

Today is Thursday, June 20, 2013 and you are preparing your Piper Malibu Mirage PA-46-350P, which you have affectionately named *The YOLO Sled*, for a trip with some friends to a wedding in The Great Smoky Mountains. You will be departing Asheville, NC (KAVL) with Jamel and both of your luggage then fly to Toccoa, GA (KTOC) to pick up Marshall and Elizabeth along with their luggage before continuing to Gatlinburg, TN (KGKT). To take advantage of fuel price markdown, you will stop at Morristown, TN (KMOR) after departing KAVL to purchase 51 gallons of fuel before continuing to KTOC. You plan to depart KAVL at 0600 Local. The information for the flight is as follows:

Aircraft Information:

- Annual Inspection: October 27, 2012
- 100 Hour: 536.0
- ELT Inspection: June 14, 2012
- Transponder Inspection: June 14, 2012
- Pitot-Static Inspection: June 14, 2011
- Current Tach Time: 634.5
- Current Hobbs Time: 729.7

Pilot Records:

- DOB: May 11, 1992
- Commercial Pilot Certificate: May 16, 2011
- Instrument Rating: January 4, 2011
- Medical Certificate: Class III issued October 17, 2008
- High Altitude Endorsement: April 16, 2012

Date	Time	ASEL	Day/Night	Landings	Remarks
3/21/13	.8	.8	Day	1	Local sightseeing flight
4/1/13	1.2	1.2	Day	2	Piper pancake breakfast fly in
4/12/13	.7	.7	Night	2	Local night flight
5/22/13	1.0	1.0	Day	1	Maintenance check flight
6/4/13	2.5	2.5	Day	2	Pilots-for-Paws flight

Weight and Balance Information:

- Basic Empty Weight and Moment: 3156.5 lbs at 427,169 lb-ins.
- Fuel: You depart KAVL with 29 gallons.
- You: 116 lbs and a 65 lb bag.
- Jamel: 174 lbs and a 28 lb bag.
- Marshall: 185 lbs and a 14 kg bag.
- Elizabeth: 54 kg and a 52 lb bag.

Performance Information:

- Use *Time, Fuel, Distance to Climb* chart and local METAR to calculate climb information. Except assume calm winds for climb calculations. KIAS=KTAS. Assume 2°/1000' lapse rate from departure airport to cruising altitude.
- Use *Power Setting Table, Cruise Speed vs. Altitude* chart, and winds aloft forecast to calculate cruise information. Interpolate where necessary. Disregard temperatures on FD. Assume 2°/1000' lapse rate from departure airport to cruising altitude. Use *Economy Cruise* power setting.
- All descents will be at 988 fpm, 190 mph, and 14 gph. Use arrival airport METAR for descent calculations.
- For takeoff and landing distance calculations, use provided charts and local METAR for calculations.
- Unless otherwise noted, assume no additional time for traffic pattern. All climbs will be from airport surface to cruising altitude on course. All descents will be from cruise altitude to field elevation.
- Despite the *FOR REFERENCE ONLY. NOT FOR FLIGHT* note on the performance charts, I recommend using them. You may have trouble answering the questions otherwise.

Route of Flight:

Leg 1: KAVL – KMOR 8,500' MSL. Use TRI winds aloft for cruise calculations.

Leg 2: KMOR – KTOC 11,500' or 12,500' MSL, whichever is appropriate. Use TYS winds aloft for cruise calculations.

Leg 3: KTOC – KGKT 9,500' or 10,500' MSL, whichever is appropriate. Use TYS winds aloft for cruise calculations.

Sunrise is 6:15 AM and Sunset is 0049Z.

Weather and NOTAM Package:

