IFR Cross-Country Flight Planning

CFII PTS - Area 03 (III) - Task B

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September 2020

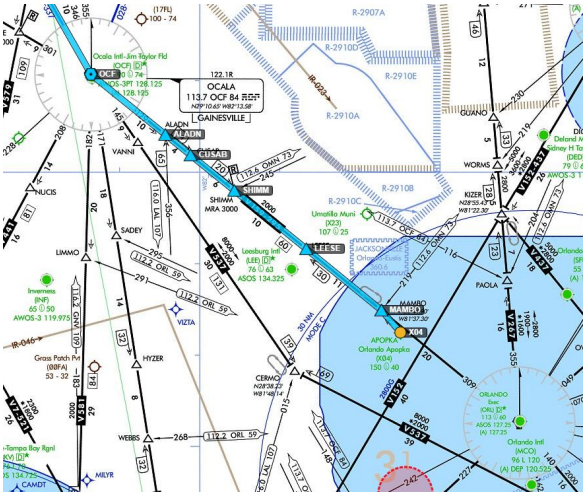
Cross-Country Flight Planning

Objective

To ensure the applicant learns the elements of cross-country IFR flight planning and can plan and execute an IFR cross country that takes into account regulatory requirements, and considers pilot, aircraft, and equipment capabilities.

Purpose

So you want to go somewhere but the weather is bad… isn't this why you wanted an instrument rating? This lesson introduces pilots to IFR cross-country flight planning, and will demonstrate that just because we have an Instrument Rating doesn't mean we can make every flight!



Schedule

- **Ground Lesson**: 60 minutes
- **Student Q&A**: 20 minutes

Equipment

- Airplane POH
- Current IFR Low Enroute Charts
- Current IFR Terminal Procedures Publication
- Current Chart Supplement
- Nav Log / Scratch Paper / E6B / Calculator
- Whiteboard / Markers (optional)

Student Actions

- Ask any questions, receive study material for the next lesson.
- Watch linked video.
- Review listed references.

Instructor Actions

- Deliver the ground lesson (below).
- Answer student questions.

Completion Standards

- Student can explain the following concepts:
  - IFR cross country pre-planning, including the PAVE checklist, looking at the overall weather picture.
  - How to plan an IFR route using airways, or how to find preferred routes.
  - How to determine the appropriate Instrument Departure Procedure from controlled and uncontrolled airports.
  - How to select approaches at the destination airport, considering aircraft capabilities.
  - When an alternate airport is required, and the requirements for choosing one.
  - How to determine if a flight complies with IFR Fuel Planning Requirements.
  - How to file an IFR flight plan, including the required elements and how to determine ICAO equipment codes.
  - How to get an IFR weather briefing and the importance of NOTAMs
  - How to make a go/no-go decision

References

- FLY8MA.com Flight Training - “Ep. 216: IFR Flight Planning | How To”
    - YouTube - https://www.youtube.com/watch?v=CUOChk6vWkk
- FAA-H-8083-25B (Pilot’s Handbook of Aeronautical Knowledge) - Chapter 5, Page 26 [Stalls/Effect of Icing], Chapter 12, Page 24 [Icing]
- FAA-H-8083-15B (Instrument Flying Handbook) - Chapter 1, Page 6-10 [IFR En Route Charts], Chapter 1, Page 12 [Terminal Procedures Publications], Chapter 4, Page 13-17 [Icing], Chapter 9, Page 25-34 [GPS], Chapter 10 [IFR Flight]
- AIM (Aeronautical Information Manual) - 1-1-3 [VOR Receiver Check], 1-1-30 to 35 [WAAS], 5-1-7 to 8 [NOTAM Abbreviations], 5-1-22 to 23 [ICAO Equipment Codes], 5-1-20 [ICAO Flight Plan Form], 5-2-7 to 10 [Diverse Departure Criteria/Low Close-in Obstacles/Use of ODPs], 5-4-5 [IAP Required Equipment]
- FAA-S-ACS-8B (Instrument Airplane ACS) - Area I Task C
- FAA-S-8081-9D (CFII PTS) - Area III Task B

