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TACTICAL PLANNING

Characteristics & Performance Chart

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PUBLISHED BY AUTHORITY OF THE COMMANDING GENERAL,
ARMY AIR FORCES, BY THE CHIEF, ENGINEERING DIVISION,
MATERIEL COMMAND, WRIGHT FIELD, DAYTON, OHIO

BOMBERS

CARGO

FIGHTERS

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This chart replaces the Monthly Chart of Airplane Characteristics and Performance EE-306-1, "Production". The latter was frequently misinterpreted and therefore general distribution was discontinued on directive from higher authority. This issue covers typical models now in theater operation and the list will be increased from time to time as rapidly as the data can be compiled.

Data contained herein are not to be considered guaranteed performance nor optimum performance as established by test flight but are to be considered official "Practical" characteristics and performance to be used for planning purposes for the average pilot.

All data includes service allowances based on theater experience. Individual airplanes may vary appreciably due to age and service changes. Data printed in red are preliminary and subject to revision after flight check. Data printed in black have been derived from information obtained in flight but are not actual flight test results. For detailed planning see Technical Orders listed as references.

WARNING

THESE CHARTS CONTAIN CONSERVATIVE AVERAGES FOR TACTICAL PLANNING AND ARE NOT SUITABLE FOR AERODYNAMIC ANALYSIS.

Performance is based on the requirements of AAF Spec. 40107B, "Pilots' Handbooks, Flight Operation Instructions", which sets forth specific allowances for practical service operation. Take-off and landing distances are 125% of optimum on hard surface, no wind, standard temperature. Weights are "Basic" weight plus crew, oil, full ammunition, fuel and bombs, cargo, passengers or troops as applicable. For bombers and cargo, "Recommended Limit" and "War Maximum" weights are based on limiting applied positive maneuver factors of 2.67G and 2.00G respectively unless otherwise specified. Time to climb is minimum within published engine limits. In future issues speed and climb with "Military Power" will be replaced with "War Emergency" when applicable. Range and endurance are based on the following assumptions:

- a. Allowance for warm-up, taxi, run-up, take-off, and landing, (equal to ten minutes at rated power.)
- b. Allowances for fuel consumed in climb. Distance and time to climb are included in range and endurance.
- c. Allowance for carrying bombs and droppable tanks entire flight.
- d. Allowance of 10% net ideal range for miscellaneous differences in airplanes, equipment, pilot technique, atmospheric conditions other than wind, unusable fuel, weight and balance and similar variables. (For example, range varies day and night due to fuel expansion prior to take-off.)
- e. Other than the above, no allowance for wind, assured reserve, combat nor formation flight.

PREPARED BY TECHNICAL DATA LABORATORY, ENGINEERING DIVISION

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DEFINITIONSCHARACTERISTICS

SUPERCHARGER: "TURBO" INDICATES EXHAUST DRIVEN TURBINE WITH SINGLE SPEED INTEGRAL DIFFUSER.

BHP/ALT.: BRAKE HORSEPOWER PER ENGINE AT CRITICAL ALTITUDE WITH RAM.

T: MAXIMUM POWER FOR TAKE-OFF.

M: MAXIMUM POWER FOR COMBAT AT ALTITUDE SHOWN, (usually limited to 15 min. duration)

we: WAR EMERGENCY POWER FOR COMBAT AT ALTITUDE SHOWN, (limited to 5 min. duration only)

C: MAXIMUM POWER FOR CONTINUOUS OPERATION.

Note: Max. cruise power is the maximum power for unlimited operation with lean mixture.

SIZE: APPROX. DIMENSIONS FOR STORAGE PLANNING.

LENGTH: DOES NOT INCLUDE PROTRUDING GUNS.

HEIGHT: MAXIMUM IN THREE POINT POSITION.

WING AREA: STANDARD AERODYNAMIC SURFACE AREA.

TREAD: CENTER TO CENTER MAIN WHEELS; (OUTBOARD IF DUAL).

WEIGHTS: APPROXIMATE AVERAGES FOR PLANNING PURPOSES

B: BASIC WEIGHT INCLUDES WEIGHT EMPTY, TRAPPED FUEL AND OIL, EQUIPMENT, ARMAMENT, ETC. BUT DOES NOT INCLUDE DISPOSABLE FUEL, OIL, DROPPABLE TANKS, AMMUNITION, BOMBS, CARGO, NOR CREW.

C: COMBAT WEIGHT IS BASED ON LATEST INFORMATION FROM THEATERS AND USUALLY INCLUDES FULL BUILT-IN FUEL, FULL AMMUNITION, AND AN ARBITRARY BOMB OR CARGO LOAD.

R: RECOMMENDED LIMIT ON GROSS WEIGHT WHICH WILL ALLOW A LIMIT APPLIED POSITIVE MANEUVER FACTOR OF AT LEAST 2.67g.

W: WAR MAX. WEIGHT FOR SPECIAL MISSIONS ONLY.

FUEL: STANDARD FUEL TANKAGE AND CAPACITIES.

ARMAMENT: RESUME OF INFORMATION IN THE "ARMAMENT & BOMB INSTALLATIONS" (CHART EE-306A)

BOMBS: MAXIMUM RACK CAPACITY FOR STANDARD SIZES.

CARGO: CARGO, PASSENGER OR TROOP CAPACITIES.

MAX. LOAD: ONE SIZE ONLY ON EACH BOMB RACK (in some cases a reduction in fuel load is required) PRACTICAL TOTAL CARGO BASED ON GR. WT.

RADIO: RESUME OF TYPICAL MODELS INSTALLED.

PERFORMANCE

RED PRINT: PRELIMINARY ESTIMATES OR CALCULATED DATA

TAKE-OFF & LANDING: VALUES ARE AT LEAST 125% OF OPTIMUM
(At 3000' RUNWAY ALT.)

GROSS WEIGHT: TO CLEAR 50': ARBITRARY VALUES FOR REFERENCE ONLY DISTANCES REPRESENTATIVE OF MINIMUM AIRPORT REQUIREMENTS.

GROUND RUN: DISTANCES REPRESENTATIVE OF MINIMUM RUNWAY REQUIREMENTS.

LANDING SPEED: PRACTICAL MINIMUM FOR AVERAGE PILOT.

HIGH SPEED & CLIMB: VALUES ARE FOR CLEAN NEW AIRPLANES

MILITARY POWER: FOR LIMITED PERIODS OF COMBAT OPERATION (Performance with War Emergency ratings are shown when applicable)

WAR EMERGENCY POWER: FOR UNLIMITED PERIODS OF OPERATION INCLUDING EMERGENCY HIGH-SPEED CRUISING.

MAX. CONTINUOUS:

TIME OF CLIMB: MINIMUM TIME TO CLIMB FROM SEA LEVEL BASED ON MILITARY POWER CLIMB FOR ALLOWABLE TIME AND MAXIMUM CONTINUOUS POWER CLIMB FROM THEN ON.

RANGE & ENDURANCE: SEE DISCUSSION IN "FOREWORD", PAGE I.

TAKE-OFF WEIGHT: BRIEF LIST OF TYPICAL GROSS WEIGHTS.

BOMBS, ETC.: TYPICAL LOADINGS COMBINED WITH VARIOUS TANK CAPACITIES. NO CONSIDERATION IS GIVEN TO LOADINGS REQUIRING PARTIALLY FILLED TANKS.

NOTE: Take-off weights with corresponding load and fuel quantity applies to all values to the right on the same line.

MAX. CONT. POWER: HIGH SPEED CRUISING WITH RICH MIXTURE (For emergency cruising only)

MAX. CRUISE POWER: MAXIMUM CONTINUOUS OPERATION WITH LEAN MIXTURE SETTING.

LONG RANGE: PRACTICAL MAXIMUM RANGE FOR PLANNING PURPOSES UNDER ALL CONDITIONS SET FORTH.

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BOEING (SEATTLE)

MODEL & BLOCK-NO.	ARMAMENT			BOMBS			FUEL U.S. GAL. (MAXIMUM)
	NO GUNS & CALIBER	RDS PER GUN	LOCATION & TYPE	INTERNAL	EXTERNAL	MAX. LOAD LB.	
				NO & SIZE	NO & SIZE		
B-17F-80 (-1 thru -27)	1-.30 2-.50 2-.50 2-.50	500 a 300 400 500	NOSE...FLEX. SIDE WAIST-FL. UPPER TURRET LOW BALL TRR. TAIL...FLEX.MT.	2-2000 6-1600 6-1000 12- 500 16- 250 24- 100	NONE	9600	2550
B-17F-80 (-30 thru -50)	NONE 1) 2) .50 2) 2)	NONE 300 b 300 400 500 565	NOSE...FLEX. RADIO COMPART. SIDE WAIST-FL. UPPER TURRET LOW BALL TRR. TAIL...FLEX.MT.	AS ABOVE	2-4000 2-2000 2-1600 2-1000	6-1600 2-4000x 17600	AS ABOVE
B-17F-80 -55 thru 1st.30(-85)	2) 1) 2) .50 2) 2)	300 300 400 500 565	AS ABOVE	A S	A B O V E		2810 (-80&SUB.)
B-17F-80 Last 70(-85) thru -130	3) 1) 2) .50 2) 2)		AS ABOVE	AS ABOVE EXCEPT THAT EXTERNAL BOMB RACKS DELETED AFTER 15th.(-95)			3630
B-17G-80 (-1 thru -60)	2) 2) 1) .50 2) 2)	300 c 365 300 500 d 400 500 565	CREEK...FLEX. CHIN TURRET RADIO COMPART. SIDE WAIST-FL. UPPER TURRET LOW BALL TRR. TAIL...FLEX.MT.	AS ABOVE	PROVISION FOR RACKS	9600	AS ABOVE

NOTES: a NOSE GUN DELETED AFTER 1st.(-20) d EARLY B-17G MODELS CARRY 300 RDS./GUN.
b RADIO COMPART.GUN ADDED AFTER 16th.(-30).
c CREEK GUNS ADDED AT MOD.CENTER. x EXTERNAL

DOUGLAS (LONG BEACH)

MODEL & BLOCK-NO.	ARMAMENT			BOMBS			FUEL U.S. GAL. (MAXIMUM)
	NO GUNS & CALIBER	RDS PER GUN	LOCATION & TYPE	INTERNAL	EXTERNAL	MAX. LOAD LB.	
				NO & SIZE	NO & SIZE		
B-17F-1L -1 thru 1st.13(-10)	1-.30 2-.50 2-.50 2-.50	500 a 300 400 500	NOSE...FLEX. SIDE WAIST-FL. UPPER TURRET LOW BALL TRR. TAIL...FLEX.MT.	2-2000 6-1600 6-1000 12- 500 16- 250 24- 100	NONE	9600	2550
B-17F-1L Last 12(-10) thru -20	2) 1) 2) .50 2) 2)	300 300 400 500 565	NOSE...FLEX. RADIO COMPART. SIDE WAIST-FL. UPPER TURRET LOW BALL TRR. TAIL...FLEX.MT.	AS ABOVE	PROV. FOR EXTERNAL RACKS ON -20 & SUB.	AS ABOVE	AS ABOVE
B-17F-1L -25 thru 1st.21(-35)	A S	A B O V E	AS ABOVE	AS ABOVE	PROV. FOR EXTERNAL RACKS	AS ABOVE	3630
B-17F-1L Last 19(-35) thru -65	3) 1) 2) .50 2) 2)		AS ABOVE	A S	A B O V E		AS ABOVE
B-17G-1L (-1 thru -40)	2) 2) 1) .50 2) 2)	300 e 365 300 500 d 400 500 565	CREEK...FLEX. CHIN TURRET RADIO COMPART. SIDE WAIST-FL. UPPER TURRET LOW BALL TRR. TAIL...FLEX.MT.	AS ABOVE	PROVISION FOR RACKS	AS ABOVE	AS ABOVE

NOTES: a NO NOSE GUN ON 1st.13(-10) d EARLY B-17G MODELS CARRY 300 RDS./GUN.
b NOT CARRIED ON -1 & -5.
c CREEK GUNS ADDED AT MOD. CENTER. x EXTERNAL

VEGA (BURBANK)

MODEL & BLOCK-NO.	ARMAMENT			BOMBS			FUEL U.S. GAL. (MAXIMUM)
	NO GUNS & CALIBER	RDS PER GUN	LOCATION & TYPE	INTERNAL	EXTERNAL	MAX. LOAD LB.	
				NO & SIZE	NO & SIZE		
B-17F-VE (-1 thru -10)	1-.30 CAL.(300 RDS.) IN 1st.		NOSE GUN	2-2000 6-1600 6-1000 12- 500 16- 250 24- 100	NONE	9600	2550
B-17F-VE (-15 & -20)	2) 1) 2) 2) 2)	300 300 300 400 500 565	NOSE...FLEX. RADIO COMPART. SIDE WAIST-FL. UPPER TURRET LOW BALL TRR. TAIL...FLEX.MT.	AS ABOVE	EXTERNAL RACKS ON Last 31 (-20)&SUB.	AS ABOVE	AS ABOVE
B-17F-VE (-25 & -30)	A S	A B O V E	AS ABOVE	AS ABOVE	2-4000 2-2000 2-1600 2-1000	6-1600 2-4000x 17600	2550 (B-17F-25) 3630 (B-17F-30)
B-17F-VE (-35 thru -50)	3) 1) 2) .50 2) 2)		AS ABOVE	AS ABOVE	NONE	9600	3630
B-17G-VE (-1 thru -40)	2) 2) 1) .50 2) 2)	300 e 365 300 500 d 400 500 565	CREEK...FLEX. CHIN TURRET RADIO COMPART. SIDE WAIST-FL. UPPER TURRET LOW BALL TRR. TAIL...FLEX.MT.	AS ABOVE	PROVISION FOR RACKS	AS ABOVE	AS ABOVE

NOTES: a NOT ON B-17F-1 & -5. d EARLY B-17G MODELS CARRIED 300 RDS./GUN.
b EXTERNAL BOMB RACKS DELETED ON Last 4(-30).
c CREEK GUNS ADDED AT MOD. CENTER. x EXTERNAL

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MODEL & BLOCK-NO.	ARMAMENT			BOMBS			FUEL U.S. GAL. (MAXIMUM)
	NO GUNS & CALIBER	RDS. PER GUN	LOCATION & TYPE	INTERNAL	EXTERNAL	MAX. LOAD LB.	
				NO & SIZE	NO & SIZE		
B-21D-CO D thru 1st. 94(-15)	1) 2) .50 2)	200 400 400	NOSE.....FLEX. UPPER TURRET TAIL TURRET	4-2000 8-1000 12- 500 12- 250 20- 100	NONE	8000	3614
B-21D-CO Last 36(-15) thru -20	1) 2) .50 1) 2)	200 400 100 400	NOSE.....FLEX. UPPER TURRET TUNNEL...FLEX. TAIL TURRET	A S	A B O V E		3614
B-21D-CO -25 thru 1st. 26(-140)	3) 2) 2) .50 1) 2)	100 250 400 100 400	NOSE.....FLEX. SIDE WAIST..FL. UPPER TURRET TUNNEL...FLEX. TAIL TURRET	4-2000 8-1600 8-1000 12- 500 12- 250 20- 100	NONE	12800	AS ABOVE
B-21D-CO Last 9(-140) thru -170	3) 2) 2) .50 2) 2)	100 250 400 400 400	NOSE.....FLEX. SIDE WAIST..FL. UPPER TURRET LOW BALL TRR. TAIL TURRET	A S	A B O V E		AS ABOVE
B-21D-CO (-1 thru -135)	2) 2) 2) .50 2) 2)	400 250 400 400 400	NOSE TURRET SIDE WAIST..FL. UPPER TURRET LOW BALL TRR. TAIL TURRET	A S	A B O V E		AS ABOVE

NOTES: a NOT ON B-21D-25.

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MODEL & BLOCK-NO.	ARMAMENT			BOMBS			FUEL U.S. GAL. (MAXIMUM)
	NO GUNS & CALIBER	RDS. PER GUN	LOCATION & TYPE	INTERNAL	EXTERNAL	MAX. LOAD LB.	
				NO & SIZE	NO & SIZE		
B-21D-CF (-1 & -5)	3) 2) 2) .50 1) 2)	100 250 400 100 400	NOSE.....FLEX. SIDE WAIST..FL. UPPER TURRET TUNNEL...FLEX. TAIL TURRET	4-2000 8-1000 12- 500 12- 250 20- 100	NONE	8000	3614
B-21D-CF (-10 thru -20)	A S	A B O V E		4-2000 8-1600 8-1000 12- 500 12- 250 20- 100	AS ABOVE	12800	AS ABOVE
B-21J-CF (-1 thru -15)	2) 2) 2) .50 2) 2)	400 250 400 400 400	NOSE TURRET SIDE WAIST..FL. UPPER TURRET LOW BALL TRR. TAIL TURRET	A S	A B O V E (SEE a)		AS ABOVE
B-21J-CF (-1 thru -15)	A S	A B O V E		A S	A B O V E		AS ABOVE

NOTES: a B-10 SHACKLES FOR 8-1600 LB. BOMBS START ON 2101st. FORD KNOCK-DOWN SET.

DOUGLAS (TULSA) and FORD (WILLOW RIDG)

MODEL & BLOCK-NO.	ARMAMENT			BOMBS			FUEL U.S. GAL. (MAXIMUM)
	NO GUNS & CALIBER	RDS. PER GUN	LOCATION & TYPE	INTERNAL	EXTERNAL	MAX. LOAD LB.	
				NO & SIZE	NO & SIZE		
B-21H-DF (-1 thru -15) (DOUGLAS)	2) 2) 2) .50 2) 2)	400 250 400 400 400	NOSE TURRET SIDE WAIST..FL. UPPER TURRET LOW BALL TRR. TAIL TURRET	4-2000 8-1600 8-1000 12- 500 12- 250 20- 100	NONE	12800	3614
B-21H-FO (-1 thru -15) (FORD)	A S	A B O V E		A S	A B O V E		AS ABOVE

NOTES: a B-10 SHACKLES FOR 8-1600 LB. BOMBS STARTS ON 2101st. FORD KNOCK-DOWN SET.

