Today's Date is May 23, 2011. You and your partners own a Cessna 172P, is based at VGC. One of your pilot friends is at N66 and needs to pick up an airplane at 1F6. You have offered to take him, planning to depart VGC at 1730Z. You will fly solo from VGC to N66, with your passenger from N66 to 1F6, then solo from 1F6 to VGC.

Private Pilot Certificate Issued 12-21-2006
Wings Program Phase 4 Completed 12-2010
Second Class Medical Issued 8-15-2006
Pilot Age 23

Recent Flight Experience:

Date	AC Type	Registration	Route of Flight	PIC Hours	TOs	LDGs	Night
2-13-11	C-172P	N289R	VGC-VGC	0.5	3	3	
3-20-11	C-172P	N289R	VGC-OIC-VGC	1.2	2	2	
4-3-11	C-172P	N289R	VGC-VGC	0.7	1	1	
4-17-11	C-172P	N289R	VGC-VGC	0.7	5	5	0.7 + 5 TO/LDG
5-8-11	C-172P	N289R	VGC-N23-VGC	2.0	4	4	
5-15-11	C-172P	N289R	VGC-VGC	0.5	3	3	

The aircraft empty weight is 1540 pounds (Empty Moment/1000 is 56.5). You weigh 185 pounds, and your passenger weighs 165 pounds. You keep a few items in baggage area 2 that together weigh 50 pounds. The aircraft is equipped with standard 40 gallon tanks, which are full before you depart VGC. The last annual inspection was signed off on January 15, 2011, and the aircraft has flown 120 hours since then. The transponder and ELT inspections were also completed in January 2011.

As you plan your flight, use the winds aloft forecast for climb, cruise, and descent winds. Climb according to the "Max Rate of Climb" chart, and cruise at the highest power setting on the cruise chart. Disregard the "distance" portion of the climb chart, since it doesn't account for winds aloft. Cruise altitude is 3500 feet for leg 1 and 2, and 4500 feet for leg 3.

Use a TAS of 140 knots, a rate of 800 feet per minute, and a fuel burn of 4 GPH for all descents. Calculate fuel burn and time to arrive over the destination airport at airport elevation, and disregard the traffic pattern for fuel and time planning purposes.

Here is an excerpt from a Weather Briefing:

******** VGC Closest Terminal Weather ********
METAR KRME 231653Z 14012G19KT 10SM OVC046 19/10 A2988 RMK AO2 SLP114
T01940144

******** N66 Closest Terminal Weather ********
METAR KBGM 231653Z 17010KT 5SM BR OVC049 16/11 A2992 RMK AO2 CIG
008V012 SLP131 T01610139

******** 1F6 Closest Terminal Weather ********
METAR KRME 231653Z 14012G19KT 10SM OVC056 19/12 A2988 RMK AO2 SLP114

T01940144

******** Forecast Weather ********
KRME 231339Z 2314/2414 14014 P6SM SCT055 BKN080
FM232000 15010KT P6SM -SHRA BKN055 OVC080

******** Notams ********
!BUF 10/119 VGC NAV GBT OTS
!BUF 04/030 N66 NAV RWY 24 ILS LLZ UNUSBL 20 DEGREES LEFT OF COURSE
!BUF 05/099 N66 NAV RWY 24 ILS LLZ UNMON
No Notams available for 1F6

******** FA Synopsis and VFR Clouds/Weather ********
BOSC FA 231610 AMD
SYNOPSIS AND VFR CLDS/WX
SYNOPSIS VALID UNTIL 240300
CLDS/WX VALID UNTIL 232100...OTLK VALID 232100-240300
ME NH VT MA RI CT NY LO NJ PA OH LE WV MD DC DE VA AND CSTL WTRS
.
SEE AIRMET SIERRA FOR IFR CONDS AND MTN OBSCN.
TS IMPLY SEV OR GTR TURB SEV ICE LLWS AND IFR CONDS.
NON MSL HGTS DENOTED BY AGL OR CIG.
.
SYNOPSIS...WRMFNT LOW UPR MI-SW PA. RDG NOVA SCOTIA TO FL ATLC
WTRS. 03Z WRMFNT LOW W CNTRL QUE-E NY. CDFNT W CNTRL QUE-NW OH.
.
NY LO ...UPDT
LONG ISLAND..OVC010 TOP 150. VIS 3-5SM BR. 16Z OVC010 TOP 060.
VIS 5SM BR. OTLK..IFR CIG BR.
SE NY..OVC010 TOP 060. VIS 3-5SM BR. OTLK..IFR CIG BR.
NERN NY..OVC030 TOP 060. VIS 3-5SM BR. 15Z BKN030. 18Z SCT-
BKN050 TOP 100. ISOL -TSRA. CB TOP FL400. OTLK..VFR.
CNTRL NY..OVC040 TOP 080. VIS 3-5SM BR. 15Z BKN040. 18Z SCT050
BKN080 TOP 150. WDLY SCT TSRA POSS SEV. CB TOP FL450. OTLK..VFR
CIG TSRA.
W NY/LO..BKN050 TOP 100. WDLY SCT -SHRA/-TSRA. CB TOP FL410.
16Z SCT -SHRA/TSRA POSS SEV. CB TOP FL450. WND SW G25KT. BECMG
1921 SCT050. OTLK..VFR.