Ground Lesson Outline

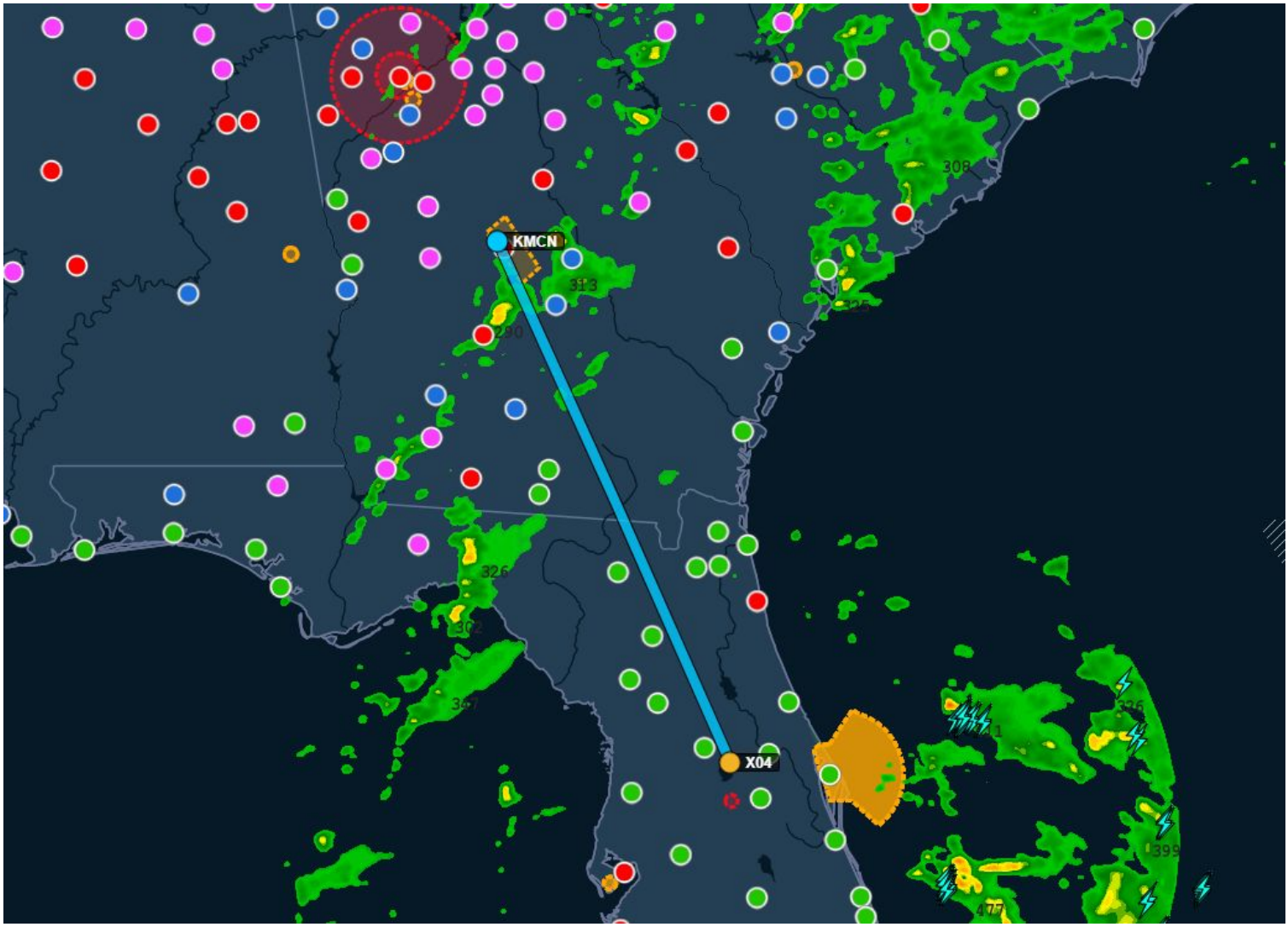
- **Scenario Introduction** - Overview, Weather Situation, Aircraft, etc.
- **Before We Plan** - When do we need to go IFR (which airspace), PAVE
    - **Pilot** - Currency requirements and proficiency with IFR in the aircraft to be used
    - **Aircraft** - Required Equipment (§ 91.205(d), “GRABCARD(D)”), What approaches can we fly?
        - High Altitude or Icing Considerations
        - WAAS/Non-WAAS, RAIM, Operating non-DME and non-GPS, etc.
    - **enVironment** - Weather, icing considerations, unfamiliarity
        - **Icing** - How to recognize frost/airframe ice, Dangers and effects of icing, types of icing (structural vs. induction, clear vs. rime), de-ice/anti-ice tools available, icing procedures?
    - **External Pressures** - Get-there-itis, etc.
- **IFR Flight Planning** - Starting with the Overall Weather Picture - Review the TAFs, charts, etc.
    - **Charts and Plotting a Course**
        - **Route**: Use of IFR Low Enroute Charts, Preferred Routes, Use of Victor Airways, SUA, etc.
        - **Altitude**: MEAs, MOCAs, OROCAs, Minimum IFR Altitudes (FAR § 91.177)
            - **Icing Dangers** - Most dangerous during landing, what to do? (Climb, descend, etc)
    - **Departure Planning** - Obtaining a Clearance, Uncontrolled Field Ops, DPs, ODPs, Diverse Departures
    - **Destination Planning** - Arrivals, Reviewing Available Approaches
        - **Selecting Approaches** - “What approaches *that I can fly* will get me the lowest?”
    - **Calculating ETE/ETA** - Account for wind, climb performance, etc.
    - **IFR Alternate Planning** - When is an alternate required, how to choose, etc? (FAR § 91.169)
        - Determining Alternate Weather Requirements, Non-Standard Alternate Minimums
        - Use of GPS at an alternate, Benefits of a Precision Approach at an Alternate
    - **IFR Fuel Requirements** - Computation of ETE, Total Fuel Requirements (FAR § 91.167)
        - Adding extra margin for “personal minimums”, e.g. 15 minutes per approach + 60 mins
    - **NOTAMs** - Affect NAVAIDs, IAPs, ODPs, alternate requirements, etc.
    - **Filing an IFR Flight Plan** - Required Items, ICAO Equipment Codes, How to File, etc.
- **Final Go/No-Go Decision** - Final Weather Briefing, Consider PAVE again, etc.