NORTH AMERICAN (DALLAS)

MODEL & BLOCK-NO.	ARMAMENT			BOMBS			FUEL U.S. GAL. (MAXIMUM)
	NO GUNS & CALIBER	RDS. PER GUN	LOCATION & TYPE	INTERNAL	EXTERNAL	MAX. LOAD LB.	
				NO & SIZE	NO & SIZE		
B-21J-NT (-1 thru -15)	3) 2) 2) .50 2) 2)	230 TOT. 250 400 400 400	NOSE.....FLEX. SIDE WAIST..FL. UPPER TURRET LOW BALL TRR. TAIL TURRET	4-2000 8-1000 12- 500 12- 250 20- 100	NONE	8000	3614
B-21J-NT (-1 thru -5)	2) 2) 2) .50 2) 2)	400 250 400 400 400	NOSE TURRET SIDE WAIST..FL. UPPER TURRET LOW BALL TRR. TAIL TURRET	A S	A B O V E		AS ABOVE
B-21J-NT (-10 thru -20)	A S	A B O V E		4-2000 8-1600 8-1000 12- 500 12- 250 20- 100	NONE	12800	AS ABOVE

NOTES: a LOWER BALL TURRET ON 5th. & SUBSEQUENT; NO TUNNEL GUN ON 1st. 4 ARTICLES.

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MODEL & BLOCK NO.	ARMAMENT			BOMBS			FUEL U.S. GAL. (MAXIMUM)
	NO GUNS & CALIBER	RDS. PER GUN	LOCATION & TYPE	INTERNAL	EXTERNAL	MAX. LOAD LB.	
				NO & SIZE	NO & SIZE		
1) .50 2) .50 2) .50	200 400 400	NOSE.....FLEX. UPPER TURRET TAIL TURRET	4-2000 8-1000 12- 500 12- 250 20- 100	NONE		8000	2364
1) .50 2) .50 1) .50 2) .50	200 400 100 400	NOSE.....FLEX. UPPER TURRET TUNNEL...FLEX. TAIL TURRET	A S	A B O V E			3614
3) .50 2) .50 1) .50 2) .50	100 250 400 100 400	NOSE.....FLEX. SIDE WAIST..FL. UPPER TURRET TUNNEL...FLEX. TAIL TURRET	4-2000 8-1600 8-1000 12- 500 12- 250 20- 100	NONE		12500	AS ABOVE
3) .50 2) .50 2) .50 2) .50	100 250 400 400 400	NOSE.....FLEX. SIDE WAIST..FL. UPPER TURRET LOW BALL TRR. TAIL TURRET	A S	A B O V E			AS ABOVE
2) .50 2) .50 2) .50 2) .50	400 250 400 400 400	NOSE TURRET SIDE WAIST..FL. UPPER TURRET LOW BALL TRR. TAIL TURRET	A S	A B O V E			AS ABOVE

NOT ON B-24D-25.

CONSOLIDATED (FT. WORTH)

MODEL & BLOCK NO.	ARMAMENT			BOMBS			FUEL U.S. GAL. (MAXIMUM)
	NO GUNS & CALIBER	RDS. PER GUN	LOCATION & TYPE	INTERNAL	EXTERNAL	MAX. LOAD LB.	
				NO & SIZE	NO & SIZE		
B-24D-CF (-1 & -5)	3) .50 2) .50 1) .50 2) .50	100 250 400 100 400	NOSE.....FLEX. SIDE WAIST..FL. UPPER TURRET TUNNEL...FLEX. TAIL TURRET	4-2000 8-1000 12- 500 12- 250 20- 100	NONE	8000	3614
B-24D-CF (-10 thru -20)	A S	A B O V E		4-2000 8-1600 8-1000 12- 500 12- 250 20- 100	AS ABOVE	12500	AS ABOVE
B-24J-CF (-1 thru -15)	2) .50 2) .50 2) .50 2) .50	400 250 400 400 400	NOSE TURRET SIDE WAIST..FL. UPPER TURRET LOW BALL TRR. TAIL TURRET	A S	A B O V E (SEE a)		AS ABOVE
B-24B-CF (-1 thru -15)	A S	A B O V E		A S	A B O V E		AS ABOVE

NOTES: a B-10 SHACKLES FOR 8-1600 LB. BOMBS START ON 2101st. FORD KNOCK-DOWN SET.

L A S (TULSA) and F O R D (WILLOW RUN)

MODEL & BLOCK NO.	ARMAMENT			BOMBS			FUEL U.S. GAL. (MAXIMUM)
	NO GUNS & CALIBER	RDS. PER GUN	LOCATION & TYPE	INTERNAL	EXTERNAL	MAX. LOAD LB.	
				NO & SIZE	NO & SIZE		
2) .50 2) .50 2) .50 2) .50	400 250 400 400 400	NOSE TURRET SIDE WAIST..FL. UPPER TURRET LOW BALL TRR. TAIL TURRET	4-2000 8-1600 8-1000 12- 500 12- 250 20- 100	NONE		12800	3614
A S	A B O V E		A S	A B O V E			AS ABOVE

B-10 SHACKLES FOR 8-1600 LB. BOMBS STARTS ON 2101st. FORD KNOCK-DOWN SET.

NORTH AMERICAN (DALLAS)

MODEL & BLOCK NO.	ARMAMENT			BOMBS			FUEL U.S. GAL. (MAXIMUM)
	NO GUNS & CALIBER	RDS. PER GUN	LOCATION & TYPE	INTERNAL	EXTERNAL	MAX. LOAD LB.	
				NO & SIZE	NO & SIZE		
B-24G-NT (-1 thru -5)	3) .50 2) .50 2) .50 2) .50	230 TOT. 250 400 400 400	NOSE.....FLEX. SIDE WAIST..FL. UPPER TURRET LOW BALL TRR. TAIL TURRET	4-2000 8-1000 12- 500 12- 250 20- 100	NONE	8000	3614
B-24G-NT (-1 thru -5)	2) .50 2) .50 2) .50 2) .50	400 250 400 400 400	NOSE TURRET SIDE WAIST..FL. UPPER TURRET LOW BALL TRR. TAIL TURRET	A S	A B O V E		AS ABOVE
B-24G-NT (-10 thru -20)	A S	A B O V E		4-2000 8-1600 8-1000 12- 500 12- 250 20- 100	NONE	12800	AS ABOVE

NOTES: a LOWER BALL TURRET ON 5th. & SUBSEQUENT; NO TUNNEL GUN ON 1st. 4 ARTICLES.

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PAGE 2
AS OF:
DATE 20 JAN 1944

TACTICAL PLANNING CHARACTERISTICS & PERFORMANCE CHART																		
MODEL & BLOCK NO.	ENGINE & PROP.		SIZE		WT.	COMBAT CREW	FUEL		ARMAMENT			BOMBS-CARGO-PASS.		RADIO	REMARKS & REFERENCE			
	NUMBER	ENGINE MFG. MODEL	B.H.P./ALT.	S-SPAN			B-BASIC	TANK TYPE OR LOCATION	NO. TANKS & CAPACITY U.S. GAL.	NO. GUNS & CALIBER	RDS. PER GUN	LOCATION & TYPE	INTERNAL		EXTERNAL	MAX. LOAD LB.	TYPE	FOR DETAILED ARMAMENT AND BOMB INSTALLATIONS SEE PAGE OPPOSITE
		SUPERCHARGER PROP. MFG. TYPE	T-TAKE-OFF M-MILITARY C-CONTINUOUS	L-LENGTH L-HEIGHT T-TREAD W-WING AREA			C-COMBAT R-RECD LIM. W-WAR MAX.						NO. & SIZE OR STATION		NO. & SIZE OR CAPACITY			
B-24D	4	PRATT-WHITNEY R-1830-13 TURBO HAMILTON STD. 11" DIA. - 38L. F.F. HYDRA-MATIC	T 1200/5 L M 1200/25000 C 1100/25000	S 110'0" L 66'4" H 18'0" T 25'8" W 101'8" SQ. F.	B 31500 C 56000 R 56000 W 61000A	8	MAIN - WINGS	12-2364	3) 2) 2) 1) 2)	100 250 400 100 400	NOSE - FLEX. SIDE WAIST-FL. UPPER TURRET TUNNEL - FLEX. TAIL TURRET	4-2000 8-1600 8-1000 12-500 12-250 20-100	NONE	12500	SEE NOTE (B)	TECHNICAL ORDER 01-52C-1 (10 NOV. 1943)		
B-24D (WITH BOMB BAY TANKS)	4	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	8	MAIN - WINGS BOMB BAY	12-2364 2x 400 3164 TOT	3) 2) 2) 2)	100 250 400 400	NOSE - FLEX. SIDE WAIST-FL. UPPER TURRET LOW BALL TURRET TAIL TURRET	A S	A B O V E	AS ABOVE	AS ABOVE	A S A B O V E		
B-24D (WITH WING TIP TANKS)	4	AS ABOVE EXCEPT R-1830-65 ENGINE IN LIEU OF R-1830-13 ON B-24D-20-CF & B-24D-135-00 thru -170-00.	AS ABOVE	AS ABOVE	AS ABOVE	8	MAIN - WINGS BOMB BAY WING TIPS	12-2364 2x 400 2x 225 3611 TOT	A S	A B O V E	A S	A B O V E	AS ABOVE	AS ABOVE	AS ABOVE	A S A B O V E		
B-24G,H&J	4	AS ABOVE EXCEPT R-1830-65 ENGINE IN LIEU OF R-1830-13 ON B-24G-5-WIA subser B-24H-5-CF (subser) B-24J SERIES.	AS ABOVE	AS ABOVE	AS ABOVE	8	AS A B O V E	2) 2) 2) 2)	2) 2) 2) 2)	400 250 400 400	NOSE TURRET SIDE WAIST-FL. UPPER TURRET LOW BALL TURRET TAIL TURRET	A S	A B O V E	AS ABOVE	AS ABOVE	A S A B O V E b FOR EXTERNAL BOMB RACKS BEING INSTALLED AT MOD. CENTERS		

MODEL & BLOCK NO.	TAKE OFF & LANDING HARD SURFACE - NO WIND				HIGH SPEED & CLIMB AT NORMAL COMBAT WEIGHT						RANGE & ENDURANCE STATUTE AIR MILES - NO WIND - NO ALLOWANCE FOR RESERVE										REMARKS ON PERFORMANCE					
	GROSS WEIGHT LB.	TO CLEAR 50 FT.		LANDING SPEED MPH	GROUND-RUN		WEIGHT LB.	STD. ALT. FT.	MIL. POWER		MAX. CONTIN. POWER		TAKE OFF WEIGHT LB.	BOMBS CARGO PASS. LB.	TOTAL FUEL U.S. GAL.	MAX. CONTINUOUS POWER		MAX. CRUISE POWER		LONG RANGE						
		T.O. DIST. FT.	LAND. DIST. FT.		T.O. DIST. FT.	LAND. DIST. FT.			HIGH SPEED MPH	RATE OF CLIMB FT./MIN.	HIGH SPEED MPH	RATE OF CLIMB FT./MIN.				TIME TO CLIMB MIN.	AT 10000 FT.	AT 25000 FT.	AT 10000 FT.	AT 25000 FT.		AT 10000 FT.	AT 25000 FT.			
		RANGE MILES	ENDUR. HOURS		RANGE MILES	ENDUR. HOURS			RANGE MILES	ENDUR. HOURS	RANGE MILES	ENDUR. HOURS				RANGE MILES	ENDUR. HOURS	RANGE MILES	ENDUR. HOURS							
B-24D	40000	-	3300	90	-	2800	30000	278	500	278	500	34.5	53000	NONE	2364	900	4.0	1000	3.9	1850	9.5	1950	8.9	2350	15.0	
B-24D (WITH BOMB BAY TANKS)	40000	-	3300	90	-	2800	30000	278	500	278	500	34.5	58500	NONE	3164	1200	5.1	1300	5.1	2100	12.1	2500	11.5	3100	20.3	
B-24D (WITH WING TIP TANKS)	40000	-	3300	90	-	2800	30000	278	500	278	500	34.5	63500	NONE	3614	1200	5.1	1500	5.1	2100	12.1	2500	11.5	3100	20.3	*MAX. FERRY RANGE MAY BE RESTRICTED BY INSUFFICIENT OIL IF ENGINE IS NOT IN BETTER THAN AVERAGE CONDITION. OIL CONSUMPTION 3 QT. TO 3 GAL./HR. DEPENDENT ON TIME SINCE OVERHAUL.
B-24G,H&J	40000	-	3300	90	-	2800	30000	278	500	278	500	34.5	61000	NONE	3164	1150	5.2	1250	5.2	2250	11.7	2250	11.1	3000	19.1	A S A B O V E

NOTES: (B) 24 VOLT RADIO SYSTEM

RED FIGURES ARE PRELIMINARY; SUBJECT TO REVISION AFTER FLIGHT CHECKS

* MILITARY POWER AVAILABLE FOR 5 MINUTES ONLY.
(A) LIMITED TO 61000 LB. BY FLYING CHARACTERISTICS.

SCR-211 FREQUENCY METER
SCR-2690 RADIO COMPASS
SCR-2714 COMMAND SET (or SCR-522)
SCR-287A LIAISON SET
SCR-535 SET (or SCR-595 or SCR-695)
SCR-576 EMERGENCY TRANSMITTER
RC - 32 FILTER EQUIPMENT (or RC-136)
RC - 36 INTERPHONE AMPLIFIER
RC - 138 MARKER BEACON
RC - 103 BLIND LANDING (Provisions only)
AN-ARR-1 (Installed in some models)

B-24

"LIBERATOR"

MANUFACTURED BY CONSOLIDATED - FORD - DOUGLAS - NORTH AMERICAN

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PAGE 3
AS OF: DATE 19 JAN 1944

TACTICAL PLANNING CHARACTERISTICS & PERFORMANCE CHART																
MODEL & BLOCK NO.	ENGINE & PROP.		SIZE	WT.	COMBAT CREW	FUEL		ARMAMENT			BOMBS-CARGO-PASS.		RADIO	REMARKS & REFERENCE		
	NUMBER	ENGINE MFR. MODEL SUPERCHARGER PROP MFR. TYPE	B.H.P./ALT. T-TAKE-OFF M-MILITARY C-CONTINUOUS	S-SPAN L-LENGTH H-HEIGHT T-TREAD W-WING AREA		B-BASIC C-COMBAT R-RECD LIM W-WAR MAX	TANK TYPE OR LOCATION	NO. TANKS & CAPACITY U.S. GAL.	NO. GUNS & CALIBER	RDS PER GUN	LOCATION & TYPE	INTERNAL NO. & SIZE OR STATION	EXTERNAL NO. & SIZE OR CAPACITY	MAX. LOAD LB.	TYPE	
B-29-BW -I TO -10 INCL	4	WRIGHT R-335-23 TURBO HAMILTON STD. 16" DIA. - LBL. F.F., HYDROMATIC	T 2200/3 L M 2200/25000 C 2000/25000	S 111'3" L 99'0" H 27'9" T 31'6" W 1739 SQ. FT.	B 71000 C 105000 R 120000 W - W	10	OUTBD. -WINGS 11-2735 INBD. -WINGS 8-2873 BOMB BAY 4x 640 6168 TOT	1-20MM 100 2) 1000 2) 1000 2) .50 1000 2) 1000	100	TAIL-M2, TYPE B UPPER REAR TR. 12-1500 UPPER REAR TR. 12-1000 LOWER REAR TR. 16-500 LOWER REAR TR. 56-250b TAIL-POWER MT. 80-100b	4-1000 5-2000 12-1500 12-1000 16-500 56-250b 80-100b	NONE	20000 SEE (A)	SCR-211, 259G, 271W, 267A, 57B, & 695A. RC-36, L3B & 103	TECHNICAL ORDER 01-20EJ-1. (20 AUG. 1943) b-DELETED ON B-29-10-BW and SUBSEQUENT MODELS. r-RC-103 NOT ON B-29-1-BW. s-OUTBOARD TREAD-31'6"; INBOARD TREAD-25'6". w- DUE TO INCREASE OF ORIGINALLY PLANNED BASIC WEIGHT COMBAT & RECOMMND. WT. ARE BEING INCREASED; NO DATA.	
			T M C	S L H T W	B C R W											
			T M C	S L H T W	B C R W											
			T M C	S L H T W	B C R W											
			T M C	S L H T W	B C R W											

COLUMN — 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

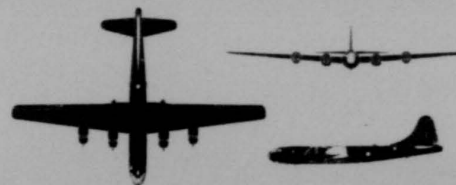
MODEL & BLOCK NO.	TAKE OFF & LANDING HARD SURFACE - NO WIND						HIGH SPEED & CLIMB AT NORMAL COMBAT WEIGHT						RANGE & ENDURANCE STATUTE AIR MILES - NO WIND - NO ALLOWANCE FOR RESERVE										REMARKS ON PERFORMANCE			
	TO CLEAR 50'		LAND. DIST.	LANDING SPEED	GROUND-RUN		WEIGHT	STD. ALT.	MIL. POWER		MAX. CONTIN. POWER		TAKE OFF WEIGHT	BOMBS CARGO PASS.	TOTAL FUEL	MAX. CONTINUOUS POWER		MAX. CRUISE POWER		LONG RANGE						
	T.O. DIST.	FT.			T.O. DIST.	FT.			HIGH SPEED	RATE OF CLIMB	HIGH SPEED	RATE OF CLIMB				TIME TO CLIMB	AT 10000 FT.	AT 25000 FT.	AT 10000 FT.	AT 25000 FT.	RANGE	ENDUR.		RANGE	ENDUR.	RANGE
	FT.	MPH	FT.	MPH	MPH	FT/MIN.	MPH	FT/MIN.	MIN.	LB.	LB.	U.S. GAL.	MILES	HOURS	MILES	HOURS	MILES	HOURS	MILES	HOURS	MILES	HOURS				
B-29-BW -I TO -10 INCL	90000	3150	3500	100	2200	2500	105000	30000	370	520	360	340	120000	NONE	6888	1500	6.8	2000	6.8	3500	15.2	2900	10.9	1200	21.5	* MOST OF FLIGHT REQUIRES THAT MAX. CRUISE POWER BE EXCEEDED SLIGHTLY BY USING AUTO. RICH MIXTURE.
	105000	4500	4400	110	3150	3000	20000	315	900	331	715	21.0														
	120000	6100	-	120	4300	-	15000	332	1040	320	850	15.0	120000	9000	5608	1500	5.5	1600	5.5	2800	12.2	3200	8.1	3300	16.0	
							10000	317	1160	307	970	10.0														
							5000	303	1250	293	1060	5.0														

18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45

NOTES: (A)

INCREASE IN BASIC WEIGHT PROHIBITS USE OF MORE THAN 2 OF THE 4 BOMB BAY TANKS OR MORE THAN 9000 LB. BOMBS WITH FULL MAIN FUEL WITHOUT EXCEEDING RECOMMENDED LIMIT OF 120000 LB. WEIGHT. 20000 LB. MAX. BOMB LOAD POSSIBLE WITH PARTIALLY FILLED MAIN FUEL TANKS ONLY.