***** Surface Observations *****

METAR KAVL 200954Z 19007KT 6SM HZ SCT055 BKN095 25/19 A3011 RMK A02 SLP171 T02500189

METAR KMOR 200954Z 18009KT 10SM FEW013 SCT026 26/22 A3009 RMKA02

METAR KLQK 200954Z 23009KT 1/2 SM +RA FG BKN013 BKN049 22/21 A3007 RMK A02 RAB02 P0016

METAR KTOC 201054Z 00000KT 10SM SCT020 SCT034 27/22 A3006 RMK A02

METAR KGKT 201154Z AUTO 17007G13KT 5SM -RA FEW006 FEW016 SCT021 23/22 A3009 RMK MDT CU NW TS DSNT NW MOV NE

METAR KTYS 201154Z VRB03KT 10SM SCT033 BKN065 26/19 A3001 RMKA02 MDT CU NE

***** Terminal Forecasts *****

TAF AMD KAVL 200539Z 2006/2106 15005KT 5SM BR VCSH SCT029 SCT100

TEMPO 2006/2008 BKN040

FM200800 16008KT P6SM VCSH OVC055 TEMPO 2012/2015 4SM TSRA OVC030CB

FM201500 17003KT P6SM -SHRA BKN040

TAF KTYS 200539Z 2006/2106 13004KT P6SM SCT040 BKN100

FM200800 22007KT P6SM SCT050 BKN120

FM201300 22008KT P6SM VCTS BKN045CB

FM201900 VRB04KT P6SM SCT050 BKN100

***** FD Winds Aloft Forecast *****

VALID 201200Z FOR USE 0600-1800Z

FT	3000	6000	9000	12000	15,000
TRI		2229+14	1832+09	1735+03	1539-06
TYS	2119	2126+13	2028+08	1927+02	1730-06

***** PIREPs *****

UA /OV KGKT /TM 0905 /FL075 /TP C177 SK/ SCT040 /TB OCNL LGT /RM BUILDUP TO THE NORTH

***** NOTAMs *****

!AVL 05/074 AVL TWY K CLSD WEF 1305311217

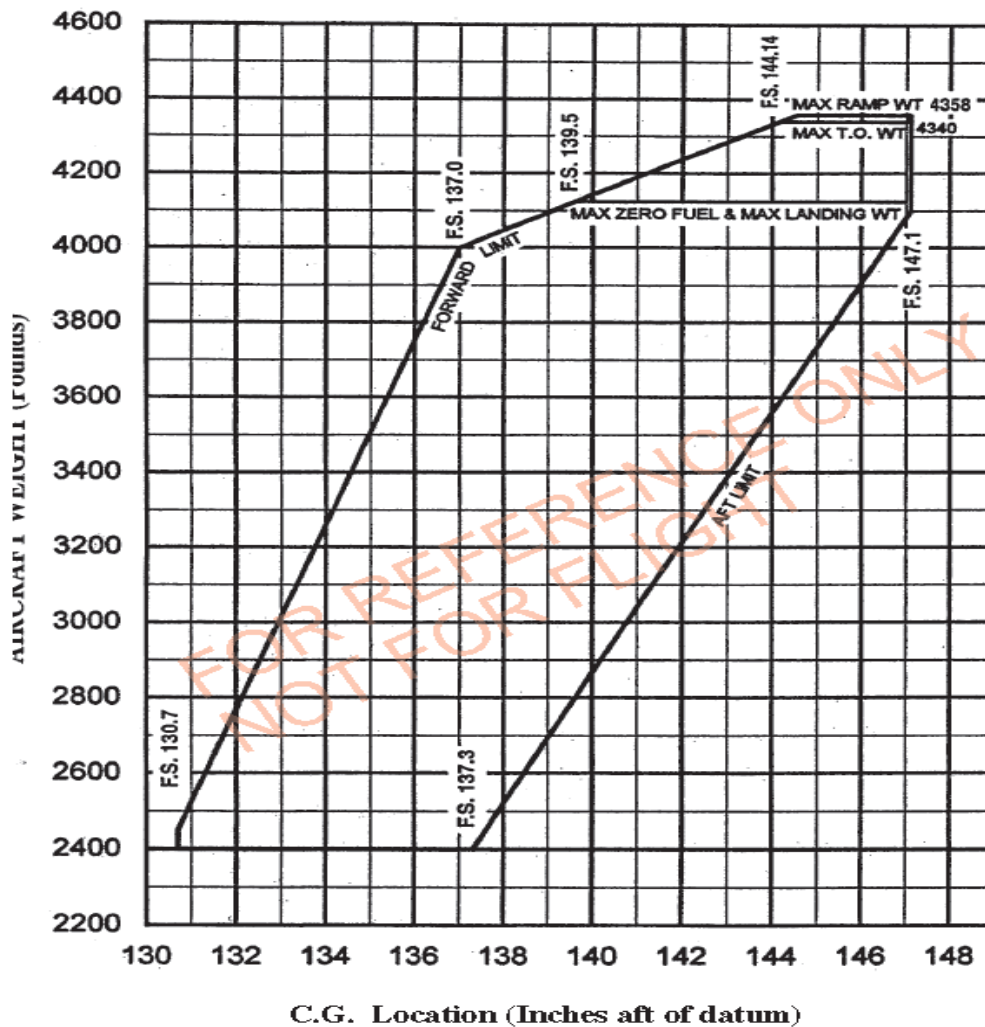
!BNA 06/312 GKT OBST TOWER 2347 (210 AGL) 3.4 SE LGTS OTS

!BNA 12/193 GKT RWY 28 PAPI OTS

!BNA 07/032 GKT RWY 28 FIRST 661 CLSD WEF 1307031030-1307032330

6.9 WEIGHT AND BALANCE DETERMINATION FOR FLIGHT (Continued)

	Weight (Lb)	Arm Aft of Datum (Inches)	Moment (In.-Lb)
Basic Empty Weight			
Pilot and Front Passenger		135.50	
Passengers (Center Seats)		177.00	
Passengers (Rear Seats)		218.75	
Baggage (Forward) (100 Lb Limit)		88.60	
Baggage (Aft) (100 Lb Limit)		248.23	
Zero Fuel Weight (4123 Lb Max.)			
Fuel (120 Gal./720 Lb Max. Usable)		150.31	
Ramp Weight (4358 Lb Max.)			
Fuel Allowance for Engine Start, Taxi, & Runup (3 Gal./18 Lb Max.)	-18	150.31	-2706
Takeoff Weight (4340 Lb Max.)			



