                   | 36.                        |                                         |                         |                            |
| 2870                                    | 30.47                   | 44.                        |                                         |                         |                            |
| 2943                                    | 30.97                   | 50.                        |                                         |                         |                            |
| 3016                                    | 31.47                   | 53.                        |                                         |                         |                            |
| 4140                                    | 38.51                   | 137.                       |                                         |                         |                            |

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Table VI - Section 2

OBSERVED DATA OF TAKE-OFF

Take-off No.: 2 Airplane: C-47 Type: B AAF No.: 43-16133  
Date 2 August 1944 G. W. 25,890  
Wind 1.43 ft/sec 4° (incl.) Configuration: Wing Flaps: 0°  
Barometer 29.173 Engine Cowl Flaps: W.O. °  
Temperature: 26 °C Normal Take-off  
I.A.S. at T.O. 83 MPH Power Setting 46.5" Hg. Man. Pr. 2665 RPM  
I.A.S. at 50' 97 MPH Runway Surface: Concrete

| Dist. From<br>Start of<br>Take-off - Ft | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. | Dist From<br>Start of<br>Take-off - Ft | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. |
|-----------------------------------------|-------------------------|----------------------------|----------------------------------------|-------------------------|----------------------------|
| 0                                       | 0                       | 0                          |                                        |                         |                            |
| 259                                     | 7.07                    | 0                          |                                        |                         |                            |
| 550                                     | 10.06                   | 0                          |                                        |                         |                            |
| 932                                     | 15.00                   | 0                          |                                        |                         |                            |
| 1257                                    | 17.83                   | 0                          |                                        |                         |                            |
| 1550                                    | 20.17                   | 0                          |                                        |                         |                            |
| 1757                                    | 21.70                   | 0                          |                                        |                         |                            |
| 1796                                    | 21.98                   | Off                        |                                        |                         |                            |
| 1832                                    | 22.23                   | 6"                         |                                        |                         |                            |
| 1868                                    | 22.49                   | 1.                         |                                        |                         |                            |
| 1904                                    | 22.74                   | 1.5                        |                                        |                         |                            |
| 1940                                    | 23.00                   | 2.5                        |                                        |                         |                            |
| 1975                                    | 23.25                   | 4.0                        |                                        |                         |                            |
| 2013                                    | 23.50                   | 5.0                        |                                        |                         |                            |
| 2202                                    | 24.80                   | 10.5                       |                                        |                         |                            |
| 2353                                    | 25.80                   | 18.5                       |                                        |                         |                            |
| 2504                                    | 26.84                   | 27.                        |                                        |                         |                            |
| 2661                                    | 27.86                   | 34.                        |                                        |                         |                            |
| 2818                                    | 28.86                   | 43.                        |                                        |                         |                            |
| 2935                                    | 29.64                   | 51.                        |                                        |                         |                            |
| 2977                                    | 29.90                   | 53.                        |                                        |                         |                            |
| 3583                                    | 33.65                   | 108.                       |                                        |                         |                            |

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Table VI - Section 3

OBSERVED DATA OF TAKE-OFF

Take-off No.: 3 Airplane C-47 Type B AAF No. 43-16133  
Date: 2 August 1944 G. W. 25,731  
Wind 0 ft/sec 11 ° (incl. ) Configuration: Wing Flaps 0 °  
Barometer 29.173 Engine Cowl Flaps W.O. °  
Temperature: 26 °C Normal Take-off  
I.A.S. at T.O. 83 MPH Power Setting 46.5 " Hg. Man. Pr. 2665 RPM  
I.A.S. at 50' 99 MPH Runway Surface: Concrete