RED FIGURES ARE PREDICTIVE; SUBJECT TO REVISION AFTER FLIGHT CHECK



B-29

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MODEL & BLOCK NO.	ARMAMENT			BOMBS			FUEL U.S. GAL (MAXIMUM)
	NO GUNS & CALIBER	RDS PER GUN	LOCATION & TYPE	INTERNAL	EXTERNAL	MAX. LOAD LB.	
				NO & SIZE	NO & SIZE		
B-25C-NA (-1 thru -20)	1) 1) 2) 2)	300 300 200 200 a	NOSE... FLEX. NOSE... FIXED UPPER TURRET LOWER TURRET	1-2000 3-1000 6- 500 8- 250 12- 100	1-2000T 6- 325 8- 250 8- 100	3-1000 8- 250 x	1599 (B-25C) 1684 (B-25D)
B-25C-NA (-25) B-25D-NA & NC (-20 thru -35)	AS ABOVE	EXCEPT NO LOWER TURRET ON 210(D-20), -25, -30 & -35.		1-2000 2-1600 3-1000 6- 500 8- 250 12- 100	AS ABOVE	2-1600 8- 250 x 5200	1524 (B-25C) 1649 (B-25D)
B-25G-NA (-1 thru -10)	1-75MM 2-.50 2-.50 2-.50	21 400 200 200 c	NOSE CANNON M1 NOSE... FIXED UPPER TURRET LOWER TURRET	A S	A B O V E		1649
B-25H-NA (-1 thru -10)	1-75MM 4-.50 4-.50 2-.50 2-.50 2-.50	21 400 400 d 200 200 500	NOSE CAN. T13E1 NOSE... FIXED NOSE PACKAGE UPPER TURRET SIDE WAIST-FL. TAIL... POWER MT.	AS ABOVE	NONE	3200	1624
B-25J-NC (-1 & Subseqt.)	4) 1) 1) 2) 2) 2)	400 300 300 200 200 600	NOSE... PACKAGE NOSE... FLEX. NOSE... FIXED SIDE WAIST-FL. UPPER TURRET TAIL... POWER MT.	AS ABOVE	1-2000T 6- 325 8- 250 8- 100	2-1600 8- 250 x 5200	AS ABOVE

NOTES: *B-25C-1 & D-1 ARMAMENT SAME AS B-25C & D. c NO LOWER TURRET ON 78(G-5) & -10.
 T TORPEDO a NO LOWER TURRET ON 80(B-25D-15) ONLY. d B-25H-1 HAS 2 PACKAGE GUNS.
 x EXTERNAL b NOT CARRIED ON 1st.157(B-25C-1).

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MODEL & BLOCK-NO.	ARMAMENT			BOMBS			FUEL U.S. GAL. (MAXIMUM)
	NO GUNS & CALIBER	RDS. PER GUN	LOCATION & TYPE	INTERNAL NO. & SIZE	EXTERNAL NO. & SIZE	MAX. LOAD LB.	
B-26B-MA (B thru -4)	1-.30 1-.30 2-.50 2-.50	600 600 1500 400	NOSE... FLEX. TUNNEL... FLEX. TAIL... FLEX. MT. UPPER TURRET	2-2000 2-1600 4-1000 8- 500 16- 250 30- 100	1-2000 (TORPEDO)	2-1600 1-2000 T 5200	1162
B-26B-MA (-10 thru -20) B-26C-MA -5 thru 1st. 75(-30)	1) 1) 2) 2) 2) 2)	200 270 240 250 200 800 400	NOSE... FIXED NOSE... FLEX. SIDE WAIST-FL. U. FUS. PACKAGE L. FUS. PACKAGE TAIL... POWER MT. UPPER TURRET	A S	A B O V E		1962
B-26B-MA (-25 thru -55) B-26C-MA Last 125(-30) thru -45*		AS ABOVE EXCEPT NO ARMAMENT OR BOMBS ON MODELS LISTED BELOW IN NOTE (A); USED FOR TOW TARGET & DESIGNATED AT-23B		2-2000 2-1600 4-1000 6- 500 10- 250 20- 100	AS ABOVE	AS ABOVE	1162
NOTES: (A) 2(B-25C-25) 1st. 26(B-26C-45) 71(B-25C-30) 111(B-26B-40) (B-26C-35 & 40) 1st. 109(B-26B-45)							
* NO NOSE GUNS ON B-26C-45 T TORPEDO							

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TACTICAL PLANNING CHARACTERISTICS & PERFORMANCE CHART																
MODEL & BLOCK NO.	ENGINE & PROP.		SIZE		WT.		FUEL		ARMAMENT		BOMBS-CARGO-PASS		RADIO		REMARKS & REFERENCE	
	NUMBER	ENGINE MFG. MODEL SUPERCHARGER PROP MFG. TYPE	B.H.P./ALT. T-TAKE-OFF M-MILITARY C-CONTINUOUS	S-SPAN L-LENGTH H-HEIGHT T-TREAD W-WING AREA	B-BASIC C-COMBAT R-RECD LIM W-WAR MAX	COMBAT CREW	TANK TYPE OR LOCATION	NO. TANKS & CAPACITY U.S. GAL.	NO. GUNS & CALIBER	RDS PER GUN	LOCATION & TYPE	INTERNAL NO. & SIZE OR STATION	EXTERNAL NO. & SIZE OR CAPACITY	MAX. LOAD LB.		TYPE
A-20B	2	B-2600-11 2 SPD. SUPERCH. HAMILTON STD. 11"3" DIA. - 3 BL. F.F. HYDRA-MATIC	T 1600/3000 M 1600/11500 C 1350/5500 1275/12000	S 61'4" L 48'0" H 18'1" T 17" W 465 SQ. FT.	B 15600 C 22000 R 25000 W 27000A	4	MAIN - WINGS FUSELAGE BOMB BAY	4 - 390 1 x 100 2 - 590 1080 TOT.	1-.30 2-.30 1-.50 2-.50	500 1000 200 200	TUNNEL - FLEX. L. & R. NACELLES REAR COCKPIT NOSE - FIXED	1-1000 1-500 4-250 10-100	(SEE C) 1-2000 T 2-500 4-250 4-100	1000	SCR-27LN SCR-535 FM-26C RC-51	TECHNICAL ORDER 01-404D-1. (1 DEC. 1942) r SOME MODELS ONLY.
A-20C -1 TO -10 INCL	2	AS ABOVE EXCEPT FOR CHANGE TO R-2600-23 ENGINE	T 1600/3000 M 1600/10000 C 1350/5000 1275/11500	S AS ABOVE H EXCEPT FOR T 47'4" LENGTH W 27000A	B 16300 C 23000 R 25200 W 27000A	4	INBD. WINGS OUTBD. WINGS FUS. (BOMB BAY) BOMB BAY (SEE B)	2 x 136 2 x 64 2 x 70 or 4 - 680 1080 TOT.	1) .30 2) or 4) .50	500	TUNNEL - FLEX. REAR COCKPIT NOSE - FIXED	4-500 4-250 4-100	(SEE C) 1-2000 T	2000	AS ABOVE	TECHNICAL ORDER 01-404D-1. (10 FEB. 1942) b NO TORPEDO PROVISIONS ON A-20C-1.
A-20G -1 TO -15 INCL	2	AS ABOVE	T AS ABOVE M AS ABOVE C AS ABOVE	S AS ABOVE H EXCEPT FOR T 48' LENGTH W 27000A	B 17200 C 24000 R 25200 W 27000A	3	AS ABOVE	AS ABOVE	1) .30 or 1-.50 6-.50	500 500 350	TUNNEL - FLEX. REAR COCKPIT NOSE - FIXED	AS ABOVE	AS ABOVE	AS ABOVE	SCR-27LN SCR-535A SCR-595A MN-26Y RC-36 RC-32 or 198	TECHNICAL ORDER 01-404D-1. (30 JULY 1943) a ARMAMENT FOR A-20G-1 IS (2) .50 CAL. FIXED NOSE GUNS OF 350 RDS. EACH & (4) 20MM NOSE CANNON, TYPE M2 OF 60 RDS. EACH; MAJORITY ALLOCATED TO FOREIGN POWER.
A-20G -20 TO -30 INCL	2	AS ABOVE	T AS ABOVE M AS ABOVE C AS ABOVE	S AS ABOVE H AS ABOVE T W 27000A	B 17700 C 26000 R 26000 W 27000A	3	INBD. WINGS OUTBD. WINGS FUS. (BOMB BAY) PROP. - EXT. (SEE B)	2 x 136 2 x 64 3 - 325 1 x 374 1099 TOT.	1) .30 2) .50 6)	400 400 350	TUNNEL - FLEX. UPPER TURRET NOSE - FIXED	AS ABOVE	(SEE C) 1-2000 T 4-500 4-250 4-100 1000	4-500 4-500 x 4-100	SCR-27LN SCR-595 SCR-695A MN-26Y RC-36 RC-198	REFERENCE AS ABOVE r ON A-20G-25 & -30 ONLY.
A-20J -1 & -5	2	AS ABOVE	T AS ABOVE M AS ABOVE C AS ABOVE	S AS ABOVE H AS ABOVE T W 27000A	B 17800 C 26000 R 26000 W 27000A	4	AS ABOVE	AS ABOVE	1) .30 2) .50	400 400 350	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	SCR-27LN SCR-695A MN-26Y RC-36 RC-198	TECHNICAL ORDER

MODEL & BLOCK NO.	TAKE OFF & LANDING HARD SURFACE - NO WIND						HIGH SPEED & CLIMB AT NORMAL COMBAT WEIGHT						RANGE & ENDURANCE STATUTE AIR MILES - NO WIND - NO ALLOWANCE FOR RESERVE										REMARKS ON PERFORMANCE				
	GROSS WEIGHT LB.	TO CLEAR 50' GROUND-RUN		LANDING SPEED MPH	GROUND-RUN		WEIGHT LB.	STD. ALT. FT.	MIL. POWER		MAX. CONTIN. POWER		TAKE OFF WEIGHT LB.	BOMBS CARGO LB.	TOTAL FUEL U.S. GAL.	MAX. CONTINUOUS POWER		MAX. CRUISE POWER		LONG RANGE							
		T.O. DIST. FT.	LAND. DIST. FT.		T.O. DIST. FT.	LAND. DIST. FT.			HIGH SPEED MPH	RATE OF CLIMB FT./MIN.	HIGH SPEED MPH	RATE OF CLIMB FT./MIN.				TIME TO CLIMB MIN.	AT 10000 FT.	AT 25000 FT.	AT 10000 FT.	AT 25000 FT.	AT 10000 FT.	AT 25000 FT.		RANGE MILES	ENDUR. HOURS	RANGE MILES	ENDUR. HOURS
A-20B	17000 19000 22000 24000 27000	- 2800 4000 4850 6500	2150 2700 3000 3500 4700	88 95 105 109 147	1500 1650 1900 - -	25000 20000 15000 10000 5000 S L	25000 20000 15000 10000 5000 S L	250 303 315 318 303 298	370 900 1125 1830 2125 2325	277 300 312 310 297 281	290 775 1275 144 2.3 0.0	23800 21000	NONE 1000	1080 1490	850 300	3.3 1.4	1150 500	4.9 2.1	1500 600	7.0 2.7	- -	- -	2100 900	13.4 6.0			
A-20C -1 TO -10 INCL	18000 20000 23000 25000 27000	- 3200 4400 5300 6500	2550 2800 3150 3950 4700	91 98 109 109 147	1600 1750 2000 - -	25000 20000 15000 10000 5000 S L	25000 20000 15000 10000 5000 S L	275 302 317 319 306 300	300 800 1320 1750 1990 2250	274 720 1200 113 301 287	270 13.9 8.7 5.0 2.4 0.0	24500 23200	NONE 2000	1080 540	875 350	3.3 1.5	- -	1500 675	6.6 3.1	- -	- -	2300 1000	12.0 6.5				
A-20G -1 TO -15 INCL	19000 21000 24000 26000 27000	- 3600 4850 5900 6500	2700 2900 3250 3600 4700	95 102 113 113 147	1650 1850 2100 - -	25000 20000 15000 10000 5000 S L	25000 20000 15000 10000 5000 S L	275 302 317 319 306 300	260 760 1260 1680 1860 2150	274 690 1150 1120 301 287	270 11.6 8.2 5.3 2.5 0.0	25300 24000 21000	NONE 2000 2000 T	1080 540 540	975 160 125	3.5 1.7 1.7	1650 750 650	6.8 3.1 3.0	1700 800 700	7.3 3.4 3.3	2000 900 -	9.1 4.1 -	2300 1100 950	12.4 6.0 5.7			
A-20G -20 TO -30 INCL	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	FLIGHTS ABOVE 10000 FT. REQUIRE SPECIAL PROVISIONS FOR OXYGEN.
A-20J -1 & -5	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE

NOTES: (A) CRITICAL FLIGHT CHARACTERISTICS RESULT ABOVE 27000 LB. (B) FUSELAGE TANKS ARE CARRIED IN BOMB BAYS WITHOUT AFFECTING BOMB LOAD CAPACITY. (C) PROVISIONS ONLY, FOR TORPEDO: A-20 SERIES NOT BEING USED FOR TORPEDO MISSIONS AS PER MILITARY REQUIREMENTS POLICY NO. 37 DATED JULY 3, 1943. RANGE VALUES WITH TORPEDO ARE SHOWN FOR COMPARATIVE REFERENCE.

RED FIGURES ARE PRELIMINARY; SUBJECT TO REVISION AFTER FLIGHT CHECK
 * MILITARY POWER AVAILABLE FOR 5 MINUTES ONLY.
 † TORPEDO (REPLACES INTERNAL BOMBS WHEN CARRIED)
 x EXTERNAL

A-20 "HAVOC"

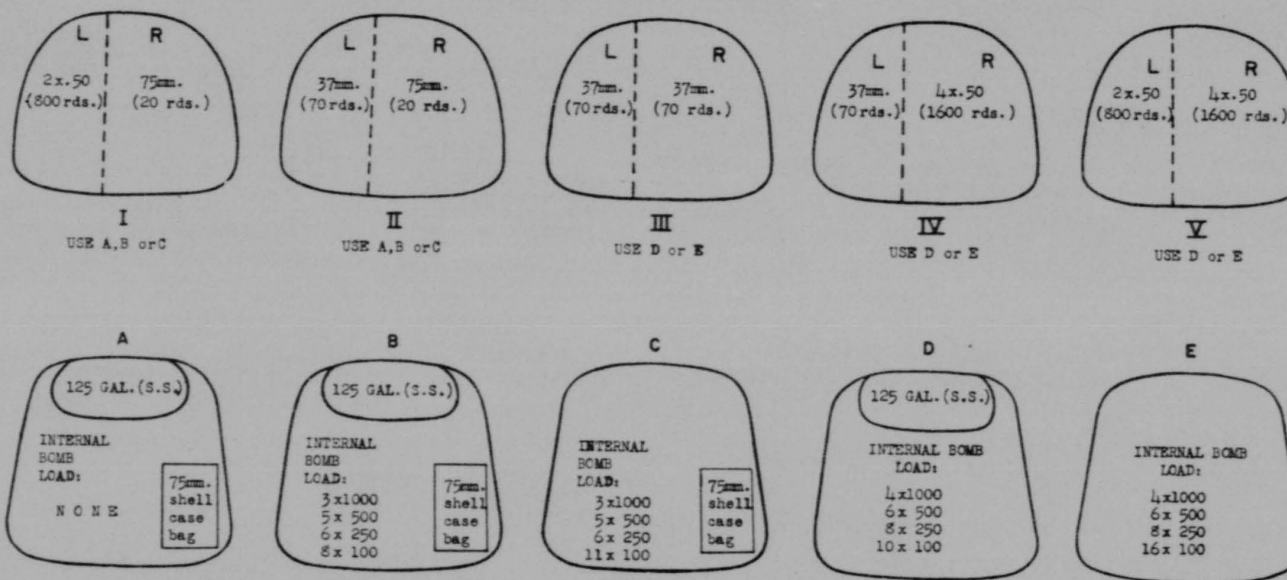
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**ALL PURPOSE NOSE
VIEWED FROM REAR**



S.S. - SELF SEALING

THE EXTERNAL BOMBS (EXCEPT TORPEDOES) ARE CARRIED ON WING RACKS. THE WING GUN PACKAGES ARE ALSO MOUNTED AT THE SAME WING RACK STATIONS; THEREFORE THE WING GUNS AND EXTERNAL WING BOMBS ARE ALTERNATE INSTALLATIONS.