TAKEOFF DISTANCE OVER 50 FT OBSTACLE - 0° FLAPS

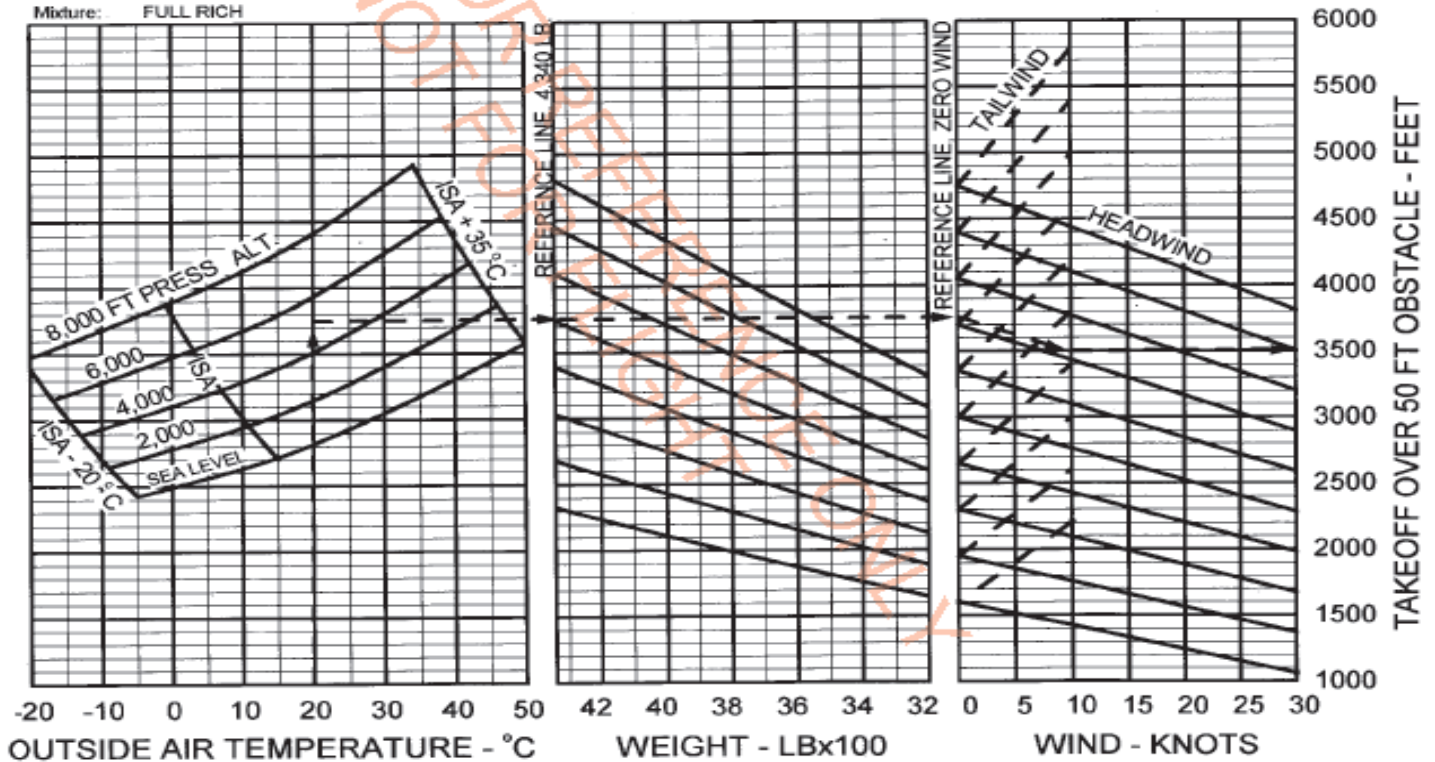
ASSOCIATED CONDITIONS

Wing Flaps: 0°
 Power: FULL THROTTLE
 2500 RPM
 BEFORE BRAKE RELEASE
 Mixture: FULL RICH

Lift-off Speed: 78 KIAS
 Barrier Speed: 91 KIAS
 Runway: PAVED, LEVEL
 & DRY

EXAMPLE

Airport Altitude: 5,000 FT
 Headwind Speed: 10 KNOTS
 OAT: 20° C
 Barrier Distance: 3,500 FT.
 Takeoff Wt.: 4,340 LB.