******** Convective SIGMET ********
MKCE WST 231655
CONVECTIVE SIGMET 45E
VALID UNTIL 1855Z
NY PA LO
FROM 50WNW SYR-30WNW SLT-10SW PSB
LINE TS 25 NM WIDE MOV FROM 22045KT. TOPS TO FL350.
HAIL TO 1.5 IN...WIND GUSTS TO 60KT POSS.
OUTLOOK VALID 231855-232255

FROM 50NNE SAW-60WNW YVV-40NW CLE-40WSW MSS-30NNW ALB-60SE
SBY-50N ILM-30NE MSL-30WNW GIJ-50NNE SAW
REF WW 338.
WST ISSUANCES EXPD. REFER TO MOST RECENT ACUS01 KWNS FROM STORM
PREDICTION CENTER FOR SYNOPSIS AND METEOROLOGICAL DETAILS.

******** AIRMETs ********
BOST WA 231445
AIRMET TANGO UPDT 3 FOR TURB VALID UNTIL 232100
.
AIRMET TURB...ME NH VT MA RI CT NY LO NJ PA AND CSTL WTRS
FROM 70NW PQI TO 40NNE PQI TO 60SW YSJ TO 80SE HTO TO 30E CYN TO
40WSW HNK TO 50SSW YOW TO 20N MSS TO YSC TO 70NW PQI
MOD TURB BLW 080. CONDS CONTG BYD 21Z THRU 03Z.
....

******** FD Winds Aloft Forecast ********
DATA BASED ON 231200Z REQUESTED
VALID 231800Z FOR USE 1400-2100Z. TEMPS NEG ABV 24000 ALTITUDE
FT 3000 6000 9000 12000 18000 24000 30000 34000 39000 5000
SYR 2033 2228+13 2230+07 2332-01 2342-11 2540-22 263937 253748 253759 2129+15

DATA BASED ON 231200Z REQUESTED
VALID 240000Z FOR USE 2100-0600Z. TEMPS NEG ABV 24000 ALTITUDE
FT 3000 6000 9000 12000 18000 24000 30000 34000 39000 5000
SYR 2040 2342+11 2535+05 2432+00 2533-12 2343-22 235937 237147 226658 2241+13

DEGRASSE

MOORES (1E8) 3 N UTC−5(−4DT) N44°23.28′ W75°03.98′ **MONTREAL**
815 NOTAM FILE BTV
RWY 02–20: 2200X55 (TURF)
RWY 02: Trees. **RWY 20:** Trees
AIRPORT REMARKS: Unattended. Deer on and in vicinity of arpt. Rwy 20 52′ trees 263′ from thld crosses rwy width. Rwy 02 ditch outlets located 31′ from thld marked by cones. Rwy 20 starts at approximately 250′ from trees on rwy end.
COMMUNICATIONS: CTAF 122.9

DE LANCEY N42°10.70′ W74°57.42′ NOTAM FILE BUF. **NEW YORK**
(L) VORW/DME 112.1 DNY Chan 58 301° 21.8 NM to Sidney Muni. 2560/11W. **HIWAS.** **H–11C, 12H, L–33A**

DOLGEVILLE (1F6) 1 NE UTC−5(−4DT) N43°07.00′ W74°44.98′ **NEW YORK**
945 NOTAM FILE BUF
RWY 11–29: 1360X100 (TURF)
RWY 11: Road. **RWY 29:** Trees.
AIRPORT REMARKS: Unattended. There is no definite edge for Rwy 11 which is part of a playing fld. Athletics may be going on from Jun to Nov. Radio control airplanes invof rwy throughout the year. Rwy 11–29 soft and wet during spring.
COMMUNICATIONS: CTAF 122.9
COMM/NAV/WEATHER REMARKS: Clnc del thru Flight Services 1–888–766–8267.

