THAT SLOW SINKING SENSATION



SCENARIO

Statistics say a partial power failure is three to five times more likely than a complete power failure. But that might mean three times as many options and a paralysis of indecision. How will you weigh your options to take the best prompt action without simply making a snap judgment?

CHOICES

CHOICE 2 CHOICE 1 Head for Saginaw **Head for Mount** (KMBS). Pleasant (KMOP).

CHOICE 4 CHOICE 3 Head for Midland **Head for Gratiot** Community (KAMN). (KIKW).

PORTING 1000-10 NEED 372-1

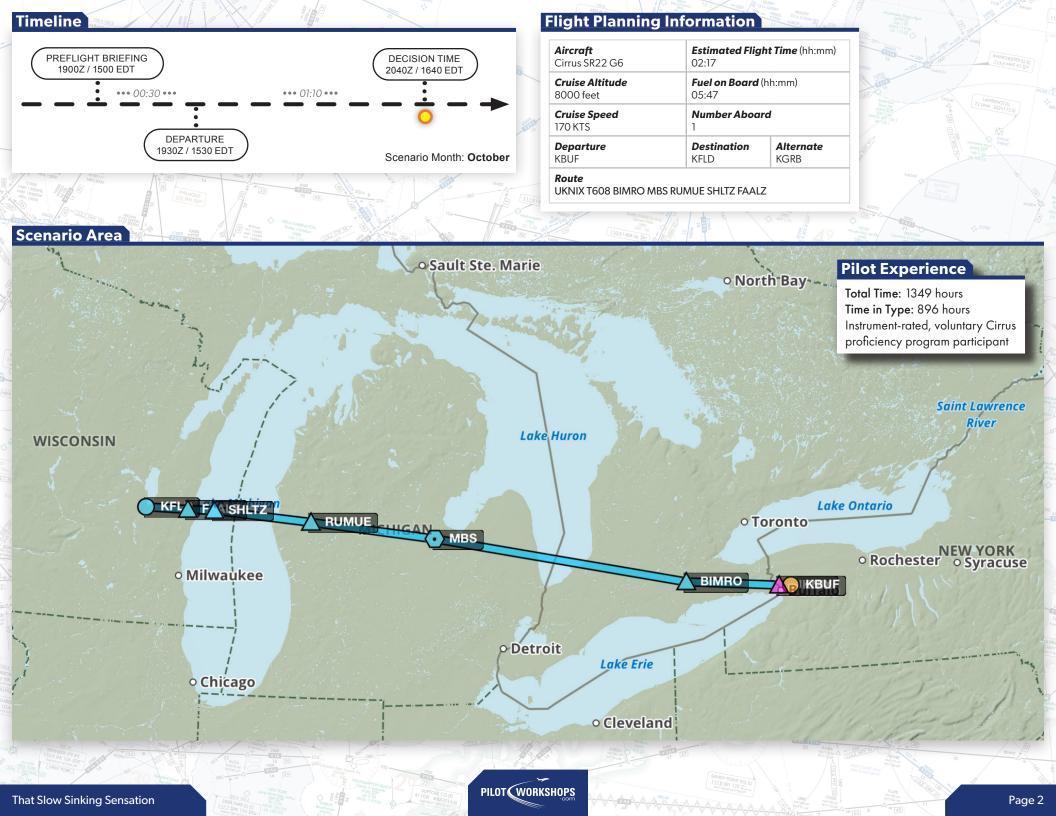
shut down the engine immediately. The unknown fuel issue is too risky.