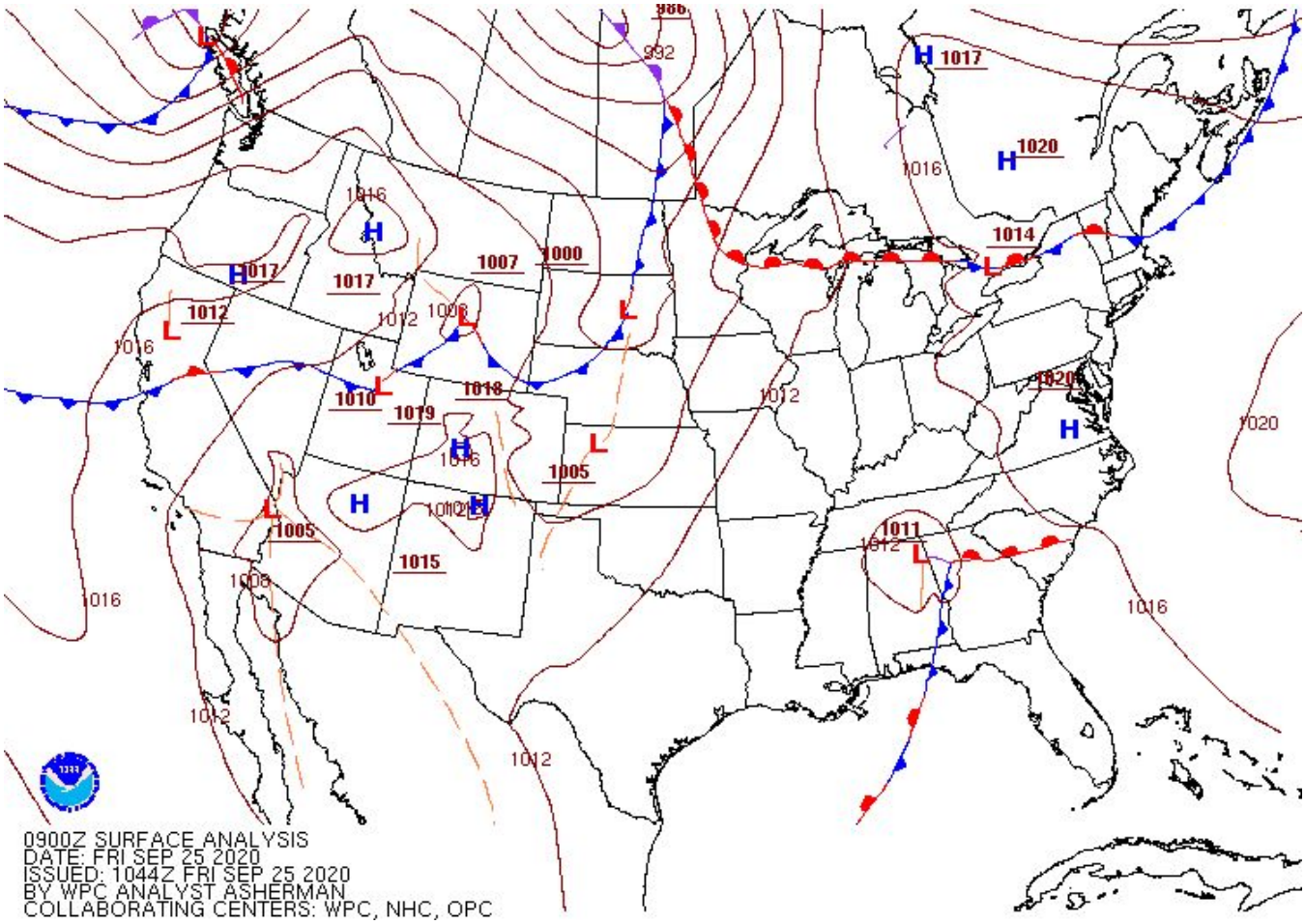
Common Errors

- Failure to understand and apply IFR alternate planning requirements.
- Failure to consider appropriate instrument departure procedures when operating from uncontrolled airports.
- Failure to understand the dangers of in-flight icing during planning for an IFR flight.
- Failure to consider NOTAMs and their effect on the IFR flight plan (NAVAIDs, minimums, alternates, etc)
- Failure to understand and correctly apply IFR fuel planning requirements.

Ground Lesson Supplement

- **Scenario** - *Orlando Apopka Airport (X04)* to *Middle Georgia Regional (KMCN)*
    - **Date:** September 25, 2020
    - **Proposed Departure Time:** 1200Z (*8:00AM Local*)
    - **Direct Distance:** 261 NM
    - **Aircraft:** *Cessna 172R*
        - **Cruise:** Approx *110 KTAS* Cruise - Approx 9 GPH
        - **Fuel:** *53 gallons (Full)*
        - **Loading:** *2,450lb (Max Gross)*
        - **Avionics:** Garmin 430W, King NAV/COM, *No Dedicated DME*

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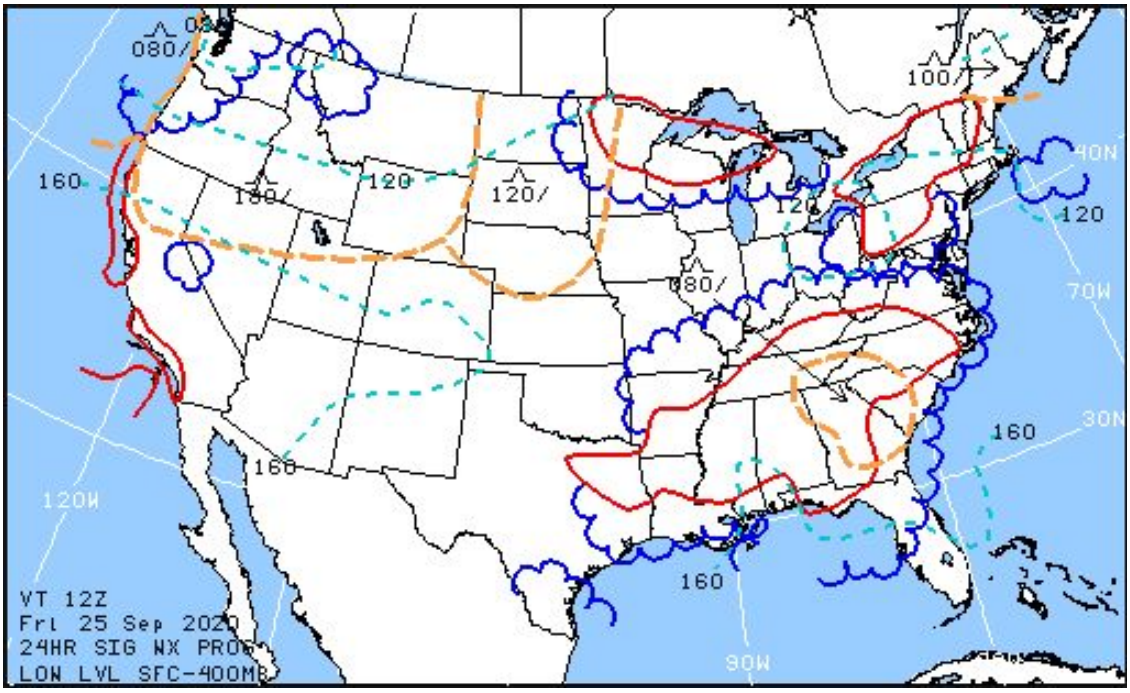
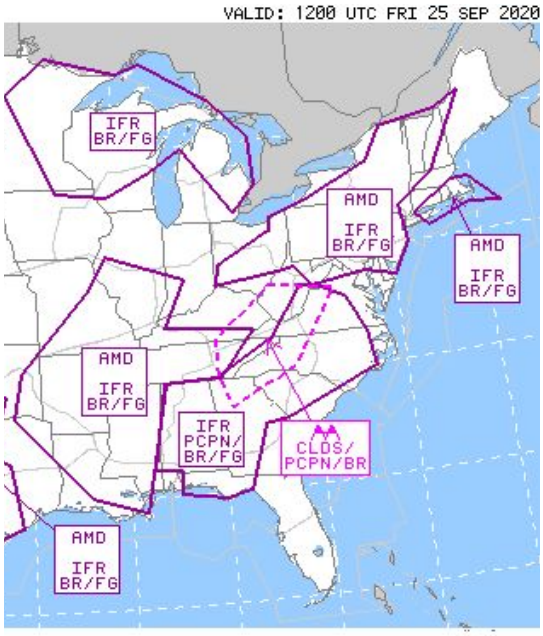
DATE: FRI SEP 25 2020
ISSUED: 1044Z FRI SEP 25 2020
BY WPC ANALYST ASHERMAN
COLLABORATING CENTERS: WPC, NHC, OPC