DOWNTOWN MANHATTAN/WALL STREET HELIPORT (See NEW YORK)

DRUM N44°04.11′ W75°44.16′ NOTAM FILE GTB. **NEW YORK**
NDB (MHW) 257 GTB 150° 1.1 NM to Wheeler Sack AAF. **L–32F**

DUANESBURG (4B1) 0 S UTC−5(−4DT) N42°45.59′ W74°08.08′ **NEW YORK**
714 TPA—1514(800) NOTAM FILE BTV
RWY 10–28: H2600X45 (ASPH) 0.5% up E
RWY 10: Trees. **RWY 28:** Trees.
AIRPORT REMARKS: Attended daylight hours. Parachute jumping. Rwy 10–28 loose and broken asph and may have loose material, check with arpt management for current condition at 518–895–4184. Rwy 10 safety area has −20′ slope 25′ from thld.
COMMUNICATIONS: CTAF/UNICOM 123.0

DUNKIRK N42°29.43′ W79°16.45′ NOTAM FILE BUF **DETROIT**
(H) VORTAC 116.2 DKK Chan 109 at Chautauqua Co Dunkirk. 680/07W. **H–10H, L–30H**
VOR portion unusable 120°–180° byd 22 NM blo 4000′.
DME portion unusable:
100°–169° byd 17 NM blo 4700′ 191°–205° byd 17 NM blo 5500′
170°–190° byd 17 NM blo 7500′ 206°–235° byd 17 NM blo 4500′

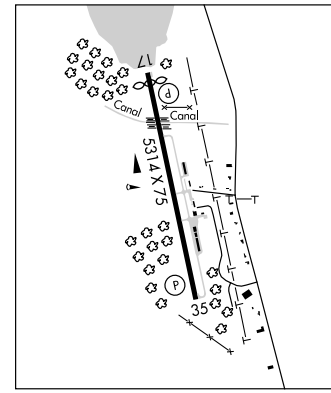
DUNKIRK

CHAUTAUQUA CO/DUNKIRK (DKK) 3 E UTC−5(−4DT) N42°29.60′ W79°16.32′ **DETROIT**
693 B S4 **FUEL** 100LL, JET A 0X 3 NOTAM FILE DKK **H–10H, L–30H**
RWY 06–24: H5000X100 (ASPH–GRVD) S–45 HIRL **IAP**
RWY 06: REIL. PAPI(P4L)—GA 3.0°. Trees. **RWY 24:** REIL. PAPI(P2L)—GA 3.0°. TCH 44′.
RWY 15–33: H4000X100 (ASPH) S–25 MIRL 0.8% up SE
RWY 15: PAPI(P4L)—GA 3.0°. TCH 36′. Tree. **RWY 33:** PAPI(P4L)—GA 3.1°. TCH 45′. Tree.
AIRPORT REMARKS: Attended 1300Z‡–dusk. Deer and birds invof arpt. Ngt snow plowing not avbl. PPR for services after hrs, call FBO manager 716–366–6938. ACTIVATE HIRL Rwy 06–24 and MIRL Rwy 15–33, and PAPI Rwy 06, Rwy 24, Rwy 15 and Rwy 33, and REIL Rwy 06 and Rwy 24—CTAF.
WEATHER DATA SOURCES: ASOS 119.275 (716) 366–7664.
COMMUNICATIONS: CTAF/UNICOM 123.075
RCO 122.1R 116.2T (BUFFALO RADIO)
Ⓡ **BUFFALO APP/DEP CON** 126.5
RADIO AIDS TO NAVIGATION: NOTAM FILE BUF.
DUNKIRK (H) VORTAC 116.2 DKK Chan 109 N42°29.43′ W79°16.45′ at fld. 680/07W.
COMM/NAV/WEATHER REMARKS: Clnc del thru Flight Services on DKK VOR 122.1R,116.2T and 1–888–766–8267.

DUTCHESS CO (See POUGHKEEPSIE)

EAST 34TH STREET HELIPORT (See NEW YORK)