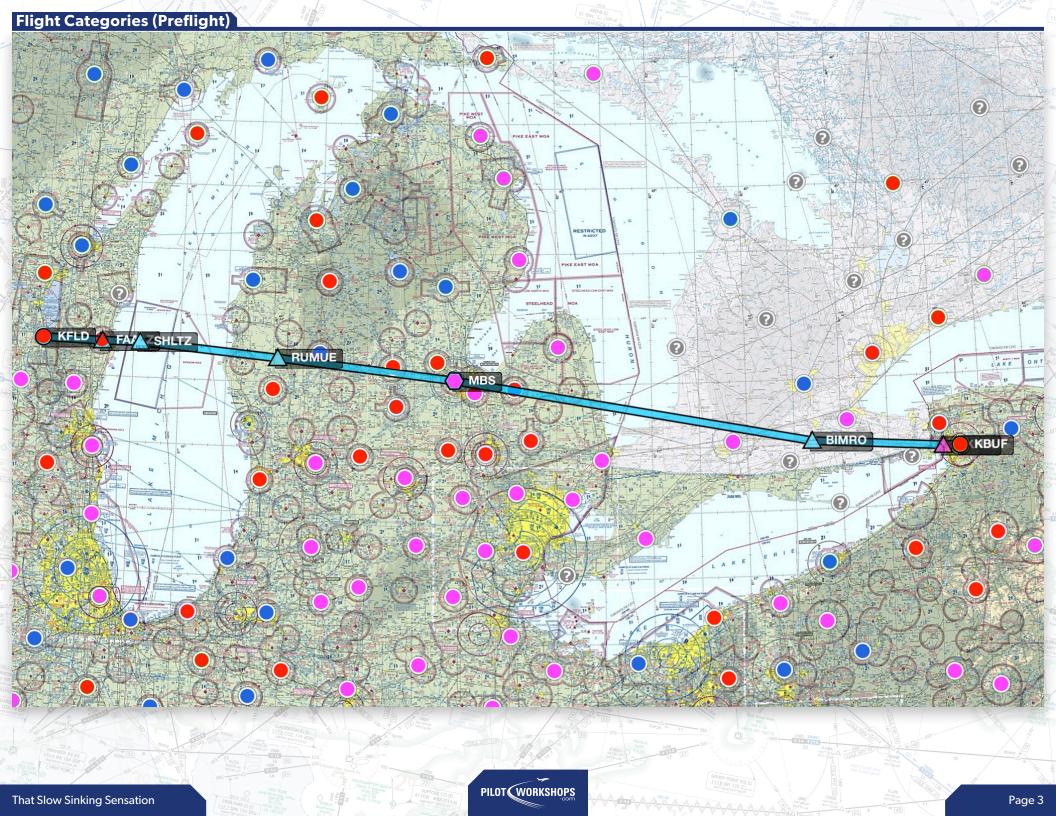
Pull the chute and

CHOICE 5









METARs and TAFs (Preflight)

Departure

KBUF 281854Z 03005KT 1 1/2SM -DZ BR BKN005 OVC011 09/09 A2970

Enroute

CYHM 281900Z 02011KT 1/8SM R12/2600V3500FT/N -DZ FG VV002 05/05 A2971

CYXU 281900Z 07008KT 1 1/4SM R15/5500VP6000FT/D -RA BR BKN004 OVC015 08/07 A2969

CYZR 281900Z AUTO 05007KT 2SM BR BKN004 OVC009 07/07 A2970

TAF AMD CYZR 281817Z 2819/2903 VRB03KT 6SM BR SCT005 OVC010
TEMPO 2901/2903 1 1/2SM -DZ BR BKN005 OVC010
RMK FCST BASED ON AUTO OBS. NXT FCST BY 290900Z