VT 12Z
Fri 25 Sep 2020
24HR SIG WX PROG
LOW LVL SFC-400MB


VALID: 1200 UTC FRI 25 SEP 2020
IFR BR/FG
AMD IFR BR/FG
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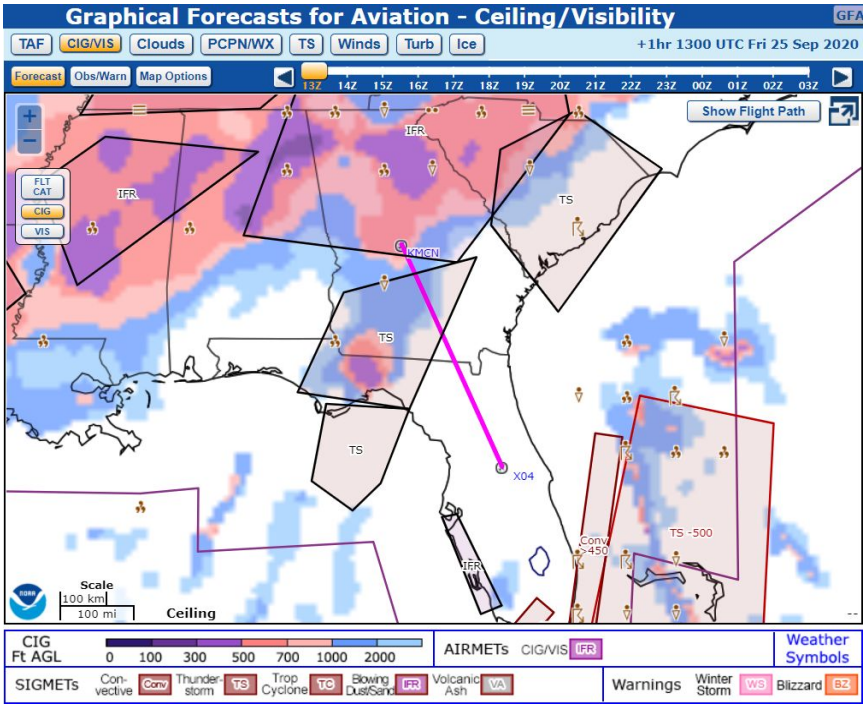
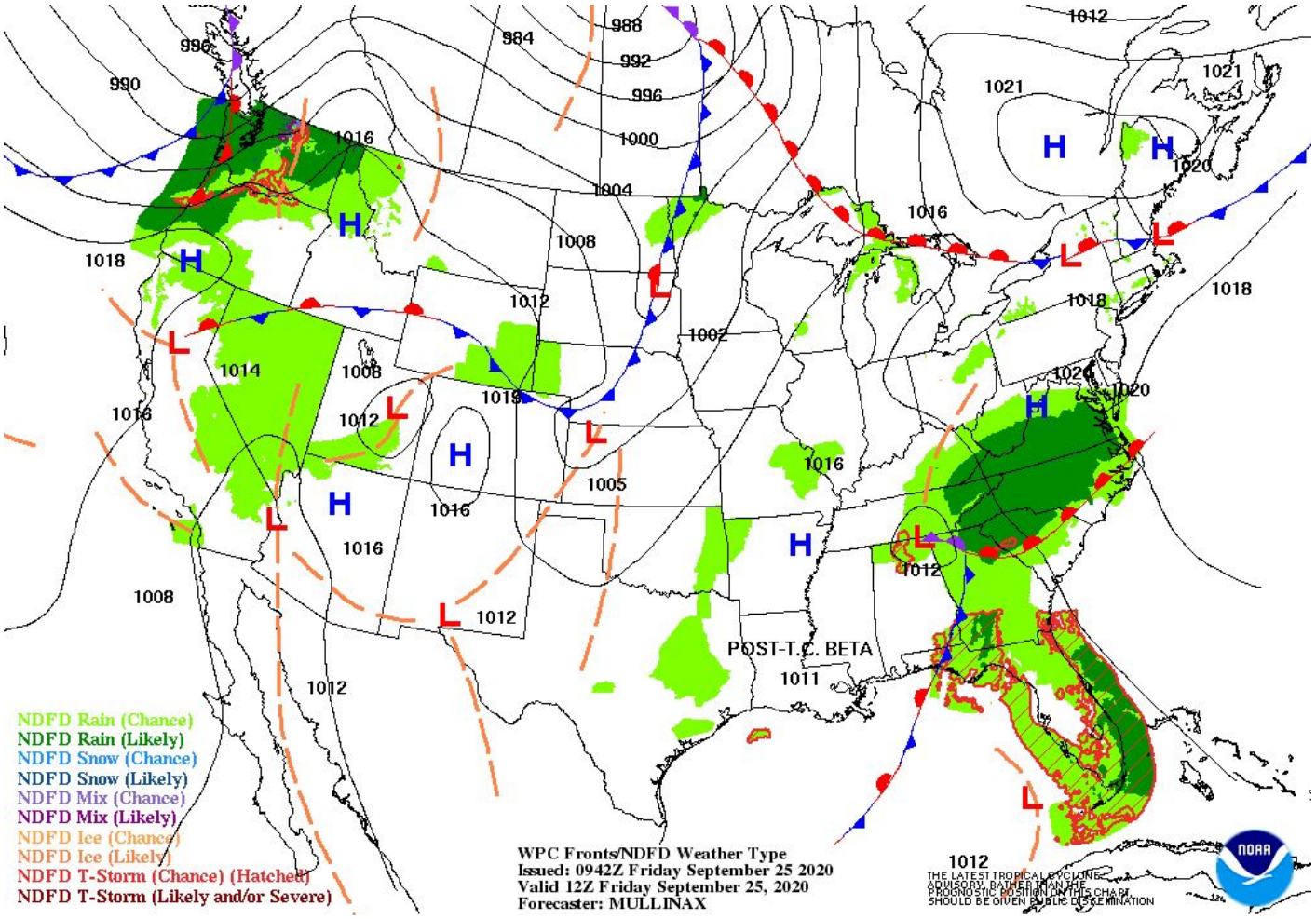
AMD IFR BR/FG
AMD IFR BR/FG
IFR PCPN/ BR/FG
CLDS/ PCPN/BR
AMD IFR BR/FG