TIME, FUEL, DISTANCE TO CLIMB

ASSOCIATED CONDITIONS

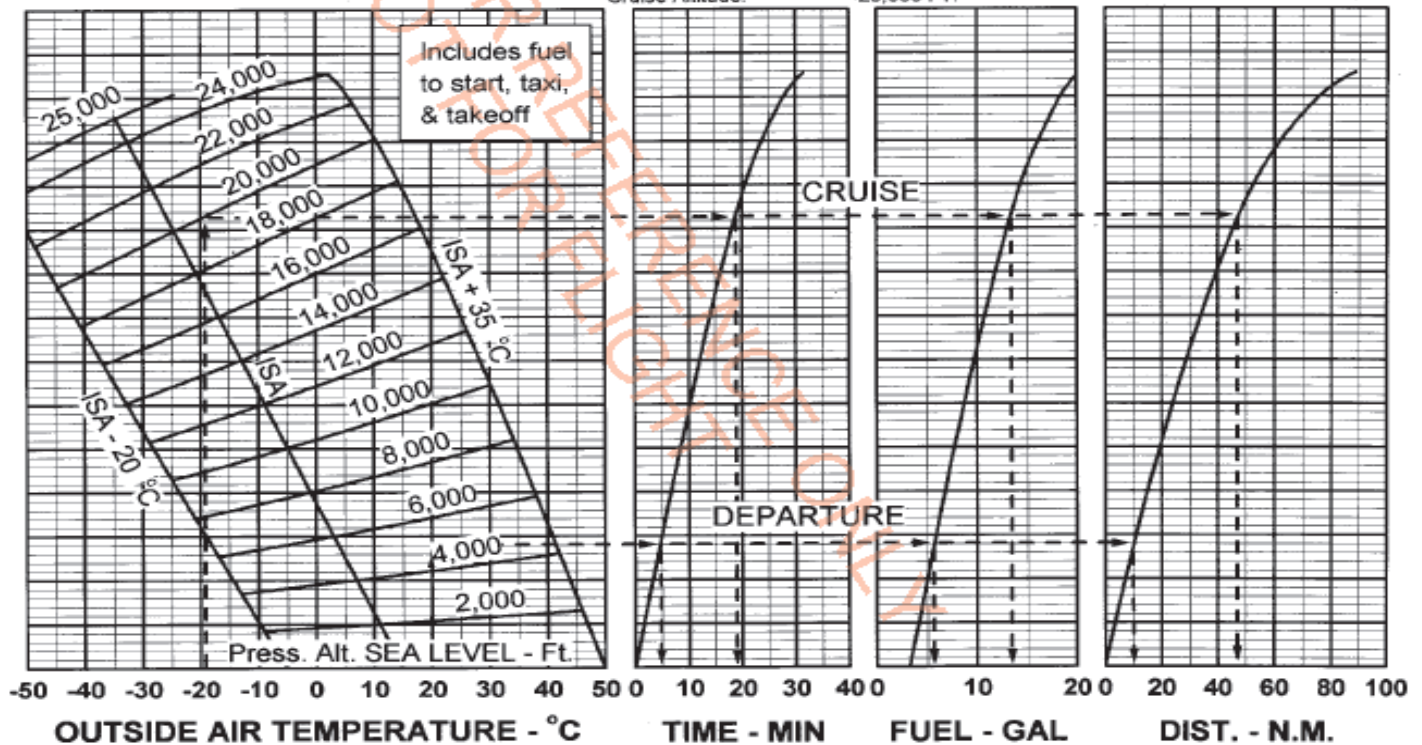
Gross Weight: 4,340 LB
 Landing Gear: UP
 Flaps: UP
 Climb Speed: 125 KIAS

Power: 2,500 RPM
 42 IN. HG. OR
 FULL THROTTLE
 Mixture: FULL RICH

EXAMPLE

Departure Airport O.A.T.: 20° C
 Departure airport Altitude: 5,000 FT.
 Cruise O.A.T.: -19° C
 Cruise Altitude: 20,000 FT.

Time to Climb: 18.8 - 4.7 = 14.1 MIN
 Fuel to Climb: 13.5 - 5.7 = 7.8 GAL
 Distance to Climb: 47.6 - 10.1 = 37.5 N.M.



POWER SETTING TABLE

Associated Conditions:

	RPM	Manifold Pressure	Approximate Fuel Flow
High Speed Cruise (75%)	2500	32" Hg.	20 GPH
Economy Cruise (65%)	2400	29" Hg.	18 GPH
Long Range Cruise (55%)	2300	25" Hg.	15 GPH

