

OPERATING LIMITATIONS

moment values of items to be carried.

EXAMPLE FOR AN AIRPLANE WITH A LICENSED EMPTY WEIGHT OF 1621 LBS. AND A MOMENT OF 57,047 IN. LBS.

	WT.	MOMENT
		1000
EMPTY WEIGHT (LICENSED).....	1621.0*	+ 57.0
OIL (12 QTS.).....	22.5	- 0.3
PILOT & PASSENGER (1).....	340.0	+ 12.2
REAR PASSENGERS (2).....	290.0	+ 20.3
FUEL (MAXIMUM) 55 GAL.....	330.0	+ 15.8
BAGGAGE (TO MAKE GR. WT.).....	46.5	+ 4.4
Total.....	2650.0	109.4

Locate this point (2650.0-109.4) on the center of gravity envelope graph, and, since the point falls within the envelope, the above loading meets all balance requirements.

*Includes 10 gallons of unusable fuel, 7 gallons
of which are usable in level flight only.

NOTE

The above problem is an example of only one of many different loading configurations. To best utilize the available payload for *your* airplane, the loading charts should be consulted to determine proper load distribution.

DESCRIPTION

NOTE

During oil changes, remove and clean oil filter screen located on the right side of the engine accessory section.

OIL TEMPERATURE GAGE.

A capillary type, oil temperature gage (15, figure 1) is mounted within the engine instrument cluster on the right side of the instrument panel. A green arc on the gage dial indicates the normal operating range of oil temperatures. Refer to Section IV for instrument markings.

OIL PRESSURE GAGE.

An oil pressure gage (12, figure 1) is mounted within the engine instrument cluster on the right side of the instrument panel. The gage is calibrated in pounds per square inch. Refer to Section IV for instrument markings.

AIR INDUCTION SYSTEM.

Air is ducted to the carburetor from an air scoop located on the bottom of the engine cowl. Dirt and other foreign matter is filtered from the incom-

ing air by a filter screen located in the air scoop. Proper cleaning and servicing of this air filter is important to increase life and maintain top efficiency of the engine. The filter should be serviced every 25 hours (during regular oil change) or oftener when operating in dusty conditions. Under extremely dusty conditions, daily maintenance of the air filter is recommended. Refer to the servicing instructions stamped on the carburetor air filter for the servicing procedure to be used.

FUEL SYSTEM.

Fuel is supplied to the engine from two rubberized, bladder-type fuel cells, one located in each wing. From these tanks, fuel is gravity-fed through a fuel selector valve and fuel strainer to the engine carburetor.

FUEL SPECIFICATION AND GRADE.

Aviation grade fuel should always be used except under emergency conditions. The recommended fuel is 80 octane minimum rating. Highly leaded fuels are not recommended.

FUEL QUANTITY DATA (U. S. GALLONS).					
TANKS	NO	USABLE FUEL ALL FLIGHT CONDITIONS	ADDITIONAL USABLE FUEL FOR LEVEL FLIGHT ONLY	UNUSABLE FUEL	TOTAL FUEL VOLUME EACH
LEFT WING	1	27.5 gal.	3.5 gal.	1.5 gal.	32.5
RIGHT WING	1	27.5 gal.	3.5 gal.	1.5 gal.	32.5