KCFS 281855Z AUTO 01003KT 5SM BR OVC007 07/07 A2971

SPECI KMBS 281800Z 03014KT 1 1/2SM R23/5000VP6000FT BR OVC003 06/05 A2976

KMOP 281855Z AUTO 04009KT 7SM OVC007 06/06 A2974

KRQB 281855Z AUTO 02008KT 7SM BKN010 OVC015 05/03 A2974

KSBM 281853Z AUTO 02008KT 7SM -RA OVC008 04/02 A2981

KSBM TAF - 28 nm E of KFLD

TAF KSBM 281734Z 2818/2918 01013G23KT 5SM -RA BR OVC006

FM281900 36013G23KT 4SM -RA BR OVC006

FM282200 01013G21KT 4SM -RA BR OVC006

FM290400 01012G21KT P6SM OVC006

PROB30 2904/2910 4SM -RASN BR OVC004

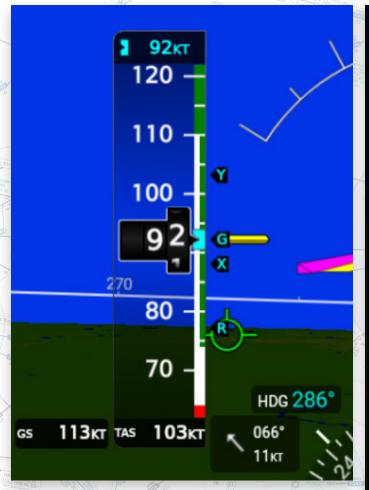
FM291200 36009KT P6SM OVC008

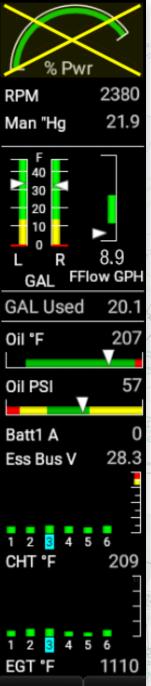
FM291600 35008KT P6SM BKN012

Destination

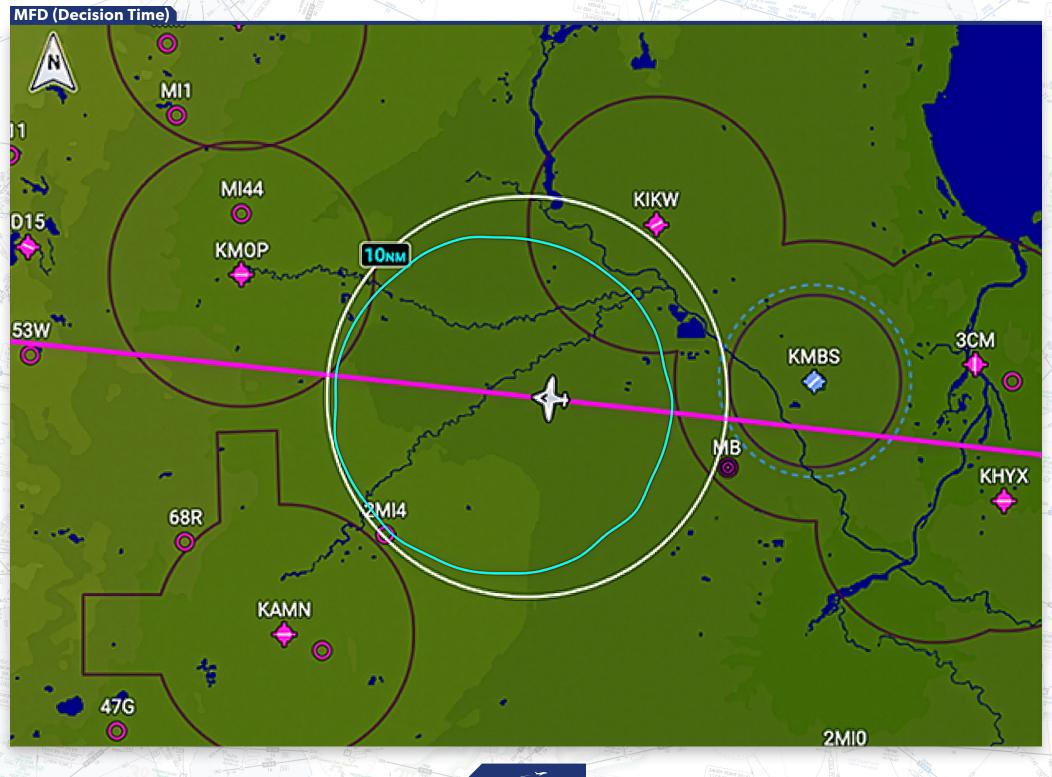
KFLD 281853Z AUTO 01014KT 10SM OVC008 04/02 A2984

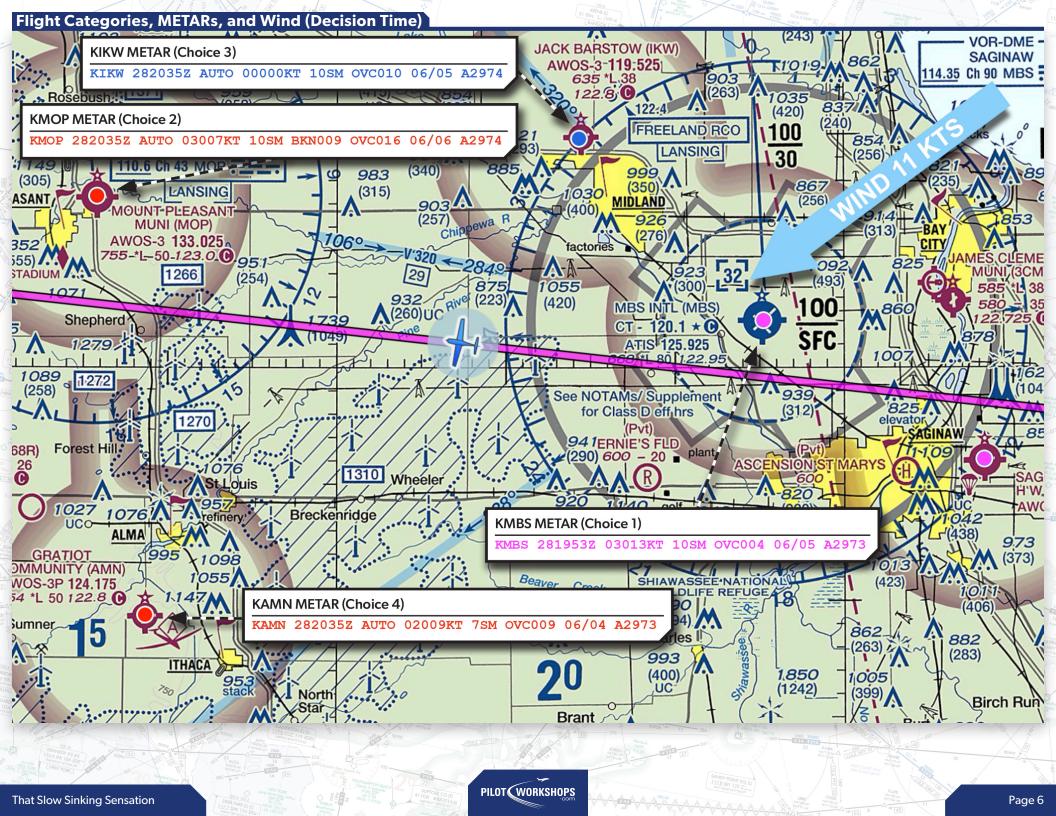
PFD and Engine Instruments (Decision Time)





Engine





Emergency Procedures Engine Partial Power Loss

□ 1. Air Conditioner (if installed) OFF ☐ 2. Fuel Pump HIGH BOOST/PRIME 4. Mixture CHECK APPROPRIATE FOR FLIGHT CONDITIONS ☐ 6. Alternate Induction Air ON 8. Land as soon as practical. WARNING: If there is a strong smell of fuel in the cockpit, divert to the nearest suitable landing field. Fly a forced landing pattern and shut down the engine fuel supply once a safe landing is assured.