| Dist. From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. | Dist. From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>sec. | Ht. Above<br>Runway<br>Ft. |
|------------------------------------------|-------------------------|----------------------------|------------------------------------------|-------------------------|----------------------------|
| 0                                        | 0                       | Start                      |                                          |                         |                            |
| 269                                      | 7.43                    | 0                          |                                          |                         |                            |
| 541                                      | 11.16                   | 0                          |                                          |                         |                            |
| 953                                      | 15.37                   | 0                          |                                          |                         |                            |
| 1296                                     | 18.33                   | 0                          |                                          |                         |                            |
| 1580                                     | 20.56                   | 0                          |                                          |                         |                            |
| 1885                                     | 22.76                   | 0                          |                                          |                         |                            |
| 1920                                     | 22.99                   | Off                        |                                          |                         |                            |
| 1952                                     | 23.25                   | 6"                         |                                          |                         |                            |
| 1990                                     | 23.48                   | 1                          |                                          |                         |                            |
| 2023                                     | 23.72                   | 2                          |                                          |                         |                            |
| 2060                                     | 23.96                   | 4                          |                                          |                         |                            |
| 2098                                     | 24.23                   | 5                          |                                          |                         |                            |
| 2350                                     | 25.91                   | 14                         |                                          |                         |                            |
| 2545                                     | 27.19                   | 22                         |                                          |                         |                            |
| 2732                                     | 28.40                   | 34                         |                                          |                         |                            |
| 2828                                     | 28.91                   | 40                         |                                          |                         |                            |
| 2859                                     | 29.13                   | 44                         |                                          |                         |                            |
| 2942                                     | 29.71                   | 51.5                       |                                          |                         |                            |
| 2980                                     | 29.95                   | 55                         |                                          |                         |                            |
| 3261                                     | 31.71                   | 86                         |                                          |                         |                            |

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Table VI - Section 4

OBSERVED DATA OF TAKE-OFF

Take-off No.: 4 Airplane C-47 Type B AAF No. 43-16133  
 Date: 3 August 1944 G.W. 26,000  
 Wind 8.34 ft/sec. 45° (incl. 0) Configuration: Wing Flaps 0°  
 Barometer 29.167 Engine Cowl Flaps W.O.°  
 Temperature 29.5° C. Minimum safe take-off  
 I.A.S. at T.O. 78 MPH Power Setting 47.8 "Hg. Man.Pr. 2690 RPM  
 I.A.S. at 50' 80 MPH Runway Surface: Concrete

| Dist. From<br>Start of<br>Take-off -Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. | Dist. From<br>Start of<br>Take-off Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. |
|-----------------------------------------|-------------------------|----------------------------|----------------------------------------|-------------------------|----------------------------|
| 0                                       | 0                       | Start                      |                                        |                         |                            |
| 235                                     | 4.7                     | 0                          |                                        |                         |                            |
| 499                                     | 8.6                     | 0                          |                                        |                         |                            |
| 775.5                                   | 11.6                    | 0                          |                                        |                         |                            |
| 1071.5                                  | 14.35                   | 0                          |                                        |                         |                            |
| 1221.2                                  | 15.4                    | 0                          |                                        |                         |                            |
| 1432.4                                  | 17.3                    | 0                          |                                        |                         |                            |
| 1464.6                                  | 17.56                   | off                        |                                        |                         |                            |
| 1497.6                                  | 17.81                   | 1                          |                                        |                         |                            |
| 1532.2                                  | 18.07                   | 2                          |                                        |                         |                            |
| 1565.8                                  | 18.34                   | 4                          |                                        |                         |                            |
| 1602.3                                  | 18.60                   | 6                          |                                        |                         |                            |
| 1636.8                                  | 18.87                   | 8                          |                                        |                         |                            |
| 1677.6                                  | 19.15                   | 11                         |                                        |                         |                            |
| 1713                                    | 19.44                   | 15                         |                                        |                         |                            |
| 1748.3                                  | 19.7                    | 19                         |                                        |                         |                            |
| 1783.7                                  | 19.95                   | 23                         |                                        |                         |                            |
| 1816.7                                  | 20.21                   | 29                         |                                        |                         |                            |
| 1850.2                                  | 20.47                   | 35                         |                                        |                         |                            |
| 1882.8                                  | 20.73                   | 43                         |                                        |                         |                            |
| 1918.6                                  | 21.0                    | 49                         |                                        |                         |                            |
| 1953.4                                  | 21.25                   | 58                         |                                        |                         |                            |

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Table VI - Section 5

OBSERVED DATA OF TAKE-OFF

Take-off No.: 5 Airplane C-47 Type B AAF No. 43-16132  
Date 3 August 1944 G.W. 25,800  
Wind 7.8 ft/sec 60° (incl. L) Configuration: Wing Flaps 0°  
Barometer 29.167 Engine Cowl Flaps W.O.  
Temperature 30° C. Minimum Safe take-off  
I.A.S. at T.O. 70 MPH Power Setting 47.8 "Hg. Man. Pr. 2890 RPM  
I.A.S. at 50' 82 MPH Runway Surface Concrete