Graphical Forecasts for Aviation - Ceiling/Visibility
TAF
CIG/VIS
Clouds
PCPN/WX
TS
Winds
Turb
Ice
+1hr 1300 UTC Fri 25 Sep 2020
Forecast
Obs/Warn
Map Options
Show Flight Path
FLT CAT
CIG
VIS
IFR
TS
KMCN
X04
Conv >450
TS -500
Scale
100 km
100 mi
Ceiling
CIG Ft AGL
0 100 300 500 700 1000 2000
AIRMETs CIG/VIS IFR
Weather Symbols
SIGMETs Con-vective Conv Thunder-storm TS Trop Cyclone TC Blowing Dust/Sand IFR Volcanic Ash VA
Warnings Winter Storm WS Blizzard BZ


NDFD Rain (Chance)
NDFD Rain (Likely)
NDFD Snow (Chance)
NDFD Snow (Likely)
NDFD Mix (Chance)
NDFD Mix (Likely)
NDFD Ice (Chance)
NDFD Ice (Likely)
NDFD T-Storm (Chance) (Hatched)
NDFD T-Storm (Likely and/or Severe)
POST-T.C. BETA
WPC Fronts/NDFD Weather Type
Issued: 0942Z Friday September 25 2020
Valid 12Z Friday September 25, 2020
Forecaster: MULLINAX
THE LATEST TROPICAL CYCLONE ADVISORY RATHER THAN THE PROGNOSTIC POSITION ON THIS CHART SHOULD BE GIVEN PUBLIC DISSEMINATION

```
METAR KLEE 251153Z 14003KT 10SM CLR 24/24 A2999 RMK AO2 SLP153 T02440239 10250 20228 53010=

METAR KSFB 251153Z 00000KT 10SM CLR 24/23 A2997 RMK AO2 SLP148 T02390228 10250 20228 53010=

METAR KGNV 251153Z 00000KT 10SM CLR 21/21 A3000 RMK AO2 SLP157 T02110211 10233 20211 53010=

KSFB 251136Z 2512/2612 14004KT P6SM FEW025 BKN250
  FM251500 17007KT P6SM SCT025 SCT050
  FM251900 12008KT P6SM VCTS SCT030CB BKN050
  TEMPO 2520/2522 3SM TSRA BKN030CB
  FM260000 19005KT P6SM FEW030 SCT060 BKN250

KLEE 251136Z 2512/2612 14004KT P6SM SCT060 BKN100
  FM251500 18006KT P6SM SCT025 BKN040
  FM252000 VRB05KT P6SM VCTS SCT030CB BKN250
  TEMPO 2521/2523 3SM TSRA BKN030CB
  FM260100 18004KT P6SM FEW030 SCT060 BKN250

KGNV 251125Z 2512/2612 VRB04KT P6SM FEW040 SCT150
  FM252000 22006KT P6SM VCTS SCT040CB SCT200
  FM260000 00000KT P6SM FEW040 SCT200

KVLD 251125Z 2512/2612 19003KT P6SM VCSH BKN035
  FM251800 19004KT P6SM VCTS BKN040CB
  TEMPO 2518/2522 4SM TSRA OVC040CB
  FM252200 19003KT P6SM VCSH BKN070
  FM260000 VRB03KT P6SM BKN100
  FM260900 00000KT 3SM BR SCT004

KMCN 251139Z 2512/2612 VRB03KT 6SM -DZ VCSH SCT004 OVC008
  TEMPO 2512/2515 4SM -SHRA BKN004
  FM251500 21005KT P6SM OVC012
  FM251700 23006KT P6SM BKN025
  FM252000 24006KT P6SM BKN035
  FM252300 00000KT P6SM SCT200
  FM261000 00000KT 5SM BR BKN004 OVC006
```


MAXIMUM RATE-OF-CLIMB AT 2450 POUNDS

CONDITIONS:

Flaps Up
Full Throttle

PRESS ALT FT	CLIMB SPEED KIAS	RATE OF CLIMB - FPM			
		-20°C	0°C	20°C	40°C
S.L.	79	830	770	705	640
2000	77	720	655	595	535
4000	76	645	585	525	465
6000	74	530	475	415	360
8000	72	420	365	310	250
10,000	71	310	255	200	145
12,000	69	200	145	---	---

NOTE:

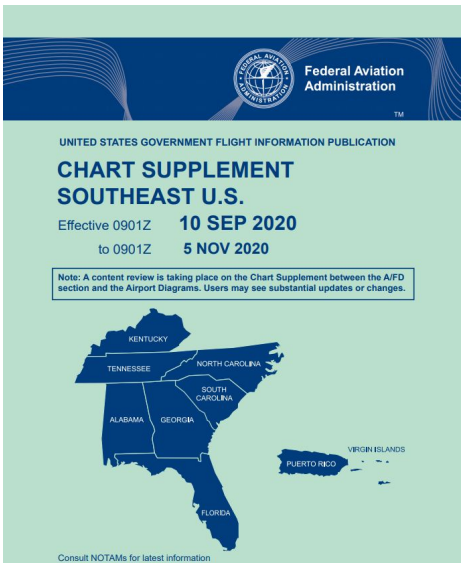
1. Mixture leaned above 3000 feet for maximum RPM.