HAMILTON MUNI (VGC) 1 NE UTC−5(−4DT) N42°50.61′ W75°33.67′ **NEW YORK**
1137 **FUEL** 100LL TPA—2103(966) NOTAM FILE BUF **H–10I, 11C, 12J, L–32F**
RWY 17–35: H5314X75 (ASPH–GRVD) S–20 D–60 MIRL **IAP**
RWY 17: REIL. PAPI(P2L)—GA 3.0° TCH 30. Thld dsplcd 300′. Trees.
RWY 35: REIL. PAPI(P2L)—GA 4.0° TCH 40′. Trees.
RUNWAY DECLARED DISTANCE INFORMATION
RWY 17: TORA–5314 TODA–5314 ASDA–5314 LDA–5014
RWY 35: TORA–5314 TODA–5314 ASDA–5314 LDA–5014
AIRPORT REMARKS: Attended 1400–2200Z‡. After hrs fuel avbl by appointment for a fee ctc arpt mgr. Maintenance shop airframe/powerplant and inspection authorization avbl Mon–Fri 1400–2200Z‡. Deer on and invof Rwy 17–35. Migratory birds on and invof arpt spring and fall. Ultralgts on and invof arpt. Windmills north of Rwy 35. Taxi svc and car rental avbl. Noise abatement procedures in effect; all acft dep maintain rwy heading until 2100 ft MSL before making turn out. ACTIVATE MIRL Rwy 17–35, and REIL Rwy 17 and Rwy 35–122.7.
WEATHER DATA SOURCES: AWOS–3 119.425 (315) 824–1825. Plus precipitation.
COMMUNICATIONS: CTAF/UNICOM 123.0
GEORGETOWN RCO 122.1R 117.8T (BUFFALO RADIO)
Ⓡ **SYRACUSE APP/DEP CON** 126.125
RADIO AIDS TO NAVIGATION: NOTAM FILE BUF.
GEORGETOWN (L) VORTAC 117.8 GGT Chan 125 N42°47.34′ W75°49.61′ 085° 12.2 NM to fld. 2040/11W.
COMM/NAV/WEATHER REMARKS: Clnc del thru Flight Services 1–888–766–8267.



HAMPTON N40°55.14′ W72°19.00′ NOTAM FILE ISP. **NEW YORK**
(H) VORTAC 113.6 HTO Chan 83 063° 3.8 NM to East Hampton. 22/13W. **HIWAS.** **COPTER**
DME portion unusable **H–10I, 12J, L–33C, 34I**
280°–325° byd 35 NM blo 1700′ 325°–355° byd 30 NM blo 2000′
VOR portion unusable 221°–231° blo 6000′
RCO 122.6 122.1R 113.6T (NEW YORK RADIO)

HANCOCK N42°03.78′ W75°18.98′ NOTAM FILE BUF. **NEW YORK**
(H) VOR/DME 116.8 HNK Chan 115 354° 15 NM to Sidney Muni. 2070/11W. **HIWAS.** **H–10I, 11C, 12J, L–30K, 33A**
RCO 122.1R 116.8T (BUFFALO RADIO)

HAVERSTRAW HELIPORT (H43) 1 E UTC−5(−4DT) N41°12.66′ W73°58.16′ **NEW YORK**
12 **FUEL** JET A NOTAM FILE ISP
HELIPAD H1: H50X50 (ASPH)
H1: Bldg.
HELIPORT REMARKS: Attended 1200–0000Z‡. For svc after hrs call 212–883–0999. Helipad H1 350 ft towers 800 ft N of helipad. Helicopters descend to point on turf area west of pavement and taxi to paved location. Noise abatement; avoid residential area W of heliport. Helipad H1 floodlights. For floodlights call 914–429–1200.
COMMUNICATIONS: CTAF/UNICOM 123.05

HAWKY N42°49.04′ W73°48.51′ NOTAM FILE ALB.
NDB (LOM) 219 AL 089° 4.2 NM to Albany Intl. Unusable 160°–210° byd 10 NM.

HEBER AIRPARK (See GANSEVOORT)

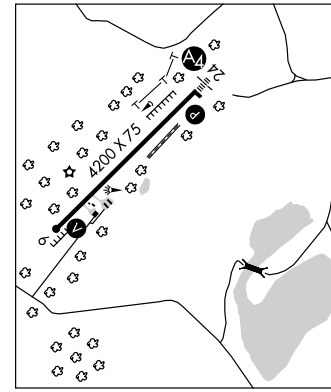
HOLCOMB

CREEKSIDE (D67) 2 NE UTC−5(−4DT) N42°54.97′ W77°22.95′ **DETROIT**
820 NOTAM FILE BUF
RWY 11–29: 2450X100 (ASPH–TRTD)
RWY 11: Brush. **RWY 29:** Brush.
AIRPORT REMARKS: Attended irregularly. P-lines on W side of arpt entrance road.
COMMUNICATIONS: CTAF 122.9
COMM/NAV/WEATHER REMARKS: Clnc del thru Flight Services 1–888–766–8267.