Go to Next Checklist?

Engine Partial Power Loss

1.	Air Conditioner (if installed)	OFF
2.	Fuel Pump	BOOST
3.	Fuel Selector	SWITCH TANKS
4.	MixtureCHECK APPROPRIATE FOR	FLIGHT CONDITIONS
5.	Power Lever	SWEEP
6.	Alternate Induction Air	ON
7.	Ignition Switch	BOTH, L, THEN R
8.	Land as soon as practicable.	

Procedure Complete

• WARNING •

If there is a strong smell of fuel in the cockpit, divert to the nearest suitable landing field. Fly a forced landing pattern and shut down the engine fuel supply once a safe landing is assured.

• **NOTE** •

Indications of a partial power loss include fluctuating RPM, reduced or fluctuating manifold pressure, low oil pressure, high oil temperature, and a rough-sounding or rough-running engine. Mild engine roughness in flight may be caused by one or more spark plugs becoming fouled. A sudden engine roughness or misfiring is usually evidence of a magneto malfunction.

A gradual loss of manifold pressure and eventual engine roughness may result from the formation of intake ice. Opening the alternate engine air will provide air for engine operation if the normal source is blocked or the air filter is iced over.

(Continued on next page)

SR22 "Partial Power Loss" Emergency Procedure (Cont.)

NOTE •

Low oil pressure may be indicative of an imminent engine failure. See OIL PRESS Warning Checklist in this Section for special procedures with low oil pressure.

A damaged (out-of-balance) propeller may cause extremely rough operation. If an out-of-balance propeller is suspected, immediately shut down engine and perform Forced Landings Checklist.

If the power loss is due to a fuel leak in the injector system, fuel sprayed over the engine may be cooled by the slipstream airflow which may prevent a fire at altitude. However, as the Power Lever is reduced during descent and approach to landing the cooling air may not be sufficient to prevent an engine fire.

Selecting BOOST may clear the problem if vapor in the injection lines is the problem or if the engine-driven fuel pump has partially failed. The electric fuel pump will not provide sufficient fuel pressure to supply the engine if the engine-driven fuel pump completely fails.

Selecting the opposite fuel tank may resolve the problem if fuel starvation or contamination in one tank was the problem.

Cycling the ignition switch momentarily from BOTH to L and then to R may help identify the problem. An obvious power loss in single ignition operation indicates magneto or spark plug trouble. Lean the mixture to the recommended cruise setting. If engine does not smooth out in several minutes, try a richer mixture setting. Return ignition switch to the BOTH position unless extreme roughness dictates the use of a single magneto.

If a partial engine failure permits level flight, land at a suitable airfield as soon as conditions permit. If conditions do not permit safe level flight, use partial power as necessary to set up a forced landing pattern over a suitable landing field. Always be prepared for a complete engine failure and consider CAPS deployment if a suitable landing site is not available. Refer to Section 10, Cirrus Airframe Parachute System (CAPS) for CAPS deployment scenarios and landing considerations.

SR22 "Engine Failure in Flight" Emergency Procedure

Engine Failure In Flight

1.]	Best Glide Speed	ESTABLISH
2. 1	Mixture	AS REQUIRED
3.]	Fuel Pump	BOOST
4.]	Fuel Selector	SWITCH TANKS
5. 4	Alternate Induction Air	ON
6.]	Ignition Switch CHECK LEFT, RIG	HT, BOTH (AS REQ'D)
♦ I	If engine does not start:	
á	a. Perform Engine Airstart, CAPS Deployment	, or Emergency Landing

Procedure Complete

w/o Power Checklist, as required.

- ◆ If engine starts:
 - a. CHTs and Oil TemperatureWARM ENGINE AT PARTIAL POWER IF REQUIRED

Procedure Complete

• WARNING •

If engine failure is accompanied by fuel fumes in the cockpit, or if internal engine damage is suspected, move Mixture Control to CUTOFF, Fuel Selector to OFF, and do not attempt a restart.

If a turn back to the runway is elected, be very careful not to stall the airplane.

• Note •

If the engine fails at altitude, pitch as necessary to establish best glide speed. While gliding toward a suitable landing area, attempt to identify the cause of the failure and correct it. If altitude or terrain does not permit a safe landing, CAPS deployment may be required. Refer to Section 10, Cirrus Airframe Parachute System (CAPS) for CAPS deployment scenarios and landing considerations.