| Dist. From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. | Dist. From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. |
|------------------------------------------|-------------------------|----------------------------|------------------------------------------|-------------------------|----------------------------|
| 0                                        | 0                       | Start                      |                                          |                         |                            |
| 265                                      | 5.82                    | 0                          |                                          |                         |                            |
| 688                                      | 11.00                   | 0                          |                                          |                         |                            |
| 920                                      | 13.20                   | 0                          |                                          |                         |                            |
| 1264.7                                   | 16.12                   | 0                          |                                          |                         |                            |
| 1449.6                                   | 17.58                   | 0                          |                                          |                         |                            |
| 1517.2                                   | 18.08                   | 0                          |                                          |                         |                            |
| 1546.8                                   | 18.32                   | off                        |                                          |                         |                            |
| 1583.3                                   | 18.57                   | 1.5                        |                                          |                         |                            |
| 1614.8                                   | 18.80                   | 3.                         |                                          |                         |                            |
| 1643.3                                   | 19.02                   | 5.                         |                                          |                         |                            |
| 1678                                     | 19.27                   | 7.                         |                                          |                         |                            |
| 1715.3                                   | 19.52                   | 9.                         |                                          |                         |                            |
| 1743.7                                   | 19.77                   | 11.                        |                                          |                         |                            |
| 1780.2                                   | 20.00                   | 15.                        |                                          |                         |                            |
| 1813.7                                   | 20.25                   | 20.                        |                                          |                         |                            |
| 1848.8                                   | 20.5                    | 25.                        |                                          |                         |                            |
| 1879.6                                   | 20.74                   | 31.                        |                                          |                         |                            |
| 1910.4                                   | 20.97                   | 37.                        |                                          |                         |                            |
| 1943.4                                   | 21.22                   | 44.                        |                                          |                         |                            |
| 1964.6                                   | 21.47                   | 50.                        |                                          |                         |                            |

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Table VI - Section 6

## OBSERVED DATA OF TAKE-OFF

Take-off No. 6 Airplane C-47 Type B AAF NO. 43-16133  
Date 3 August 1944 G.W. 25,673  
Wind 3.65 ft/sec. 35 °(incl.L) Configuration: Wing Flaps 0°  
Barometer 29.167 Engine Cowl Flaps W.O. °  
Temperature: 31 °C Minimum Safe Take-Off  
I.A.S. at T.O. 80 MPH Power Setting 47.8" Hg. Man.Pr. 2690 RPM  
I.A.S. at 50' 79 MPH Runway Surface Concrete

| Dist. From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. | Dist. From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. |
|------------------------------------------|-------------------------|----------------------------|------------------------------------------|-------------------------|----------------------------|
| 0                                        | 0                       | Start                      |                                          |                         |                            |
| 150                                      | 6.89                    | 0                          |                                          |                         |                            |
| 355                                      | 10.78                   | 0                          |                                          |                         |                            |
| 558                                      | 13.53                   | 0                          |                                          |                         |                            |
| 836.7                                    | 16.53                   | 0                          |                                          |                         |                            |
| 1145.5                                   | 21.89                   | 0                          |                                          |                         |                            |
| 1488.4                                   | 22.17                   | Off                        |                                          |                         |                            |
| 1522.6                                   | 22.43                   | 1                          |                                          |                         |                            |
| 1555.6                                   | 22.68                   | 3                          |                                          |                         |                            |
| 1593.4                                   | 22.94                   | 5                          |                                          |                         |                            |
| 1626.2                                   | 23.20                   | 7                          |                                          |                         |                            |
| 1663.3                                   | 23.47                   | 9                          |                                          |                         |                            |
| 1706.8                                   | 23.73                   | 12                         |                                          |                         |                            |
| 1733.3                                   | 23.99                   | 16                         |                                          |                         |                            |
| 1767.6                                   | 24.28                   | 20                         |                                          |                         |                            |
| 1805.3                                   | 24.53                   | 27                         |                                          |                         |                            |
| 1840.7                                   | 24.80                   | 31                         |                                          |                         |                            |
| 1872.2                                   | 25.07                   | 38                         |                                          |                         |                            |
| 1907.7                                   | 25.33                   | 44                         |                                          |                         |                            |
| 1939.2                                   | 25.59                   | 51                         |                                          |                         |                            |