HOLLANDS INTL FLD (See NEWFANE)

HOPEWELL AIRPARK (See CANANDIGUA)

ONEONTA MUNI (N66) 3 N UTC−5(−4DT) N42°31.49′ W75°03.87′ NEW YORK
1763 B S4 **FUEL** 100LL, JET A NOTAM FILE BUF L–32G, 33A
RWY 06–24: H4200X75 (ASPH) S–12 MIRL 0.3% up SW IAP
RWY 06: REIL. VASI(V4R)—GA 3.0° TCH 55′. Tree.
RWY 24: MALS. REIL. PAPI(P2L). Trees.
AIRPORT REMARKS: Attended 1300–2200Z‡. Bcn twr partially obscured by trees. Rwy 24 REIL OTS indef. ACTIVATE REIL Rwy 06–24, VASI Rwy 06, PAPI Rwy 24, and MALS Rwy 24–122.8. MIRL Rwy 06–24 opr SS–SR.
WEATHER DATA SOURCES: AWOS–3 119.575 (607) 643–0253.
COMMUNICATIONS: CTAF/UNICOM 122.8
ROCKDALE RCO 122.1R 112.6T (BUFFALO RADIO)
BOSTON CENTER APP/DEP CON 133.25
RADIO AIDS TO NAVIGATION: NOTAM FILE BUF.
ROCKDALE (L) VOR/DME 112.6 RKA Chan 73 N42°27.98′ W75°14.36′ 077° 8.5 NM to fld. 2027/11W.
KRING NDB (LOM) 279 0Z N42°35.08′ W74°59.18′ 236° 5.0 NM to fld.
ILS 108.9 I–0ZX Rwy 24 LOM KRING NDB. LOC only. LOC unusable 0.6 NM inbound to thld.
COMM/NAV/WEATHER REMARKS: Clnc del thru Flight Services 1–888–766–8267.



ORANGE CO (See MONTGOMERY)

ORCHY N40°51.98′ W73°48.21′ NOTAM FILE LGA.
NDB (LOM) 385 UR 222° 6.2 NM to La Guardia. Unusable 140°–210° beyond 11 NM.

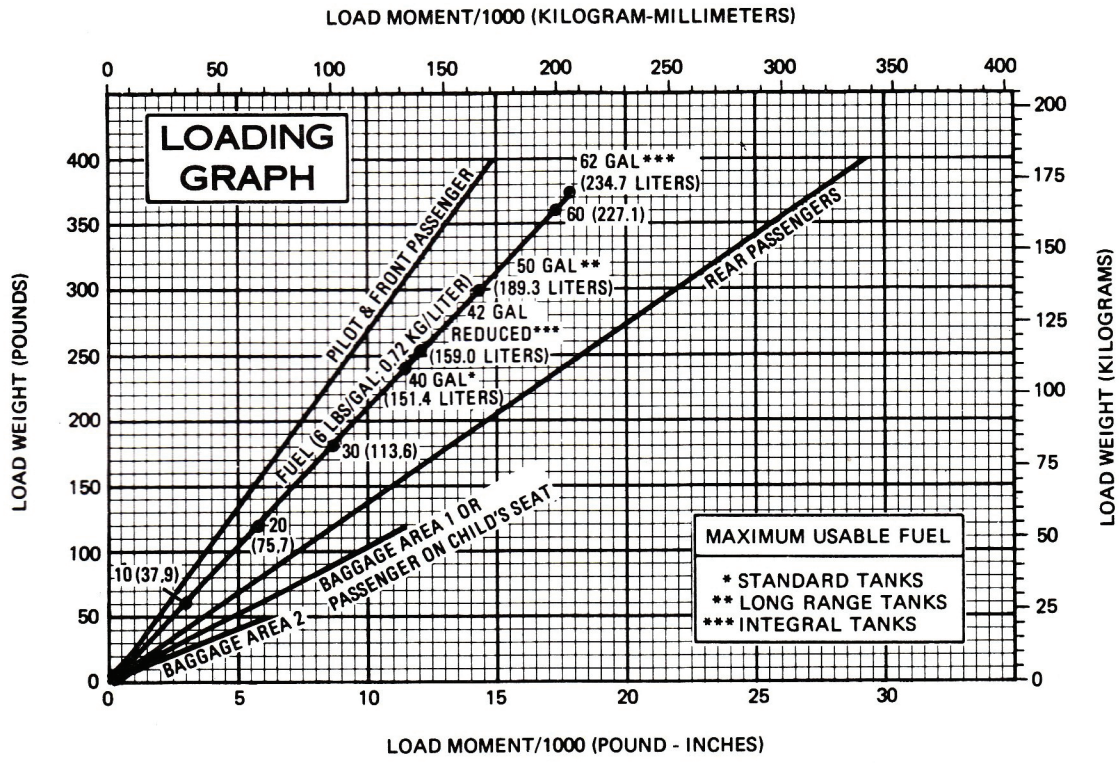
OSWEGO CO (See FULTON)

OTIMS N41°26.71′ W74°17.47′ NOTAM FILE ISP.
NDB (LOM) 353 MG 031° 4.1 NM to Orange Co.

