GPS JAMMING OVER NEBRASKA

SCENARIO

One of the funny things a pilot learns over years of GPS use is that there's more than one way to accomplish the same task. There are also ways to complete a flight if the GPS is completely out of the picture. But what if the GPS is partially inoperative? Is there a clever solution?

CHOICES

CHOICE 1

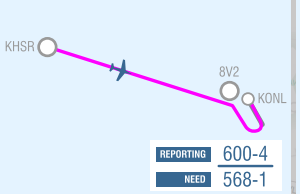
Keep going to Atkinson (8V2) with plans to fly the RNAV (GPS) Rwy 11.

CHOICE 2

Change destination to Ainsworth (KANW) for the VOR Rwy 35 Approach.

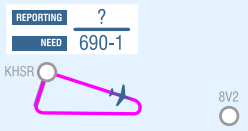
CHOICE 3

Change destination to O'Neill (KONL) for the VOR Rwy 31 Approach.



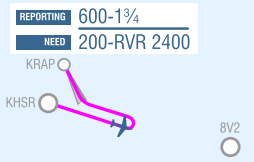
CHOICE 4

Return to Hot Springs (KHSR) for the RNAV (GPS) Rwy 1 Approach.



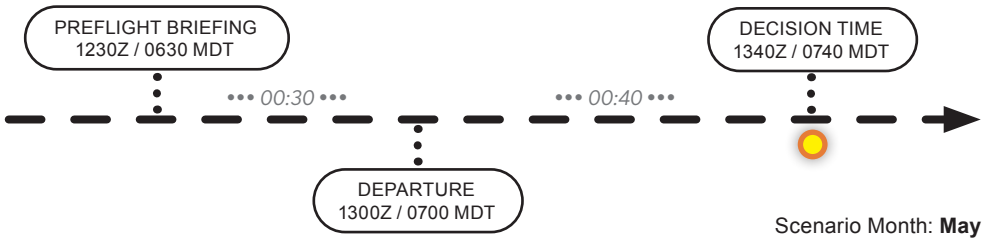
CHOICE 5

Divert to Rapid City (KRAP) for the ILS Rwy 32. Don't worry about the GPS requirement.



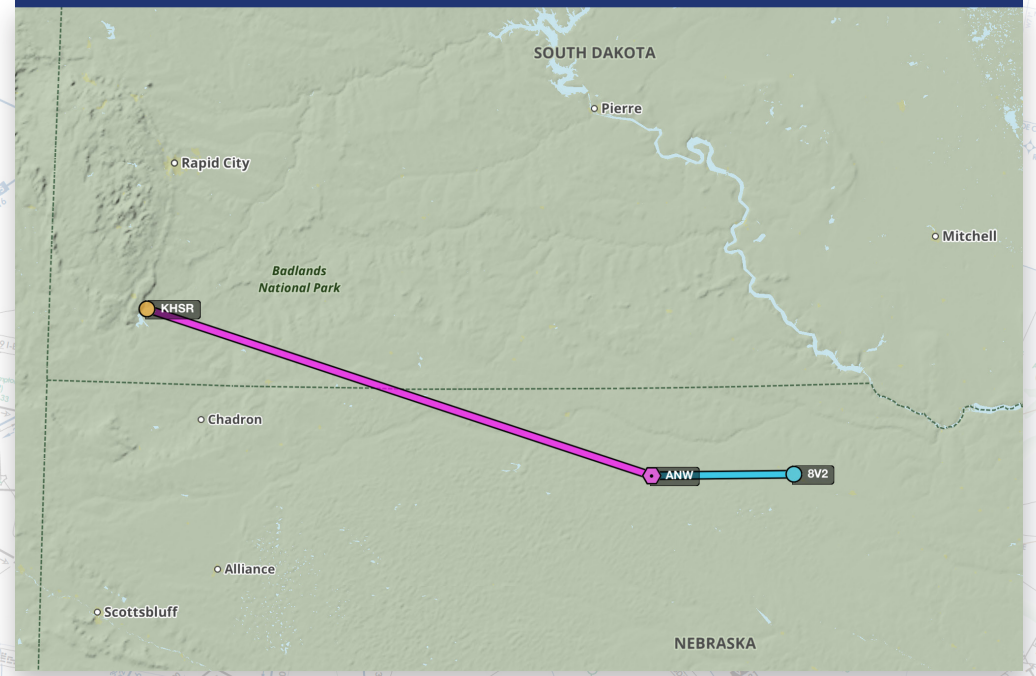
PILOT WORKSHOPS

Timeline



Scenario Month: **May**

Scenario Area



Flight Planning Information

Aircraft Piper PA-24-250 Comanche	***Estimated Flight Time*** (hh:mm) 01:26	
Cruise Altitude 7000 feet	***Fuel on Board*** (hh:mm) 06:30	
Cruise Speed 150 KTS	***Number Aboard*** 2	
Departure KHSR	***Destination*** 8V2	***Alternate*** KSUX
Route ANW		

Pilot Experience

Total Time: 603 hours
Time in Type: 285 hours
Instrument-rated

METARs and TAFs (Preflight)

Departure

KHSR - no wx reporting

KRAP (Departure Alternate) – 43 nm N

```
KRAP 141152Z 02010KT 5SM RA BR SCT004 BKN008 OVC023 10/10
    A3045 RMK AO2 CIG 006V010
TAF KRAP 141120Z 1412/1512 01011KT 3SM -SHRA BR BKN004
  FM141800 02012KT P6SM BKN015
  FM142100 04011KT P6SM BKN025
  FM150500 VRB04KT 3SM BR FEW002 BKN025
```

Enroute

```
KVTN 141152Z AUTO 01012KT 5SM BR OVC005 11/09 A3034
TAF KVTN 141120Z 1412/1512 01013KT 3SM BR VCSH OVC006
  TEMPO 1412/1416 OVC004
  FM141700 02012KT 2SM -SHRA BR OVC006
  FM150000 36008KT 4SM BR OVC008
KANW 141155Z AUTO 03010KT 3SM BR OVC003 11/11 A3031
```