**BOMB BAY
VIEWED FROM REAR**

A-26B

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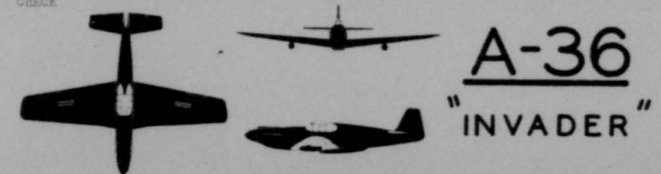
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TACTICAL PLANNING CHARACTERISTICS & PERFORMANCE CHART																	
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PAGE 8 AS OP: DATE 20 DEC. 1943																	
MODEL & BLOCK NO.	ENGINE & PROP.			SIZE		WT.	COMBAT CREW	FUEL		ARMAMENT			BOMBS-CARGO-PASS		RADIO	REMARKS & REFERENCE	
	NUMBER	ENGINE MFR. MODEL SUPERCHARGER PROP MFR. TYPE	B.H.P./ALT. T-TAKE-OFF M-MILITARY C-CONTINUOUS	S-SPAN L-LENGTH H-HEIGHT T-TREAD W-WING AREA	B-BASIC C-COMBAT R-RECD LIM W-WAR MAX	TANK TYPE OR LOCATION		NO. TANKS & CAPACITY U.S. GAL.	NO. GUNS & CALIBER	RDS. PER GUN	LOCATION & TYPE	INTERNAL NO. & SIZE OR STATION	EXTERNAL NO. & SIZE OR CAPACITY	MAX. LOAD LB.	TYPE		
A-36A	1	ALLISON W-1710-87 SINGLE SPEED CURTISS 10 1/2" DIA. - 3 BL. CONST. SPD. ELECT.	T 1325/3 L M 1325/3400 W* 1500/2500 C 1100/6600	S 37' 0" L 32' 3" H 12' 2" T 11' 10" W 233 SQ. F.	B 7100 C 10000 R 10700 W -	1	MAIN - WING EXT. - WING	2 x 90 2 x 75 or 2 x 150 180 TOT.	2-50 1-50	200 200	NOSE - FIXED WING - FIXED	NONE	2-500 2-250	1000	SCR-27LM SCR-535 SCR-595**	TECHNICAL ORDER 01-608B-1. (10 JULY 1943) *** WAR EMERGENCY RATING. ** LAST 599 ONLY.	
			T M C	S L H T W	B C R W												
			T M C	S L H T W	B C R W												
			T M C	S L H T W	B C R W												
			T M C	S L H T W	B C R W												
			T M C	S L H T W	B C R W												
COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

MODEL & BLOCK NO.	TAKE OFF & LANDING HARD SURFACE - NO WIND				HIGH SPEED & CLIMB AT NORMAL COMBAT WEIGHT					RANGE & ENDURANCE STATUTE AIR MILES - NO WIND - NO ALLOWANCE FOR RESERVE										REMARKS ON PERFORMANCE						
	GROSS WEIGHT LB.	TO CLEAR 50'		LANDING SPEED MPH	GROUND-RUN		STD. ALT. FT.	MIL. POWER		MAX. CONTIN. POWER			TAKE OFF WEIGHT LB.	BOMBS CARGO-PASS LB.	TOTAL FUEL U.S. GAL.	MAX. CONTINUOUS POWER			MAX. CRUISE POWER			LONG RANGE				
		T.O. DIST. FT.	LAND. DIST. FT.		T.O. DIST. FT.	LAND. DIST. FT.		HIGH SPEED MPH.	RATE OF CLIMB FT./MIN.	HIGH SPEED MPH.	RATE OF CLIMB FT./MIN.	TIME TO CLIMB MIN.				AT 10000 FT.	AT 25000 FT.	AT 10000 FT.	AT 25000 FT.		AT 10000 FT.	AT 25000 FT.	RANGE MILES	ENDUR. HOURS	RANGE MILES	ENDUR. HOURS
		A-36A	9000		2800	3000		2050	2100	10000	288	500				277	300	16.6	11000		NONE	180	1100	5.6	-	-
	10000	3400	3500	2500	2100	10000	295	1025	285	300	9.1	10000	NONE	330	1000	3.8	-	-	-	-	-	-	1500	7.7		
	11000	4100	-	3200	-	10000	310	2075	293	300	2.4	10000	NONE	180	550	2.0	-	-	-	-	-	-	850	3.9		
						10000	295	2200	275	300	-	10000	1000	180	500	2.0	-	-	-	-	-	-	800	3.7		

NOTES:

RED FIGURES ARE PRELIMINARY; SUBJECT TO REVISION AFTER FLIGHT CHECK
* MILITARY POWER AVAILABLE FOR 15 MINUTES.



A-36
"INVADER"

MANUFACTURED BY NORTH AMERICAN

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PAGE 9
AS OF:
DATE 20 JAN 1944

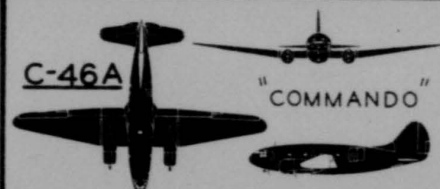
TACTICAL PLANNING CHARACTERISTICS & PERFORMANCE CHART																
MODEL & BLOCK NO.	ENGINE & PROP.		SIZE		WT.	COMBAT CREW	FUEL		ARMAMENT			BOMBS-CARGO-PASS.		RADIO	REMARKS & REFERENCE	
	ENGINE MFR. MODEL	B.H.P./ALT.	S-SPAN	B-BASIC			TANK TYPE OR LOCATION	NO. TANKS & CAPACITY	NO. GUNS & CALIBER	RDS PER GUN	LOCATION & TYPE	INTERNAL NO. & SIZE	EXTERNAL NO. & SIZE			MAX. LOAD LB.
NUMBER	PROP. MFR. TYPE	T-TAKE-OFF	L-LENGTH	C-COMBAT	COMBAT CREW	NO. TANKS & CAPACITY	NO. GUNS & CALIBER	RDS PER GUN	LOCATION & TYPE	INTERNAL NO. & SIZE	EXTERNAL NO. & SIZE	MAX. LOAD LB.	TYPE	REMARKS & REFERENCE		
C-46A -I TO -25 INCL.	PRATT-WHITNEY R-2800-51 2 SPEED CURTISS 13'6" DIA. - 4 BL. F.F. ELECTRIC	T 2000/1500 M 1600/13500 C 1600/5700 1.50/13000	S 108'10" L 76'4" H 22'10" T 26'10" W 1360 SQ. FT.	B 32400 C 16000 R 16000 W 56000	3	WING-PANELS FUSELAGE	6 - 1100 8 x 100 2200 TOT.	N O N E	E	FORE-BELLY APT-BELLY MAIN-CABIN TROOPS	3700 1800 10000 or 50	15000	SCR-211, 269,271N, 287,518, 578 & 695, RC-36,43, 103,138, AN/ARS-1	TECHNICAL ORDER 01-251A-1. (REVISION IN PROGRESS) * EARLY MODELS HAVE HAMILTON STD. 30MADE, HYDROMATIC, 15'1" DIA. PROPELLER. ** MISC. RADIO CARRIED. MAX. COMBINATION SHOWN. NOTE: EARLY MODELS LIMITED TO 10000# GROSS WEIGHT & HAVE SMALL CARGO DOOR.		
C-47 & A C-53, C & D	PRATT-WHITNEY R-1830-92 INTEGRAL SUPER. HAMILTON STD. 11'7" DIA. - 3 BL. F.F. HYDROMATIC	T 1200/3000 M - C 1050/7000	S 95'10" L 64'6" H 17'10" T 18'6" W 987 SQ. FT.	B 18000 C 26000 R 29000 W 36500	3	MAIN - WING AUX. - WING FUSELAGE	2 x 202 2 x 200 8 x 100 1604 TOT.	N O N E	E	CARGO or TROOPS or LITTERS	6000 27 18	6000 NOR. 11000 MAX.	SCR-211,269, 271N,287, 522,578, 578 & 695, RC-36,43, 103,138, AN/ARS-1	TECHNICAL ORDER 01-400C-1. (AN/AP1-2 ON SOME MODELS) C-47, C-53 & C-53C INSTALLED WITH 12VOLT SYSTEM; OTHERS WITH 24 VOLT SYSTEM. NOTE: C-47 & C-53 SERIES SIMILAR EXCEPT FOR LARGE CARGO DOOR ON C-47. THE C-53 CARRIES 28 PASSENGERS.		
C-54A	PRATT-WHITNEY R-2000-3 or -7 2 SPEED HAMILTON STD. 13'1" DIA. - 3 BL. F.F. HYDROMATIC	T 1290/3000 M 1290/3000 C 1015/9000 9.40/13200	S 117'6" L 93'10" H 27'6" T 24'8" W 1160 SQ. FT.	B 37000 C 58000 R 58600 W 76000	6	INBD. - WING OUTBD. - WING FUSELAGE	2 x 508 2 x 435 4 x 134 3742 TOT.	N O N E	E	FORE-BELLY APT-BELLY FORE-CARGO APT-CARGO TROOPS	1800 2100 21000 11900	25000	SCR-211, 269,271N, 287,578, 578 & 695, RC-36,43, 103,138	TECHNICAL ORDER 01-100M-1. * MISC. RADIO CARRIED. MAX. COMBINATION SHOWN. NOTE: 30 TROOPS WITH FUSELAGE TANKS (3742 GAL.) 50 TROOPS WITHOUT FUSELAGE TANKS (1886 GAL.)		
C-60A -I & -5	WRIGHT R-1820-87 2 SPEED HAMILTON STD. 10'6" DIA. - 3 BL. F.F. HYDROMATIC	T 1200/3000 M 1200/5700 C 1000/2400 900/16500	S 65'8" L 49'10" H 12'0" T 15'4" W 551 SQ. FT.	B 13000 C 21500 R 21500 W 25000	3	FRONT - WING REAR - WING AUX. - WING	2 x 150 2 x 172 3 x 134 1046 TOT.	N O N E	E	BELLY CABIN or PARATROOPS	3100 6600 or 18	8500	SCR-211, 269,271N, 287,578, 578 & 695, RC-36,43, 103,138	TECHNICAL ORDER 01-750C-1. * MISC. RADIO CARRIED. MAX. COMBINATION SHOWN. EARLIER MODELS CARRY SCR-535 IN PLACE OF SCR-695. ** 1200 LB. BALLAST REQUIRED IN NOSE TO BALANCE PARATROOPS.		
C-87	PRATT-WHITNEY R-1830-13 TURBO HAMILTON STD. 11'7" DIA. - 3 BL. F.F. ELECTRIC	T 1200/3000 M 1200/28500 C 1100/27000	S 110'0" L 66'4" H 18'0" T 25'8" W 1018 SQ. FT.	B 34250 C 58000 R 56000 W 62000	5	INBD. - WING OUTBD. - WING	12 - 2364 6 - 450 2814 TOT.	1-50	500	TAIL - FLEX. (ON SOME MODELS ONLY)	20 or 7 11	11000 NOR. 20000 MAX.	SCR-271N, 287,289, 578 & 695, RC-36 RC-43	TECHNICAL ORDER 01-50A-1. (PRELIMINARY DATA) A CARGO VERSION OF B-21, MODEL: SILHOUETTE VIEWS APPROX. AS B-21, & WILL APPEAR NEXT ISSUE. * RESTRICTED MAXIMUM ALLOWABLE GROSS WEIGHT.		

RED FIGURES ARE PRELIMINARY. SUBJECT TO REVISION AFTER FLIGHT CHECK (A) PERMISSIBLE ONLY WITH ALL WING TANKS FULL.

MODEL & BLOCK NO.	TAKE OFF & LANDING HARD SURFACE - NO WIND				HIGH SPEED & CLIMB AT NORMAL COMBAT WEIGHT				RANGE & ENDURANCE STATUTE AIR MILES - NO WIND - NO ALLOWANCE FOR RESERVE										REMARKS ON PERFORMANCE						
	GROSS WEIGHT	TO CLEAR 50'		GROUND-RUN	WEIGHT	STD. ALT.	MIL. POWER		MAX. CONTIN. POWER		TAKE OFF WEIGHT	BOMBS CARGO	TOTAL FUEL	MAX. CONTINUOUS POWER		MAX. CRUISE POWER		LONG RANGE							
		T.O. DIST.	LAND. DIST.				LANDING SPEED	T.O. DIST.	LAND. DIST.	WEIGHT				STD. ALT.	HIGH SPEED	RATE OF CLIMB	HIGH SPEED	RATE OF CLIMB		TIME TO CLIMB	AT 10000 FT.	AT 25000 FT.	AT 10000 FT.	AT 25000 FT.	AT 10000 FT.
C-46A -I TO -25 INCL.	31000 39000 45000 50000	- 2700 1050 6300	1800 2000 2250 -	- 1650 2100 3650	1150 1300 1500 -	16000	20000 15000 10000 5000 S L	888 900 1100 1300	258 265 284 255 240	400 650 750 900 900	28.4 18.6 11.6 5.5 -	51000 47000 47000 51000	2000 1400 6000 10000	2200 1400 1050 1050	1400 850 630 620	5.5 3.5 2.5 2.5	ABOVE PRAC- TICAL CRUIS- ING CEILING	2600 1650 1150 1100	12.3 7.5 5.5 5.5	ABOVE PRAC- TICAL CRUIS- ING CEILING	3200 2150 1550 1200	16.0 10.5 7.8 6.3	NOTE: x HIGH SPEED IN PRELIMINARY TEST - 264 MPH AT 13000 FT. ALTITUDE & 38200 LB. GROSS WT.		
C-47 & A C-53, C & D	21000 23000 26000 29000	- 1850 2400 3200	2100 2300 2600 -	- 1150 1550 2000	1300 1400 1600 -	26000	20000 15000 10000 5000 S L	NO MILITARY POWER RATINGS	201 217 202* 187*	180 150 720 920 -	37.0 20.9 11.0 5.0 -	29000 26000 29000	NONE 2000 6000**	1600 1000 804	1500 950 750	7.6 4.7 3.7	AS ABOVE	2300 1150 1100	13.0 7.9 6.2	AS ABOVE	3100 2050 1550	19.3 12.7 10.0	* MAX. PERMISSIBLE LEVEL FLIGHT SPEED FOR 29000 LB. ** 6000 LB. CARGO or 27 TROOPS.		
C-54A	45000 55000 59000 62500 65000	- 2800 3300 3950 4350	2900 3400 -	- 1600 1850 2150 3350	1800 2200 -	56000	20000 15000 10000 5000 S L	- - - 272 260 1150	125 278 276 260 245	125 800 1000 1100 1050	21.4 16.0 9.4 4.4 -	62500 65000 59000 65000	NONE 8000* 8000* 11000**	3742 2814 1886 1886	EXCEEDS SPEED LIMITS	AS ABOVE	3100 2500 1600 1550	16.2 12.0 7.7 7.7	AS ABOVE	4100 2900 1900 1800	26.0 17.1 11.7 10.2	* 8000 LB. CARGO or 30 TROOPS & 2000 LB. EQUIPMENT. ** 11000 LB. CARGO or 50 TROOPS & 4000 LB. EQUIPMENT.			
C-60A -I & -5	14000 17500 18500 21500 23000	- 1800 2050 2850 3300	2150 2600 2700 -	- 1000 1150 1600 1900	1700 2100 2200 -	21500	20000 15000 10000 5000 S L	259 269 260 255* 236*	650 1300 1400 1500 1600	255 252 1200 217 235	19.0 11.0 7.0 3.0 -	21500 23000	1150 **5000	1046 644	1000 600	4.5 2.7	AS ABOVE	1150 850	7.0 4.3	AS ABOVE	2300 1200	14.4 7.7	* SPEED RESTRICTED IN LEVEL FLIGHT. ** 5000 LB. CARGO or 18 PARATROOPS & 1200 LB. BALLAST IN NOSE.		
C-87	40000 50000 56000 60000	- 3500 4750 6000	90 100 105 -	2800 2150 3350 4200	2900 3300 3550 -	66000	30000 25000 20000 15000 10000 5000	302 317 301 287 273 260	600 1050 1100 1150 1200 1200	295 311 295 282 269 255	31.0 26.8 20.9 15.3 9.0 4.2	52900 56000 56000 60000	NONE 3100 5800 9800	2814 1205 2364 2364	1215 1205 1000 975	4.6 4.6 3.8 3.7	1385 1375 1135 1100	4.6 4.6 3.8 3.8	2635 2590 2100 1975	11.7 11.4 9.4 8.9	2835 2750 2235 2165	11.0 10.8 8.0 8.8	3365 3235 2650 2500	17.0 16.2 13.1 12.3	

NOTES:

- MANUFACTURERS:
C-46A - CURTISS
C-47 & A - DOUGLAS
C-53, C & D - DOUGLAS
C-54A - DOUGLAS
C-60A - LOCKHEED



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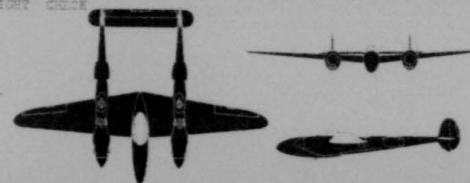
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TACTICAL PLANNING CHARACTERISTICS & PERFORMANCE CHART																	
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MODEL & BLOCK NO.	ENGINE & PROP.			SIZE		WT.	COMBAT CREW	FUEL		ARMAMENT			BOMBS-CARGO-PASS			RADIO	REMARKS & REFERENCE
	NUMBER	ENGINE MFR. MODEL SUPERCHARGER PROP MFR. TYPE	B.H.P./ALT. T-TAKE-OFF M-MILITARY C-CONTINUOUS	S-SPAN L-LENGTH H-HEIGHT T-TREAD W-WING AREA	B-BASIC C-COMBAT R-RECD LIM W-WAR MAX	TANK TYPE OR LOCATION		NO. TANKS & CAPACITY U.S. GAL.	NO. GUNS & CALIBER	RDS PER GUN	LOCATION & TYPE	INTERNAL NO & SIZE OR STATION	EXTERNAL NO & SIZE OR CAPACITY	MAX. LOAD LB.	TYPE		
R P-38E (RESTRICTED)	2	ALLISON V-1710-27 & 29 TURBO CURTISS 11'6" DIA. - 3BL. P.P. ELECTRIC	T 1150/ S L M 1150/25000 C 1000/28000	S 52' 0" L 37'10" H 12'10" T 16' 6" W 528 SQ. FT.	B 12700 C 15000 R 20000 W -	1	MAIN - WING RES. - WING	2 x 90 2 x 60 300 TOT.	1-20MM L-50	150 NOSE - TYPE M1 500 NOSE - FIXED (MAX.)	NONE	NONE	NONE	SCR-183	TECHNICAL ORDER 01-75FB-1. (REV. 15 JAN. 1943) THE RP-38E MODEL IS RESTRICTED AND WILL BE OMITTED FROM NEXT ISSUE.		
P-38F	2	ALLISON V-1710-19 & 53 TURBO CURTISS 11'6" DIA. - 3BL. P.P. ELECTRIC	T 1225/ S L M 1225/21000 C 1000/27000	AS ABOVE	B 13000 C 15300 R 20000 W -	1	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	SCR-183 or SCR-271M	AS ABOVE		
P-38F -I TO -15 INCL.	2	AS ABOVE	AS ABOVE	AS ABOVE	B 13600 C 15900 R 20000 W -	1	MAIN - WING RES. - WING PROP. - EXT.	2 x 90 2 x 60 2 x 75 2 x 150 600 TOT.	NONE	AS ABOVE	NONE	2-1000 2-500 2-325 2-250 2-100	2000	SCR-271M* SCR-515** SCR-522 SCR-535	REFERENCE AS ABOVE * PROVISIONS ONLY. ** SPACE ONLY.		
P-38G -I TO -15 INCL.	2	ALLISON V-1710-51 & 55 TURBO CURTISS 11'6" DIA. - 3BL. P.P. ELECTRIC	T 1225/ S L M 1225/21000 C 1100/24000	AS ABOVE	B 13500 C 15800 R 20000 W -	1	AS ABOVE EXCEPT THAT LAST 200 P-38G-10'S ARE SAME AS BELOW	AS ABOVE EXCEPT THAT LAST 200 P-38G-10'S ARE SAME AS BELOW	AS ABOVE EXCEPT THAT P-38G-10'S ONLY ARE SAME AS BELOW	AS ABOVE EXCEPT THAT P-38G-10'S ONLY ARE SAME AS BELOW	AS ABOVE EXCEPT THAT P-38G-10'S ONLY ARE SAME AS BELOW	AS ABOVE EXCEPT THAT P-38G-10'S ONLY ARE SAME AS BELOW	AS ABOVE EXCEPT THAT P-38G-10'S ONLY ARE SAME AS BELOW	SCR-271M* SCR-515** SCR-522 SCR-535 SCR-595***	REFERENCE AS ABOVE * PROVISIONS ONLY. ** SPACE ONLY. *** LAST 179 P-38G-10'S ONLY.		
P-38H -I & -5	2	ALLISON V-1710-89 & 91 TURBO CURTISS 11'6" DIA. - 3BL. P.P. ELECTRIC	T 1125/ S L M 1125/25000 C 1100/25000	AS ABOVE	B 13700 C 16300 R 21000 W -	1	MAIN - WING RES. - WING PROP. - EXT.	2 x 90 2 x 60 2 x 75 2 x 150 2 x 300 900 TOT.	1-20MM L-50	150 NOSE-AN-M20* 500 NOSE-FIXED (MAX.)	NONE	2-1600 2-1000 2-500 2-325 2-250 2-100	3200	SCR-271M* SCR-515** SCR-522 SCR-535 SCR-695	TECHNICAL ORDER 01-75FP-1. (25 SEPT. 1943) * PROVISIONS ONLY. ** SPACE ONLY. ‡ LIMITED TO 12,000 FT. BECAUSE OF INADEQUATE COOLING.		