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Table VI - Section 7

OBSERVED DATA OF TAKE-OFF

Take-off No. 7 Airplane C-47 Type B AAF No. 43-16133  
 Date 3 August 1944 G.W. 25,536  
 Wind 4.24 ft/sec 50° (incl.L) Configuration: Wing Flaps 0°  
 Barometer 29.167 Engine Cowl Flaps W.O. °  
 Temperature 31 °C. Absolute Minimum Take-off  
 I.A.S. at T.O. 72 MPH Power Setting 48.3 "Hg. Man. Pr. 2685 RPM  
 I.A.S. at 50' 78 MPH Runway Surface Concrete

| Dist From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. | Dist. From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. |
|-----------------------------------------|-------------------------|----------------------------|------------------------------------------|-------------------------|----------------------------|
| 0                                       | 0                       | Start                      |                                          |                         |                            |
| 133                                     | 3.01                    | 0                          |                                          |                         |                            |
| 244                                     | 5.46                    | 0                          |                                          |                         |                            |
| 457                                     | 8.74                    | 0                          |                                          |                         |                            |
| 737                                     | 12.04                   | 0                          |                                          |                         |                            |
| 1140                                    | 15.81                   | 0                          |                                          |                         |                            |
| 1200                                    | 16.34                   | Off                        |                                          |                         |                            |
| 1290                                    | 16.86                   | 1                          |                                          |                         |                            |
| 1333                                    | 17.42                   | 2                          |                                          |                         |                            |
| 1399                                    | 17.92                   | 4                          |                                          |                         |                            |
| 1467                                    | 18.49                   | 7                          |                                          |                         |                            |
| 1505                                    | 19.02                   | 12                         |                                          |                         |                            |
| 1603                                    | 19.54                   | 17                         |                                          |                         |                            |
| 1674                                    | 20.09                   | 24                         |                                          |                         |                            |
| 1740                                    | 20.62                   | 31                         |                                          |                         |                            |
| 1808                                    | 21.14                   | 40                         |                                          |                         |                            |
| 1874                                    | 21.68                   | 50                         |                                          |                         |                            |

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OBSERVED DATA OF TAKE-OFF

Take-off No. 8 Airplane C-47 Type B AAF No. 43-16133  
Date 3 August 1944 G.W. 25,374  
Wind 3.2 ft/sec 20° (incl. L) Configuration: Wing Flaps 0°  
Barometer 29.167 Engine Cowl Flaps W.O. °  
Temperature 32 ° C. Absolute Minimum Take-off  
I.A.S. at T.O. 74 MPH Power Setting 48.3 "Hg. Man. Pr. 2685 RPM  
I.A.S. at 50' 80 MPH Runway Surface Concrete

| Dist. From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. | Dist. From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. |
|------------------------------------------|-------------------------|----------------------------|------------------------------------------|-------------------------|----------------------------|
| 0                                        | 0                       | Start                      |                                          |                         |                            |
| 109                                      | 4.08                    | 0                          |                                          |                         |                            |
| 379                                      | 8.67                    | 0                          |                                          |                         |                            |
| 754                                      | 12.95                   | 0                          |                                          |                         |                            |
| 1065                                     | 15.85                   | 0                          |                                          |                         |                            |
| 1317                                     | 17.93                   | Off                        |                                          |                         |                            |
| 1417                                     | 18.71                   | 1                          |                                          |                         |                            |
| 1482                                     | 19.23                   | 3                          |                                          |                         |                            |
| 1550                                     | 19.75                   | 7                          |                                          |                         |                            |
| 1620                                     | 20.27                   | 11                         |                                          |                         |                            |
| 1691                                     | 20.79                   | 17                         |                                          |                         |                            |
| 1759                                     | 21.30                   | 22                         |                                          |                         |                            |
| 1827                                     | 21.81                   | 31                         |                                          |                         |                            |
| 1894                                     | 22.33                   | 41                         |                                          |                         |                            |
| 1963                                     | 22.85                   | 53                         |                                          |                         |                            |