Destination

8V2 - no wx reporting

KONL - 17 nm SE

```
KONL 141155Z 36012G19KT 2 1/2SM BR OVC003 12/11 A3027
```

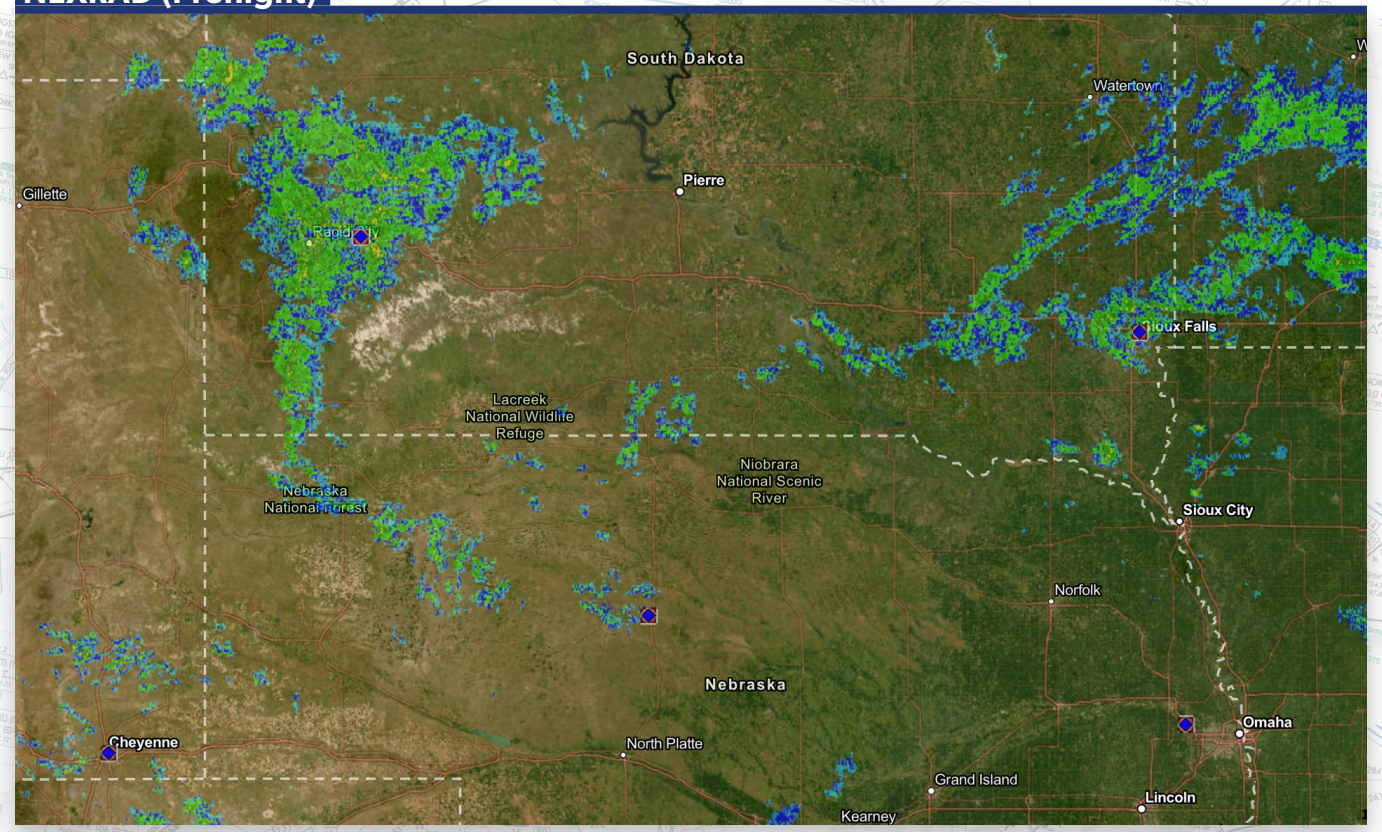
KOFK TAF - 79 nm E

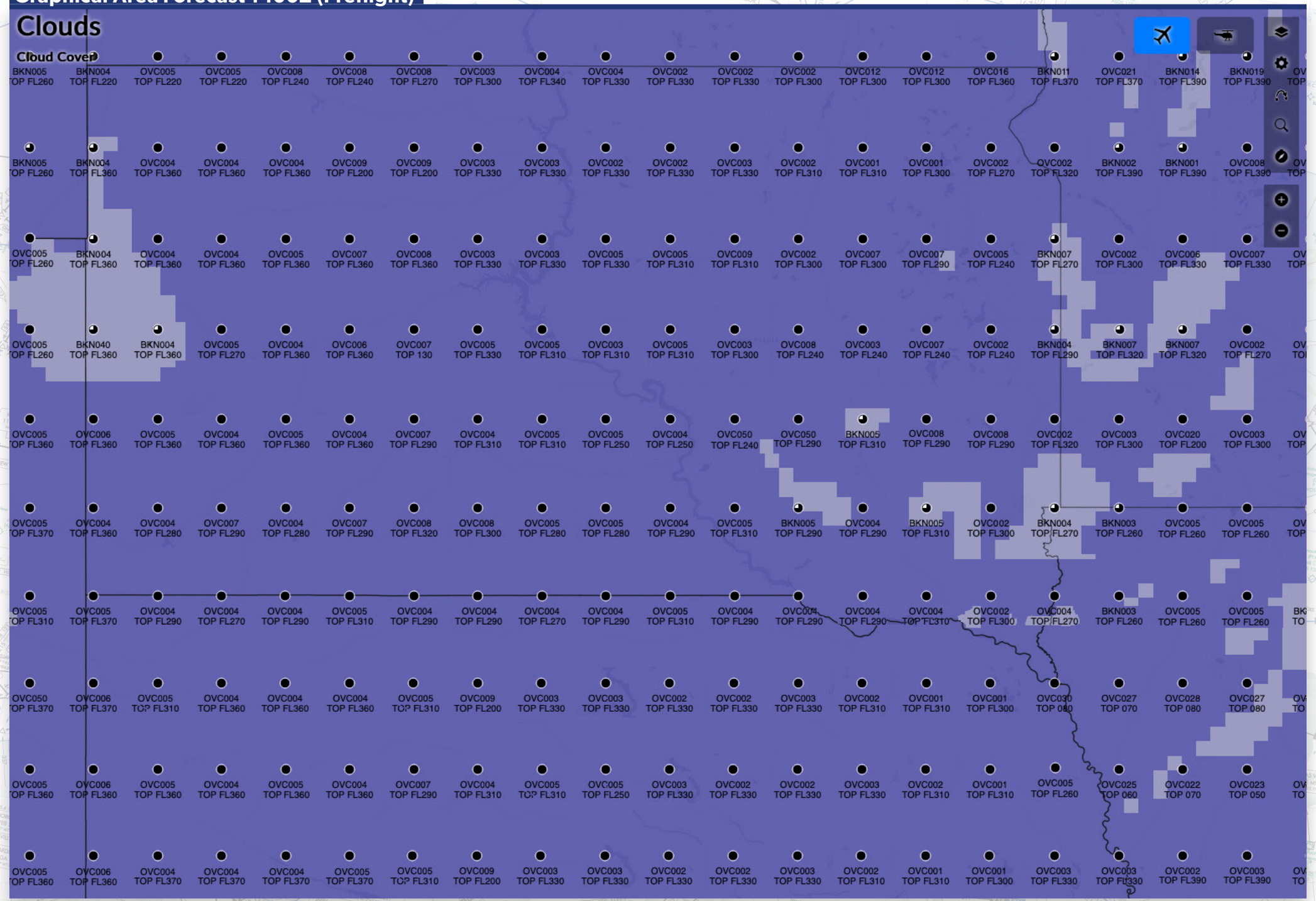
```
TAF KOFK 141120Z 1412/1512 01010KT 5SM BR OVC007
  FM141700 04012G20KT 4SM BR OVC006
  TEMPO 1417/1420 3SM -RA OVC004
  FM150300 05010KT 4SM BR OVC003
```

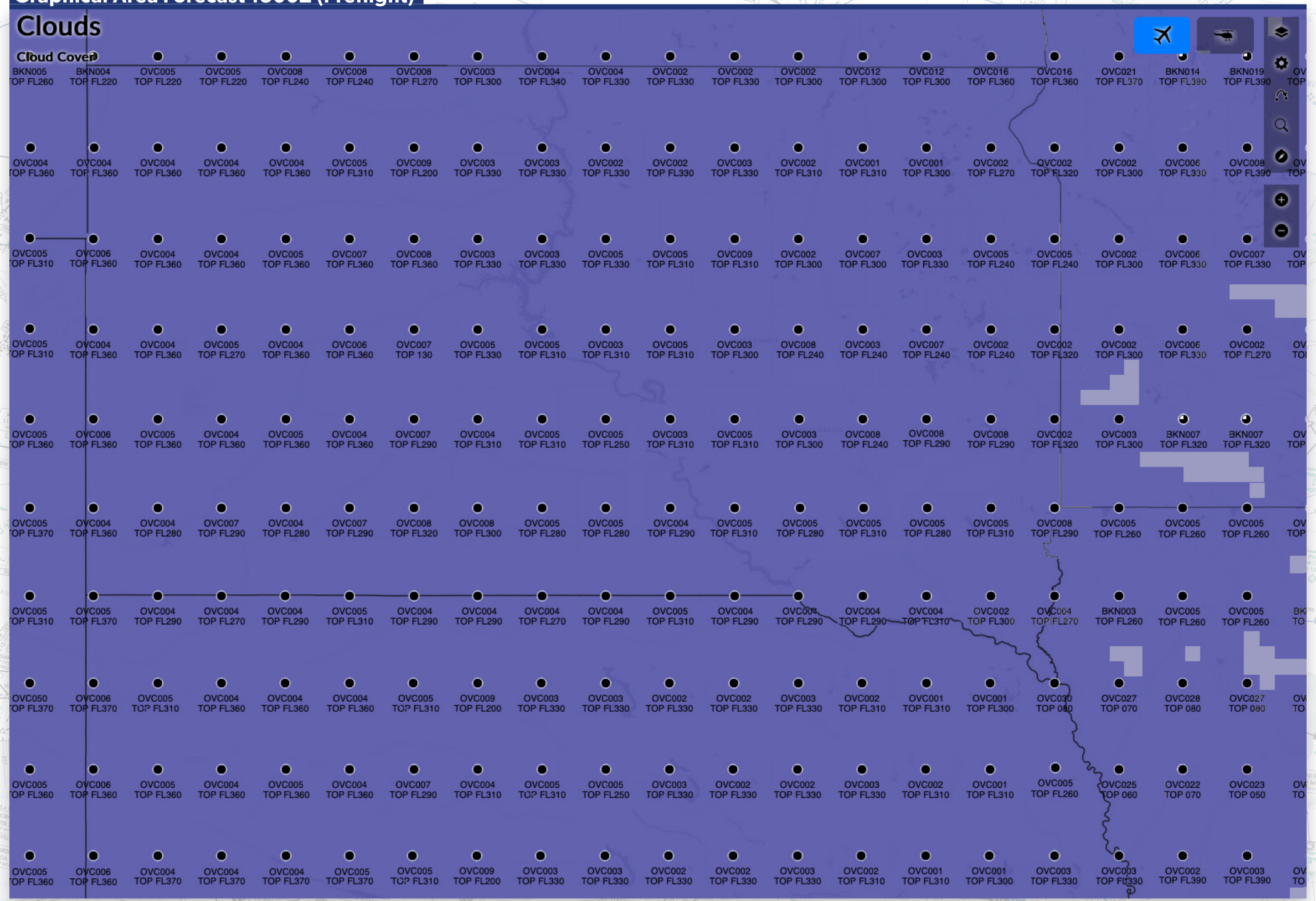
KSUX TAF - 118 nm E

```
TAF KSUX 141124Z 1412/1512 34011G17KT P6SM OVC012
  FM141500 06013G22KT 6SM BR OVC010
  FM142200 05013G23KT P6SM VCSH OVC006
  FM150100 05013G22KT P6SM OVC008
  FM150600 05011G19KT P6SM OVC012
```