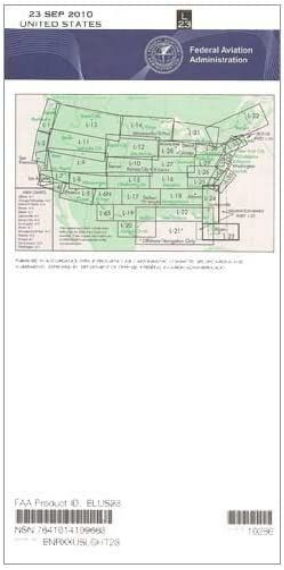
CRUISE PERFORMANCE

CONDITIONS:
2450 Pounds
Recommended Lean Mixture At All Altitudes (Refer to Section 4, Cruise)

PRESS ALT FT	RPM	20°C BELOW STANDARD TEMP			STANDARD TEMPERATURE			20°C ABOVE STANDARD TEMP		
		% BHP	KTAS	GPH	% BHP	KTAS	GPH	% BHP	KTAS	GPH
2000	2250	---	---	---	79	115	9.0	74	114	8.5
	2200	79	112	9.1	74	112	8.5	70	111	8.0
	2100	69	107	7.9	65	106	7.5	62	105	7.1
	2000	61	101	7.0	58	99	6.6	55	97	6.4
	1900	54	94	6.2	51	91	5.9	50	89	5.8
4000	2300	--	---	---	79	117	9.1	75	117	8.6
	2250	80	115	9.2	75	114	8.6	70	114	8.1
	2200	75	112	8.6	70	111	8.1	66	110	7.6
	2100	66	106	7.6	62	105	7.1	59	103	6.8
	2000	58	100	6.7	55	98	6.4	53	95	6.2
	1900	52	92	6.0	50	90	5.8	49	87	5.6
6000	2350	--	---	---	80	120	9.2	75	119	8.6
	2300	80	117	9.2	75	117	8.6	71	116	8.1
	2250	76	115	8.7	71	114	8.1	67	113	7.7
	2200	71	112	8.1	67	111	7.7	64	109	7.3

- **Before We Begin To Plan** - We review the basic **PAVE** checklist
  - **Determine Pilot Capability** - Am I current and *proficient* enough to make the flight?
    - **Currency** - 6 in 6, etc.
    - **Proficiency** - Have I flown IFR in *this aircraft* recently? Am I very familiar with avionics, etc? Have I flown in comparable weather before?
  - **Determine Airplane Capability** - What instruments and navigation radios are onboard and operable?
    - **Flight Instruments** - We need to satisfy at least § 91.205(d).
      - People often use *"GRABCARD(D)"* - Generator/Alternator, Radios (Appropriate to Route), Altimeter (Sensitive), Ball, Clock (with Second Hand), Attitude Indicator, Rate of Turn, Directional Gyro, DME (above FL240)
    - **High Altitude or Icing Considerations** - IFR flight may require high altitudes. Am I equipped with oxygen, if necessary? Do I have the necessary climb performance? Do I have any anti-ice or de-ice capability?
    - **VOR Checks** - Do we need/plan to navigate with VORs? Do we have our 30-day VOR check?
    - **GPS Considerations** - GPS is considerably more complex…
      - **General Capabilities** - Can we use Airways or will we need to enter every fix?
      - **WAAS or Non-WAAS?** - For WAAS, we must check GPS NOTAMs, we can use GPS at our alternate, and we can fly LPV/LP or LNAV/VNAV approaches. For Non-WAAS, we will need to perform a RAIM check, we have tighter rules for use of GPS at an alternate, and we can fly only LNAV minimums.
      - **Navigation Database** - Is it up to date? We need it to be updated to fly any approaches.
  - **Environmental or External Pressures** - Weather, unfamiliarity, get-there-itis, etc.
- **Will We Go IFR?** - When is an IFR flight plan and clearance required?
  - **Needed in:** Class A airspace, less than VFR conditions in Controlled Airspace
- **Charts and Plotting a Course** - First, look for a *Preferred Route* in the Chart Supplement
  - If none available, look at "*Route Advisor*" in ForeFlight (or elsewhere) to see routes "Recently Cleared by ATC"
  - For our scenario, we will plan our own route using airways on the *IFR Low Enroute Charts*.
    - **Route:** We will use *Victor Airways* and fly between fixes and VORs.
      - **Caution:** We must still take care to avoid Restricted areas, and consider other SUA, etc.
      - We choose: **`X04 MAMBO V159 OCF T205 OTK V579 VNA V362 MCN KMCN`**
    - **Altitude:** Consider MEAs, OROCAs, FAR § 91.177, weather, etc. to determine the altitude we will fly.
      - **Caution:** IFR MEAs may be quite high, and **may be unusable when icing conditions exist**, or when not equipped with onboard oxygen. Also consider that **you may not have the climb performance necessary to meet the 200 FT/NM standard IFR climb gradient!**