OVID (D82) 2 SE UTC−5(−4DT) N42°39.29′ W76°47.78′ NEW YORK
1062 NOTAM FILE BUF
RWY 01R–19L: 2800X40 (ASPH–GRVL)
RWY 01R: Trees. **RWY 19L:** Trees.
RWY 01L–19R: 2200X60 (TURF)
RWY 01L: Trees. **RWY 19R:** Trees.
AIRPORT REMARKS: Attended Apr–Nov dawn–dusk, Dec–Mar call arpt manager at 607–869–5601. Parachute Jumping. Arpt CLOSED to transient acft 1 Dec–1 Apr (annually). Turf Rwy 19R thld begins 470′ byd paved Rwy 19L thld. Rwy 01L–19R soft and wet Mar–Jun. Use Rwy 19L for calm wind ldgs. Rwy 19L slopes uphill. Rwy 01R–19L TRTD GRVL.
COMMUNICATIONS: CTAF/UNICOM 122.8
COMM/NAV/WEATHER REMARKS: Clnc del thru Flight Services 1–888–766–8267.

OWASCO (See MORAVIA)

PAWLING N41°46.19′ W73°36.03′ NOTAM FILE ISP. NEW YORK
(L) VORW/DME 114.3 PWL Chan 90 246° 27.1 NM to Stewart Intl. 1250/12W. H–10I, L–33B, 34I



NOTE: Line representing adjustable seats shows the pilot or passenger center of gravity on adjustable seats positioned for an average occupant. Refer to the Loading Arrangements diagram for forward and aft limits of occupant C.G. range.

Figure 6-6. Loading Graph

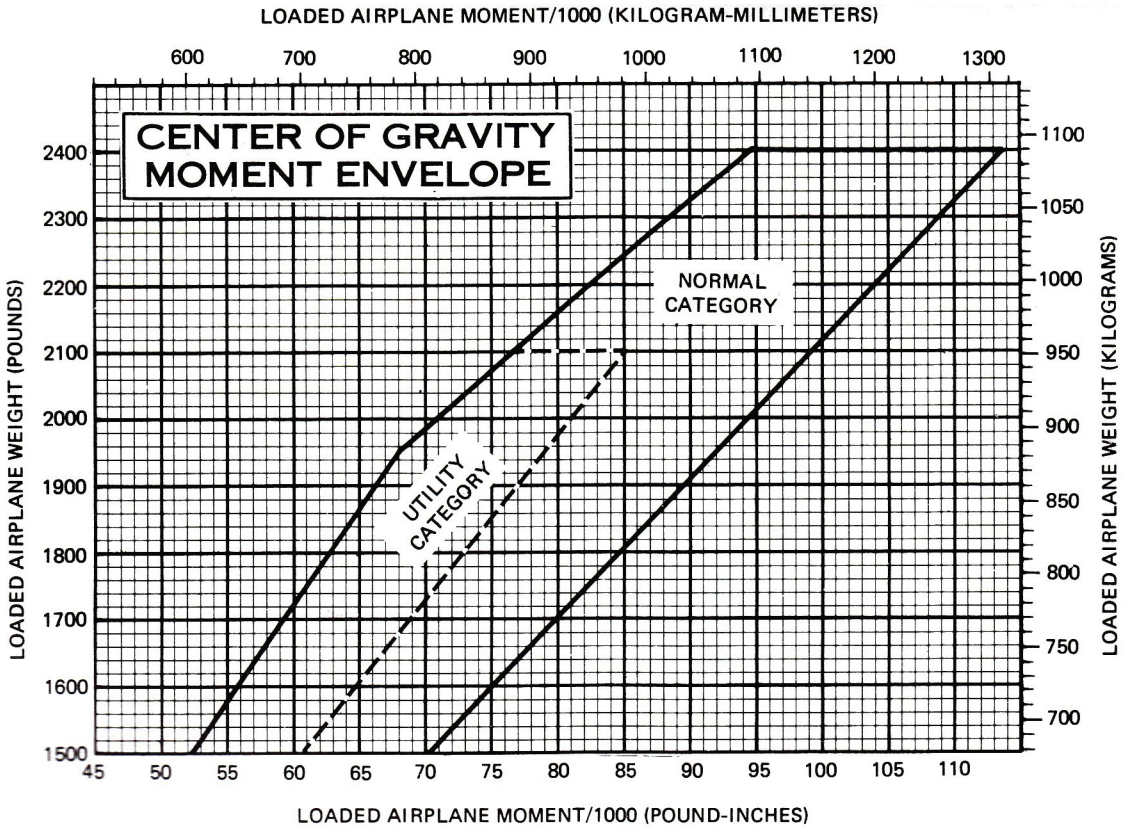


Figure 6-7. Center of Gravity Moment Envelope

TAKEOFF DISTANCE

MAXIMUM WEIGHT 2400 LBS

SHORT FIELD

CONDITIONS:
Flaps 10°
Full Throttle Prior to Brake Release
Paved, Level, Dry Runway
Zero Wind