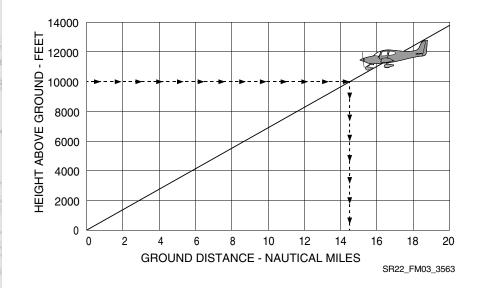
SR22 Glide

Glide

Conditions		Example	
Power	OFF	Altitude	10,000 ft. AGL
Propeller	Windmilling	Airspeed	Best Glide
Flaps	0% (UP)	Glide Distance	14.5 NM
Wind	Zero		

Best Glide Speed

Figure 3-1: Maximum Glide Ratio ~ 8.8:1



CAPS Deployment

• WARNING •

The maximum demonstrated deployment speed is 140 KIAS.

1. Activation Handle CoverREMOVE

2. Activation Handle (Both Hands)......PULL STRAIGHT DOWN

	After deployment, as time permits:	
3.	Mixture	CUTOFF
4.	Fuel Selector	OFF
5.	Fuel Pump	OFF
6.	BAT 1, BAT 2, ALT 1, and ALT 2 Switches	OFF
	Turn the master switches off after completing any necommunications.	essary radio
7.	Ignition Switch	OFF
8.	ELT	
		ON
9.	ELT	ON TIGHTEN
9. 10	ELT	ON TIGHTEN

Procedure Complete

• WARNING •

Jerking or rapidly pulling the activation T-handle will greatly increase the pull forces required to activate the rocket. Use a firm and steady pulling motion – a "chin-up" type pull ensures successful activation.

• Note •

The Cirrus Airframe Parachute System (CAPS) should be activated immediately in the event of a spin. It should also be used in other life threatening emergencies where CAPS deployment is determined to be safer than continued flight and landing.

Expected impact in a fully stabilized deployment is equivalent to a drop from approximately 13 feet.

SR22 CAPS Deployment (Continued)

CAUTION •

CAPS deployment will likely result in damage or loss to the airframe.

• Note •

Several possible scenarios in which the activation of the CAPS would be appropriate are discussed in Section 10: Safety Information of this Handbook. These include:

- Mid-air collision
- Structural failure
- Loss of control
- Landing in inhospitable terrain
- Pilot incapacitation

All pilots should carefully review the information on CAPS activation and deployment in Section 10 before operating the airplane.



Garmin Perspective+ Underspeed Protection

UNDERSPEED PROTECTION

Underspeed Protection is available when the optional Electronic Stability and Protection (ESP) system is installed and the autopilot is on. It is designed to discourage aircraft operation below minimum established airspeeds.

When the aircraft reaches a predetermined airspeed (see pertinent flight manual for airspeeds which are dependant upon flap setting, and anti-ice system onboard), a flashing yellow 'MINSPD' annunciation will appear above the airspeed indicator.

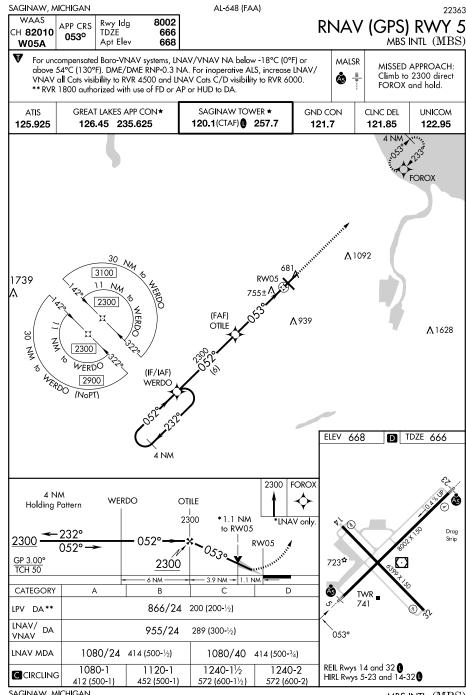


Figure 7-33 MINSPD Annunciation

When the airspeed trend vector reaches the predetermined airspeed, a single aural "AIRSPEED" will sound, alerting the pilot to the impending underspeed condition.

If the aircraft continues to decelerate, Underspeed Protection functionality depends on which vertical flight director mode is selected. For the purpose of this discussion, the vertical flight director modes can be divided into two categories: Those in which it is important to maintain altitude for as long as possible (altitude-critical modes), and those in which maintaining altitude is less crucial (non-altitude critical modes).