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OBSERVED DATE OF TAKE-OFF

Take-off No. 9 Airplane C-47 Type B AAF NO. 43-16133  
Date 3 August 1944 G.W. 25,241  
Wind 0 ft/sec. 85° (incl.L) Configuration: Wing Flaps 0°  
Barometer 29.167 Engine Cowl Flaps W.O. °  
Temperature 33 °C Absolute Minimum Take-off  
I.A.S. at T.O. 71 MPH Power Setting 48.3 Hg. Man. Pr. 2685 HgM  
I.A.S. at 50' 77 MPH Run-Way Surface Concrete

| Dist. From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. |
|------------------------------------------|-------------------------|----------------------------|
| 0                                        | 0                       | Start                      |
| 3                                        | .59                     | 0                          |
| 35                                       | 2.56                    | 0                          |
| 172                                      | 5.95                    | 0                          |
| 284                                      | 7.89                    | 0                          |
| 589                                      | 11.76                   | 0                          |
| 916                                      | 15.03                   | 0                          |
| 1134                                     | 16.93                   | 0                          |
| 1167                                     | 17.22                   | 0                          |
| 1200                                     | 17.47                   | Off                        |
| 1223                                     | 17.74                   | .5                         |
| 1266                                     | 18.01                   | 1.0                        |
| 1299                                     | 18.28                   | 1.5                        |
| 1331                                     | 18.54                   | 3.                         |
| 1367                                     | 18.82                   | 4.                         |
| 1400                                     | 19.03                   | 5.                         |
| 1506                                     | 19.91                   | 10.                        |
| 1576                                     | 20.44                   | 14                         |
| 1647                                     | 20.96                   | 20                         |
| 1714                                     | 21.50                   | 28.5                       |
| 1784                                     | 22.06                   | 37.5                       |
| 1820                                     | 22.36                   | 44.                        |
| 1854                                     | 22.60                   | 49.5                       |
| 1888                                     | 22.86                   | 55.                        |

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OBSERVED DATA OF TAKE-OFF

Take-off No. 10 Airplane C-47 Type B AAF No. 43-16133  
Date 3 August 1944 G. W. 25,119  
Wind 2.33ft/sec. 104°(incl.L) Configuration: Wing Flaps 1/4  
Barometer 29.167 Engine Cowl Flaps: W.O.°  
Temperature 33 °C Absolute Minimum Take-off  
I.A.S. at T.O. 70 MPH Power Setting 48.3 "Hg. Man. Pr. 2685 RPM  
I.A.S. at 50' 76 MPH Runway Surface Concrete

| Dist. From<br>Start of<br>Take-off - Ft | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. |
|-----------------------------------------|-------------------------|----------------------------|
| 0                                       | 0                       | 0                          |
| 17                                      | 1.57                    | Start                      |
| 44                                      | 2.60                    | 0                          |
| 70                                      | 3.46                    | 0                          |
| 150                                     | 5.34                    | 0                          |
| 235                                     | 6.90                    | 0                          |
| 340                                     | 8.54                    | 0                          |
| 476                                     | 10.39                   | 0                          |
| 571                                     | 11.48                   | 0                          |
| 742                                     | 13.31                   | 0                          |
| 962                                     | 15.42                   | 0                          |
| 1087                                    | 16.52                   | 0                          |
| 1149                                    | 17.05                   | off                        |
| 1180                                    | 17.29                   | .5                         |
| 1242                                    | 17.80                   | 2.                         |
| 1274                                    | 18.07                   | 3.                         |
| 1308                                    | 18.34                   | 4.                         |
| 1342                                    | 18.59                   | 6.                         |
| 1409                                    | 19.17                   | 10.                        |
| 1470                                    | 19.65                   | 15.                        |
| 1535                                    | 20.17                   | 23.                        |
| 1596                                    | 20.68                   | 31.                        |
| 1633                                    | 20.90                   | 37.5                       |
| 1665                                    | 21.21                   | 42.                        |
| 1698                                    | 21.49                   | 48.                        |
| 1728                                    | 21.75                   | 55.                        |

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Table VI - Section 11

OBSERVED DATE OF TAKE-OFF

Take-off No. 11 Airplane C-47 Type B AAF No. 43-16133  
 Date 3 August 1944 G. W. 25,008  
 Wind 2.21 ft/sec 16 °(incl.L) Configuration: Wing Flaps 1/4 °  
 Barometer 29.167 Engine Cowl Flaps W.O.  
 Temperature 33.5 ° C. Absolute Minimum Take-off  
 I.A.S. at T.O. 66 MPH power setting 48.3 Hg. Man. Pr. 2685 RPM  
 I.A.S. at 50' 71 MPH Runway Surface Concrete