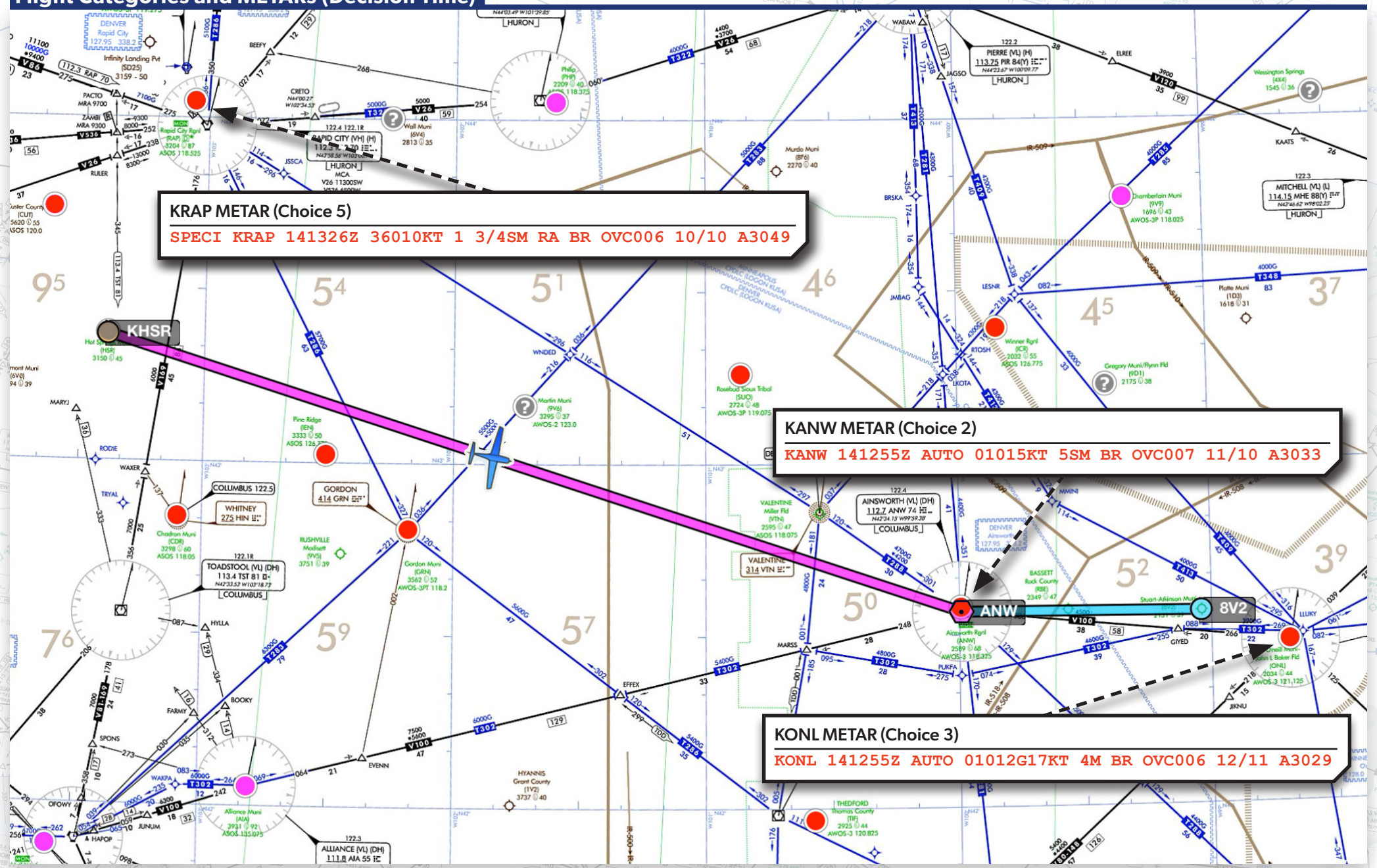
NEXRAD (Preflight)




Clouds
Cloud Cover


Clouds
Cloud Cover

Flight Categories and METARs (Decision Time)



KSUX METAR (240 NM E from aircraft present position)

KSUX 141252Z 34011KT 10SM OVC013 13/10 A3028

Garmin GNS 430W at Decision Time

Garmin GNS 430W Key and Knob Functions

TAKEOFF TOUR
Key and Knob Functions

Key and Knob Functions

The 400W-series unit is designed to make operation as simple as possible. The key and knob descriptions on the next three pages provide a general overview of the primary function(s) for each key and knob. This Takeoff Tour section is intended to provide a brief overview of the primary functions of your 400W-series unit. Experiment with the unit and refer to the Reference sections for more information.

Left-hand Keys and Knobs

Left-hand Keys and Knobs

The **COM power/volume** knob (420W/430W only) controls unit power and communications radio volume. Press momentarily to disable automatic squelch control. In the GPS 400W, this control is used only for power.

The **VLOC volume** knob (430W only) controls audio volume for the selected VOR/Localizer frequency. Press momentarily to enable/disable the ident tone.

The **large left** knob (COM/VLOC) (420W/430W only) is used to tune the megahertz (MHz) value (to the left of the decimal point) of the standby frequency for the communications transceiver (COM) or the VLOC receiver, whichever is currently selected by the tuning cursor.

The **small left** knob (COM/VLOC) (420W/430W only) is used to tune the kilohertz (kHz) value (to the right of the decimal point) of the standby frequency for the communications transceiver (COM) or the VLOC receiver, whichever is currently selected by the tuning cursor. Press this knob momentarily to toggle the tuning cursor between the COM and VLOC frequency fields.

The **COM flip-flop** key (420W/430W only) is used to swap the active and standby COM frequencies. Press and hold to select emergency channel (121.500 MHz).

The **VLOC flip-flop** key (430W only) is used to swap the active and standby VLOC frequencies (i.e., make the selected standby frequency active).

Right-hand Keys and Knobs

Right-hand Keys and Knobs

RNG The **range** key (**RNG**) allows you to select the desired map scale. Use the up arrow side of the key to zoom out to a larger area, or the down arrow side to zoom in to a smaller area.

The **direct-to** key provides access to the direct-to function, which allows you to enter a destination waypoint and establishes a direct course to the selected destination. See Section 3.

MENU The **MENU** key displays a context-sensitive list of options. This options list allows you to access additional features or make settings changes which relate to the currently displayed page.

CLR The **clear** key (**CLR**) is used to erase information or cancel an entry. Press and hold this key to immediately display the Default Navigation Page, regardless of which page is currently displayed.

ENT The **enter** key (**ENT**) is used to approve an operation or complete data entry. It is also used to confirm information, such as during power on.

The **large right** knob is used to select between the various page groups: NAV, WPT, AUX or NRST. With the on-screen cursor enabled, the large right knob allows you to move the cursor about the page.

The **small right** knob (CRSR) is used to select between the various pages within one of the groups listed above. Press this knob momentarily to display the on-screen cursor. The cursor allows you to enter data and/or make a selection from a list of options.

Bottom Row Keys

NRST The **nearest** (**NRST**) key (400W/420W only) displays the nearest airports page. Then, turning the **small right** knob steps through the NRST pages.

CDI The **CDI** key (430W only) is used to toggle which navigation source (GPS or VLOC) provides output to an external HSI or CDI.

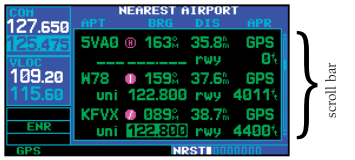
OBS The **OBS** key is used to select manual or automatic sequencing of waypoints. Pressing the **OBS** key selects OBS mode, which will retain the current "active to" waypoint as your navigation reference even after passing the waypoint (i.e., prevents sequencing to the next waypoint). Pressing the **OBS** key again will return to normal operation, with automatic sequencing of waypoints. Whenever OBS mode is selected, you may set the desired course to/from a waypoint using the OBS Page, or an external OBS selector on your HSI or CDI.

MSG The **message** key (**MSG**) is used to view system messages and important warnings and requirements. See Sections 11 and 9 for more information on messages and unit settings.

FPL The **flight plan** key (**FPL**) allows you to create, edit, activate and invert flight plans, as well as access approaches, departures and arrivals. A closest point to flight plan feature is also available from the flight plan key. See Section 4 for more information on flight plans.

GPS 400W / GNC 420W

GNS 430W



Whenever the 400W-series unit is displaying a list of information that is too long for the display screen, a scroll bar will appear along the right-hand side of the display. The scroll bar graphically indicates the number of additional items available within the selected category.

Simply press the small right knob to activate the cursor and turn the large right knob to scroll through the list.

PROC The **procedures** key (**PROC**) allows you to select and remove approaches, departures and arrivals from your flight plan. When using a flight plan, available procedures for your departure and/or arrival airport are offered automatically. Otherwise, you may select the desired airport, then the desired procedure.

8V2 RNAV (GPS) RWY 11

ATKINSON, NEBRASKA — AL-9257 (FAA) — 24361

RNAV (GPS) RWY 11
STUART-ATKINSON MUNI (8V2)

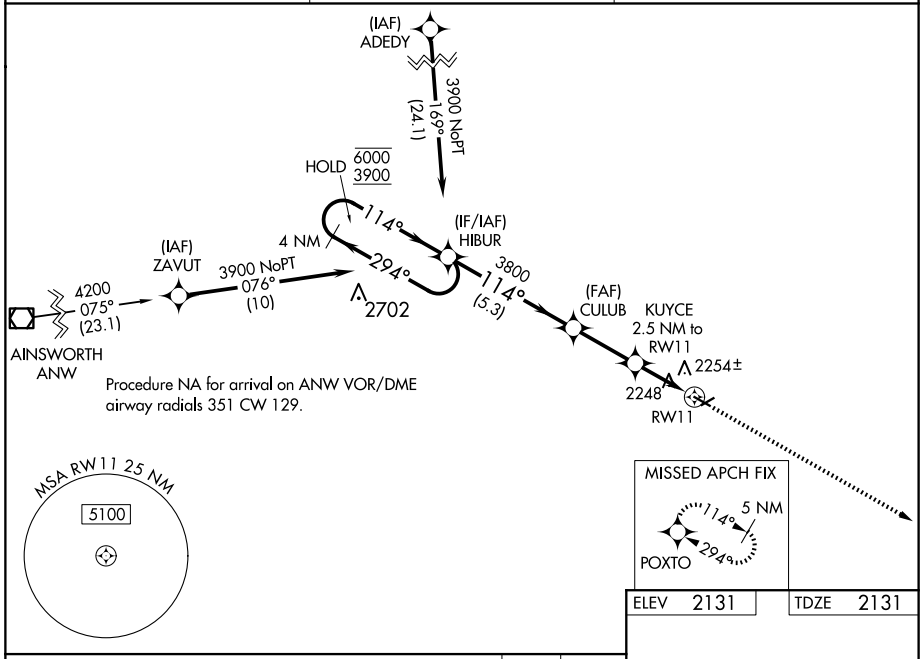
WAAS	APP CRS		
CH 69427 W11A	114°	Rwy Idg	3900
		TDZE	2131
		Apt Elev	2131

RNP APCH.