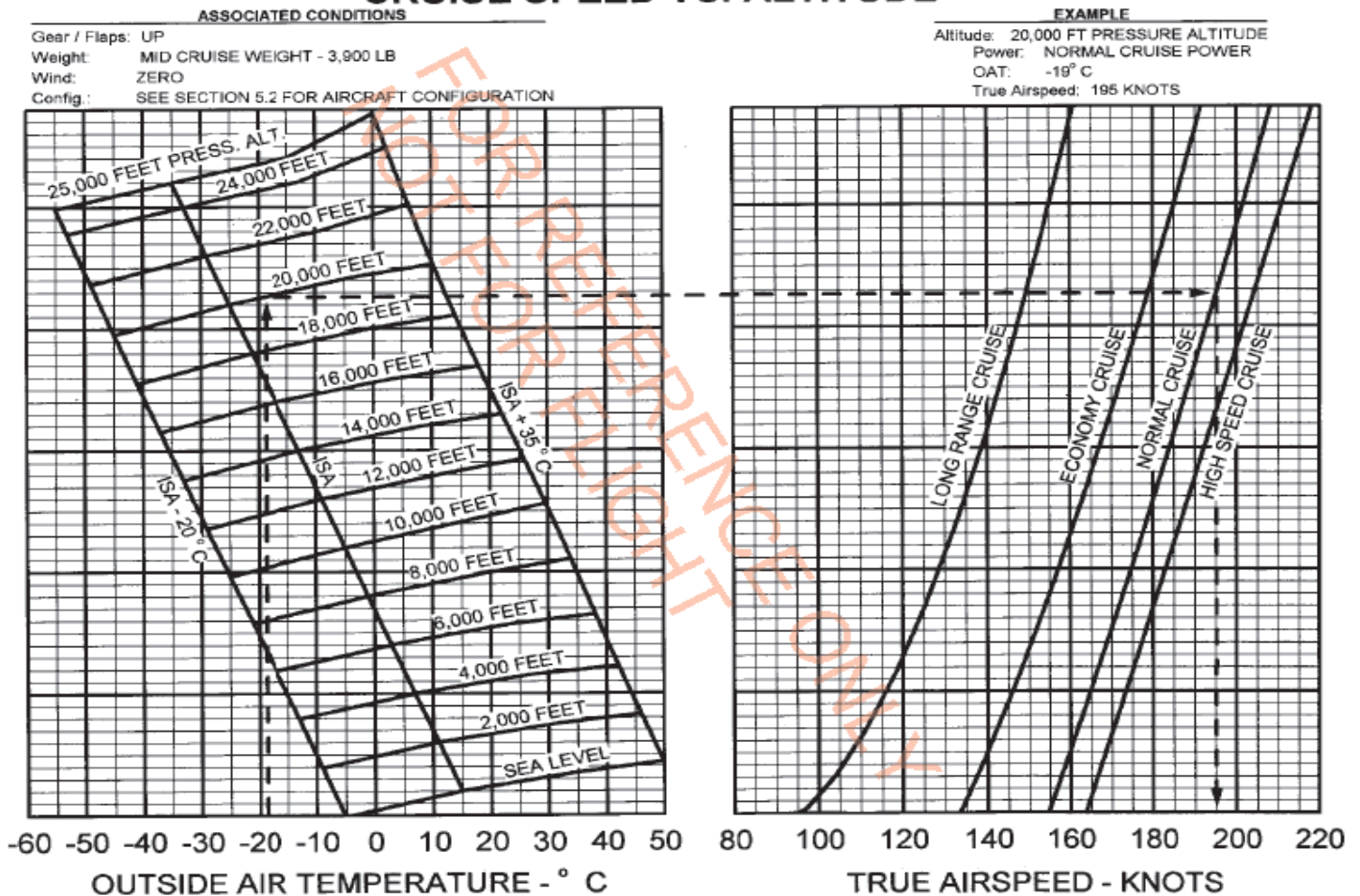
Table Reference Altitude is 20,000'. The fuel flow differential for altitude is 1 GPH per 1,000', greater at lower altitudes and less at higher altitudes.

The cruise speeds are shown at mid-cruise weight, 3900 pounds. The speed differential for weight is 0.7 knots per 100 pounds, faster at lighter weights and slower at heavier weights.

*Example:

Cruise Altitude: 20,000 ft
 Cruise OAT: -19° C
 Cruise Power: Normal Cruise
 Cruise Weight: 3900 lbs
 Cruise Fuel Flow: 18 GPH
 Cruise Speed: 195 KTAS