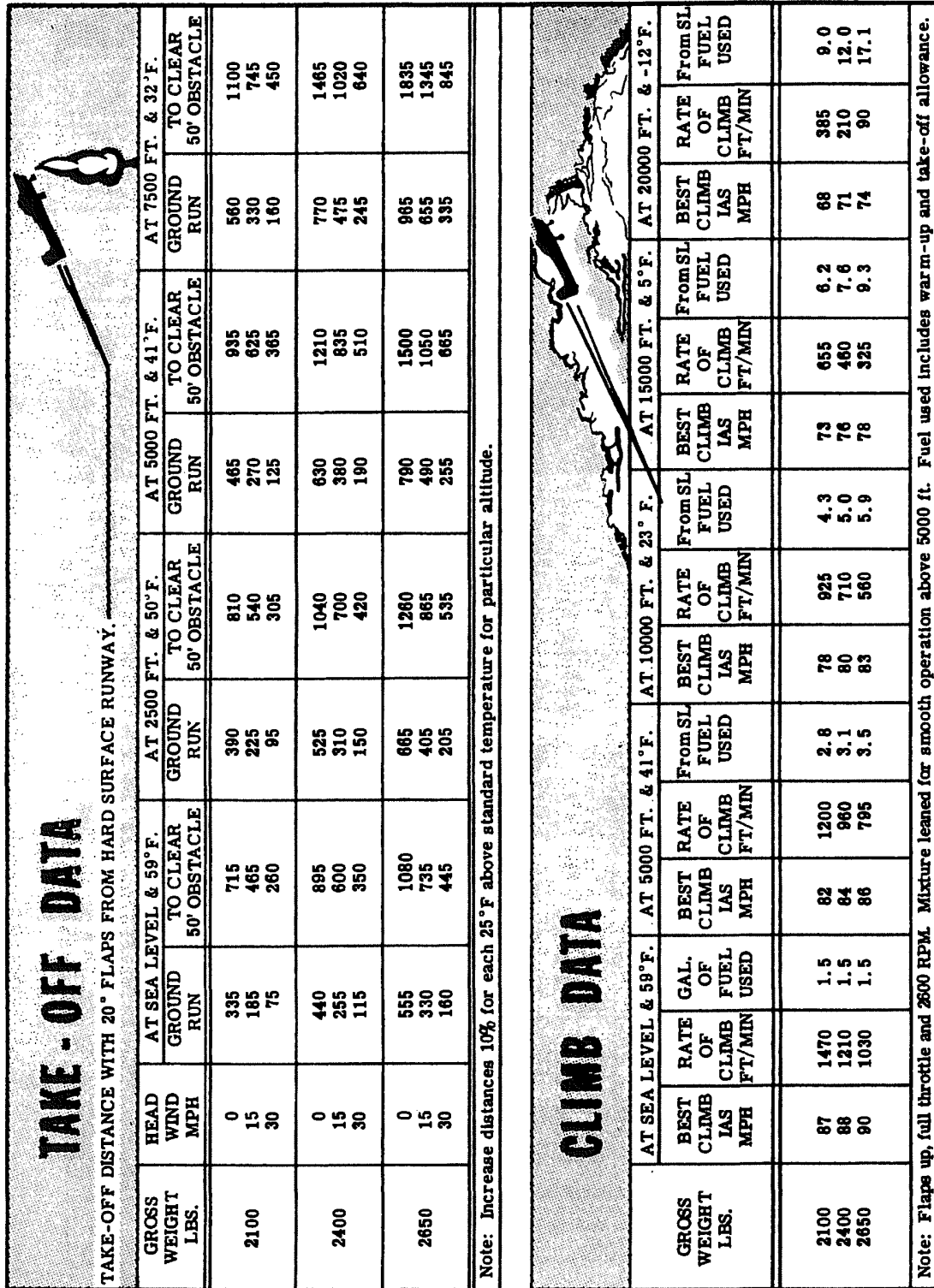


Figure 17. Take-Off & Climb Chart

OPERATIONAL DATA

CRUISE & RANGE PERFORMANCE									
Altitude	RPM	M. P.	BHP	%BHP	TAS MPH	Gal/Hr.	End. Hours	Ml/Gal.	Range Miles
2500	2450	23	175	76	152	14.2	3.9	10.6	585
		22	166	72	148	13.4	4.1	11.0	605
		21	157	68	145	12.7	4.3	11.4	625
		20	148	63	142	12.0	4.6	11.8	650
	2300	23	164	71	148	13.1	4.2	11.3	620
		22	153	67	144	12.2	4.5	11.8	650
		21	143	62	140	11.5	4.8	12.2	670
		20	135	59	136	11.0	5.0	12.4	680
	2200	23	153	67	144	12.1	4.6	11.9	655
		22	144	63	140	11.4	4.8	12.2	670
		21	135	59	136	10.8	5.1	12.6	695
		20	126	55	132	10.2	5.4	12.9	710
Maximum Range Settings	2000	20	107	47	120	8.7	6.3	13.7	755
		19	99	43	115	8.2	6.7	14.0	770
		18	89	39	107	7.5	7.3	14.3	785
		17	81	35	99	7.0	7.9	14.2	780
5000	2450	23	179	78	157	14.5	3.8	10.8	595
		22	169	73	153	13.6	4.0	11.3	620
		21	161	70	150	13.0	4.2	11.5	630
		20	150	65	146	12.2	4.5	11.9	655
	2300	23	167	73	152	13.4	4.1	11.4	625
		22	158	69	149	12.6	4.4	11.8	650
		21	148	64	144	11.9	4.6	12.0	660
		20	139	60	140	11.2	4.9	12.4	685
	2200	23	157	68	149	12.4	4.4	12.1	665
		22	148	64	144	11.7	4.7	12.3	675
		21	138	60	140	11.0	5.0	12.7	700
		20	131	57	137	10.5	5.2	13.1	720
Maximum Range Settings	2000	19	103	45	120	8.5	6.5	14.1	775
		18	94	41	112	7.9	7.0	14.2	780
		17	86	37	105	7.3	7.5	14.4	790
		16	79	34	98	6.8	8.0	14.4	790
7500	2450	21	163	71	154	13.1	4.2	11.8	650
		20	153	67	150	12.4	4.4	12.0	660
		19	143	62	146	11.7	4.7	12.4	685
		18	133	58	140	11.0	5.0	12.7	700
	2300	21	151	66	149	12.2	4.5	12.2	670
		20	142	62	145	11.6	4.7	12.4	680
		19	133	58	140	11.0	5.0	12.7	700
		18	125	54	136	10.5	5.2	12.9	710
	2200	21	143	62	146	11.4	4.8	12.7	700
		20	134	58	141	10.7	5.1	13.1	720
		19	126	54	136	10.2	5.4	13.4	735
		18	118	51	132	9.7	5.7	13.6	750
Maximum Range Settings	2000	19	107	47	124	8.7	6.3	14.2	780
		18	98	43	117	8.1	6.8	14.4	790
		17	90	39	110	7.6	7.2	14.4	790
		16	82	36	101	7.0	7.8	14.4	790