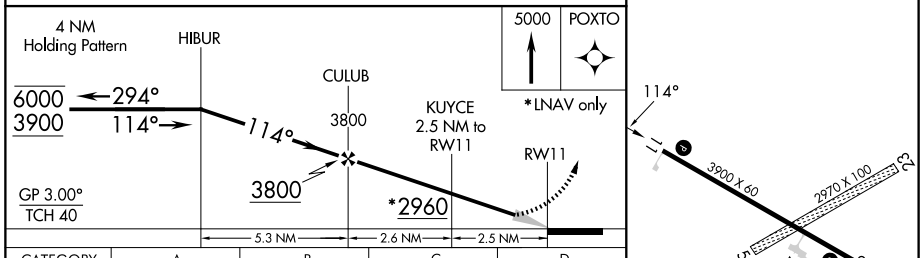
T A NA — Circling NA to Rwys 5 and 23. Baro-VNAV NA. Use O'Neill altimeter setting; when not received, use Ainsworth altimeter setting: increase LPV DA to 2547 feet and visibility all Cats to 1⅛ SM; increase LNAV/VNAV DA to 2691 feet and visibility all Cats to 1⅝ SM; increase all MDA 120 feet.

MISSED APPROACH: Climb to 5000 direct POXTO and hold, continue climb-in-hold to 5000.

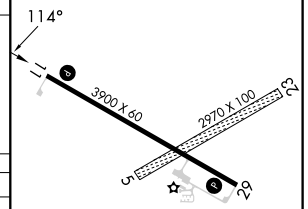
ONL AWOS-3	MINNEAPOLIS CENTER	CTAF
121.125	128.0 257.95	122.9 L



ELEV 2131 — TDZE 2131



CATEGORY	A	B	C	D
LPV DA	2433-1	302 (400-1)	NA	
LNAV/VNAV DA	2577-1⅜	446 (500-1⅜)	NA	
LNAV MDA	2560-1	429 (500-1)	NA	
CIRCLING	2620-1	2640-1	NA	
	489 (500-1)	509 (600-1)		



MIRL Rwy 11-29 L
REIL Rwys 11 and 29 L

ATKINSON, NEBRASKA
Amdt 1B 26MAR20

42°34'N-99°02'W

STUART-ATKINSON MUNI (8V2)
RNAV (GPS) RWY 11

KANW VOR RWY 35

AINSWORTH, NEBRASKA — AL-5681 (FAA) — 23110

VOR RWY 35
AINSWORTH RGNL (ANW)

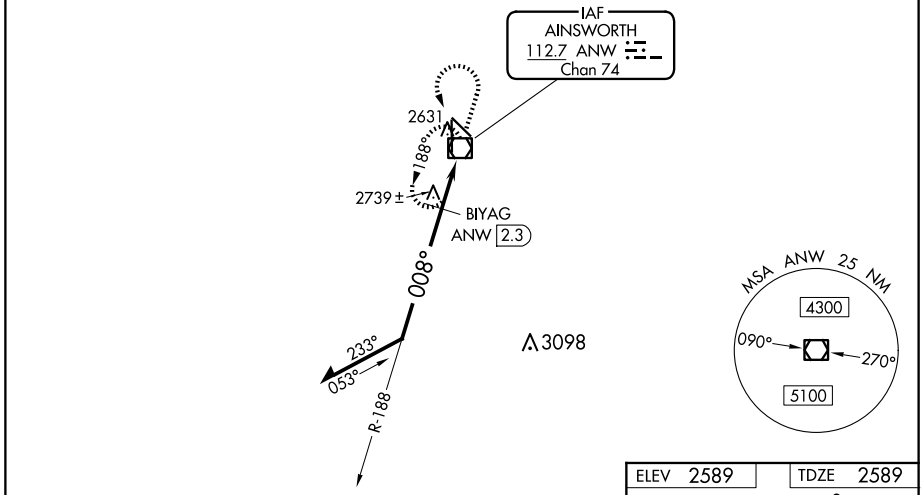
VOR/DME ANW	APP CRS		
112.7 Chan 74	008°	Rwy Idg	6824
		TDZE	2589
		Apt Elev	2589

T A When local altimeter setting not received, procedure NA. For inoperative ALS, increase BIYAG fix minimums S-35 Cat D visibility to 1¼.

MALSR

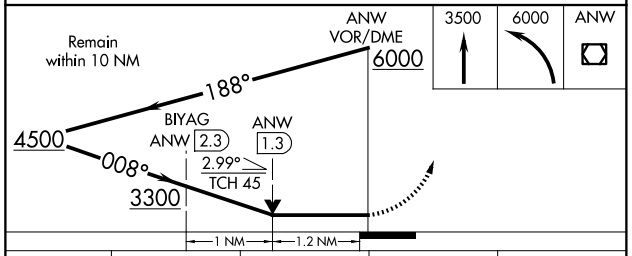
MISSED APPROACH: Climb to 3500 then climbing left turn to 6000 direct ANW VOR/DME and hold.

AWOS-3	DENVER CENTER	UNICOM
118.325	127.95 338.2	122.8 (CTAF) L

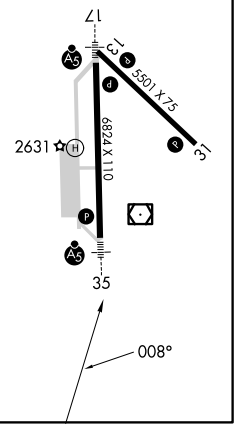


ELEV 2589 — TDZE 2589

HIRL Rwys 13-31 and 17-35 L
REIL Rwy 31 L



CATEGORY	A	B	C	D
S-35	3300-½	711 (800-½)	3300-1½ 711 (800-1½)	3300-1¾ 711 (800-1¾)
C CIRCLING	3300-1	711 (800-1)	3300-2 711 (800-2)	3300-2¼ 711 (800-2¼)
BIYAG FIX MINIMUMS (DME REQUIRED)				
S-35	3000-½	411 (500-½)	3000-¾ 411 (500-¾)	3000-1 411 (500-1)
C CIRCLING	3000-1 411 (500-1)	3040-1 451 (500-1)	3040-1½ 451 (500-1½)	3200-2 611 (700-2)



AINSWORTH, NEBRASKA
Amdt 4B 08OCT20

42°35'N-100°00'W

AINSWORTH RGNL (ANW)
VOR RWY 35

KONL VOR RWY 31

O'NEILL, NEBRASKA — AL-5515 (FAA) — 22307

VORTAC ONL 113.9 Chan 86	APP CRS 318°	Rwy Idg 4408 / TDZE 2032 / Apt Elev 2034

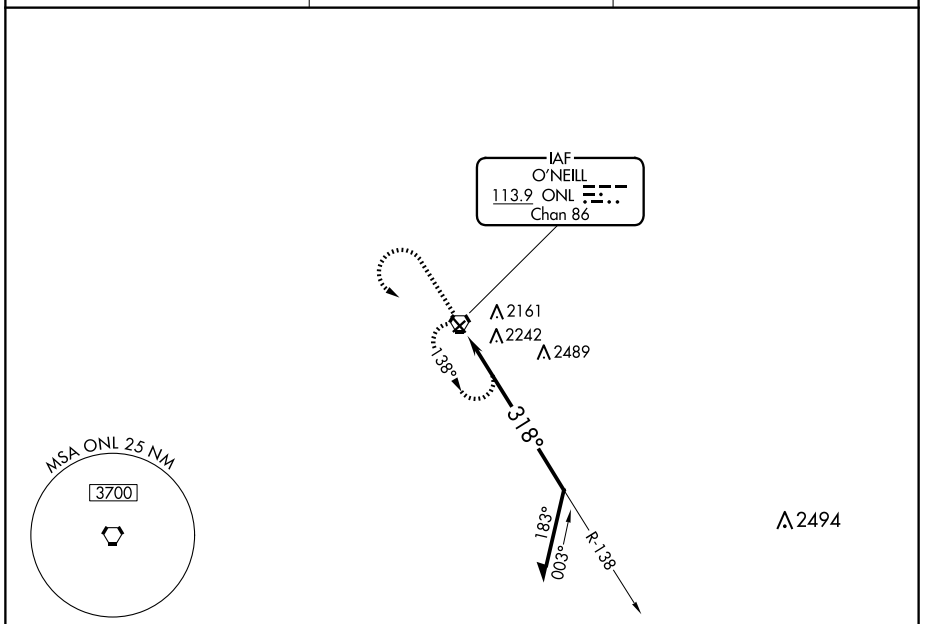
VOR RWY 31

THE O'NEILL MUNI-JOHN L BAKER FLD (ONL)

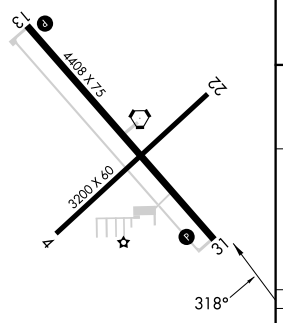
Night landing: Rwy 4, 22 NA.