MODEL & BLOCK NO.	TAKE OFF & LANDING HARD SURFACE - NO WIND						HIGH SPEED & CLIMB AT NORMAL COMBAT WEIGHT						RANGE & ENDURANCE STATUTE AIR MILES-NO WIND-NO ALLOWANCE FOR RESERVE						REMARKS ON PERFORMANCE								
	TO CLEAR 50'		LANDING SPEED	GROUND-RUN		WEIGHT	STD. ALT.	MIL. POWER		MAX. CONTIN. POWER		TAKE OFF WEIGHT	BOMBS CARGO-PASS.	TOTAL FUEL U.S. GAL.	MAX. CONTINUOUS POWER		MAX. CRUISE POWER			LONG RANGE							
	T.O. DIST.	LAND. DIST.		T.O. DIST.	LAND. DIST.			HIGH SPEED	RATE OF CLIMB	HIGH SPEED	RATE OF CLIMB				TIME TO CLIMB	AT 10000 FT.	AT 25000 FT.	AT 10000 FT.		AT 25000 FT.	AT 10000 FT.	AT 25000 FT.	RANGE	ENDUR.	RANGE	ENDUR.	
R P-38E	13000	-	2650	83	-	1100	15000	25000	390	2100	380	#	11.0	15500	NONE	300	150	1.5	475	1.5	750	3.0	750	2.7	875	4.4	
P-38F	13500	-	2750	85	-	1150	15300	25000	395	2100	380	#	12.0	15800	NONE	300	140	1.3	425	1.3	700	2.7	675	2.4	900	4.5	
P-38F -I TO -15 INCL.	13500	2150	2980	90	1280	1580	15900	25000	390	2300	367	#	8.8	18000	NONE	600	800	2.9	850	2.9	1100	6.1	1125	5.4	2300	9.9	
P-38G -I TO -15 INCL.	15500	2270	3050	91	1360	1620	15900	20000	376	2450	354	#	6.0	15900	NONE	300	400	1.3	400	1.3	700	2.7	685	2.4	900	4.5	
P-38H -I & -5	13600	-	2750	86	-	1150	16900	25000	402	1700	390	#	9.7	18300	NONE	900	1300	5.0	1150	5.0	1250	9.3	1950	6.6	2200	10.0	NO WAR EMERGENCY RATING AVAILABLE ON THIS MODEL BECAUSE OF COOLING.

NOTES:

RED FIGURES ARE PRELIMINARY; SUBJECT TO REVISION AFTER FLIGHT CHECK
MILITARY POWER AVAILABLE FOR 15 MINUTES.



P-38
"LIGHTNING"

MANUFACTURED BY LOCKHEED

CONFIDENTIAL

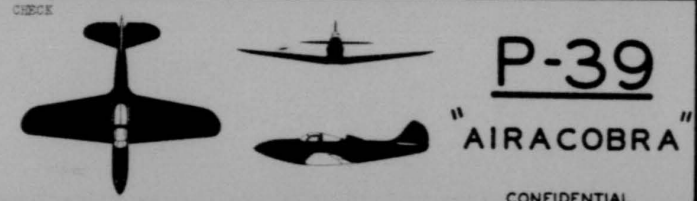
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TACTICAL PLANNING CHARACTERISTICS & PERFORMANCE CHART																
CONFIDENTIAL																
MODEL & BLOCK NO.	ENGINE & PROP.			SIZE		WT.	COMBAT CREW	FUEL		ARMAMENT			BOMBS-CARGO-PASS		RADIO	REMARKS & REFERENCE
	NUMBER	ENGINE MFR. MODEL SUPERCHARGER PROP. MFR. TYPE	B.H.P./ALT. T-TAKE-OFF M-MILITARY C-CONTINUOUS	S-SPAN L-LENGTH H-HEIGHT T-TREAD W-WING AREA	B-BASIC C-COMBAT R-RECD LIM W-WAR MAX			TANK TYPE OR LOCATION	NO. TANKS & CAPACITY U.S. GAL.	NO. GUNS & CALIBER	RDS. PER GUN	LOCATION & TYPE	INTERNAL NO. & SIZE OR STATION	EXTERNAL NO. & SIZE OR CAPACITY		
P-39D	1	ALLISON V-1710-35 SINGLE SPEED CURTISS 10'5" DIA. - 3BL. CONST. SPD. ELECT.	T 1150/S L M 1150/12000 C 1000/10800	S 34' 0" L 30' 2" H 11' 10" T 11' 4" W 213 SQ. FT.	B 6300 C 7650 R 9200 W -	1	WING TOTALS DROPP.-BELLY	12-120 1x75 or 1x156 or 1x175 295 TOT.	4-.30 2-.50 1-37MM	*1000 200 30	WING - FIXED NOSE - FIXED PROP. - TYPE M1	NONE	1-500 1-325 1-250 1-100	500	SCR-283	TECHNICAL ORDER 01-110PB-1. (30 JUNE 1943)
P-39D-1	1	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	1	AS ABOVE	AS ABOVE	4-.30 2-.50 1-37MM	*1000 200 60	WING - FIXED NOSE - FIXED PROP. - TYPE M1	A S	A B O V E		SCR-274H or SCR-522A & SCR-535A	TECHNICAL ORDER 01-110PB-1. (30 JUNE 1943)
P-39D-2	1	ALLISON V-1710-63 SINGLE SPEED CURTISS 10'5" DIA. - 3BL. CONST. SPD. ELECT.	T 1325/S L M 1150/12000 C 1000/10800	AS ABOVE	AS ABOVE	1	AS ABOVE	AS ABOVE	A S	A B O V E	WING - FIXED NOSE - FIXED PROP. - TYPE M1	A S	A B O V E	AS ABOVE	AS ABOVE	A S A B O V E
P-39F	1	ALLISON V-1710-35 SINGLE SPEED ARMO PRODUCTS 10'5" DIA. - 3BL. CONST. SPD. ELECT.	T 1150/S L M 1150/12000 C 1000/10800	AS ABOVE	AS ABOVE	1	AS ABOVE	AS ABOVE	4-.30 2-.50 1-37MM	*1000 200 30	WING - FIXED NOSE - FIXED PROP. - TYPE M1	A S	A B O V E		SCR-283	TECHNICAL ORDER 01-110PB-1. (30 JUNE 1943)
P-39K-1	1	ALLISON V-1710-63 SINGLE SPEED ARMO PRODUCTS 10'5" DIA. - 3BL. CONST. SPD. ELECT.	T 1325/S L M 1150/12000 C 1000/10800	AS ABOVE	AS ABOVE	1	AS ABOVE	AS ABOVE	A S	A B O V E	WING - FIXED NOSE - FIXED PROP. - TYPE M1	A S	A B O V E		SCR-274H or SCR-522A & SCR-535A	TECHNICAL ORDER 01-110PB-1. (30 JUNE 1943)

MODEL & BLOCK NO.	TAKE OFF & LANDING HARD SURFACE - NO WIND					HIGH SPEED & CLIMB AT NORMAL COMBAT WEIGHT					RANGE & ENDURANCE STATUTE AIR MILES - NO WIND - NO ALLOWANCE FOR RESERVE										REMARKS ON PERFORMANCE					
	GROSS WEIGHT LB.	TO CLEAR 50'		LANDING SPEED MPH	GROUND-RUN		STD. ALT. FT.	MIL. POWER			MAX. CONTIN. POWER			TAKE OFF WEIGHT LB.	BOMBS-CARGO-PASS LB.	TOTAL FUEL U.S. GAL.	MAX. CONTINUOUS POWER		MAX. CRUISE POWER			LONG RANGE				
		T.O. DIST. FT.	LAND. DIST. FT.		T.O. DIST. FT.	LAND. DIST. FT.		HIGH SPEED MPH	RATE OF CLIMB FT./MIN.	HIGH SPEED MPH	RATE OF CLIMB FT./MIN.	TIME TO CLIMB MIN.	AT 10000 FT.				AT 25000 FT.	AT 10000 FT.	AT 25000 FT.	RANGE MILES		ENDUR. HOURS	RANGE MILES	ENDUR. HOURS	RANGE MILES	ENDUR. HOURS
		P-39D	6700 7600 7800 8150 8850		- 2800 3000 3400 4500	1850 2050 2100 2200 -		82 86 88 91 -	1100 1300 1350 1400 -	7650	25000 20000 15000 10000 5000	321 318 360 355 335	750 1350 2000 2150 2550				310 338 313 315 323	11.0 9.1 6.1 5.9 1.9	8850 8800 8150 7650 8150	NONE NONE NONE NONE 500		295 276 195 120 120	550 525 400 275 225	2.2 2.0 1.6 0.9 0.9	- - - 4.50 -	- - 525 350 250
P-39D-1		A S	A B O V E				A S	A B O V E				A S	A B O V E			A S	A B O V E							A S A B O V E		
P-39D-2	6700 7600 7800 8150 8850	- 2500 2700 3000 4200	1850 2050 2100 2200 -	82 86 88 91 -	1100 1300 1350 1400 -			A S	A B O V E				A S	A B O V E			A S	A B O V E						A S A B O V E		
P-39F		S I M I L A R	T O P-39D					A S	A B O V E				A S	A B O V E			A S	A B O V E							A S A B O V E	
P-39K-1		S I M I L A R	T O P-39D-2					A S	A B O V E				A S	A B O V E			A S	A B O V E							A S A B O V E	

NOTES:
RANDOM P-39 MODELS MODIFIED FOR AIR/GROUND SUPPORT BY INSTALLATION OF CAMERAS, BELLY ARMOR, ETC.
* 1000 RDS./GUN MAX. FOR GROUND STRAPPING; 300 RDS./GUN NORMAL.

RED FIGURES ARE PRELIMINARY, SUBJECT TO REVISION AFTER FLIGHT CHECK
* MILITARY POWER AVAILABLE FOR 15 MINUTES



P-39
"AIRACOBRA"

MANUFACTURED BY BELL

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TACTICAL PLANNING CHARACTERISTICS & PERFORMANCE CHART																		
MODEL & BLOCK NO.	ENGINE & PROP.			SIZE		WT.	COMBAT CREW	FUEL		ARMAMENT			BOMBS-CARGO-PASS		RADIO	REMARKS & REFERENCE		
	NUMBER	ENGINE MFG. MODEL SUPERCHARGER PROP MFG. TYPE	B.H.P./ALT. T-TAKE-OFF M-MILITARY C-CONTINUOUS	S-SPAN L-LENGTH H-HEIGHT T-TREAD W-WING AREA	B-BASIC C-COMBAT R-RECD LIM W-WAR MAX			TANK TYPE OR LOCATION	NO. TANKS & CAPACITY U.S. GAL.	NO. GUNS & CALIBER	RDS. PER GUN	LOCATION & TYPE	INTERNAL NO. & SIZE OR STATION	EXTERNAL NO. & SIZE OR CAPACITY			MAX. LOAD LB.	TYPE
P-39L-1	1	ALLISON W-1710-65 SINGLE SPEED CURTISS 10'5" DIA. - 3BL. CONST. SPD. HUBS	T 1325/SL M 1150/12000 C 1000/10800	S 34' 0" L 30' 2" H 11' 10" T 11' 4" W 213 SQ. FT.	B 6500 C 7900 R 9200 W -	1	WING TOTALS 12-120 PROP.-BELLY 1x75 or 1x156 or 1x175 295 TOT.	4-.30 2-.50 1-37MM	*1000 200 30	WING - FIXED NOSE - FIXED PROP. - TYPE M4	NONE	1-500 1-325 1-250 1-100	500	SCR-271N or SCR-522A & SCR-535A	TECHNICAL ORDER 01-1109G-1. (30 JUNE 1943)			
P-39M-1	1	ALLISON W-1710-65 SINGLE SPEED CURTISS 10'5" DIA. - 3BL. CONST. SPD. HUBS	T 1200/SL M 1125/15500 C 1000/11000	AS ABOVE	AS ABOVE	1	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	TECHNICAL ORDER 01-1109H-1. (30 JULY 1943)			
P-39N -O TO -5 INCL.	1	ALLISON W-1710-65 SINGLE SPEED CURTISS 11'7" DIA. - 3BL. CONST. SPD. HUBS	T AS ABOVE M AS ABOVE C AS ABOVE	S AS ABOVE L 30' 2" H 12'5" HT. T 11' 4" W PROPPELLER	B 6100 C 7600 R 9200 W -	1	WING TOTALS 8-87 PROP.-BELLY 1x75 or 1x156 or 1x175 262 TOT.	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	SCR-271N or SCR-522A & SCR-535A	TECHNICAL ORDER 01-1109M-1. (10 AUG. 1943) * SCR-695 REPLACES SCR-535A ON P-39M-5 ONLY. ** 1st. 166 P-39M-0 BUILT-IN FUEL 120 GAL. KITS AVAILABLE IN SERVICE TO INCREASE FUEL OF ALL W's TO 120 GAL.			
P-39Q -1 TO -20 INCL.	1	AS ABOVE	T AS ABOVE M AS ABOVE C AS ABOVE	S AS ABOVE L AS ABOVE H AS ABOVE T AS ABOVE W AS ABOVE	B AS ABOVE C AS ABOVE R AS ABOVE W AS ABOVE	1	AS ABOVE EXCEPT: BUILT-IN FUEL ** P-39Q-1.....87 GAL P-39Q-5.....110 GAL P-39Q-10,15 & 20.....120 GAL	2-.50 2-.50 1-37MM	250 300 30	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	SCR-271N or SCR-522A & SCR-695	TECHNICAL ORDER 01-1109N-1. (20 AUG. 1943) ** KITS AVAILABLE IN SERVICE TO INCREASE BUILT-IN FUEL OF P-39Q-1 & -5 TO 120 GAL.			

MODEL & BLOCK NO.	TAKE OFF & LANDING HARD SURFACE - NO WIND						HIGH SPEED & CLIMB AT NORMAL COMBAT WEIGHT						RANGE & ENDURANCE STATUTE AIR MILES - NO WIND - NO ALLOWANCE FOR RESERVE										REMARKS ON PERFORMANCE					
	GROSS WEIGHT LB.	TO CLEAR 50' DIST.		LANDING SPEED MPH	GROUND-RUN DIST.		WEIGHT LB.	STD. ALT. FT.	MIL. POWER		MAX. CONTIN. POWER		TAKE OFF WEIGHT LB.	BOMBS CARGO-PASS LB.	TOTAL FUEL U.S. GAL.	MAX. CONTINUOUS POWER		MAX. CRUISE POWER		LONG RANGE								
		T.O. FT.	LAND. FT.		T.O. FT.	LAND. FT.			HIGH SPEED MPH	RATE OF CLIMB FT/MIN.	HIGH SPEED MPH	RATE OF CLIMB FT/MIN.				TIME TO CLIMB MIN.	RANGE MILES	ENDUR. HOURS	RANGE MILES	ENDUR. HOURS	RANGE MILES	ENDUR. HOURS		RANGE MILES	ENDUR. HOURS	RANGE MILES	ENDUR. HOURS	
P-39L-1	7000 7400 7900 8400 9100	- 1950 2100 2100 2100	84 86 89 89 89	1150 1200 1300 1300 1300	7900	25000 20000 15000 10000 5000	323 317 360 354 335	650 1250 1900 2350 2900	309 330 342 344 322	11.9 9.7 6.6 4.2 2.1	9100 8400 7900 8400	NONE NONE NONE NONE	295 195 120 120	500 400 250 200	2.0 1.6 0.9 0.9	850 590 425 275	3.5 2.5 1.5 1.2	- - - - -	- - - - -	1075 750 550 400	6.0 4.2 2.5 2.3	ALL PERFORMANCE ESTIMATED						
P-39M-1	7000 7400 7900 8400 9100	- 1950 2100 2100 2100	84 86 89 89 89	1200 1300 1450 1450 1450	7900	25000 20000 15000 10000 5000	357 365 370 350 330	1200 1775 2400 2250 2050	343 352 357 337 320	12.8 9.5 7.1 4.9 2.5	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE			
P-39N -O TO -5 INCL. P-39Q-1	6800 7600 8100 8700 8800	- 1950 2050 2150 2100	83 82 91 91 91	1100 1300 1400 1400 1400	7600	25000 20000 15000 10000 5000	368 375 375 357 330	1175 1825 2450 2600 2600	350 355 366 346 320	11.9 8.5 6.1 4.0 2.0	8750 8600 8050 7550 8050	NONE NONE NONE NONE NONE	262 215 162 87 150	500 450 350 175 150	2.0 1.8 1.4 0.6 0.6	850 775 525 300 225	3.5 3.2 2.2 1.0 1.0	- - - - -	- - - - -	975 900 625 350 275	5.4 5.0 3.3 1.7 1.5	RANGE AND ENDURANCE OF 1st. 166 P-39M-0 ARTICLES SAME AS P-39Q-10 to -20 LISTED BELOW.						
P-39Q -5	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	
P-39Q -10 TO -20	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE

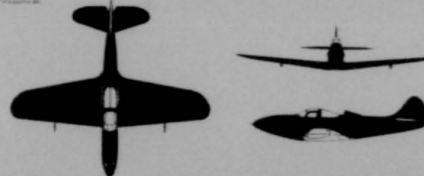
NOTES:

RANDOM P-39 MODELS MODIFIED FOR AIR/GROUND SUPPORT BY INSTALLATION OF CAMERAS, BELLY ARMOR, ETC.