Cruise performance is based on standard conditions, zero wind, lean mixture, 55 gallons of fuel, no fuel reserve, and 2850 pounds gross weight. For Skylane performance, add approximately 3 miles per hour to the maximum cruise speeds shown.

Figure 18.

OPERATIONAL DATA

CRUISE & RANGE PERFORMANCE									
Altitude	RPM	M. P.	BHP	%BHP	TAS MPH	Gal/Hr.	End. Hours	Mi/Gal.	Range Miles
10,000	2450	19	146	63	150	11.9	4.6	12.6	690
		18	137	60	146	11.2	4.9	13.0	715
		17	127	55	140	10.6	5.2	13.3	730
		16	118	51	134	10.0	5.5	13.4	735
	2300	19	137	60	146	11.1	5.0	13.1	720
		18	128	56	140	10.5	5.2	13.4	735
		17	118	51	134	9.8	5.6	13.6	750
		16	109	47	128	9.2	6.0	14.0	770
	2200	19	129	56	141	10.4	5.3	13.6	745
		18	120	52	135	9.8	5.6	13.7	755
		17	112	49	130	9.3	5.9	13.9	765
		16	103	45	122	8.7	6.3	14.0	770
Maximum Range Settings	2000	18	102	44	122	8.4	6.5	14.5	795
		17	93	40	114	7.8	7.1	14.6	805
		16	87	38	106	7.4	7.4	14.4	790
		15	80	35	99	6.9	8.0	14.4	790
15,000	2450	16	124	54	142	10.4	5.3	13.6	750
		15	114	50	135	9.8	5.6	13.7	755
		14	105	46	127	9.2	6.0	13.8	760
	2300	16	115	50	136	9.6	5.7	14.0	770
		15	107	47	129	9.1	6.0	14.1	775
		14	98	42	120	8.5	6.5	14.1	775
	2200	16	109	47	131	9.1	6.0	14.3	785
		15	101	44	124	8.6	6.4	14.5	795
		14	92	40	114	8.0	6.9	14.3	785
Maximum Range Settings	2000	16	93	40	115	7.8	7.1	14.6	815
		15	86	37	105	7.3	7.5	14.4	790
		14	78	34	92	6.8	8.1	13.5	745
20,000	2450	13	102	44	125	9.0	6.1	13.9	765
		12	93	40	114	8.3	6.6	13.6	750
	2300	13	96	42	118	8.4	6.6	14.1	775
		12	87	38	105	7.7	7.1	13.5	745
	2200	13	90	39	109	7.8	7.0	13.9	765
		12	81	35	89	7.2	7.7	12.4	680
Cruise performance is based on standard conditions, zero wind, lean mixture, 55 gallons of fuel, no fuel reserve, and 2650 pounds gross weight. For Skylane performance, add approximately 3 miles per hour to the maximum cruise speeds shown.									

Range Chart