KMBS RNAV (GPS) RWY 5



SAGINAW, MICHIGAN

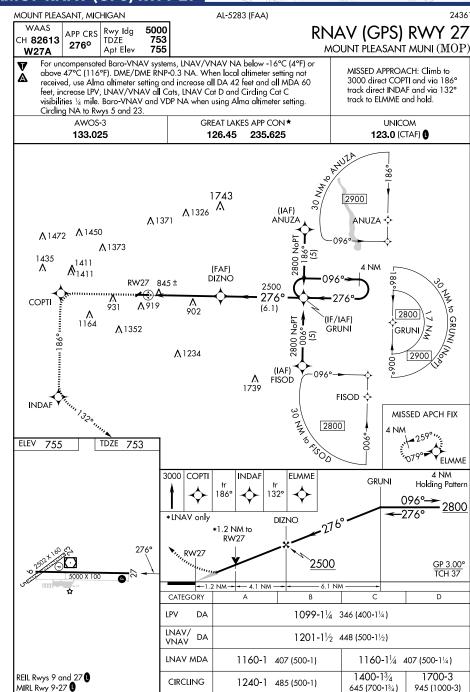
Amdt 2 01FEB18

43°32′N - 84°05′W

RNAV (GPS) RWY 5

43°40′N-84°16′W

KMOP RNAV (GPS) RWY 27



MOUNT PLEASANT, MICHIGAN Orig-C 09SEP21

43°37′N - 84°44′W

MOUNT PLEASANT MUNI (MOP) RNAV (GPS) RWY 27

945 (1000-3)

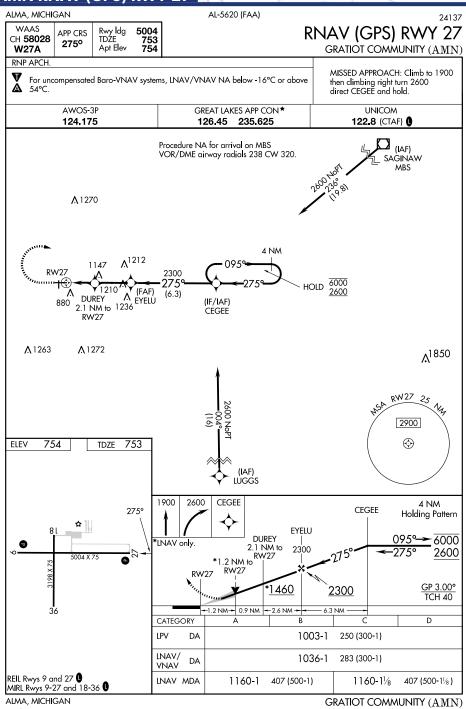
645 (700-13/4)

JACK BARSTOW (IKW)

RNAV (GPS) RWY 6

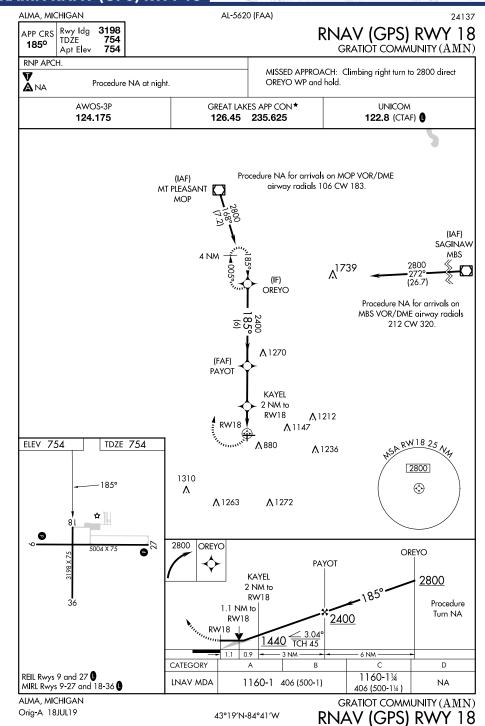
Amdt 1B 22APR21

KAMN RNAV (GPS) RWY 27



43°19′N-84°41′W

KAMN RNAV (GPS) RWY 18



RNAV (GPS) RWY 27

Amdt 2 05NOV20

KMBS Chart Supplement

MBS INTL (MBS)(KMBS) 9 NW UTC-5(-4DT) N43°31.98′ W84°04.78′

668 B LRA ARFF Index—See Remarks NOTAM FILE MBS RWY 05-23: H8002X150 (ASPH-GRVD) S-135, D-160, 2D-265

PCN 50 F/C/X/U HIRL

RWY 05: MALSR. RVR-TR

RWY 23: MALSR. PAPI(P4L)—GA 3.0° TCH 54'. RVR-TR 0.4% up.

RWY 14–32: H6399X150 (ASPH–GRVD) S–135, D–160, 2D–265 PCN 50 F/C/X/U HIRL

RWY 14: REIL, PAPI(P4L)—GA 3.0° TCH 45', Trees.

RWY 32: REIL. PAPI(P4L)—GA 3.0° TCH 50'. Trees.

RUNWAY DECLARED DISTANCE INFORMATION

RWY 05: TORA-8002 TODA-8002 ASDA-8002 LDA-8002 RWY 14: TORA-6399 TODA-6399 ASDA-6399 LDA-6399 RWY 23: TORA-8002 TODA-8002 ASDA-8002 LDA-8002 **RWY 32**: TORA-6399 TODA-6399 ASDA-6399 LDA-6399

SERVICE: S2 FUEL 100LL, JET A 0X3 LGT When twr clsd ACTIVATE MALSR Rwy 05-23, REIL Rwy 14 and Rwy 32, HIRL Rwys 05-23 and 14-32—CTAF. PAPI Rwy 14, 23 and 32 ops cons.