MISSED APPROACH: Climb to 3600 then left turn direct ONL VORTAC and hold.

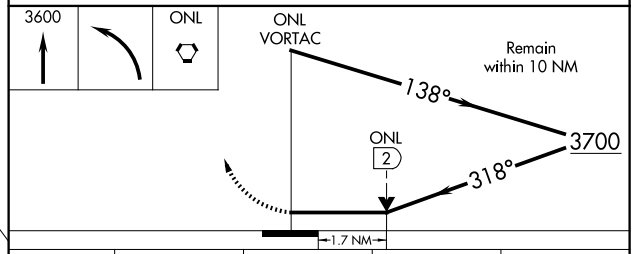
AWOS-3	MINNEAPOLIS CENTER	UNICOM
121.125	128.0 257.95	122.8 (CTAF) L



ELEV 2034 — TDZE 2032



REIL Rwys 13 and 31 L
MIRL Rwy 13-31 L



CATEGORY	A	B	C	D
S-31	2600-1	568 (600-1)	2600-1⅝	568 (600-1⅝)
C CIRCLING	2600-1	566 (600-1)	2680-1¾ 646 (700-1¾)	2840-2½ 806 (900-2½)

O'NEILL, NEBRASKA
Amdt 1E 19MAY22

THE O'NEILL MUNI-JOHN L BAKER FLD (ONL)
42°28'N-98°41'W
VOR RWY 31

KHSR RNAV (GPS) RWY 1

HOT SPRINGS, SOUTH DAKOTA — AL-904 (FAA) — 22251

WAAS CH 99628 W01A	APP CRS 012°	Rwy Idg 4506 / TDZE 3150 / Apt Elev 3150

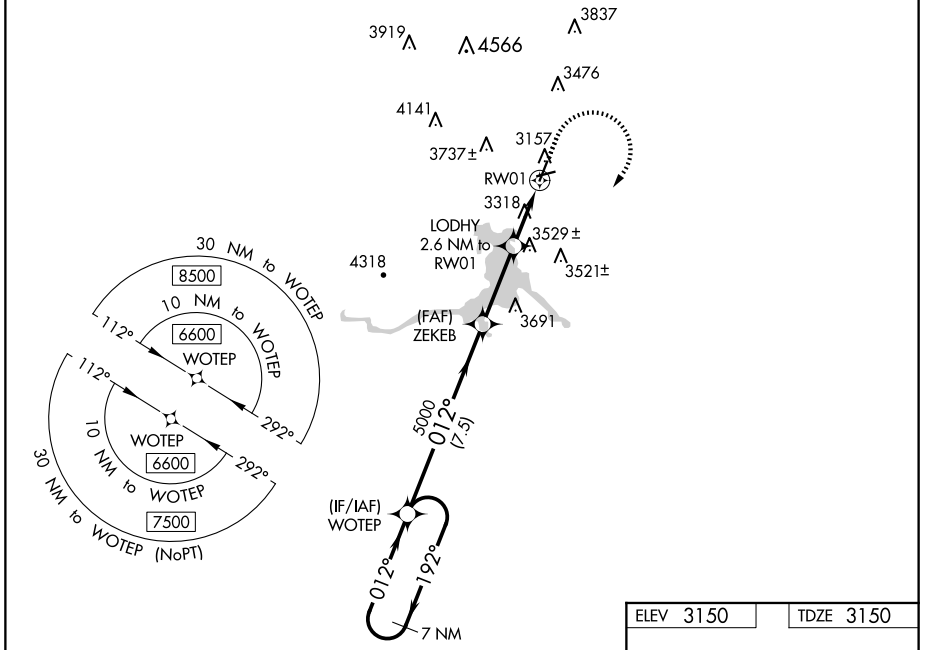
RNAV (GPS) RWY 1

HOT SPRINGS MUNI (HSR)

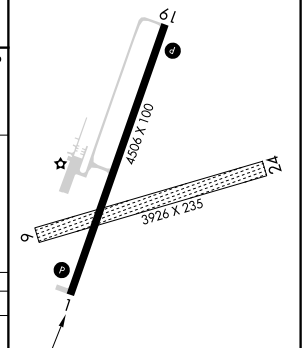
NA Rwy 1 helicopter visibility reduction below ¾ NA. DME/DME RNP-0.3 NA. Circling NA west of Rwy 1-19. Use Chadron, NE altimeter setting, when not received use Rapid City Rgnl altimeter setting and increase all MDA 20 feet, increase LNAV Cat B visibility ¼ mile. Circling NA to Rwy 6 and 24.

MISSED APPROACH: Climb to 3900, then climbing right turn to 6600 direct WOTEP and hold.

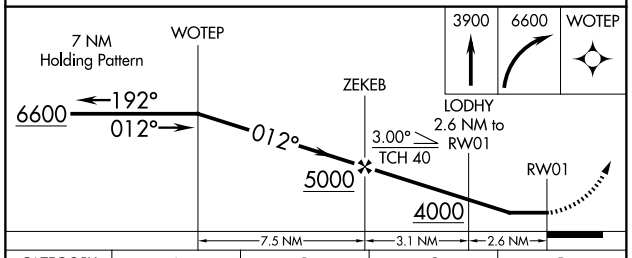
CDR ASOS	DENVER CENTER	GCO	AUNICOM
118.05	127.95 338.2	121.725	122.8 (CTAF) L



ELEV 3150 — TDZE 3150



MIRL Rwy 1-19 L



CATEGORY	A	B	C	D
LP MDA	3840-1	690 (700-1)	3840-2	690 (700-2)
LNAV MDA	3880-1	730 (800-1)	3880-2	730 (800-2)
C CIRCLING	3880-1 730 (800-1)	3900-1 750 (800-1)	3980-2½ 830 (900-2½)	4100-3 950 (1000-3)

HOT SPRINGS, SOUTH DAKOTA
Orig-B 29MAR18

43°22'N-103°23'W

HOT SPRINGS MUNI (HSR)
RNAV (GPS) RWY 1

KRAP ILS or LOC RWY 32

RAPID CITY, SOUTH DAKOTA | AL-877 (FAA) | 23166

LOC/DME I-RAP	APP CRS	Rwy Idg	8701
109.3 Chan 30	324°	TDZE	3160
		Apt Elev	3204

ILS or LOC RWY 32

RAPID CITY RGNL (RAP)

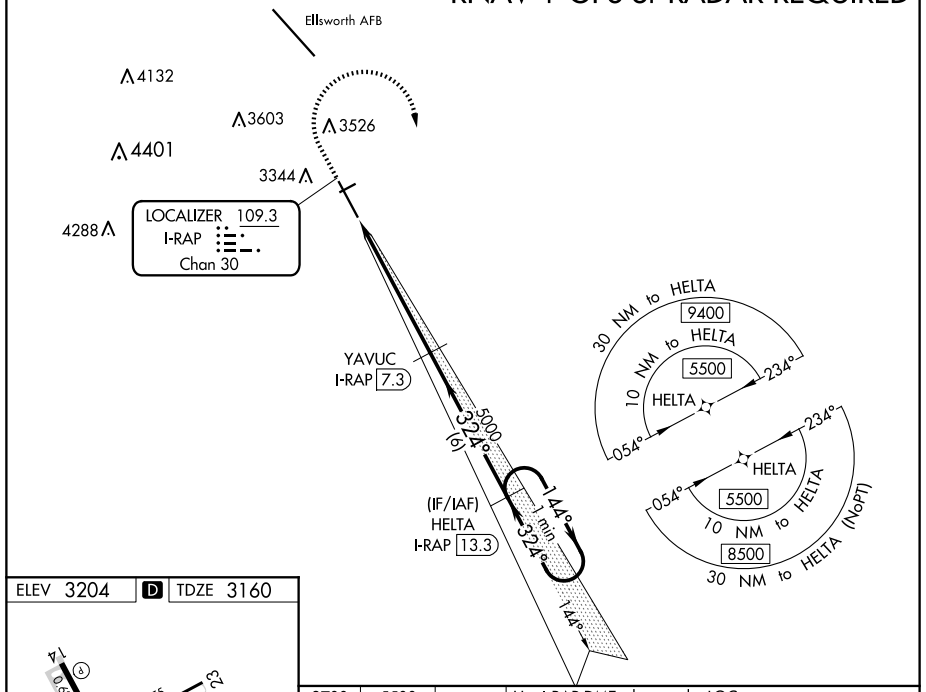
DME and RNAV 1-GPS required. ILS glideslope unusable for coupled approaches below 3360. For inop ALS, increase S-ILS Cat E visibility to RVR 4000 and S-LOC Cat E visibility to 1⅜ SM. # RVR 1800 authorized with use of FD or AP or HUD to DA.