CRUISE SPEED VS. ALTITUDE



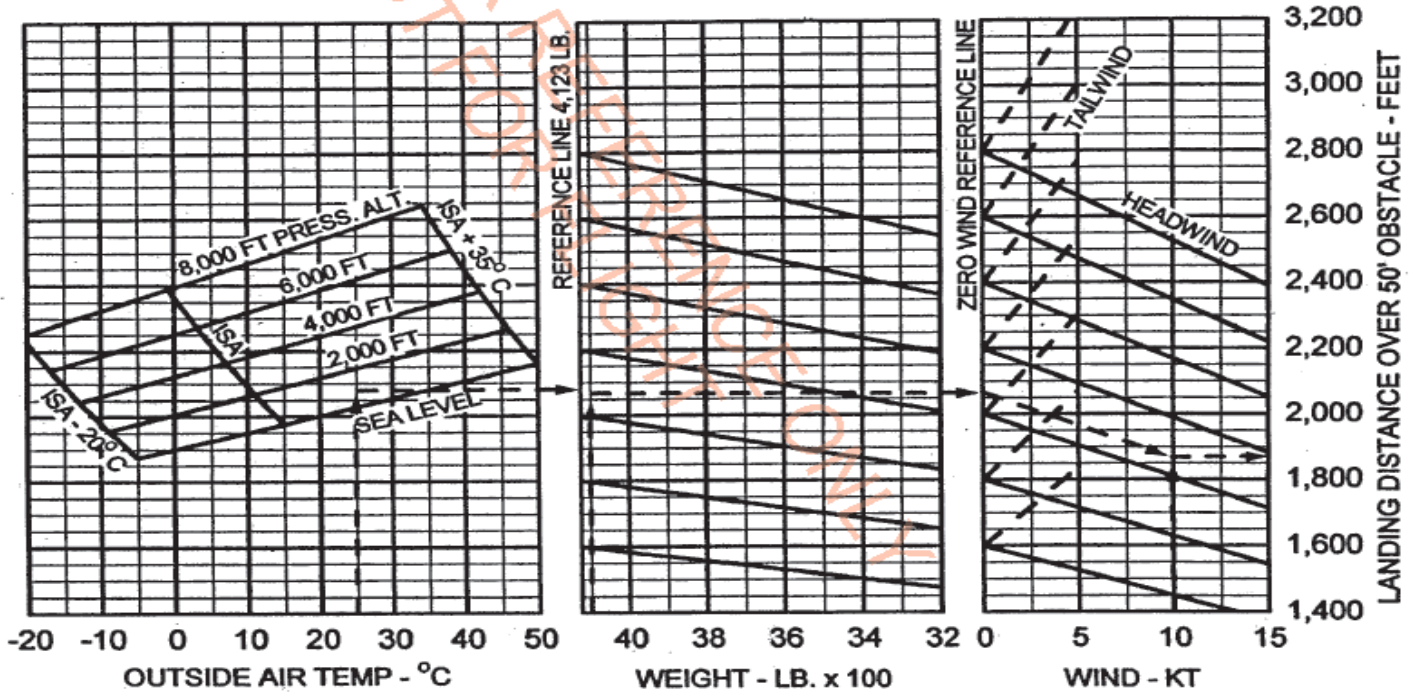
LANDING PERFORMANCE

ASSOCIATED CONDITIONS

Gear: DOWN Braking: HEAVY
 Flaps: 36° Approach speed: 78 KIAS
 Throttle: CLOSED Touch Down: FULL STALL
 RUNWAY PAVED, LEVEL, & DRY

EXAMPLE

Press. Alt.: 1,000 FT Headwind: 10 KT
 OAT: 25°C Weight: 4,100 LB
 Landing Distance: 1,870 FEET



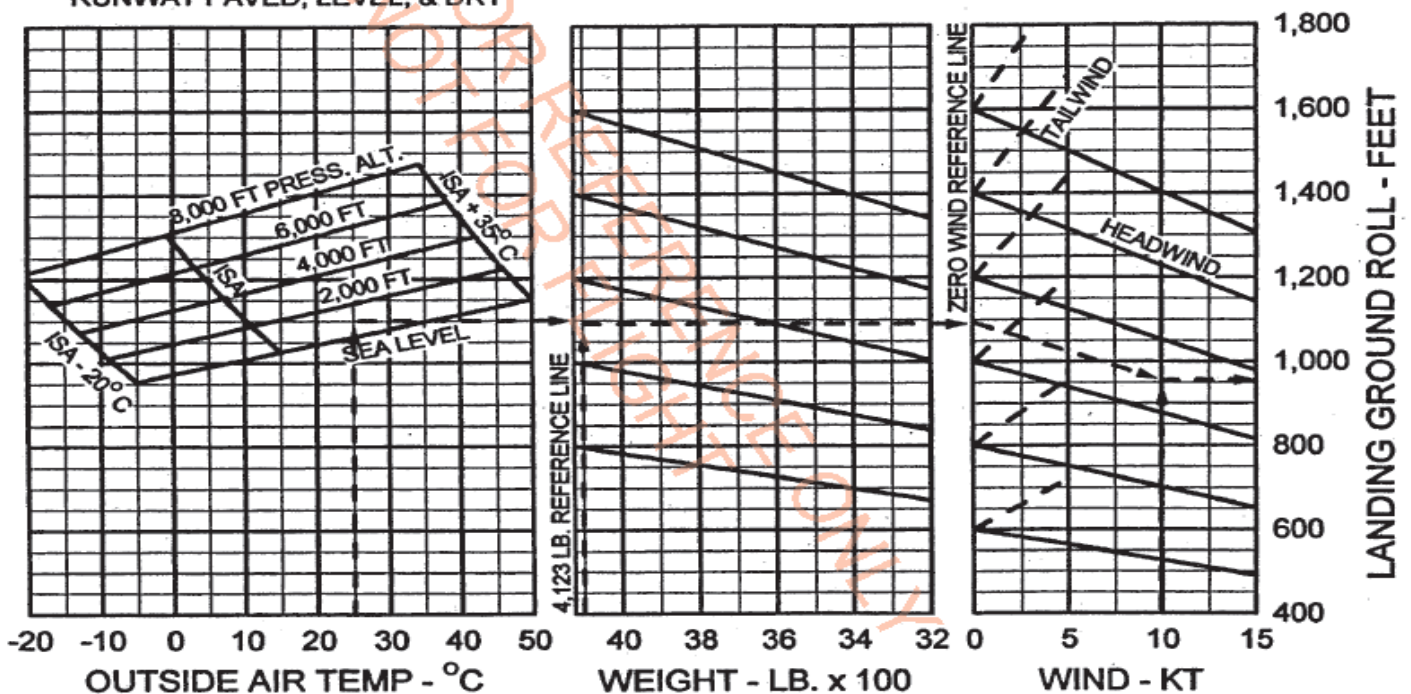
LANDING GROUND ROLL DISTANCE

ASSOCIATED CONDITIONS

Gear: DOWN Throttle: CLOSED
 Flaps: 36° Braking: HEAVY
 FULL STALL TOUCH DOWN
 RUNWAY PAVED, LEVEL, & DRY

EXAMPLE

Press. Alt.: 1,000 FT Headwind: 10 KT
 OAT: 25°C Weight: 4,100 LB
 Landing Ground Roll: 955 FEET



ASHEVILLE RGNL (AVL) 9 S UTC-5(-4DT) N35°26.17' W82°32.51'
 2165 B S2 **FUEL** 100LL, JET A OX 3 Class I, ARFF Index B NOTAM FILE AVL
RWY 16-34: H8001X150 (ASPH-GRVD) S-120, D-160, 2S-175,
 2D-260 HIRL CL

RWY 16: MALSR. PAPI(P4L)—GA 3.0° TCH 54'. 0.4% down.