* 1000 RES./GUN MAX. FOR GROUND STRAPPING; 300 RES./GUN NORMAL.

ATTENTION:

KITS AVAILABLE IN SERVICE TO INCREASE BUILT-IN FUEL CAPACITY OF ALL P-39Q & P-39M MODELS TO 120 GAL. PERFORMANCE WILL BE SAME AS SHOWN FOR P-39Q-10 TO -20 MODELS.

RED FIGURES ARE PRELIMINARY; SUBJECT TO REVISION AFTER FLIGHT CHECK
* MILITARY POWER AVAILABLE FOR 15 MINUTES

P-39
"AIRACOBRA"

MANUFACTURED BY BELL

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TACTICAL PLANNING CHARACTERISTICS & PERFORMANCE CHART																	
CONFIDENTIAL																	
PAGE 12																	
AS OF: DATE 20 JAN 1944																	
MODEL & BLOCK NO.	NUMBER	ENGINE & PROP.		SIZE		WT.		COMBAT CREW	FUEL		ARMAMENT			BOMBS-CARGO-PASS.		RADIO	REMARKS & REFERENCE
		ENGINE MFG. MODEL	B.H.P./ALT.	S-SPAN	B-BASIC	TANK	NO. GUNS		RDS	LOCATION	INTERNAL	EXTERNAL	MAX. LOAD	TYPE			
		SUPERCHARGER	T-TAKE-OFF	L-LENGTH	C-COMBAT	NO. TANKS	PER GUN	NO. & LOCATION	NO. & SIZE	NO. & SIZE	LB.						
		PROP MFG. TYPE	M-MILITARY	H-HEIGHT	R-RECD LIM	& CAPACITY		OR LOCATION	OR STATION	OR CAPACITY							
		C-CONTINUOUS	C-CONTINUOUS	W-WING AREA	W-WAR MAX	US GAL											
P-40E & E-1	1	ALLISON V-1710-39 SINGLE SPEED CURTISS 11'0" DIA. - 3BL. CONST. SPD. ELECT.	T 1150/S L M 1150/11700 C 1000/10800	S 37'4" L 31'9" H 12'4" T 8'2" W 236 SQ.'	B 6900 C 8400 R 10000 W -	1 x 52 REAR - WING 1 x 35 FRONT - WING 1 x 62 FUSELAGE 1 x 52 DROP. - BELLY 201 TOT.	6-.50	281 (average)	WING - FIXED	NONE	1-500 & * 2-100 or * 6- 20. 1-325 1-250 1-100	700	SCR-283 or SCR-274N	TECHNICAL ORDER 01-25CP-1. (REV. 20 OCT. '43) * NO EXTERNAL WING BOMBS ON EARLY MODELS.			
P-40F	1	PACKARD V-1650-1 SINGLE STG. - 2 SPD. CURTISS 11'0" DIA. - 3BL. CONST. SPD. ELECT.	T 1300/S L M 1240/11500 C 1080/9500	S 37'4" L * 33'4" H 12'4" T 8'2" W 236 SQ.'	B 7000 C 8500 R 10000 W -	1 x 54 REAR - WING 1 x 37 FRONT - WING 1 x 66 FUSELAGE 1 x 52, 75 150 or 170 327 TOT.	A S	A B O V E	A S	A B O V E	AS ABOVE	AS ABOVE	SCR-274N or SCR-522A * SCR-535A or SCR-695	TECHNICAL ORDER 01-25CH-1. (20 JUNE 1943) REVISED * P-40F-1 LENGTH SAME AS P-40E. ALL SUBSEQUENT MODELS HAVE EXTENDED FUSELAGE.			
P-40K	1	ALLISON V-1710-73 SINGLE SPEED CURTISS 11'0" DIA. - 3BL. CONST. SPD. ELECT.	T 1325/S L M 1150/11800 C 1000/11000	S L H AS ABOVE T W	B 6950 C 8400 R 10000 W -	1 x 54 REAR - WING 1 x 37 FRONT - WING 1 x 66 FUSELAGE 1 x 52, 75 150 or 170 327 TOT.	A S	A B O V E	A S	A B O V E	AS ABOVE	AS ABOVE	AS ABOVE	TECHNICAL ORDER 01-25CK-1. (25 MAY 1943) REV. * P-40K-1 & -5 LENGTH SAME AS P-40E. ALL SUBSEQUENT MODELS HAVE EXTENDED FUSELAGE.			
P-40L	1	PACKARD V-1650-1 SINGLE STG. - 2 SPD. CURTISS 11'0" DIA. - 3BL. CONST. SPD. ELECT.	T 1300/S L M 1240/11500 C 1080/9500	S L H AS ABOVE T W	B 7000 C 8500 R 10000 W -	1 x 54 REAR - WING 1 x 37 FRONT - WING 1 x 66 FUSELAGE 1 x 52, 75 150 or 170 327 TOT.	* 4-.50	201 (average)	AS ABOVE	A S	A B O V E	AS ABOVE	AS ABOVE	TECHNICAL ORDER 01-25CE-1. (REV. 20 JUNE '43) * P-40L-1 FUEL AND ARMAMENT SAME AS P-40F SERIES.			
P-40M	1	ALLISON V-1710-81 SINGLE SPEED CURTISS 11'0" DIA. - 3BL. CONST. SPD. ELECT.	T 1200/S L M 1125/11600 C 1000/13600	S L H AS ABOVE T W	B 6950 C 8400 R 10000 W -	1 x 54 REAR - WING 1 x 37 FRONT - WING 1 x 66 FUSELAGE 1 x 52, 75 150 or 170 327 TOT.	6-.50	281 (average)	AS ABOVE	A S	A B O V E	AS ABOVE	AS ABOVE	TECHNICAL ORDER 01-25CK-1. (REV. 25 MAY '43)			
COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

MODEL & BLOCK NO.	TAKE OFF & LANDING						HIGH SPEED & CLIMB						RANGE & ENDURANCE										REMARKS ON PERFORMANCE				
	HARD SURFACE - NO WIND						AT NORMAL COMBAT WEIGHT						STATUTE AIR MILES - NO WIND - NO ALLOWANCE FOR RESERVE														
	GROSS WEIGHT	TO CLEAR 50'		GROUND-RUN		WEIGHT	STD. ALT.	MIL. POWER	HIGH SPEED	RATE OF CLIMB	HIGH SPEED	RATE OF CLIMB	TIME TO CLIMB	TAKE OFF WEIGHT	BOMBS CARGO-PASS.	TOTAL FUEL	MAX. CONTINUOUS POWER		MAX. CRUISE POWER		LONG RANGE						
LB.	FT.	FT.	MPH	FT.	FT.												FT.	MPH	FT./MIN.	MPH	FT./MIN.	MIN.	LB.	LB.	US GAL.	AT 10000 FT.	AT 25000 FT.
		T.O. DIST.	LAND. DIST.	LANDING SPEED	T.O. DIST.	LAND. DIST.	FT.	MPH	FT./MIN.	MPH	FT./MIN.	MIN.	LB.	LB.	US GAL.	RANGE	ENDUR.	RANGE	ENDUR.	RANGE	ENDUR.	RANGE	ENDUR.				
P-40E & E-1	7500	-	1550	84	-	950	25000	-	-	265	500	18.2	9100	NONE	201	425	1.7	-	-	675	3.0	-	-	850	4.5		
	8100	2800	1700	87	1600	1050	20000	330	980	300	#	11.5	8700	NONE	149	325	1.2	-	-	525	2.2	-	-	650	3.3		
	8400	3125	1750	90	1800	1100	15000	362	1150	312	#	7.6	9200	500	119	300	1.2	-	-	450	2.1	-	-	575	3.1		
	8700	3600	-	-	1950	-	10000	345	2170	313	#	4.8															
	9100	4300	-	-	2300	-	5000	335	2100	296	#	2.4															
P-40F	7500	-	1700	81	-	1050	25000	350	1000	-	500	18.3	10000	NONE	327	-	-	-	-	-	-	-	-	1500	8.0		
	8850	3700	1900	-	2200	1250	20000	364	1100	320	1000	11.6	9350	NONE	232	550	2.0	950	2.3	800	3.4	-	-	1000	7.3		
	9200	4150	2150	-	2450	1300	15000	352	1860	332	1500	7.6	9200	NONE	209	475	1.7	975	2.0	700	3.0	-	-	875	4.6		
	9350	4400	2350	-	2550	1350	10000	340	2210	320	#	4.5	8850	NONE	157	375	1.3	425	1.8	600	2.2	-	-	700	3.1		
	9550	4700	2700	-	2700	1400	5000	320	2160	300	#	2.4	9550	700	157	325	1.3	350	1.8	500	2.2	-	-	600	3.2		
	10000	5250	-	-	3100	-																					
P-40K	7500	-	1700	81	-	1050	25000	-	-	265	350	18.5	10000	NONE	327	-	-	-	-	-	-	-	-	1100	7.8		
	8800	2950	1950	-	1800	1300	20000	330	1100	300	#	11.2	9300	NONE	232	500	1.9	-	-	900	3.9	-	-	1000	5.5		
	9150	3150	2000	-	1900	1350	15000	362	1650	312	#	7.5	9150	NONE	209	400	1.6	-	-	750	3.4	-	-	900	4.8		
	9300	3200	2050	-	1950	1400	10000	342	2000	313	#	4.9	8800	NONE	157	350	1.2	-	-	600	2.4	-	-	700	3.4		
	9500	3350	2100	-	2050	-	5000	320	2100	296	#	2.4	9500	700	157	300	1.2	-	-	550	2.4	-	-	600	3.3		
	10000	-	-	-	-	-																					
P-40L	7500	-	1700	81	-	1050	25000	353	850	330	#	14.7	10000	NONE	327	-	-	-	-	-	-	-	-	1500	8.0		
	8400	2350	1850	85	1400	1200	20000	360	1500	335	#	10.2	9300	NONE	232	650	2.5	-	-	1200	5.6	-	-	1150	8.4		
	8800	2650	1950	-	1600	1300	15000	361	2025	338	#	7.2	8800	NONE	157	450	1.8	750	2.9	900	4.2	-	-	1000	5.6		
	9300	3150	2000	-	1900	1350	10000	346	2180	320	#	4.5	8800	NONE	157	325	1.1	475	1.8	600	2.5	-	-	700	3.7		
	10000	4000	-	-	2500	-	5000	328	2070	308	#	2.4	9300	700	157	300	1.1	475	1.8	475	2.3	-	-	675	3.3		
18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

NOTES:

RED FIGURES ARE PRELIMINARY; SUBJECT TO REVISION AFTER FLIGHT CHECKS.
 # MILITARY POWER AVAILABLE FOR 5 MINUTES ONLY.
 * MILITARY POWER AVAILABLE FOR 15 MINUTES.



P-40
"WARHAWK"

MANUFACTURED BY CURTISS

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TACTICAL PLANNING CHARACTERISTICS & PERFORMANCE CHART																	
MODEL & BLOCK NO.	ENGINE & PROP.		SIZE		WT.		FUEL		ARMAMENT			BOMBS-CARGO-PASS.		RADIO	REMARKS & REFERENCE		
	NUMBER	ENGINE MFG. MODEL SUPERCHARGER PROP. MFG. TYPE	B.H.P./ALT.		S-SPAN L-LENGTH H-HEIGHT T-TREAD W-WING AREA	B-BASIC C-COMBAT R-RECD LIM W-WAR MAL	COMBAT CREW	TANK TYPE OR LOCATION	NO. TANKS & CAPACITY U.S. GAL.	NO. GUNS & CALIBER	RDS. PER GUN	LOCATION & TYPE	INTERNAL		MAX. LOAD LB.	TYPE	
			T-TAKE-OFF M-MILITARY C-CONTINUOUS	T-TAKE-OFF M-MILITARY C-CONTINUOUS									NO. & SIZE OR STATION	NO. & SIZE OR CAPACITY			
P-40N-1	1	ALLISON V-1710-31 SINGLE SPEED CURTISS 11'0" DIA. - 3 BL. CONST. SPD., ELECT.	T 1200/3 L M 1125/11600 C 1000/13800	S 37'4" L 33'4" H 12'4" T 8'2" W 236 sq. ft.	B 6400 C 7725 R 11000 W -	1	REAR - WING FUSELAGE DROPPING - BELLY	1 x 54 1 x 68 1 x 52, 75, 150 or 170 222 TOT.	4-.50	201 (average)	WING - FIXED	NONE	1-500 & * 2-100 or * 6- 20, 1-325 1-250 1-100	500	SCR-27LN or SCR-522A & SCR-695	TECHNICAL ORDER 01-250H-1. (REV. 10 OCT. '43) * PROVISIONS FOR RACKS ONLY.	
P-40N -5 TO -15 INCL.	1	AS ABOVE	AS ABOVE	S AS ABOVE L AS ABOVE H AS ABOVE T AS ABOVE W -	B 6700 C 8400 R 11500 W -	1	REAR - WING FRONT - WING FUSELAGE DROPPING - BELLY (SEE REMARKS)	1 x 54 1 x 37 1 x 70 1 x 75, 150 or 225 * 611 TOT.	6-.50	281 (average)	AS ABOVE	NONE	* 1-500 & * 2-500 or * 2-100 or * 6- 20, 1-325 1-250 1-100	1500	SCR-27LN or SCR-522A & SCR-695	REFERENCE AS ABOVE * PROVISIONS FOR 2-225 GAL. FERRYING TANKS or 2-500 LB. or 2-100 LB. EXTERNAL WING BOMBS IN ADDITION TO 1-500 LB. BOMB IN PLACE OF BELLY TANK. SPACE ONLY FOR 6-20 LB. BOMBS	
P-40N -20 & -25	1	ALLISON V-1710-99 SINGLE SPEED CURTISS 11'0" DIA. - 3 BL. CONST. SPD., ELECT.	T AS ABOVE M AS ABOVE C AS ABOVE	S AS ABOVE L AS ABOVE H AS ABOVE T AS ABOVE W -	B AS ABOVE C AS ABOVE R AS ABOVE W -	1	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE

MODEL & BLOCK NO.	TAKE OFF & LANDING						HIGH SPEED & CLIMB						RANGE & ENDURANCE										REMARKS ON PERFORMANCE
	HARD SURFACE - NO WIND						AT NORMAL COMBAT WEIGHT						STATUTE AIR MILES - NO WIND - NO ALLOWANCE FOR RESERVE										
	TO CLEAR 50'		LANDING		GROUND-RUN		STD. ALT.	MIL. POWER		MAX. CONTIN. POWER		TAKE OFF WEIGHT	BOMBS CARGO PASS.	TOTAL FUEL	MAX. CONTINUOUS POWER		MAX. CRUISE POWER		LONG RANGE				
	T.O. DIST.	LAND. DIST.	LANDING SPEED	T.O. DIST.	LAND. DIST.	HIGH SPEED		RATE OF CLIMB	HIGH SPEED	RATE OF CLIMB	TIME TO CLIMB				RANGE	ENDUR.	RANGE	ENDUR.	RANGE	ENDUR.	RANGE	ENDUR.	
P-40N-1	7000	-	1650	92	-	1000	25000	332	1225	313	12.4	8850	NONE	292	600	2.2	-	1050	4.9	-	1250	7.4	
	7725	2150	1750	96	1350	1100	20000	316	1850	330	9.1	8250	NONE	197	380	1.5	500	2.1	760	3.6	750	3.5	
	8250	2950	1750	105	1700	1100	15000	318	2100	333	6.7	7725	NONE	122	230	0.9	290	1.2	430	1.9	125	1.9	
	8425	3100	1850	-	1800	1150	10000	331	2525	315	4.1	7725	NONE	122	230	0.9	290	1.2	430	1.9	125	1.9	
	8850	3500	-	-	1950	-	5000	313	2125	297	2.1	8225	900	122	210	0.9	260	1.2	420	2.0	120	2.0	
P-40N -5 TO -15 INCL.	7000	-	1650	92	-	1000	25000	325	900	306	13.0	11100	NONE	611	1250	4.9	-	2250	10.9	-	2800	15.7	
	8400	2700	1850	100	1650	1200	20000	316	1550	325	8.8	9500	NONE	331	675	2.6	-	1250	6.0	-	1550	8.4	
	8900	3550	1850	109	2050	1200	15000	313	2130	328	6.0	8900	NONE	236	470	1.8	600	2.5	930	4.3	-	1080	5.7
	9100	3800	1900	-	2200	1250	10000	325	2230	310	4.7	8400	NONE	161	320	1.2	400	1.6	600	2.6	-	750	3.9
	9500	4250	-	-	2350	-	5000	308	2120	291	2.4	8900	900	161	300	1.2	370	1.6	590	2.8	-	-	-
P-40N -20 & -25	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	AS ABOVE	

NOTES:

RED FIGURES ARE PRELIMINARY; SUBJECT TO REVISION AFTER FLIGHT CHECK
 * MILITARY POWER AVAILABLE FOR 15 MINUTES



P-40
"WARHAWK"

MANUFACTURED BY CURTISS

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PAGE 13
AS OF
DATE 21 JAN 1944

TACTICAL PLANNING CHARACTERISTICS & PERFORMANCE CHART																
MODEL & BLOCK NO.	ENGINE & PROP.		SIZE		WT.	COMBAT CREW	FUEL		ARMAMENT			BOMBS-CARGO-PASS		RADIO	REMARKS & REFERENCE	
	ENGINE MFG. MODEL SUPERCHARGER PROP MFG. TYPE	B.H.P./ALT. T-TAKE-OFF M-MILITARY C-CONTINUOUS	S-SPAN L-LENGTH H-HEIGHT T-TREAD W-WING AREA	B-BASIC C-COMBAT R-RECD LIM W-WAR MAX	TANK TYPE OR LOCATION		NO. TANKS & CAPACITY U.S. GAL.	NO. GUNS & CALIBER	RDS. PER GUN	LOCATION & TYPE	INTERNAL NO. & SIZE OR STATION	EXTERNAL NO. & SIZE OR CAPACITY	MAX. LOAD LB.	TYPE		
P-47C-ITO-5 P-47D-ITO-20 P-47G-ITO-16	PRATT-WHITNEY R-2800-21, -59, -63 TURBO CURTISS 12" DIA. - 14 BL. CONST. SPEED ELECT.	2000 / S L 2000 / 27000 2300 / 27000 1625 / 29000	40' 9" 36' 1" 14' 2" 15' 6" 300 SQ. FT.	10700 13500 15000 -	1	MAIN - PUS. 1 x 205 AUX. - PUS. 1 x 100 BROP. - BELLY 1 x 75 OR 115 or 200 KIT. - WINGS 2 x 150 & 1 x 75 (SEE REF.) 750 TOT.	6) or 8)	267 HOR. 425 MAX.	WING - FIXED	NONE	1-500 or 2-500 or 3-500	1500	SCR-274 SCR-522 & SCR-535A SCR-695	TECHNICAL ORDER 01-6580-1. (REV. 20 NOV. '43) ** R-2800-21 ENGINE WILL HAVE WAR EMERGENCY RATING WHEN WATER INJECTION EQUIPMENT IS INSTALLED & REDESIGNATED R-2800-63. *** ALL MODELS AFTER P-47D-1 HAVE B-7 SHACKLE FOR BELLY TANK OF BOMB; MODELS AFTER P-47D-15 HAVE WING RACKS FOR TANKS OR BOMBS. *** ONLY EARLY MODELS CARRY 200 GAL. DROPPABLE BELLY TANK. MAX. FUEL OF 680 GAL. COMPRISED OF BUILT-IN FUEL PLUS 2-150 EXTERNAL WING TANKS & 1-75 GAL. BELLY TANK, ONLY.		