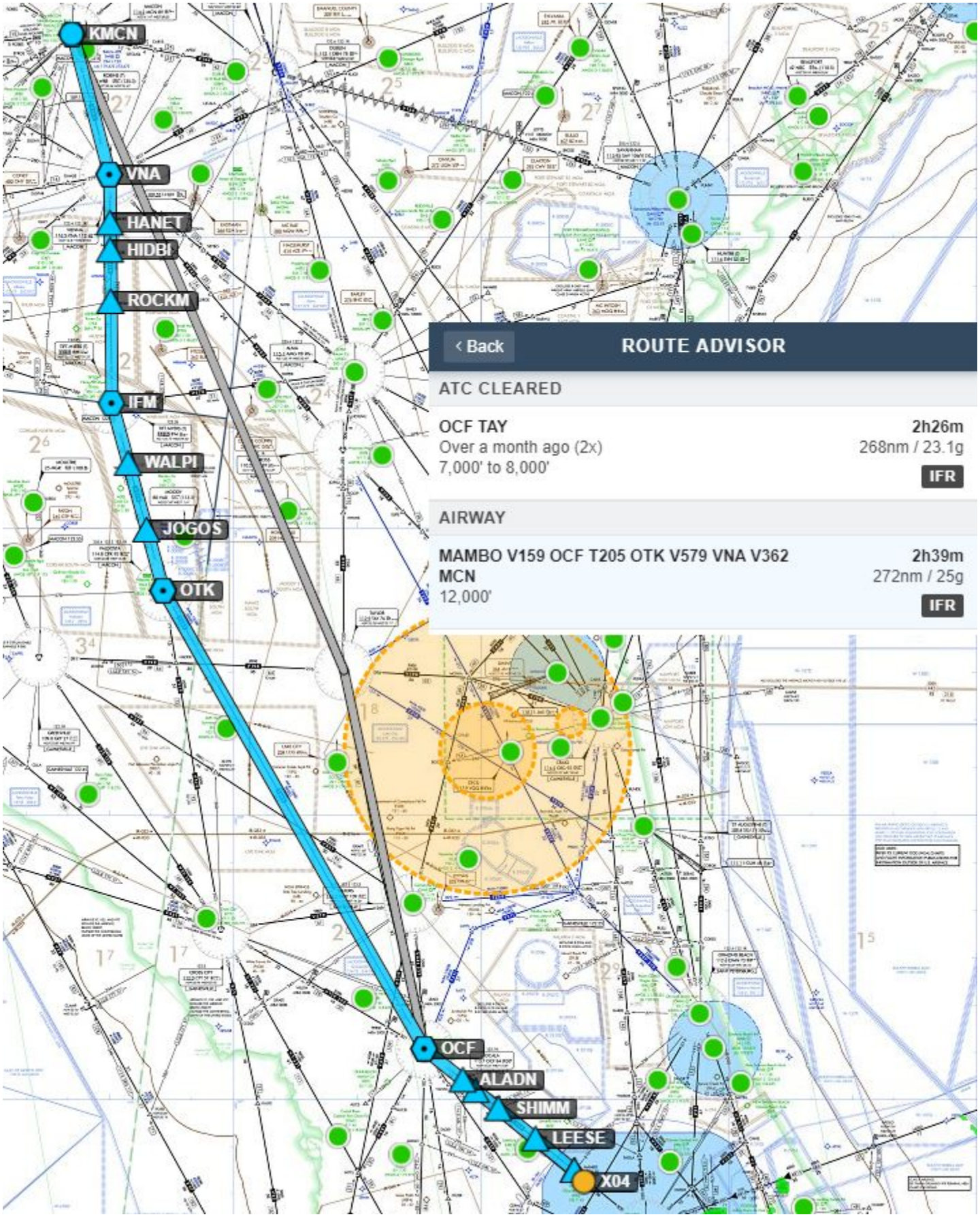
PREFERRED IFR ROUTES

PREFERRED IFR ROUTES

A system of preferred routes has been established to guide pilots in planning their route of flight, to minimize route changes during the operational phase of flight, and to aid in the efficient orderly management of the air traffic using federal airways. The preferred IFR routes which follow are designed to serve the needs of airspace users and to provide for a systematic flow of air traffic in the major terminal and en route flight environments. Cooperation by all pilots in filing preferred routes will result in fewer traffic delays and will better provide for efficient departure, en route and arrival air traffic service.

The following lists contain preferred IFR routes for the low altitude stratum and the high altitude stratum. The high altitude list is in two sections; the first section showing terminal to terminal routes and the second section showing single direction route segments. Also, on some high altitude routes low altitude airways are included as transition routes.

ORLANDO METRO(MCO,ORL,ISM,LEE,SFB)		
FORT LAUDERDALE(FLL)	(AT OR BELOW 100; PROPS)PHK V267 BRIKL	1030–0300
WEST PALM BEACH(PBI)	(PROPS ONLY)(PBI EAST OPS)PHK PBI	1030–0300
	or	
	(PROPS ONLY)(PBI WEST OPS)DEARY V537 PBI	1030–0300
	or	
	(TURBOJETS/TURBOPROPS –GPS OR DME/DME/IRU)TRV FRWAY (RNAV)–STAR	1030–0300
ORLANDO(MCO)		
KEY WEST(EYW)	RSW V225 EYW	1030–0300
MIAMI(MIA)	(PROPS)MLB V437 BRIKL	1100–0400
ORLANDO(ORL)		
	(100 AND BLO)PHK V267 BRIKL	1030–0300

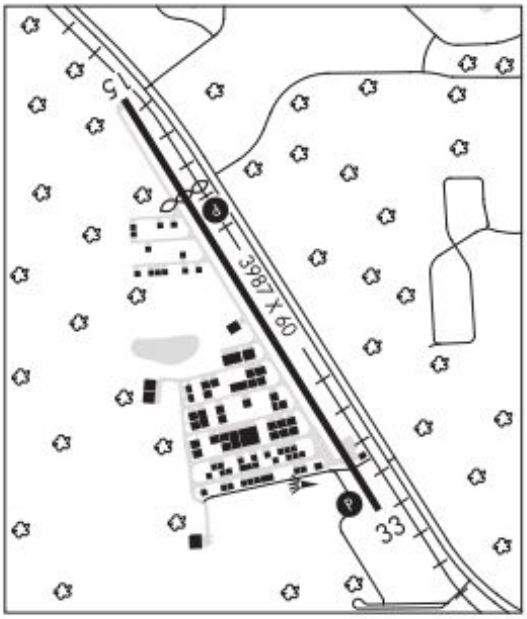

KMCN
VNA
HANET
HIDBI
ROCKM
IFM
WALPI
JOGOS
OTK
OCF
ALADN
SHIMM
LEESE
X04
‹ Back
ROUTE ADVISOR
ATC CLEARED
OCF TAY
Over a month ago (2x)
7,000' to 8,000'
2h26m
268nm / 23.1g
IFR
AIRWAY
MAMBO V159 OCF T205 OTK V579 VNA V362
MCN
12,000'
2h39m
272nm / 25g
IFR

- **Departing an Uncontrolled Field Under IFR** - Consult the A/FD to find a clearance delivery phone number of frequency.
    - **Do we need to depart IFR?** - Consult the local weather to determine if it is truly necessary to depart IFR.
        - If the weather is VFR, you may be able to depart VFR and pick up your IFR clearance once airborne.
    - **Clearance and Release** - When obtaining an IFR clearance on the ground, ATC may or may not release you for departure at that time. Typically ATC will give a 5-10 minute window for departure. You may request a "Hold for Release" with your clearance, where you will contact them again before departure to obtain your release.

82 **FLORIDA**

APOPKA

ORLANDO APOPKA (XØ4) 4 NW UTC-5(-4DT) N28°42.45′ W81°34.92′ **JACKSONVILLE**
150 B NOTAM FILE PIE **L-21D, 24F**
RWY 15-33: H3987X60 (ASPH) LIRL 0.4% up NW **IAP**
RWY 15: PAPI(P2L)—GA 3.5° TCH 10′. Thld dsplcd 943′. Berm. Rgt tfc.
RWY 33: PAPI(P2L)—GA 3.0° TCH 25′. Tree.
RUNWAY DECLARED DISTANCE INFORMATION
RWY 15: TORA-3987 TODA-3987 ASDA-3987 LDA-3044
RWY 33: TODA-3987 ASDA-3987 LDA-3987
SERVICE: S4 **FUEL** 100LL, JET A **OX** 2, 4 **LGT** PAPI Rwy 15 and 33 on cont durg dalgt. After SS, ACTVT PAPI Rwy 15 and 33; LIRL Rwy 15-33—CTAF.
AIRPORT REMARKS: Attended 1300-2300Z‡. Ctc UNICOM or 407-308-5904 for safety briefing. Rwy 15-33 clsd to touch and go ldgs by tran helicopters. Steep dropoff 63′ fm SE end and aprxly 60′ off west and east edge. Acft hldg shrt Rwy 15 may be una to see acft on final for Rwy 15.
AIRPORT MANAGER: 407-308-5904
COMMUNICATIONS: CTAF/AUNICOM 123.05
Ⓡ **ORLANDO APP/DEP CON** 135.3
CLEARANCE DELIVERY PHONE: For CD or to cnl IFR ctc Orlando Apch at 407-825-3398.