NOTES:
1. Short field technique as specified in Section 4.
2. Prior to takeoff from fields above 3000 feet elevation, the mixture should be leaned to give maximum RPM in a full throttle, static runup.
3. Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots.
4. For operation on a dry, grass runway, increase distances by 15% of the "ground roll" figure.

WEIGHT LBS	TAKEOFF SPEED KIAS		PRESS ALT FT	0°C		10°C		20°C		30°C		40°C	
	LIFT OFF	AT 50 FT		GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS
2400	51	56	S.L.	795	1460	860	1570	925	1685	995	1810	1065	1945
			1000	875	1605	940	1725	1015	1860	1090	2000	1170	2155
			2000	960	1770	1035	1910	1115	2060	1200	2220	1290	2395
			3000	1055	1960	1140	2120	1230	2295	1325	2480	1425	2685
			4000	1165	2185	1260	2365	1355	2570	1465	2790	1575	3030
			5000	1285	2445	1390	2660	1500	2895	1620	3160	1745	3455
			6000	1425	2755	1540	3015	1665	3300	1800	3620	1940	3990
			7000	1580	3140	1710	3450	1850	3805	2000	4220	- - -	- - -
			8000	1755	3615	1905	4015	2060	4480	- - -	- - -	- - -	- - -

TAKEOFF DISTANCE

2200 LBS AND 2000 LBS

SHORT FIELD

REFER TO SHEET 1 FOR APPROPRIATE CONDITIONS AND NOTES.

WEIGHT LBS	TAKEOFF SPEED KIAS		PRESS ALT FT	0°C		10°C		20°C		30°C		40°C	
	LIFT OFF	AT 50 FT		GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS
2200	49	54	S.L.	650	1195	700	1280	750	1375	805	1470	865	1575
			1000	710	1310	765	1405	825	1510	885	1615	950	1735
			2000	780	1440	840	1545	905	1660	975	1785	1045	1915
			3000	855	1585	925	1705	995	1835	1070	1975	1150	2130
			4000	945	1750	1020	1890	1100	2040	1180	2200	1270	2375
			5000	1040	1945	1125	2105	1210	2275	1305	2465	1405	2665
			6000	1150	2170	1240	2355	1340	2555	1445	2775	1555	3020
			7000	1270	2440	1375	2655	1485	2890	1605	3155	1730	3450
			8000	1410	2760	1525	3015	1650	3305	1785	3630	1925	4005
2000	46	51	S.L.	525	970	565	1035	605	1110	650	1185	695	1265
			1000	570	1060	615	1135	665	1215	710	1295	765	1385
			2000	625	1160	675	1240	725	1330	780	1425	840	1525
			3000	690	1270	740	1365	800	1465	860	1570	920	1685
			4000	755	1400	815	1500	880	1615	945	1735	1015	1865
			5000	830	1545	900	1660	970	1790	1040	1925	1120	2070
			6000	920	1710	990	1845	1070	1990	1150	2145	1235	2315
			7000	1015	1900	1095	2055	1180	2225	1275	2405	1370	2605
			8000	1125	2125	1215	2305	1310	2500	1410	2715	1520	2950

TIME, FUEL, AND DISTANCE TO CLIMB

MAXIMUM RATE OF CLIMB

CONDITIONS:
Flaps Up
Full Throttle
Standard Temperature

NOTES:
1. Add 1.1 gallons of fuel for engine start, taxi and takeoff allowance.
2. Mixture leaned above 3000 feet for maximum RPM.
3. Increase time, fuel and distance by 10% for each 10°C above standard temperature.
4. Distances shown are based on zero wind.