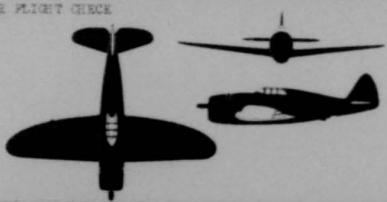
MODEL & BLOCK NO.	TAKE OFF & LANDING				HIGH SPEED & CLIMB						RANGE & ENDURANCE										REMARKS ON PERFORMANCE				
	HARD SURFACE - NO WIND				AT NORMAL COMBAT WEIGHT						STATUTE AIR MILES - NO WIND - NO ALLOWANCE FOR RESERVE														
	TO CLEAR 50'		GROUND-RUN		WEIGHT	STD. ALT.	MIL. POWER		MAX. CONTIN. POWER		TAKE OFF WEIGHT	BOMBS CARGO	TOTAL FUEL	MAX. CONTINUOUS POWER		MAX. CRUISE POWER		LONG RANGE							
T.O. DIST.	LAND. DIST.	LAND. SPEED	T.O. DIST.	LAND. DIST.			HIGH SPEED	RATE OF CLIMB	HIGH SPEED	RATE OF CLIMB				TIME TO CLIMB	RANGE	ENDUR.	RANGE	ENDUR.	RANGE	ENDUR.	RANGE	ENDUR.	RANGE	ENDUR.	
P-47C-ITO-5 P-47D-ITO-20 P-47G-ITO-16 (MILITARY POWER)	11000 12500 13500 14000 15000	- 3100 3700 3400 3800	2200 2800 2500 2800 -	92 100 104 106 -	1200 1500 1700 1800 -	13500	30000 25000 20000 15000 10000 5000	420 416 400 384 368 352	1750 1750 2150 2200 2300 2350	360 330 310 290 275	20.0 15.0 11.0 7.2 4.3 2.2	16200 15600 14900 14300 13500	NONE NONE NONE NONE NONE	680 605 505 420 380 305	900 800 625 525 475 325	3.0 2.6 2.2 1.8 1.6 1.3	950 850 650 550 475 400	3.0 2.6 2.2 1.8 1.6 1.3	- - - - - -	- - - - - -	- - - - - -	- - - - - -	1725 1325 1100 1035 925 835	6.3 7.3 5.4 4.9 4.4 3.8	NO RANGE DATA WITH BOMBS AVAILABLE. PERFORMANCE VALUES WITHOUT EXTERNAL RACKS.
P-47C-ITO-5 P-47D-ITO-20 P-47G-ITO-16 (WAR EMER. POWER)		A S	A B O V E			13500	30000 25000 20000 15000 10000 5000	433 421 406 390 372 353	1375 1825 2140 2400 2630 2750		A S	A B O V E													A S A B O V E

NOTES: (A) R-2800-21 (WATER INJECTION PROVISIONS; KITS AVAILABLE FOR INSTALLATION) USED ON: P-47C-1, -2 & -5; P-47D-1, -2, -3 & -4; P-47G-1, -5 & -10

R-2800-59 (WATER INJECTION & NEW ELECTRICAL HARNESS) USED ON: P-47D-20

R-2800-63 (WATER INJECTION) USED ON: P-47D-10, -11, -15 & -16; P-47G-15 & -16

RED FIGURES ARE PRELIMINARY, SUBJECT TO REVISION AFTER FLIGHT CHECK
* MILITARY POWER AVAILABLE FOR 15 MINUTES.



P-47
"THUNDERBOLT"

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TACTICAL PLANNING CHARACTERISTICS & PERFORMANCE CHART

PAGE 11
AS OF
DATE 11 FEB 1943

MODEL & BLOCK NO.	ENGINE & PROP.		SIZE		WT.		COMBAT CREW	FUEL		ARMAMENT			BOMBS-CARGO-PASS.			RADIO	REMARKS & REFERENCE
	ENGINE MFR. MODEL SUPERCHARGER PROP. MFR. TYPE	B.H.P./ALT. T-TAKE-OFF M-MILITARY C-CONTINUOUS	S-SPAN L-LENGTH H-HEIGHT T-TREAD W-WING AREA	B-BASIC C-COMBAT R-RECD LIM W-WAR MAX	TANK TYPE OR LOCATION	NO. TANKS & CAPACITY U.S. GAL.		NO. GUNS & CALIBER	RDS. PER GUN	LOCATION & TYPE	INTERNAL NO. & SIZE OR STATION	EXTERNAL NO. & SIZE OR CAPACITY	MAX. LOAD LB.	TYPE			
															NO. & SIZE		
P-51 -1 & -2	ALLISON V-1710-39 SINGLE SPEED CURTISS 10"9" DIA. - 3 BL. CONST. SPD. ELECTR.	T 1150/8 L M 1150/13750 C 1000/13750	S 37' 0" L 32' 3" H 12' 2" T 11' 10" W 233 SQ. FT.	B 7050 C 8800 R 10500 W -	1	1 x 90 1 x 59 1 x 31 180 TOT.	4-20MM	125	WING-TYPE M2	NONE	NONE	NONE	SCR-274N & SCR-535	TECHNICAL ORDER 01-60JB-1. (10 JAN. 1943)			
P-51A -1 TO -10 INCL.	ALLISON V-1710-81 SINGLE SPEED CURTISS 10"9" DIA. - 3 BL. CONST. SPD. ELECTR.	T 1200/8 L M 1125/18000 C 1000/17500	S AS ABOVE	B 6850 C 8600 R 10500 W -	1	1 x 90 1 x 90 2 x 75 or 2 x 150 180 TOT.	2) .50 2) 350	280 350	OUTSD. -WINGS INBD. -WINGS	NONE	2-500 2-325 2-250 2-100	1000	SCR-274N* SCR-535* SCR-515** SCR-522 SCR-695	TECHNICAL ORDER 01-60JC-1. (25 OCT. 1943) * PROVISIONS ONLY ** SPACE PROVIDED			

COLUMN — 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

MODEL & BLOCK NO.	TAKE OFF & LANDING HARD SURFACE - NO WIND				HIGH SPEED & CLIMB AT NORMAL COMBAT WEIGHT						RANGE & ENDURANCE STATUTE AIR MILES - NO WIND - NO ALLOWANCE FOR RESERVE										REMARKS ON PERFORMANCE					
	TO CLEAR 50'		GROUND-RUN		WEIGHT	STD. ALT.	MIL. POWER		MAX. CONTIN. POWER		TAKE OFF WEIGHT	BOMBS	TOTAL FUEL	MAX. CONTINUOUS POWER		MAX. CRUISE POWER		LONG RANGE								
	T.O. DIST.	LAND. DIST.	T.O. DIST.	LAND. DIST.			HIGH SPEED	RATE OF CLIMB	HIGH SPEED	RATE OF CLIMB				RANGE	ENDUR.	RANGE	ENDUR.	RANGE	ENDUR.	RANGE		ENDUR.	RANGE	ENDUR.		
LB.	FT.	FT.	MPH	FT.	FT.	MPH	FT./MIN.	MPH	FT./MIN.	MIN.	LB.	LB.	U.S. GAL.	MILES	HOURS	MILES	HOURS	MILES	HOURS	MILES	HOURS					
P-51	7500	-	2600	88	-	1700	25000	337	800	315	300	16.0	8800	NONE	180	150	1.5	700	2.6	700	2.7	-	-	1000	4.5	
P-51A -1 TO -10 INCL.	8000	-	2450	100	-	1550	25000	375	1100	360	300	12.7	10600	NONE	180	1135	4.1	-	-	2000	8.3	-	-	2350	11.4	PERFORMANCE SHOWN WITH WING RACKS; REMOVAL OF WING RACKS INCREASES HIGH SPEED APPROX. 12 MPH. & RATE OF CLIMB 50% TO 100%/MIN.
	8600	2050	2750	103	1400	1850	20000	390	1650	375	300	9.1	9600	NONE	330	725	2.7	-	-	1250	5.3	-	-	1525	7.9	
	9100	2250	3000	106	1600	2100	15000	380	2300	365	300	6.6	8600	NONE	180	425	1.4	-	-	750	2.8	-	-	1000	4.8	
	9600	2500	3250	-	1800	2350	10000	360	2300	346	300	4.4	9100	500	180	415	1.4	-	-	725	2.8	-	-	950	4.7	
	10300	2900	-	-	2100	-	5000	340	2300	325	300	2.2	9600	1000	180	410	1.4	-	-	710	2.8	-	-	910	4.6	

NOTES:

RED FIGURES ARE PRELIMINARY; SUBJECT TO REVISION AFTER FLIGHT CHECK
/ MILITARY POWER AVAILABLE FOR 15 MINUTES

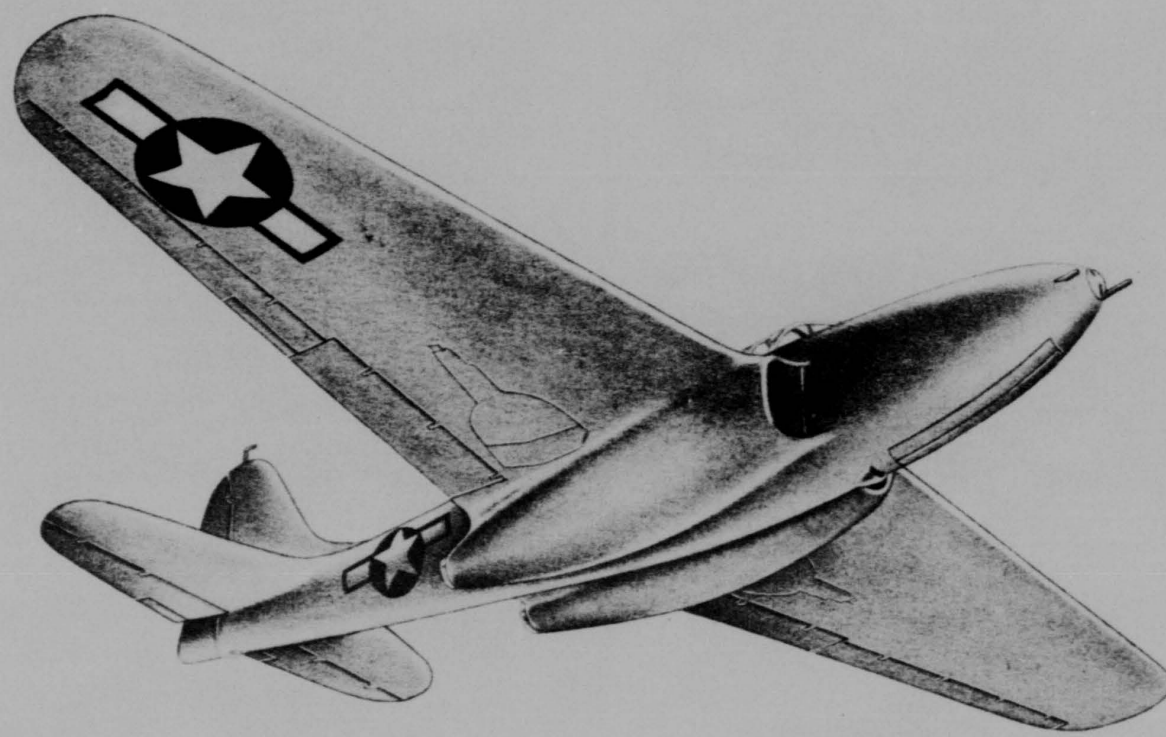


P-51
"MUSTANG"

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TACTICAL PLANNING CHARACTERISTICS & PERFORMANCE CHART																
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MODEL & BLOCK NO.	ENGINE & PROP.		SIZE		WT.		FUEL		ARMAMENT			BOMBS-CARGO-PASS.		RADIO		REMARKS & REFERENCE
	NUMBER	ENGINE MFR. MODEL SUPERCHARGER PROP MFR. TYPE	B.H.P./ALT. T-TAKE-OFF M-MILITARY C-CONTINUOUS	S-SPAN L-LENGTH H-HEIGHT T-TREAD W-WING AREA	B-BASIC C-COMBAT R-RECD LIM W-WAR MAX	COMBAT CREW	TANK TYPE OR LOCATION	NO. TANKS & CAPACITY U.S. GAL.	NO. GUNS & CALIBER	RDS PER GUN	LOCATION & TYPE	INTERNAL NO. & SIZE OR STATION	EXTERNAL NO. & SIZE OR CAPACITY	MAX LOAD LB.	TYPE	
YP-59A	2	GENERAL ELECTRIC I-16 JET TYPE TURBO SUPERCH. ENGINE	T M C SEE NOTE(A)	S 49' L 38'10" H 12' 4" T 18' 6" W 100 SQ. FT.	B 8000 C 10500 R 12700 W -	1	WINGS (INTER) 2x150 WINGS (EXTER) 5-290 or 1-370M & 3-50 590 TOT.	2-370M or 1-370M & 3-50	4 4 200	NOSE - FIXED	N	O	N	E	SCR-271N SCR-522A SCR-535A SCR-695A SCR-515	(PRELIMINARY INFORMATION FROM ENGR. DIV.) ON LAST 4, MOMENTS ONLY.
			T M C	S L H T W	B C R W											
			T M C	S L H T W	B C R W											
			T M C	S L H T W	B C R W											
			T M C	S L H T W	B C R W											
			T M C	S L H T W	B C R W											

MODEL & BLOCK NO.	TAKE OFF & LANDING HARD SURFACE - NO WIND						HIGH SPEED & CLIMB AT NORMAL COMBAT WEIGHT						RANGE & ENDURANCE STATUTE AIR MILES-NO WIND-NO ALLOWANCE FOR RESERVE										REMARKS ON PERFORMANCE				
	GROSS WEIGHT		TO CLEAR 50'		LANDING SPEED		GROUND-RUN		WEIGHT	STD. ALT.	MIL. POWER		MAX. CONTIN. POWER		TAKE OFF WEIGHT	BOMBS CARGO PASS.	TOTAL FUEL U.S. GAL.	MAX. CONTINUOUS POWER		MAX. CRUISE POWER		LONG RANGE					
	LB.	FT.	T.O. DIST. FT.	LAND. DIST. FT.	MPH	FT.	FT.	FT.			HIGH SPEED M.P.H.	RATE OF CLIMB FT./MIN.	HIGH SPEED M.P.H.	RATE OF CLIMB FT./MIN.				TIME TO CLIMB MIN.	AT 10000 FT.	AT 25000 FT.	AT 10000 FT.	AT 25000 FT.		RANGE MILES	ENDUR. HOURS	RANGE MILES	ENDUR. HOURS
YP-59A	8000	1350	1600	-	800	900	10500	113	1500	322	332	332	332	12700	NONE	590	330	1.0	-	-	-	-	-	-	1.50	1.5	* SPEED & CLIMB BASED ON PRELIM. TEST. MAX. RANGE IS APPROX. 500 MILES IN 1.5 HRS. AT 20000' WITH 590 GAL. FUEL. b MAX. RANGE IS APPROX. 210 MILES IN 0.5 HRS. AT 20000' WITH 290 GAL. FUEL.
	8500	1500	1475	-	850	975	10500	120	2000	377	377	377	377	10500	NONE	290	200	0.5	-	-	-	-	-	-	0.5		
	9000	1600	1725	-	925	1050	10500	125	2000	387	387	387	387														
	10500	2300	1950	-	1275	1200	10500	150	3200	465	465	465	465														
	12700	4100	-	-	2200	1125	10500	171	3500	521	521	521	521														

NOTES: (A)

TEMPERATURE ENGINE LIMITATIONS (FUEL - KEROSENE)
 TAKE-OFF & MILITARY POWER - (16500 R.P.M.)
 CONTINUOUS POWER - (16000 R.P.M.)