AIRPORT REMARKS: Attended continuously. For svc after hrs call 800-227-7907. Birds on and invof arpt. Class I, ARFF Index B. Index C ARFF svc avbl upon req. Ldg fee waived with fuel purchase.

AIRPORT MANAGER: 989-695-5555

WEATHER DATA SOURCES: ASOS (989) 695-2488 LAWRS 1100-0400Z‡.

COMMUNICATIONS: CTAF 120.1 **ATIS** 125.925 **UNICOM** 122.95

FREELAND RCO 122.4 (LANSING RADIO)

 $^{ ext{(1030-0500Z$}}$

R CLEVELAND CENTER APP/DEP CON 127.7 when Great Lakes apch ctl clsd.

SAGINAW TOWER 120.1 (1100-0400Z‡) GND CON 121.7 CLNC DEL 121.85

CLEARANCE DELIVERY PHONE: For CD when ATCT clsd ctc Great Lakes Apch at 269-459-3345, when Apch clsd ctc Cleveland ARTCC at 440-774-0224/0490.

AIRSPACE: CLASS D svc 1100-0400Z‡; other times CLASS E.

TRSA ctc Apch Ctl within 20 NM.

RADIO AIDS TO NAVIGATION: NOTAM FILE MBS.

SAGINAW (VL) (DH) VORW/DME 114.35 MBS Chan 90(Y) N43°31.90′ W84°04.64′

DME unusable:

185°-200° byd 14 NM

VOR unusable:

145°-185° bvd 40 NM

336°-338° byd 40 NM

OLSTE NDB (LOMW) 257 MB N43°27.69′ W84°10.79′ 053° 6.1 NM to fld. 625/7W. NDB unmonitored.

ILS 108.7 I-MBS Rwy 05. Class IT. LOM OLSTE NDB. LOM unmonitored. Unmonitored when ATCT clsd. LOC unusable byd 24° left of course; byd 25° right of course.

ILS/DME 108.7 I-TQR Chan 24 Rwy 23. Class ID. Unmonitored when ATCT clsd. DME unusable byd 7.7 NM blw

COMM/NAV/WEATHER REMARKS: Emerg frequency, 121.5 not available at twr.

IAP. AD G G G €3

33

DETROIT

H-10G, 11A, L-28J

KIKW Chart Supplement

JACK BARSTOW (IKW)(KIKW) 3 NW UTC-5(-4DT) N43°39.78′ W84°15.68

635 B NOTAM FILE LAN

RWY 06-24: H3801X75 (ASPH) S-24 MIRL 0.4% up NE

RWY 06: REIL. PAPI(P2L)—GA 3.0° TCH 32'. Tree.

RWY 24: REIL, PAPI(P2L)—GA 3.0° TCH 24', Tree.

RWY 18-36: H3001X75 (ASPH) S-24 MIRL

RWY 18: REIL. Tree.

RWY 36: REIL. Tree.

SERVICE: FUEL 100LL, JET A+ LGT Actvt REIL Rwy 06, 24, 18 & 36; PAPI Rwy 06 & 24; MIRL Rwy 06-24 & 18-36-CTAF.

NOISE: Noise sensitive area south of arpt, use preferred Rwy 06–24.

AIRPORT REMARKS: Attended Mon-Fri 1400-2200Z‡, Sat-Sun

1300-2100Z‡. Unatndd maior hols. Deer and Irg birds on & invof arpt. Ocnl ultralight activity. 100LL and Jet A+ avbl self svc; Jet A+ avbl full svc by prior arngmt. Fld conds unmon wkdavs 2300–1300Z‡ & wkends 2100-1300Z‡. Door Code: 5-3-2-1.

AIRPORT MANAGER: 989-835-3231

WEATHER DATA SOURCES: AWOS-3 119.525 (989) 835-5841.

COMMUNICATIONS: CTAF/UNICOM 122.8

 $^{ ext{(1030-0500Z$}}$

R CLEVELAND CENTER APP/DEP CON 127.7 when Great Lakes apch ctl clsd. CLEARANCE DELIVERY PHONE: For CD ctc Great Lakes Apch at

269-459-3345, when Apch clsd ctc Cleveland ARTCC at 440-774-0224/0490.

RADIO AIDS TO NAVIGATION: NOTAM FILE MBS.

SAGINAW (VL) (DH) VORW/DME 114.35 MBS Chan 90(Y) N43°31.90′ W84°04.64′ 318° 11.2 NM to fld.