WEIGHT LBS	PRESSURE ALTITUDE FT	TEMP °C	CLIMB SPEED KIAS	RATE OF CLIMB FPM	FROM SEA LEVEL		
					TIME MIN	FUEL USED GALLONS	DISTANCE NM
2400	S.L.	15	76	700	0	0.0	0
	1000	13	76	655	1	0.3	2
	2000	11	75	610	3	0.6	4
	3000	9	75	560	5	1.0	6
	4000	7	74	515	7	1.4	9
	5000	5	74	470	9	1.7	11
	6000	3	73	425	11	2.2	14
	7000	1	72	375	14	2.6	18
	8000	-1	72	330	17	3.1	22
	9000	-3	71	285	20	3.6	26
	10,000	-5	71	240	24	4.2	32
	11,000	-7	70	190	29	4.9	38
	12,000	-9	70	145	35	5.8	47

Figure 5-7. Time, Fuel, and Distance to Climb

CRUISE PERFORMANCE

CONDITIONS:
2400 Pounds
Recommended Lean Mixture (See Section 4, Cruise)
NOTE:
Cruise speeds are shown for an airplane equipped with speed fairings which increase the speeds by approximately two knots.

PRESSURE ALTITUDE FT	RPM	20°C BELOW STANDARD TEMP			STANDARD TEMPERATURE			20°C ABOVE STANDARD TEMP		
		% BHP	KTAS	GPH	% BHP	KTAS	GPH	% BHP	KTAS	GPH
2000	2500	- - -	- - -	- - -	76	114	8.5	72	114	8.1
	2400	72	110	8.1	69	109	7.7	65	108	7.3
	2300	65	104	7.3	62	103	6.9	59	102	6.6
	2200	58	99	6.6	55	97	6.3	53	96	6.1
	2100	52	92	6.0	50	91	5.8	48	89	5.7
4000	2550	- - -	- - -	- - -	76	117	8.5	72	116	8.1
	2500	77	115	8.6	73	114	8.1	69	113	7.7
	2400	69	109	7.8	65	108	7.3	62	107	7.0
	2300	62	104	7.0	59	102	6.6	57	101	6.4
	2200	56	98	6.3	54	96	6.1	51	94	5.9
	2100	51	91	5.8	48	89	5.7	47	88	5.5
6000	2600	- - -	- - -	- - -	77	119	8.6	72	118	8.1
	2500	73	114	8.2	69	113	7.8	66	112	7.4
	2400	66	108	7.4	63	107	7.0	60	106	6.7
	2300	60	103	6.7	57	101	6.4	55	99	6.2
	2200	54	96	6.1	52	95	5.9	50	92	5.8
	2100	49	90	5.7	47	88	5.5	46	86	5.5
8000	2650	- - -	- - -	- - -	77	121	8.6	73	120	8.1
	2600	77	119	8.7	73	118	8.2	69	117	7.8
	2500	70	113	7.8	66	112	7.4	63	111	7.1
	2400	63	108	7.1	60	106	6.7	58	104	6.5
	2300	57	101	6.4	55	100	6.2	53	97	6.0
	2200	52	95	6.0	50	93	5.8	49	91	5.7
10,000	2600	74	118	8.3	70	117	7.8	66	115	7.4
	2500	67	112	7.5	64	111	7.1	61	109	6.8
	2400	61	106	6.8	58	105	6.5	56	102	6.3
	2300	55	100	6.3	53	98	6.0	51	96	5.9
	2200	50	93	5.8	49	91	5.7	47	89	5.6
12,000	2550	67	114	7.5	64	112	7.1	61	111	6.9
	2500	64	111	7.2	61	109	6.8	59	107	6.6
	2400	59	105	6.6	56	103	6.3	54	100	6.1
	2300	53	98	6.1	51	96	5.9	50	94	5.8

Figure 5-8. Cruise Performance

LANDING DISTANCE

SHORT FIELD

CONDITIONS:
Flaps 30°
Power Off
Maximum Braking
Paved, Level, Dry Runway
Zero Wind

NOTES:
1. Short field technique as specified in Section 4.
2. Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots.
3. For operation on a dry, grass runway, increase distances by 45% of the "ground roll" figure.
4. If a landing with flaps up is necessary, increase the approach speed by 7 KIAS and allow for 35% longer distances.

WEIGHT LBS	SPEED AT 50 FT KIAS	PRESS ALT FT	0°C		10°C		20°C		30°C		40°C	
			GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS
2400	61	S.L.	510	1235	530	1265	550	1295	570	1325	585	1350
		1000	530	1265	550	1295	570	1325	590	1360	610	1390
		2000	550	1295	570	1330	590	1360	610	1390	630	1425
		3000	570	1330	590	1360	615	1395	635	1430	655	1460
		4000	595	1365	615	1400	635	1430	660	1470	680	1500
		5000	615	1400	640	1435	660	1470	685	1510	705	1540
		6000	640	1435	660	1470	685	1510	710	1550	730	1580
		7000	665	1475	690	1515	710	1550	735	1590	760	1630
		8000	690	1515	715	1555	740	1595	765	1635	790	1675

Figure 5-11. Landing Distance