GENERAL NOTE: ALL INFORMATION CONTAINED IN THIS CHART IS SUBJECT TO CONSIDERABLE REVISION AFTER FURTHER FLIGHT TESTS AND PRODUCTION CHANGES; PERFORMANCE DATA OTHER THAN HIGH SPEED AND CLIMB HAS BEEN ESTIMATED.

RED FIGURES ARE PRELIMINARY; SUBJECT TO REVISION AFTER FLIGHT CHECK.



P-59

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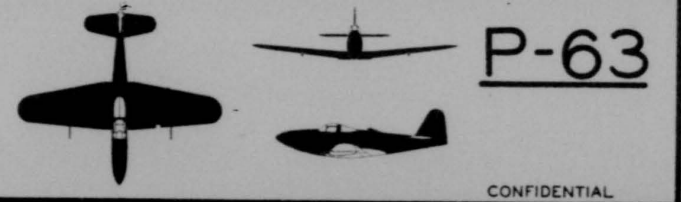
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TACTICAL PLANNING CHARACTERISTICS & PERFORMANCE CHART																		
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PAGE 17 AS OF DATE 21 JAN 1944																		
MODEL & BLOCK NO.	ENGINE & PROP.	SIZE	WT.	COMBAT CREW	FUEL		ARMAMENT			BOMBS-CARGO-PASS.		RADIO	REMARKS & REFERENCE					
					TANK TYPE OR LOCATION	NO. TANKS & CAPACITY U.S. GAL.	NO. GUNS & CALIBER	RDS PER GUN	LOCATION & TYPE	INTERNAL NO. & SIZE OR STATION	EXTERNAL NO. & SIZE OR CAPACITY		MAX. LOAD LB.	TYPE				
P-63A -1 TO -6 INCL.	ALLISON V-1710-93 2 STAGE SUPERCHARGER PROP. MFG. TYPE	B.H.P./ALT. T-TAKE-OFF M-MILITARY C-CONTINUOUS	S-SPAN L-LENGTH H-HEIGHT T-TREAD W-WING AREA	B-BASIC C-COMBAT R-RECD LIM W-WAR MAX	1	MAIN - WINGS DROPP. - BELLY DROPP. - WINGS (SEE P)	2 x 68 1 x 64 (225) or 1 x 75 or 1 x 75 2 x 75 161 TOT	1-37MM 2-50 2-50	30 250 200	PROP. - TYPE M; WING - FIXED NOSE - FIXED	NONE	1-500 1-325 1-250 1-100	500	SCR-27LN & EC-198 or SCR-522 & DETROIA # 138 & SCR-695	TECHNICAL ORDER 01-110FF-1. (20 JULY 1943) 2x75 GAL. DROPPABLE WING TANKS ADDED TO P-63A-6. NO WAR EMERGENCY RATING.			

MODEL & BLOCK NO.	TAKE OFF & LANDING				HIGH SPEED & CLIMB						RANGE & ENDURANCE										REMARKS ON PERFORMANCE					
	HARD SURFACE - NO WIND				AT NORMAL COMBAT WEIGHT						STATUTE AIR MILES - NO WIND - NO ALLOWANCE FOR RESERVE															
	GROSS WEIGHT	TO CLEAR 50'	LAND. DIST.	LAND. SPEED	STD. ALT.	MIL. POWER	HIGH SPEED	RATE OF CLIMB	MAX. CONTIN. POWER	HIGH SPEED	RATE OF CLIMB	TIME TO CLIMB	TAKE OFF WEIGHT	BOMBS CARGO PASS.	TOTAL FUEL	MAX. CONTINUOUS POWER		MAX. CRUISE POWER		LONG RANGE						
LB.	FT.	FT.	MPH	FT.	FT.	MPH	FT/MIN.	MPH	FT/MIN.	MIN.	MIN.	LB.	LB.	U.S. GAL.	AT 10000 FT.	AT 25000 FT.	AT 10000 FT.	AT 25000 FT.	AT 10000 FT.	AT 25000 FT.	AT 10000 FT.	AT 25000 FT.				
P-63A -1 TO -6 INCL. [MILITARY POW.]	7700 8300 8700 9500 10500	1700 2140 2520 2900 4500	1800 - - - -	1070 1320 1520 2000 3100	1140 - - - -	8550	30000 25000 20000 15000 10000 5000	392 401 388 370 355 326	1150 2200 3870 3870 3370 3270	350 365 370 395 335 315	11.0 8.8 6.8 4.6 3.1 1.7	10550 9500 8850 8350 8850	NONE NONE NONE NONE 500	161 311 211 136 136	- 725 400 100 350	- 3.2 2.1 1.3 1.3	- 850 600 125 350	- 3.1 2.1 1.3 1.3	- 1100 700 550 150	- 4.0 3.2 2.1 2.0	- - - - -	- - - - -	2250 1100 950 700 600	13.3 7.5 4.6 3.2 3.0	PERFORMANCE VALUES WITHOUT EXTERNAL TANKS.	
P-63A -1 TO -6 INCL. [WAR EMERG.]						8550	30000 25000 20000 15000 10000 5000	392 401 388 370 355 326	1150 2200 3870 3870 3370 3270	350 365 370 395 335 315	AS ABOVE															AS ABOVE

NOTES: RED FIGURES ARE PRELIMINARY; SUBJECT TO REVISION AFTER FLIGHT CHECK.
* MILITARY POWER AVAILABLE FOR 15 MINUTES.



P-63

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**GLIDER AND
TOWPLANE SECTION**

1-FEBRUARY-1944

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FOREWORDWARNING

THESE CHARTS CONTAIN CONSERVATIVE AVERAGES FOR TACTICAL PLANNING AND ARE NOT SUITABLE FOR AERODYNAMIC ANALYSIS.

Data contained herein are not to be considered guaranteed performance nor optimum performance as established by test flight but are to be considered official "Practical" characteristics and performance to be used for planning purposes for the average pilot.

All data includes service allowances based on theater experience. Individual airplanes may vary appreciably due to age and service changes. Data printed in red are preliminary and subject to revision after flight check. Data printed in black have been derived from information obtained in flight but are not actual flight test results. For detailed planning see Technical Orders listed as references.

Range and endurance are based on the following assumptions:

- a. Allowance for warm-up, taxi, run-up, take-off, and landing. (equal to ten minutes at rated power.)
- b. Allowances for fuel consumed in climb. Distance and time to climb are included in range and endurance.
- c. Allowance for carrying bombs and droppable tanks entire flight.
- d. Allowance of 10% net ideal range for miscellaneous differences in airplanes, equipment, pilot technique, atmospheric conditions other than wind, unusable fuel, weight and balance and similar variables. (For example, range varies day and night due to fuel expansion prior to take-off.)
- e. Other than the above, no allowances for wind, assured reserve, combat, nor formation flight.

DEFINITIONS

<u>LOADING:</u>	TYPICAL LOADINGS OF GLIDER AND TOWPLANE FOR TACTICAL MISSIONS.
Note:	Weight and fuel quantities shown apply to all performance values to the right on the same line.
MAX. TOW SPEED:	MAX. PERMISSIBLE CALIBRATED INDICATED AIR SPEED FOR TOWING GLIDER AT WEIGHT SHOWN.
<u>TAKE-OFF:</u>	
(To clear 50' object)	DISTANCES REPRESENTATIVE OF MINIMUM AIRPORT REQUIREMENTS.
TAKE-OFF SPEED:	NORMAL FOR AVERAGE PILOT.
GROUND RUN:	DISTANCES REPRESENTATIVE OF MINIMUM RUNWAY REQUIREMENTS.
<u>CLIMB:</u>	
(I.A.S. for CLIMB)	MINIMUM TOWPLANE INDICATED AIR SPEED FOR GOOD CONTROL & SATISFACTORY ENGINE COOLING.
INITIAL RATE OF CLIMB:	SEA LEVEL RATE OF CLIMB AT MINIMUM TOWPLANE INDICATED AIR SPEED.
Note:	For some combinations rate of climb tends to increase up to critical altitude of towplane engines.
SERVICE CEILING:	ALTITUDE AT WHICH RATE OF CLIMB IS 100'/MIN.
TIME TO SERVICE CEILING:	TIME TO CLIMB IN MINUTES FROM SEA LEVEL TO SERVICE CEILING BASED ON I.A.S. FOR CLIMB.
<u>RANGE & ENDURANCE:</u>	(SEE DISCUSSION UNDER FOREWORD)
RADIUS OF ACTION:	DISTANCE GLIDER CAN BE TOWED AND RELEASED WITH TOWPLANE HAVING ENOUGH FUEL TO RETURN TO BASE ALONE.
TIME OUT:	TIME FROM TAKE-OFF TO RELEASE OF GLIDER: (At recommended cruising altitude)
TIME BACK:	TIME REQUIRED FOR TOWPLANE TO RETURN TO BASE ALONE AT RECOMMENDED CRUISING SPEED AND ALTITUDE.
MAX. RANGE & ENDURANCE:	PRACTICAL MAXIMUM RANGE WHICH GLIDER CAN BE TOWED UNDER CONDITIONS SET FORTH AND CORRESPONDING TIME REQUIRED.

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TOWPLANE & GLIDER TACTICAL PLANNING PERFORMANCE CHART

PAGE 1
AS OF:
20 JAN. 1944

BOMBER TOWPLANE AND CG-4A GLIDER

TOWPLANE & GLIDER COMBINATION	LOADING						TAKE OFF (WITH GLIDER ATTACHED) S.L. - HARD SURFACE - NO WIND			CLIMB (AT MINIMUM TOW SPEED)				RANGE & ENDURANCE (AT CRUISING POWER) STATUTE AIR MILES - NO WIND - NO RESERVE						REMARKS	
	GLIDERS		TOWPLANE				MAX. TOW SPEED (M.P.H.)	TO CLEAR 50' OBJ. DISTANCE (FT.)	TAKE OFF SPEED (M.P.H.)	GROUND RUN DISTANCE (FT.)	I.A.S. FOR CLIMB (M.P.H.)	INITIAL RATE OF CLIMB (FT./MIN.)	SERVICE CEILING (FT.)	TIME TO SERVICE CEIL. (MIN.)	RADIUS OF ACTION (GLIDER RELEASED AT RADIUS)			RECOMM. CRUISING ALTITUDE (FT.)	MAX. RANGE (WITH GLIDER)		
	TAKE-OFF WEIGHT (LB.)	CARGO OR PASS. (LB.)	TAKE-OFF WEIGHT (LB.)	BOMBS CARGO OR PASS. (LB.)	FUEL (U.S. GAL.)	RADIUS (MI.)									TIME OUT (HRS.)	TIME BACK (HRS.)	RANGE (MI.)		ENDUR. (HRS.)		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20
B-17F & (1) CG-4A	7500	3600	59100	NONE	2780	150	6150	110	4150	135	300	12000*	37	(990)	7.2	6.8	5000	1380	10.3	* LIMITED- NO OXYGEN IN GLIDER	
														(980)	6.8	6.3	10000	1370	9.6		
B-17F & (2) CG-4A	7500	3600	52500	NONE	1700	150	6000	110	4100	135	300	11000	57	510	3.8	3.5	5000	720	5.5		
	7500	3600	59100	NONE	2780	150	6950	110	4700	135	240	8000	44	860	6.6	6.2	5000	1140	8.8		
B-24D & (1) CG-4A	7500	3800	52500	NONE	2344	150	4225	115	3475	140	530	12000*	24	(870)	6.5	5.3	5000	1360	9.7	* LIMITED- NO OXYGEN IN GLIDER	
	7500	3600	59000	6000	2344	150	5075	115	4125	140	325	12000*	41	(830)	5.6	4.4	10000	1280	8.6		
B-25C & (1) CG-4A	7500	3800	30000	2000	972	150	5075	120	4175	140	390	12000*	38	540	3.8	3.4	5000	700	4.9	* LIMITED- NO OXYGEN IN GLIDER	

NOTES:


- (1) REFERENCE MATERIAL FROM TECHNICAL ORDER 01-1-143 dated 1-DEC.1943.
- (2) ALL PERFORMANCE SHOWN WITH GLIDER TRAINING GEAR ATTACHED.

ALL FIGURES ARE PRELIMINARY. SUBJECT TO REVISION AFTER FLIGHT CHECK.

TEMPORARY TOW RELEASE MECHANISM ON B-17F CAN BE INSTALLED QUICKLY WITH NO STRUCTURAL MODIFICATIONS REQUIRED.

TOW PLANE PERFORMANCE WITH CG-4D TO BE SAME AS WITH CG-4A.

GLIDER CHARACTERISTICS

WEIGHT		SIZE
B - BASIC		S - SPAN
C - COMBAT	L - LENGTH	
W - WAR MAX	H - HEIGHT	
	T - TREAD	
	W - WING AREA	
	TYPICAL GLIDER CAPACITIES	
B - (3700 to 4500)	S - 53'8"	
C - 7500	L - 48'4"	
W - 9000	H - 12'7"	
	T - 9'4"	
	W (Tact. gear) 852 SQ. FT.	

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TOWPLANE & GLIDER TACTICAL PLANNING PERFORMANCE CHART

PAGE 2
AS OP: 20 JAN. 1944

CARGO TOWPLANE AND CG-4A GLIDER

TOWPLANE & GLIDER COMBINATION	LOADING						TAKE OFF (WITH GLIDER ATTACHED) SL-HARD SURFACE-NO WIND			CLIMB (AT MINIMUM TOW SPEED)				RANGE & ENDURANCE (AT CRUISING POWER) STATUTE AIR MILES-NO WIND-NO RESERVE						REMARKS	
	GLIDERS		TOWPLANE				MAX. TOW SPEED (M.P.H.)	TO CLEAR 50' OBJ. DISTANCE (FT.)	TAKE OFF SPEED (M.P.H.)	GROUND RUN DISTANCE (FT.)	I.A.S. FOR CLIMB (M.P.H.)	INITIAL RATE OF CLIMB (FT./MIN)	SERVICE CEILING (FT.)	TIME TO SERVICE CEIL. (MIN)	RADIUS OF ACTION (GLIDER RELEASED AT RADIUS)			RECOMM. CRUISING ALTITUDE (FT.)	MAX. RANGE (WITH GLIDER)		
	TAKE-OFF WEIGHT (LB.)	CARGO OR PASS (LB.)	TAKE-OFF WEIGHT (LB.)	BOMBS-CARGO OR PASS (LB.)	FUEL (U.S. GAL)	RADIUS (MI.)									TIME OUT (HRS)	TIME BACK (HRS)	RANGE (MI.)		ENDUR. (HRS)		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20
C-46A & (1)CG-4A	7500	3800	15000	3000	1400	150	3150	95	3500	125	275	10000	4.7	650	5.3	3.8	5000	950	7.8	BETTER PERFORMANCE EXPECTED UPON FURTHER FLIGHT TESTING.	
C-46A & (2)CG-4A	7500	3800	15000	3000	1400	150	3300	95	5650	120	100	3000	3.0	410	3.6	2.7	1000	530	4.7	AS ABOVE	
C-47, 47A & 53 (STD. BLADE PROPS) & (1)CG-4A	7500	3800	26000	3000	804	150	4425	90	3000	120	275	11350	4.4	560	4.6	4.4	5000	830	6.8		
C-47, 47A & 53 (PADDLE BLADE PROPS) & (1)CG-4A	7500	3800	26000	3000	804	150	4075	85	2825	105	425	12000*	3.0	610	5.7	4.7	5000	950	9.1	* LIMITED- NO OXYGEN IN GLIDER	
	7500	3800	29000	6000	804	150	5625	85	3800	105	350	11800	4.2	570	5.0	4.4	5000	875	7.6		
	7500	3800	31000	8000	804	150	6175	90	4175	105	300	11300	5.3	510	4.1	3.8	5000	740	6.4		
C-47, 47A & 53 (PADDLE BLADE PROPS) & (2)CG-4A	7500	3800	29000	6000	804	150	7850	85	4450	105	125	8000	5.7	395	3.7	3.3	2000	518	4.5	* TO 3000 FT. ALTITUDE	
	7500	3800	31000	8000	804	150	8850	90	5550	105	80	-	3.8*	370	3.4	3.1	1000	470	4.4		
C-60A & (1)CG-4A	7500	3800	18500	NONE	644	150	4000	85	2750	120	550	12000*	3.7	580	4.7	4.0	5000	940	7.9	* LIMITED- NO OXYGEN IN GLIDER	
	7500	3800	21500	3000	644	150	5425	85	3675	120	320	11500	4.8	410	3.4	2.8	5000	560	4.7		
C-60A & (2)CG-4A	4700	1000	18500	NONE	644	150	4800	85	4100	120	250	8000	4.0	360	2.8	2.5	5000	540	4.6		
	7500	3800	18500	NONE	644	150	7000	85	4500	120	200	7500	4.1	330	2.9	2.4	5000	475	4.0		

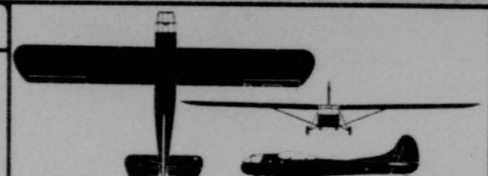
NOTES:

- (1) REFERENCE MATERIAL FROM TECHNICAL ORDER OI-1-113 dated 1 DEC. 1943.
- (2) ALL PERFORMANCE SHOWN WITH GLIDER TRAINING GEAR ATTACHED.

FIGS. SHOWN ARE PRELIMINARY; SUBJECT TO REVISION AFTER FLIGHT CHECK.

TOW PLANE PERFORMANCE WITH CG-4A TO BE SAME AS WITH CG-1A

GLIDER CHARACTERISTICS

WEIGHT		SIZE
B - BASIC		S - SPAN
C - COMBAT		L - LENGTH
W - WAR MAX	H - HEIGHT	T - TREAD
	W - WING AREA	
TYPICAL GLIDER CAPACITIES		
B - (3700 to 4500)	(a) TROOP CARRIER: CREW(2) & TROOPS(13).	S - 83'8"
C - 7500	(b) CARGO CARRIER: CREW(2) & TROOPS(4) & JEEP CAR(1).	L - 48'4"
W - 9000	(c) CARGO CARRIER: CREW(2) & TROOPS(3) & 75MM. HOWITZER(1) & 75MM. AMMUNITION(18 RDE.)	H - 12'7"
		T - 9'4"
		W (Tact. gear) 852 SQ. FT.

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