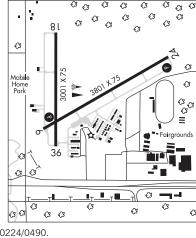
663/3W. DME unusable:

185°-200° byd 14 NM

VOR unusable:

145°-185° bvd 40 NM

336°-338° bvd 40 NM



DETROIT

L-28J. 31C

KMOP Chart Supplement

MOUNT PLEASANT MUNI (MOP)(KMOP) 2 NE UTC-5(-4DT) N43°37.30′ W84°44.24′ 755 B NOTAM FILE MOP

DETROIT H-2L, 10F, L-28J

RWY 09-27: H5000X100 (ASPH) S-50, D-65, 2S-82, 2D-118 MIRL

RWY 09: REIL. PAPI(P4L)—GA 3.0° TCH 42'. Pole.

RWY 27: REIL. PAPI(P4L)—GA 3.0° TCH 37'.

RWY 05-23: 2502X160 (TURF)

RWY 05: Tree. RWY 23: Tree.

SERVICE: FUEL 100LL, JET A+ LGT Actvt REIL Rwy 09 & 27; PAPI Rwy 27; MIRL Rwy 09–27—CTAF. PAPI Rwy 09 opr consly.

NOISE: Rwy 27 noise abatement: climb to 1500 ft AGL before turning ovr

AIRPORT REMARKS: Attended Mon–Fri 1300–2130Z‡. Deer & Irg birds on & invof arpt. 100LL fuel avbl H24 self svc via credit card. For svc aft hrs call 989–779–5475 subj call–in fee. Ramp fee for all coml acft – waived with 50 gallon mnm fuel purchase. Rwy 05–23 clsd Nov–Mar and when snow covd–no snow removal. Rwy end 05 mkg type: 3 ft yellow cones. Rwy end 23 mkg type: 3 ft yellow cones. Admin bldg aces: press V, then II–III simul, then I. Gate aces: 1–2–3–4.

AIRPORT MANAGER: 989-772-2965

WEATHER DATA SOURCES: AWOS-3 133.025 (989) 773-2885.

COMMUNICATIONS: CTAF/UNICOM 123.0

RCO 122.6 (LANSING RADIO)

R GREAT LAKES APP/DEP CON 126.45 (1030–0500Z‡)

® CLEVELAND CENTER APP/DEP CON 127.7 when Great Lakes apch ctl clsd.

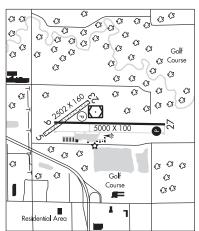
CLEARANCE DELIVERY PHONE: For CD ctc Great Lakes Apch at 269-459-3345, when Apch clsd ctc Cleveland ARTCC at 440-774-0224/0490.

RADIO AIDS TO NAVIGATION: NOTAM FILE MOP.

(L) (L) VORW/DME 110.6 MOP Chan 43 N43°37.37′ W84°44.24′ at fld. 752/5W.

DME unusable:

Byd 33 NM blo 4,000



Bonus Resources

For additional resources, visit the IFR Mastery Hangar for this scenario.

KAMN Chart Supplement

754 B NOTAM FILE AMN

RWY 09–27: H5004X75 (ASPH–GRVD) S–40, D–65, 2S–82 MIRL

GRATIOT COMMUNITY (AMN)(KAMN) 3 SW UTC-5(-4DT) N43°19.33´ W84°41.28´

RWY 09: REIL. PAPI(P4L)—GA 3.0° TCH 40′. Tree. **RWY 27:** REIL. PAPI(P4L)—GA 3.0° TCH 40′.

RWY 18–36: H3198X75 (ASPH–GRVD) S–26 MIRL **RWY 18**: Tree.

ERVICE: FUEL 100LL, JET A+ LGT Actvt REIL Rwy 09 & 27; PAPI Rwy 09 & 27; MIRL Rwy 09–27 & 18–36—CTAF.

AIRPORT REMARKS: Attended Mon–Sat 1330–1930Z‡. Deer and Irg birds on & invof arpt. Admin bldg aces, press V, then III & II simul, then I.

AIRPORT MANAGER: 989-463-5500

WEATHER DATA SOURCES: AWOS-3P 124.175 (989) 463-3433.

COMMUNICATIONS: CTAF/UNICOM 122.8

(1030-0500Z‡)

© CLEVELAND CENTER APP/DEP CON 126.75 (0500–1030Z‡)

CLEARANCE DELIVERY PHONE: For CD ctc Great Lakes Apch at 269-459-3345, when Apch clsd ctc Cleveland ARTCC at 440-774-0224/0490.

RADIO AIDS TO NAVIGATION: NOTAM FILE MBS.

SAGINAW (VL) (DH) VORW/DME 114.35 MBS Chan 90(Y)

N43°31.90′ W84°04.64′ 248° 29.5 NM to fld. 663/3W

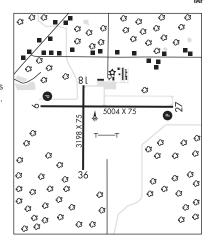
DME unusable:

185°-200° byd 14 NM

VOR unusable:

145°-185° byd 40 NM

336°-338° byd 40 NM



DETROIT L-28J