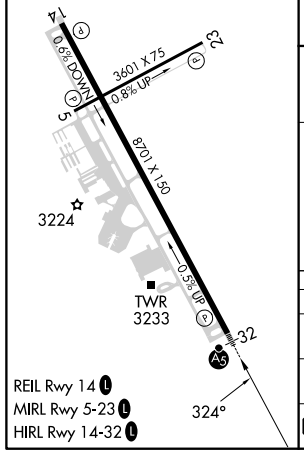
MALSR

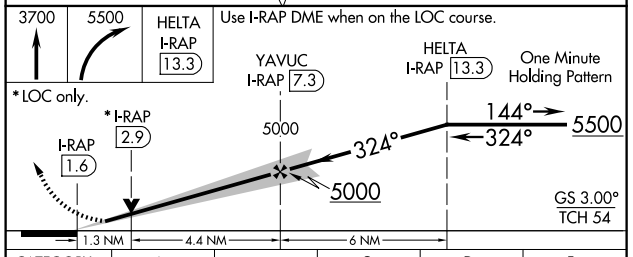
MISSED APPROACH: Climb to 3700 then climbing right turn to 5500 direct HELTA and hold.

ASOS	ELLSWORTH APP CON *	RAPID CITY TOWER *	GND CON	UNICOM
118.525	119.5 259.1	125.85 (CTAF) L 257.8	121.9	122.95

RNAV 1-GPS or RADAR REQUIRED







CATEGORY	A	B	C	D	E
S-ILS 32 #	3360/24 200 (200-½)				
S-LOC 32	3620/24 460 (500-½)		3620/45 460 (500-⅞)		
C CIRCLING	3660-1 456 (500-1)	3840-1 636 (700-1)	3860-1¾ 656 (700-1¾)	3940-2¼ 736 (800-2¼)	3960-2¾ 756 (800-2¾)

RAPID CITY, SOUTH DAKOTA
Amdt 21A 07DEC17

44°03'N-103°03'W

RAPID CITY RGNL (RAP)

ILS or LOC RWY 32

KSUX ILS or LOC RWY 31

SIOUX CITY, IOWA | AL-395 (FAA) | 25107

LOC/DME I-SUX	APP CRS	Rwy Idg	9002
109.3 Chan 30	313°	TDZE	1096
		Apt Elev	1098

ILS or LOC RWY 31

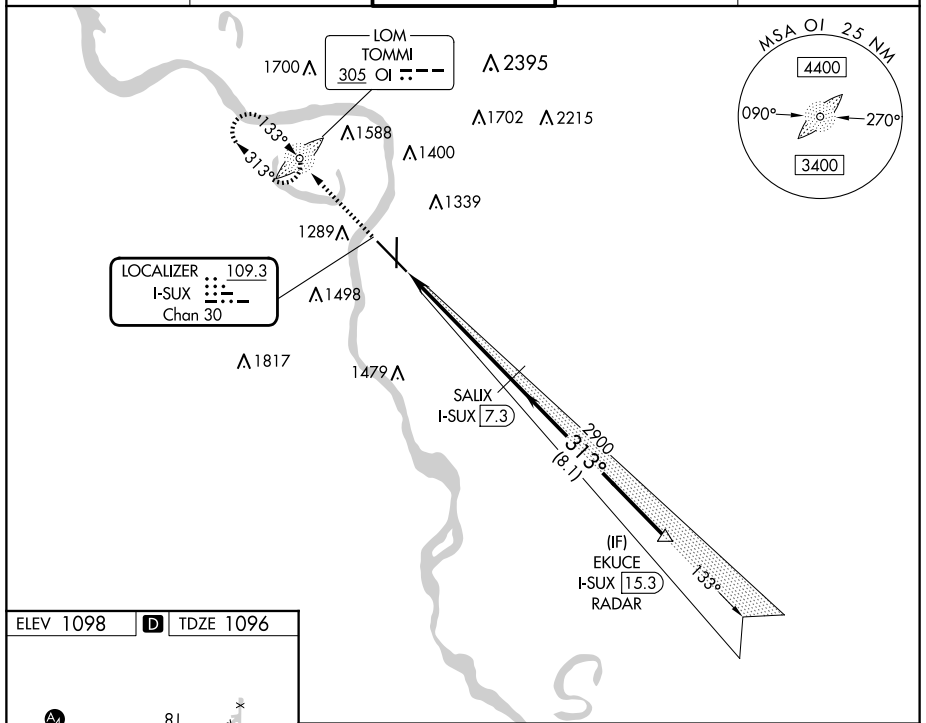
SIOUX GATEWAY/BRIG GENERAL BUD DAY FLD (SUX)

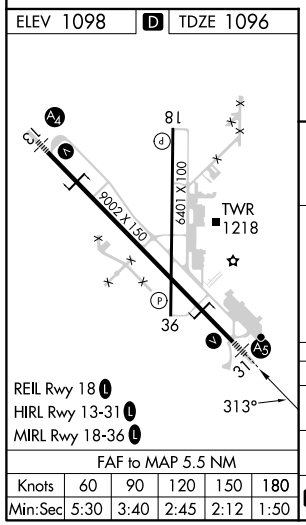
ADF required. DME required for LOC only. RADAR required for procedure entry. Autopilot coupled approach NA below 2025 MSL. For inop ALS, increase S-ILS 31 Cat E visibility to RVR 4000 and S-LOC 31 Cat E to 1⅜ SM. *RVR 1800 authorized with use of FD or AP or HUD to DA.

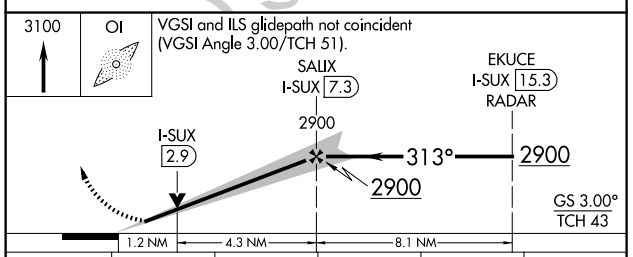
MALSR

MISSED APPROACH: Climb to 3100 direct TOMMI LOM and hold, continue climb-in-hold to 3100.

ATIS	SIOUX CITY APP CON *	SIOUX CITY TOWER *	GND CON	UNICOM
119.45 270.8	124.6 307.0	118.7 (CTAF) L 254.3	121.9 348.6	122.95







FAF to MAP 5.5 NM

Knots	60	90	120	150	180
Min:Sec	5:30	3:40	2:45	2:12	1:50

CATEGORY	A	B	C	D	E
S-ILS 31*	1296/24 200 (200-½)				
S-LOC 31	1540/24 444 (500-½)		1540/45 444 (500-⅞)		
C CIRCLING	1640-1 542 (600-1)	1700-1 602 (700-1)	1700-1¾ 602 (700-1¾)	1860-2½ 762 (800-2½)	1940-3 842 (900-3)

SIOUX CITY, IOWA
Amdt 27 24MAR22

42°24'N-96°23'W

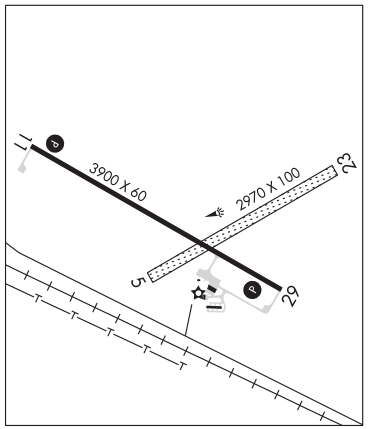
SIOUX GATEWAY/BRIG GENERAL BUD DAY FLD (SUX)

ILS or LOC RWY 31

Sectional Chart (Highway between KONL and 8V2)

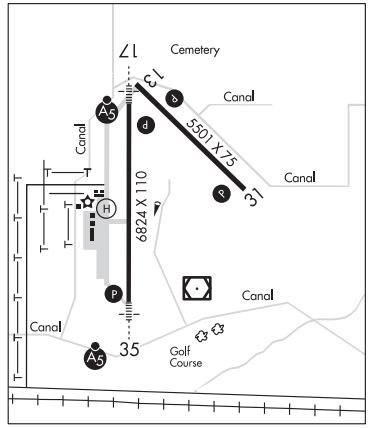
8V2 Chart Supplement

STUART–ATKINSON MUNI (8V2) 3 NW UTC–6(–5DT) N42°33.76′ W99°02.33′ **OMAHA**
2131 B NOTAM FILE OLU **L–12H**
RWY 11–29: H3900X60 (CONC) S–12.5 MIRL **IAP**
RWY 11: REIL. PAPI(P2L)—GA 3.0° TCH 40′.
RWY 29: REIL. PAPI(P2L)—GA 3.0° TCH 40′.
RWY 05–23: 2970X100 (TURF)
SERVICE: **FUEL** 100LL **LGT** ACTVT REIL Rwy 11 and Rwy 29; PAPI Rwy 11–29; MIRL Rwy 11–29 preset med intst SS–SR, to incr intst and ACTVT—CTAF.
AIRPORT REMARKS: Unattended. For fuel call 402–925–5527 or 402–340–0388. Rwy 05–23 narrowed to 100′, centerline stayed the same. NSTD markings, Rwy 05–23 marked with yellow cones.
AIRPORT MANAGER: 402-340-0388
COMMUNICATIONS: CTAF 122.9
Ⓡ**MINNEAPOLIS CENTER APP/DEP CON** 128.0
CLEARANCE DELIVERY PHONE: For CD ctc Minneapolis ARTCC at 651-463-5588.
RADIO AIDS TO NAVIGATION: NOTAM FILE ONL.
O'NEILL (H) (H) VORTACW 113.9 ONL Chan 86 N42°28.23′ W98°41.22′ 280° 16.6 NM to fld. 2028/10E.