| Dist. From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. |
|------------------------------------------|-------------------------|----------------------------|
| 0                                        | 0                       | Start                      |
| 12                                       | 1.12                    | 0                          |
| 42                                       | 2.45                    | 0                          |
| 83                                       | 3.84                    | 0                          |
| 147                                      | 5.44                    | 0                          |
| 240                                      | 7.06                    | 0                          |
| 302                                      | 8.10                    | 0                          |
| 453                                      | 10.23                   | 0                          |
| 516                                      | 11.01                   | 0                          |
| 608                                      | 12.10                   | 0                          |
| 452                                      | 13.64                   | 0                          |
| 862                                      | 14.72                   | 0                          |
| 943                                      | 15.47                   | 0                          |
| 1030                                     | 16.25                   | 0                          |
| 1062                                     | 16.53                   | Off                        |
| 1093                                     | 16.78                   | .6                         |
| 1122                                     | 17.07                   | 1.                         |
| 1154                                     | 17.34                   | 3.                         |
| 1210                                     | 17.57                   | 4.                         |
| 1215                                     | 17.84                   | 5.                         |
| 1275                                     | 18.33                   | 9.                         |
| 1338                                     | 18.85                   | 13.                        |
| 1403                                     | 19.39                   | 19.5                       |
| 1467                                     | 19.93                   | 27.                        |
| 1527                                     | 20.43                   | 34.                        |
| 1557                                     | 20.69                   | 38.                        |
| 1586                                     | 20.95                   | 42.                        |
| 1619                                     | 21.18                   | 47.                        |
| 1648                                     | 21.45                   | 51.                        |

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OBSERVED DATE OF LANDING

Landing No. 1 Airplane C-47 Type B AAF No. 43-16133  
Date 3 August 1944 G. W. —  
Wind 1.86 ft/sec 43 °(incl.L) Configuration: Wing Flaps Full  
Barometer 29.167 Engine Cowl Flaps Closed  
Temperature 30 °C.  
I.A.S. at Contact 69 MPH Power Setting "Hg. Man Pr. 2400 RPM  
I.A.S. at 50' 84 MPH Runway Surface Concrete

| Dist. From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. | Dist From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. |
|------------------------------------------|-------------------------|----------------------------|-----------------------------------------|-------------------------|----------------------------|
| 0                                        | 0                       | 67                         | 883.4                                   | 6.82                    | 3                          |
| 72                                       | .5                      | 51                         | 917                                     | 7.12                    | 2                          |
| 106                                      | .79                     | 47                         | 957.4                                   | 7.4                     | 1                          |
| 146                                      | 1.06                    | 41                         | 984.6                                   | 7.69                    | Land                       |
| 182                                      | 1.34                    | 35                         | 6014.4                                  | 7.95                    |                            |
| 219                                      | 1.63                    | 31                         | 1225.                                   | 9.85                    |                            |
| 258.5                                    | 1.92                    | 27                         | 1441.4                                  | 12.0                    |                            |
| 294.7                                    | 2.2                     | 22                         | 1681.9                                  | 14.97                   |                            |
| 331.5                                    | 2.46                    | 18                         | 1884.5                                  | 18.45                   |                            |
| 367                                      | 2.74                    | 15                         | 2018.9                                  | 22.38                   |                            |
| 406.1                                    | 3.0                     | 12                         | 2025.9                                  | 22.90                   | Stop                       |
| 436.1                                    | 3.26                    | 10                         |                                         |                         |                            |
| 475                                      | 3.53                    | 8                          |                                         |                         |                            |
| 508.1                                    | 3.8                     | 7                          |                                         |                         |                            |
| 544.1                                    | 4.08                    | 6                          |                                         |                         |                            |
| 581.5                                    | 4.37                    | 6                          |                                         |                         |                            |
| 617                                      | 4.66                    | 6                          |                                         |                         |                            |
| 653                                      | 4.94                    | 6                          |                                         |                         |                            |
| 710.2                                    | 5.21                    | 5                          |                                         |                         |                            |
| 717.2                                    | 5.48                    | 5                          |                                         |                         |                            |
| 751.1                                    | 5.74                    | 5                          |                                         |                         |                            |
| 785.7                                    | 6.01                    | 5                          |                                         |                         |                            |
| 817.8                                    | 6.28                    | 4                          |                                         |                         |                            |
| 849.8                                    | 6.55                    | 4                          |                                         |                         |                            |