RWY 34: MALSR. TDZL. VASI(V4L)—GA 2.8° TCH 59'. Rgt t/c.
 0.9% up.

AIRPORT REMARKS: Attended continuously. Flocks of migratory birds on and in/ov arpt. PPR for unscheduled air carrier opr with more than 30 passenger seats 0400-1200Z†; call arpt manager 828-684-2226. For the Asheville Rgnl arpt acft diversions emergency contingency plan and facility constraints ctc arpt Public Safety at 828-684-4577. Rwy 16 touchdown rwy visual range avbl. HIRL preset to off when twr clsd, to increase ints and ACTIVATE HIRL and MALSR Rwy 16 and Rwy 34—CTAF.

WEATHER DATA SOURCES: ASOS (828) 681-0131 LLWAS.

COMMUNICATIONS: CTAF 121.1 ATIS 120.2 UNICOM 122.95

® **APP/DEP CON** 124.65 (160°-339°) 125.8 (340°-159°)
 (1130-0400Z†)

ATLANTA CENTER APP/DEP CON 132.625 (160°-339°) (0400-1130Z†)

TOWER 121.1 (1130-0400Z†) **GND CON** 121.9

AIRSPACE: CLASS C svc ctc **APP CON** svc 1130-0400Z† other times CLASS G.

RADIO AIDS TO NAVIGATION: NOTAM FILE RDU.

SUGARLOAF MOUNTAIN (L) VORTAC 112.2 SUG Chan 59 N35°24.39' W82°16.12' 280° 13.5 NM to fld.
 397Q/2W.

BROAD RIVER NDB (HW) 379 BRA N35°16.37' W82°28.26' 344° 10.4 NM to fld. NOTAM FILE AVL. NDB
 unmonitored when Asheville ATCT closed.

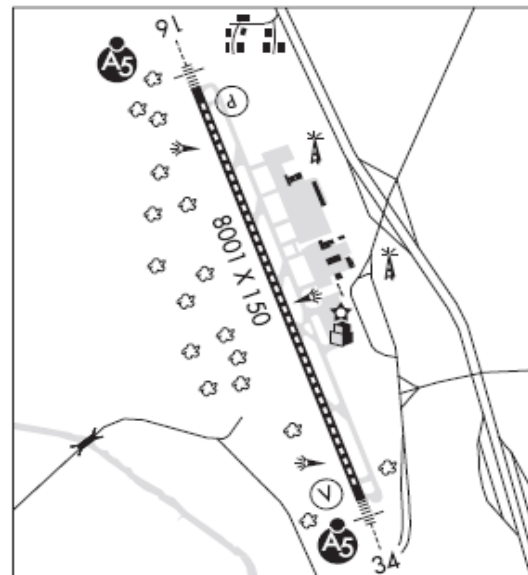
KEANS NDB (LOM) 357 IM N35°31.97' W82°35.25' 163° 6.2 NM to fld.

ILS 110.9 I-IMO Rwy 16. Class I.A. LOM KEANS NDB. ILS not avbl during hours ATCT closed. LOC unusable byd
 20° right of course. LOC unusable within 0.20 NM fm threshold.

ILS 110.5 I-AVL Rwy 34. Class I.B. Unmonitored when ATCT closed.

ASR (1130-0400Z†)

COMM/NAV/WEATHER REMARKS: Communications unavailable blo 6,000' except by RALEIGH RADIO on 122.1R when avbl app
 con clsd. ASOS wind unreliable when twr closed.



MORRISTOWN

MOORE-MURRELL (MOR) 4 SW UTC-5(-4DT) N36°10.76' W83°22.53'
 1313 B S4 **FUEL** 100LL, JET A NOTAM FILE BNA

RWY 05-23: H5717X100 (ASPH) S-25 MRL 0.7% up SW

RWY 05: MALSF. REIL. VASI(V4L)—GA 3.0° TCH 39'. Tree.

RWY 23: REIL. PAPI(P2L)—GA 3.0° TCH 41'. P-line.

AIRPORT REMARKS: Attended 1300Z†-dusk. Deer on and in/ov arpt. MALSF
 OTS indef. ACTIVATE VASI Rwy 05 and PAPI Rwy 23—CTAF.

WEATHER DATA SOURCES: AWOS-3 126.725 (423) 587-5886.

COMMUNICATIONS: CTAF/UNICOM 122.8

® **KNOXVILLE APP/DEP CON** 132.8

RADIO AIDS TO NAVIGATION: NOTAM FILE RDU.

SNOWBIRD (L) VORTAC 108.8 SOT Chan 25 N35°47.41'
 W83°03.14' 330° 28.1 NM to fld. 4239/4W.

DME unusable.