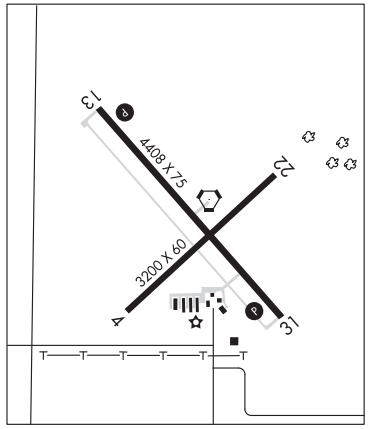
KANW Chart Supplement

AINSWORTH RGNL (ANW)(KANW) 6 NW UTC–6(–5DT) N42°34.75′ W99°59.58′ **OMAHA**
2589 B NOTAM FILE ANW MON Airport **H–5B, L–12H**
RWY 17–35: H6824X110 (ASPH) S–30, D–45 HIRL **IAP**
RWY 17: MALSR. PAPI(P4L)—GA 3.0° TCH 46′. Berm.
RWY 35: MALSR. PAPI(P4L)—GA 3.0° TCH 45′. Trees.
RWY 13–31: H5501X75 (ASPH) S–24, D–36 HIRL
RWY 13: PAPI(P2L)—GA 3.0° TCH 50′.
RWY 31: REIL. PAPI(P2L)—GA 3.0° TCH 52′.
SERVICE: **FUEL** 100LL, JET A **LGT** ACTVT MALSR Rwy 17 and 35; REIL Rwy 31; PAPI Rwy 13 and 31, 17 and 35; and HIRL Rwy 13–31 and Rwy 17–35—CTAF.
AIRPORT REMARKS: Attended Mon–Fri 1400–2300Z‡. For svc after hrs call 402–387–1255. 24 hr self svc fuel avbl via credit card system. Seasonal migratory waterfowl on and invof arpt.
AIRPORT MANAGER: 402-387-1491
WEATHER DATA SOURCES: AWOS–3 118.325 (402) 387–2329.
COMMUNICATIONS: CTAF/UNICOM 122.8
RCO 122.4 (COLUMBUS RADIO)
Ⓡ**DENVER CENTER APP/DEP CON** 127.95
CLEARANCE DELIVERY PHONE: For CD ctc Denver ARTCC on freq. If una, ctc FSS on freq via rco. If una, ctc Denver ARTCC at 303-651-4257.
AIRSPACE: CLASS E.
RADIO AIDS TO NAVIGATION: NOTAM FILE ANW.
(VL) (DH) VORW/DME 112.7 ANW Chan 74 N42°34.15′ W99°59.38′ at fld. 2605/9E.
VOR unusable:
022°–024° byd 40 NM
230°–233° byd 40 NM
HELIPAD H1: H50X50 (ASPH)
HELIPORT REMARKS: Helipad for refueling only—not avbl for instrument approaches.



KONL Chart Supplement

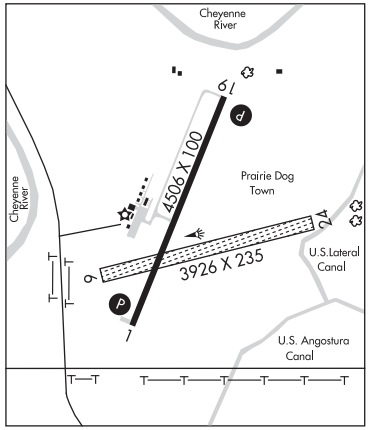
THE O'NEILL MUNI–JOHN L BAKER FLD (ONL)(KONL) 2 NW UTC–6(–5DT) N42°28.16′ W98°41.27′ **OMAHA**
2034 B NOTAM FILE ONL **L–12H**
RWY 13–31: H4408X75 (CONC) S–30 MIRL **IAP**
RWY 13: REIL. PAPI(P2L)—GA 3.0° TCH 40′.
RWY 31: REIL. PAPI(P2L)—GA 3.0° TCH 40′.
RWY 04–22: H3200X60 (CONC)
SERVICE: S4 **FUEL** 100LL, JET A+ **LGT** ACTIVATE REIL Rwy 13 and Rwy 31; PAPI Rwy 13 and Rwy 31; MIRL Rwy 13–31—CTAF.
AIRPORT REMARKS: Attended continuously. Watch for large flocks of waterfowl during migration seasons (Feb & Oct). For aft hrs svc call 402–336–6582.
AIRPORT MANAGER: 402-336-6582
WEATHER DATA SOURCES: AWOS–3 121.125 (402) 336–4834.
COMMUNICATIONS: CTAF/UNICOM 122.8
O'NEILL RCO 122.6 (COLUMBUS RADIO)
Ⓡ**MINNEAPOLIS CENTER APP/DEP CON** 128.0
CLEARANCE DELIVERY PHONE: For CD if una to ctc on FSS freq, ctc Minneapolis ARTCC at 651-463-5588.
RADIO AIDS TO NAVIGATION: NOTAM FILE ONL.
O'NEILL (H) (H) VORTACW 113.9 ONL Chan 86 N42°28.23′ W98°41.22′ at fld. 2028/10E.



KHSR Chart Supplement

HOT SPRINGS MUNI (HSR)(KHSR) 5 SE UTC–7(–6DT) N43°22.10′ W103°23.30′ **CHEYENNE**
3150 B NOTAM FILE HON **L–12G**
IAP

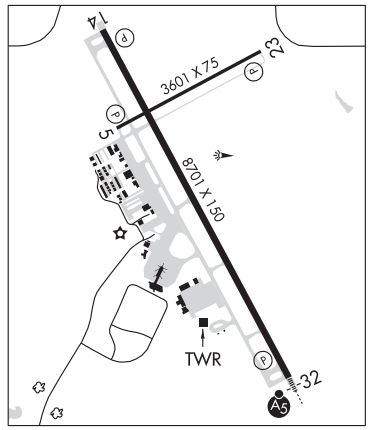
RWY 01–19: H4506X100 (ASPH) S–12.5 MIRL
RWY 01: PAPI(P2L)—GA 3.0° TCH 38′. Trees.
RWY 19: PAPI(P2L)—GA 3.0° TCH 41′. Tree.
RWY 06–24: 3926X235 (TURF)
SERVICE: S4 **FUEL** 100LL **LGT** ACTVT PAPI Rwy 01 and 19; MIRL Rwy 01–19—CTAF.
AIRPORT REMARKS: Attended Mon–Fri 1500–0000Z‡. Birds on and invof arpt. Glider ops on and invof arpt. Fuel avbl 24 hrs with credit card. Rwy 06–24 marked with black and white cones. Compass rose located on apron. High vol of acft oprng invof of Mt. Rushmore and Crazy Horse Monuments at or blw 7500′; pilots are advised to mnt 122.85 for tfc advisories.
AIRPORT MANAGER: 605-745-3555
COMMUNICATIONS: CTAF/AUNICOM 122.8
Ⓡ **DENVER CENTER APP/DEP CON** 127.95
GCO 121.725 (4 clicks to DENVER CENTER and 6 clicks to FLIGHT SERVICES)
CLEARANCE DELIVERY PHONE: For CD if una via GCO ctc Denver ARTCC at 303-651-4257.
RADIO AIDS TO NAVIGATION: NOTAM FILE RAP.
RAPID CITY (VH) (H) VORTAC 112.3 RAP Chan 70 N43°58.56′ W103°00.74′ 191° 40.0 NM to fld. 3157/13E.
VOR unusable:
215°–232° byd 40 NM
233°–243° byd 40 NM blo 8,300′
233°–243° byd 81 NM blo 18,000′
244°–253° byd 40 NM blo 8,000′
244°–253° byd 61 NM
254°–264° byd 40 NM blo 18,000′
COMM/NAV/WEATHER REMARKS: Automated UINCOM; 3 clicks adzy and wx.



KRAP Chart Supplement

RAPID CITY RGNL (RAP)(KRAP) P (ARNG) 8 SE UTC–7(–6DT) N44°02.72′ W103°03.44′ **CHEYENNE**
3204 B ARFF Index—See Remarks NOTAM FILE RAP MON Airport **H–2H, L–12G**
IAP, AD