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Table VI - Section 13

OBSERVED DATA OF LANDING

Landing No. 2 Airplane C-47 Type B AAF No. 43-16133

Date 3 August 1944 G. W. —

Wind 77 ft/sec 40 °(incl.L) Configuration: Wing Flaps Full

Barometer 29.167 Engine Cowl Flaps Closed

Temperature 30.5 °C

I.A.S. at Contact 66 MPH Power Setting -- "Hg. Man. Pr. 2400 RPM

I.A.S. at 50' 82 MPH Runway Surface Concrete

| Dist. From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. | Dist. From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. |
|------------------------------------------|-------------------------|----------------------------|------------------------------------------|-------------------------|----------------------------|
| 0                                        | 0                       | 70                         | 915                                      | 7.05                    | 4                          |
| 41                                       | .28                     | 60                         | 947.1                                    | 7.33                    | 1.5                        |
| 81                                       | .58                     | 51                         | 980.1                                    | 7.6                     | Land                       |
| 122                                      | .85                     | 44                         | 1013                                     | 7.88                    | 0                          |
| 159                                      | 1.15                    | 35                         | 1043.1                                   | 8.16                    | 0                          |
| 197                                      | 1.42                    | 29                         | 1346.7                                   | 10.95                   | 0                          |
| 235                                      | 1.7                     | 24                         | 1625.8                                   | 14.3                    | 0                          |
| 270                                      | 1.98                    | 19                         | 1870.2                                   | 18.2                    | 0                          |
| 309                                      | 2.26                    | 16                         | 2014.4                                   | 22.05                   | 0                          |
| 347                                      | 2.54                    | 12                         | 2050.4                                   | 24.79                   | Stop                       |
| 384                                      | 2.92                    | 11                         |                                          |                         |                            |
| 429                                      | 3.1                     | 10                         |                                          |                         |                            |
| 458                                      | 3.39                    | 9                          |                                          |                         |                            |
| 494                                      | 3.68                    | 8                          |                                          |                         |                            |
| 530                                      | 4.05                    | 8                          |                                          |                         |                            |
| 568                                      | 4.25                    | 8                          |                                          |                         |                            |
| 635                                      | 4.8                     | 6                          |                                          |                         |                            |
| 667                                      | 5.07                    | 6                          |                                          |                         |                            |
| 705                                      | 5.35                    | 6                          |                                          |                         |                            |
| 740                                      | 5.62                    | 6                          |                                          |                         |                            |
| 773                                      | 5.91                    | 6                          |                                          |                         |                            |
| 809.5                                    | 6.2                     | 5                          |                                          |                         |                            |
| 845.7                                    | 6.5                     | 5                          |                                          |                         |                            |
| 881.5                                    | 6.77                    | 5                          |                                          |                         |                            |

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Table VI - Section 14

OBSERVED DATA OF LANDING

Landing No. 3 Airplane C-47 Type B AAF No. 43-16133  
Date 3 August 1944 G. W. —  
Wind 3.56 ft/sec 12 °(incl.L) Configuration: Wing Flaps Full  
Barometer 29.167 Engine Cowl Flaps Closed  
Temperature 31 °C  
I. A. S. at Contact 66 MPH Power Setting — "Hg Man.Pr. 2400 RPM  
I. A. S. at 50' 81 MPH Runway Surface Concrete

| Dist. From<br>Start of<br>Take-off - Ft. | Elapsed<br>Time<br>Sec. | Ht. Above<br>Runway<br>Ft. |
|------------------------------------------|-------------------------|----------------------------|
| 0                                        | 0                       | 50                         |
| 36.8                                     | .29                     | 40                         |
| 110.4                                    | .88                     | 34                         |
| 187.4                                    | 1.47                    | 25                         |
| 257.8                                    | 2.02                    | 18                         |
| 327.3                                    | 2.56                    | 10                         |
| 421.5                                    | 3.14                    | 7                          |
| 468.0                                    | 3.71                    | 4                          |
| 508.1                                    | 4.29                    | 2                          |
| 606.3                                    | 4.84                    | 1                          |
| 665.9                                    | 5.39                    | Land                       |
| 729.7                                    | 5.94                    | 0                          |
| 790.9                                    | 6.51                    | 0                          |
| 962.0                                    | 8.17                    | 0                          |
| 1156.7                                   | 10.68                   | 0                          |
| 1308.3                                   | 12.34                   | 0                          |
| 1440.3                                   | 14.84                   | 0                          |
| 1605.2                                   | 18.44                   | 0                          |
| 1650.2                                   | 20.93                   | 0                          |
| 1656.2                                   | 21.19                   | Stop                       |