225°-250° byd 30 NM blo 10,000'

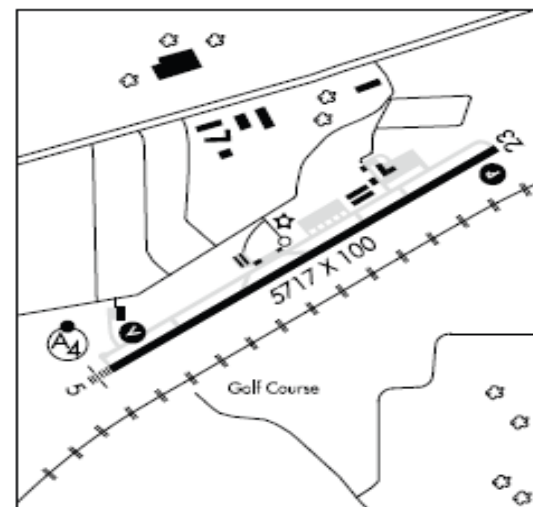
JEFFERSON NDB (MHY) 346 JXT N36°06.63'

W83°28.54' 054° 6.4 NM to fld. NOTAM FILE BNA.

NDB unusable.

Byd 15 NM

SDF/DME 109.5 I-MOR Chan 32 Rwy 05. SDF unmonitored
 0200-1200Z†.



CINCINNATI
 H-9B, 12G, L-25B
 IAP

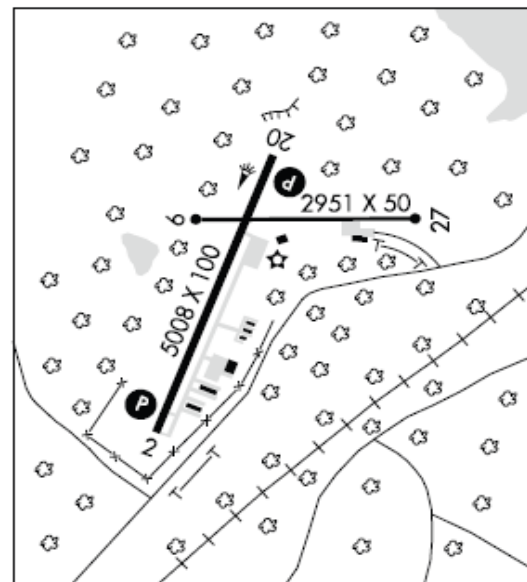
TOCCOA RG LETOURNEAU FLD (TOC) 2 NE UTC-5(-4DT) N34°35.57' W83°17.78'**ATLANTA**996 B S4 **FUEL** 100LL, JET A NOTAM FILE MCN**H-9B, 12G, L-25B****RWY 02-20:** H5008X100 (ASPH) S-30 MIRL 0.5% up SW**IAP****RWY 02:** REIL PAPI(P2L)—GA 3.25° TCH 32'.**RWY 20:** REIL PAPI(P2L)—GA 3.0° TCH 33'.**RWY 09-27:** H2951X50 (ASPH) S-20 0.8% up W**RWY 09:** Trees.**RWY 27:** Trees.**AIRPORT REMARKS:** Attended Mon-Sat 1400-2300Z†, Sun 1700-2300Z†.

Deer on or invof arpt. Dusk-0300Z†, after 0300Z† ACTIVATE MIRL

Rwy 02-20, REIL Rwy 02 and Rwy 20, PAPI Rwy 02 and Rwy 20—CTAF.

WEATHER DATA SOURCES: AWOS-3 119.625 (706) 297-7473.**COMMUNICATIONS:** CTAF/UNICOM 122.8**Ⓡ ATLANTA CENTER APP/DEP CON** 134.8**RADIO AIDS TO NAVIGATION:** NOTAM FILE AND.**FOOTHILLS (H) VORTAC** 113.4 ODF Chan 81 N34°41.75'

W83°17.86' 179°6.2 NM to fld. 1700/0E.

**SEVIERVILLE****GATLINBURG-PIGEON FORGE (GKT) 2 SE UTC-5(-4DT) N35°51.47' W83°31.72'****ATLANTA**1014 B S4 **FUEL** 100LL, JET A NOTAM FILE BNA**H-9B, 12G, L-25B****RWY 10-28:** H5506X75 (ASPH) S-40, D-54 MIRL**IAP****RWY 10:** REIL PAPI(P4L)—GA 3.5° TCH 33'. Trees.**RWY 28:** REIL PAPI(P4L)—GA 4.5° TCH 41'. Thld dsplcd 340'. Hill.**AIRPORT REMARKS:** Attended Nov-Feb 1200-2300Z†, Mar-Oct

1200-0000Z†. Rwy 10 PAEW NW side. Deer on and invof arpt. MIRL

Rwy 10-28 preset low ints, to increase ints ACTIVATE—CTAF. PAPI

Rwy 10 and Rwy 28 opr continuously.

WEATHER DATA SOURCES: AWOS-3 126.875 (865) 429-5401.**COMMUNICATIONS:** CTAF/UNICOM 123.0**Ⓡ KNOXVILLE APP/DEP CON** 132.8**RADIO AIDS TO NAVIGATION:** NOTAM FILE TYS.**VOLUNTEER (H) VORTAC** 116.4 VXV Chan 111 N35°54.29'W83°53.68' 102°18.1 NM to fld. 1290/3W. **HIVAS.**