RWY 14–32: H8701X150 (CONC–GRVD) S–140, D–190, 2S–175, 2D–300 PCR 635 R/D/W/T HIRL
RWY 14: REIL. PAPI(P4L)—GA 3.0° TCH 50′. RVR–R Fence. 0.6% down.
RWY 32: MALSR. PAPI(P4L)—GA 3.0° TCH 54′. RVR–T 0.5% up.
RWY 05–23: H3601X75 (ASPH) S–12.5 PCR 80 F/C/X/T MIRL 0.8% up NE
RWY 05: PAPI(P2L)—GA 3.0° TCH 34′. Rgt tfc.
RWY 23: PAPI(P2L)—GA 3.0° TCH 38′. Road.
RUNWAY DECLARED DISTANCE INFORMATION
RWY 05: TORA–3601 TODA–3601 ASDA–3601 LDA–3601
RWY 14: TORA–8701 TODA–8701 ASDA–8701 LDA–8701
RWY 23: TORA–3601 TODA–3601 ASDA–3601 LDA–3601
RWY 32: TORA–8701 TODA–8701 ASDA–8701 LDA–8701
SERVICE: S4 **FUEL** 100LL, JET A **OX** 3 **LGT** When ATCT clsd actvt MALSR Rwy 32; REIL Rwy 14; HIRL Rwy 14–32; MIRL Rwy 05–23; Twy A and B lgts —CTAF. PAPI Rwys 05, 14, 23, 32 opr consly. **MILITARY—FUEL** ARNG ramp– A+(Mil) (NC–100LL,A)
AIRPORT REMARKS: Attended continuously. Birds on and in vicinity of arpt. Be alert: extensive military jet traffic in vicinity of and north–northwest of arpt. Be alert do not mistake Ellsworth AFB, located 6.5 NM north–northwest for Rapid City Rgnl. 152′ AGL twr 2.5 NM north–northwest of arpt. Line of sight is restricted between Rwy 14 and Rwy 23 physical ends. Twr has limited visibility of Twy T1 and Twy T2 and Twy B at AER 23. Rwy 05–23 not avbl for skedd acr opns with more than 9 psgr seats or unsked acr at least 31 psgr seats. Rwy 05–23 not avbl to acft over 12,500 lbs to taxi. Class I, ARFF Index B. ARFF Index C avbl upon req. 100LL and Jet A self svc avbl 24 hrs with credit card only NE side of GA ramp. Diverting non–based air carriers ctc arpt ops at 605–593–3419 prior to diverting due to limited gate space. Ctc ground for free tie–down locations, or call arpt opr at 605–593–3419. All charter serviced acft over 12,500 lbs must ctc arpt ops at 605–593–3419 at least 48 hrs prior to arrival. Overnight parking allowed in designated tiedown areas only. No cstms svc avbl. Landing fee for acft over 12,500 lbs or greater.
AIRPORT MANAGER: 605-394-4195
WEATHER DATA SOURCES: ASOS 118.525 (605) 393–2832.
COMMUNICATIONS: CTAF 125.85 **UNICOM** 122.95
RCO 122.4 (HURON RADIO)
RCO 122.1R 112.3T (HURON RADIO)
Ⓡ **ELLSWORTH APP/DEP CON** 119.5 (H24 1300Z‡ Mon thru 0500Z‡ Sat, 1300–0500Z‡ Sat–Sun, other times ctc Denver Center: 127.95 338.2)
TOWER 125.85 (1300–0500Z‡) **GND CON** 121.9
CLEARANCE DELIVERY PHONE: For CD ctc gnd or ATCT on freq. If una, ctc rap ATCT at 605-393-1161. When ATCT clsd, ctc Ellsworth Apch at 605-385-6198. When Apch clsd ctc Denver ARTCC at 303-651-4257.
AIRSPACE: CLASS D svc 1300–0500Z‡; other times CLASS E.
RADIO AIDS TO NAVIGATION: NOTAM FILE RAP.
(VH) (H) VORTAC 112.3 RAP Chan 70 N43°58.56′ W103°00.74′ 322° 4.6 NM to fld. 3157/13E.
VOR unusable:
215°–232° byd 40 NM
233°–243° byd 40 NM blo 8,300′
233°–243° byd 81 NM blo 18,000′
244°–253° byd 40 NM blo 8,000′
244°–253° byd 61 NM
254°–264° byd 40 NM blo 18,000′
ILS/DME 109.3 I–RAP Chan 30 Rwy 32. Class IE. Glideslope unusable for coupled approaches blo 3,360′. LOC unusable byd 27° left of course byd 27° r of course.
COMM/NAV/WEATHER REMARKS: High vol of heli tours invof Mt. Rushmore and Crazy Horse Monuments at or blw 7500′; all otr acft should rmn at or above 7700′ and maintain 1 NM horizontal separation from the monuments; pilots are advised to monitor 122.85 for tfc advisories.



KSUX Chart Supplement

SIOUX GATEWAY/BRIG GENERAL BUD DAY FLD (SUX)(KSUX) P (ANG) 6 S UTC–6(–5DT) N42°24.08´ W96°23.07´ **OMAHA H–5C, L–12I IAP, AD**

1099 B ARFF Index—See Remarks NOTAM FILE SUX

RWY 13–31: H9002X150 (CONC–GRVD) S–120, D–173, 2S–152, 2D–281, 2D/2D2–685 PCR 540 R/C/W/T HIRL

RWY 13: MALS. VASI(V4L)—GA 3.0° TCH 50´. RVR–TR Tree.

RWY 31: MALSR. VASI(V4L)—GA 3.0° TCH 51´. RVR–TR

RWY 18–36: H6401X100 (ASPH–GRVD) S–104, D–139, 2D–194, 2D/2D2–561 PCR 430 F/D/X/T MIRL

RWY 18: REIL. PAPI(P4R)—GA 3.0° TCH 54´. Trees.

RWY 36: PAPI(P4L)—GA 3.0° TCH 54´. Pole.

LAND AND HOLD–SHORT OPERATIONS

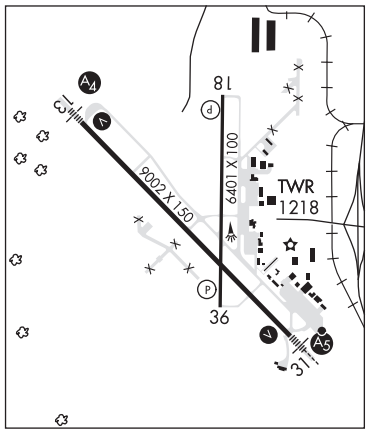
LDG RWY	HOLD–SHORT POINT	AVBL LDG DIST
RWY 13	18–36	5400
RWY 18	13–31	4740

RUNWAY DECLARED DISTANCE INFORMATION

RWY 13:	TORA–9002	TODA–9002	ASDA–9002	LDA–9002
RWY 18:	TORA–6400	TODA–6400	ASDA–6400	LDA–6400
RWY 31:	TORA–9002	TODA–9002	ASDA–9002	LDA–9002
RWY 36:	TORA–6400	TODA–6400	ASDA–6400	LDA–6400

ARRESTING GEAR/SYSTEM

RWY 13 BAK–14 BAK–12B(B) (1392').



BAK–14 BAK–12B(B) (1492'). **RWY 31**

SERVICE: S4 **FUEL** 100LL, JET A **OX** 1, 2, 3, 4 **LGT** Dusk–Dawn. When ATCT clsd ACTVT MALS Rwy 13; MALSR Rwy 31; REIL Rwy 18; VASI Rwy 13 and 31; HIRL Rwy 13–31; MIRL Rwy 18–36—CTAF. **MILITARY**— **A–GEAR** Avbl only dur ANG opr. **JASU** 6 (AM32A–86) 6(AM32–95) **FUEL** A++(Mil) (NC–100LL, A). **FLUID** SP PRESAIR LOX LPOX LHNIT **OIL** JOAP–Avbl only dur ANG duty hr

AIRPORT REMARKS: Attended Mon–Sun 1000–0600Z‡. PAEW 0330–1200Z‡ during inclement weather Nov–Apr. For fuel and support after hrs by PPR or call in. Airfield surface conditions not monitored by arpt management between 0600–1000Z‡ daily. Class I, ARFF Index B. ARFF Index D fire fighting equipment avbl on request. ATCT has limited visibility of Twy A near ARFF bldg and of Twy G. Rwy 31 is calm wind rwy. Caution: Portions of Twy A southeast of Twy B not visible by twr.

MILITARY REMARKS: RSTD All mil OPS opr 1300–2200Z‡ Tue–Fri exc hol. **CAUTION** Ocnl birdwatch cond–sev drg spring/fall due to migratory waterfowl. Civilian twr does not broadcast USAF birdwatch cond. Ctc alfd mgmt for bird sts. **ANG** Offl bus only/PPR. COMMAND POST (24 hr opn) DSN 585–0211 or 585–0212 or C712–233–0211/0212. PPR for use of ANG Ramp V(712)–233–0210. Extremely limited parking. Trans acft PAX ident and baggage search unavbl. Base ops opr 1230–2230Z‡ Tue–Fri exc hol, C712–233–0276 DSN 585–0276.

AIRPORT MANAGER: 720-365-6312

WEATHER DATA SOURCES: ASOS 119.45 (712) 317–9924. LAWRS. LLWAS.

COMMUNICATIONS: CTAF 118.7 **ATIS** 119.45 **UNICOM** 122.95

RCO 122.2 (FORT DODGE RADIO)

Ⓡ **SIOUX CITY APP/DEP CON** 124.6 (1200–0330Z‡)

Ⓡ **MINNEAPOLIS CENTER APP/DEP CON** 125.025 (when twr clsd)

SIOUX CITY TOWER 118.7 (1200–0330Z‡) **GND CON** 121.9

ANG COMD POST 138.437

CLEARANCE DELIVERY PHONE: For CD if una to ctc on FSS freq, ctc Minneapolis ARTCC at 651-463-5588.

AIRSPACE: CLASS D svc 1200–0330Z‡; other times CLASS E.

RADIO AIDS TO NAVIGATION: NOTAM FILE SUX.

SIOUX CITY (L) TACAN Chan 112 SUX (116.5) N42°20.67´ W96°19.42´ 313° 4.3 NM to fld. 1087/9E.

TOMMI NDB (MHW/LOM) 305 OI N42°27.61´ W96°27.73´ 133° 4.9 NM to fld. 1104/3E. NDB unmonitored when SUX ATCT clsd.

NDB unusable:
140°–155° byd 10 NM

ILS 111.3 I–OIQ Rwy 13. Class IB. LOM TOMMI NDB. LOM unmonitored. Localizer unmonitored when ATCT closed.

ILS/DME 109.3 I–SUX Chan 30 Rwy 31. Class IT. Unmonitored when ATCT closed. Glideslope autopilot cpd apchs NA blw 2,025´ MSL.

Bonus Resources

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