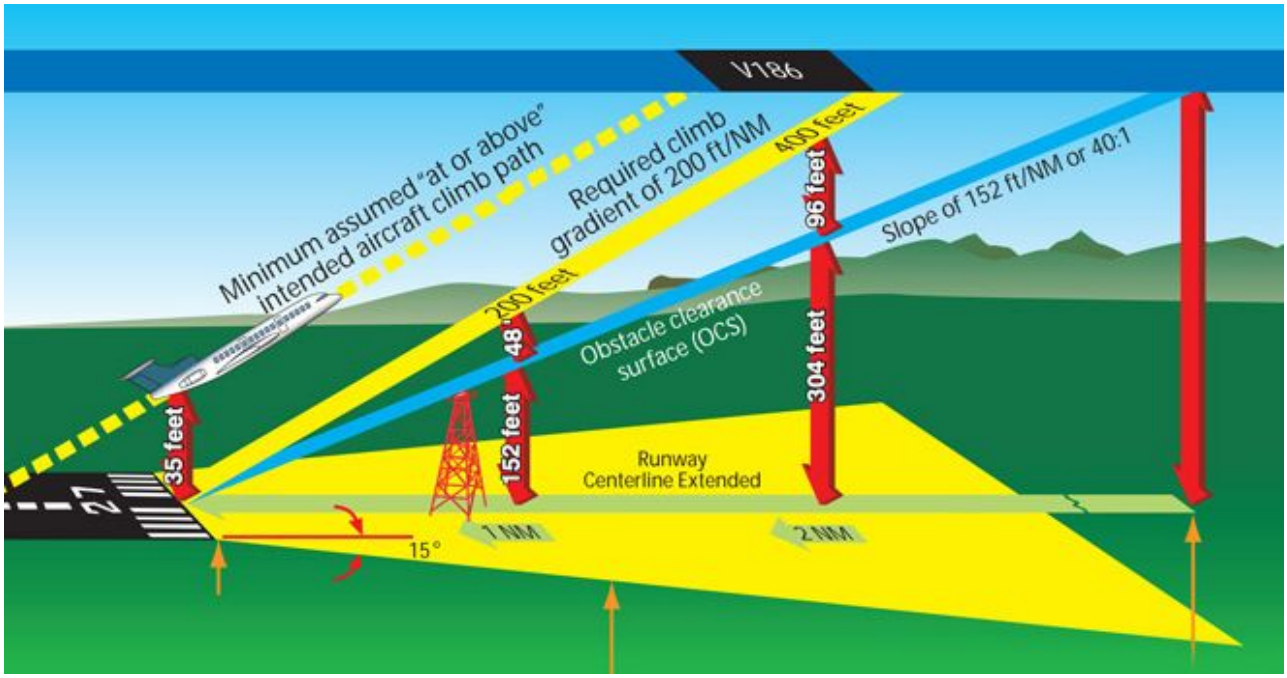
RADIO AIDS TO NAVIGATION: NOTAM FILE ORL.
(H) VORTACW 112.2 ORL Chan 59 N28°32.56′ W81°20.10′ 307° 16.3 NM to fld. 102/0E.
TACAN AZIMUTH unusable:
066°-084°
246°-289° byd 17 NM blo 2,000′
246°-289° byd 28 NM blo 2,500′
COMM/NAV/WEATHER REMARKS: ACTVT automated UNICOM—CTAF.

- **Departing an Uncontrolled Field Under IFR** - How do we depart this field and get to the enroute environment?
    - **Departure Procedures** - If no Departure Procedure is explicitly listed for the airport (which would be unusual for an uncontrolled field), consult the takeoff minimums publication to determine the *Obstacle Departure Procedure (ODP)*, if any exists.
        - If no ODP is listed for a runway, the runway is said to have a *"diverse departure"*.
    - **Caution:** Although takeoff minimums are not mandatory for Part 91, do not ignore them! They are listed because obstacles penetrate the *Obstacle Clearance Surface (OCS)* established for the runway! ***It is your responsibility to see and avoid these obstacles, even under IFR!***
        - **Do you have sufficient climb performance to make the required climb gradients?**

TAKEOFF MINIMUMS, (OBSTACLE) DEPARTURE PROCEDURES, AND DIVERSE VECTOR AREA (RADAR VECTORS)

20254

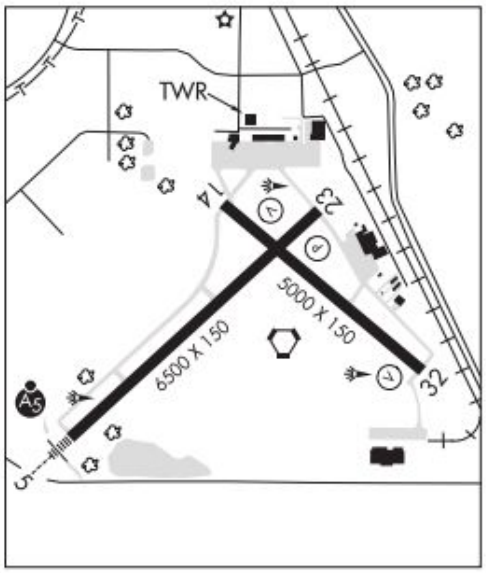
APOPKA, FL
ORLANDO APOPKA (X04)
TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES
ORIG 20SEP12 (12264) (FAA)
TAKEOFF MINIMUMS:
Rwy 15, 300-2 or std. w/min. climb of 263' per NM to 400.
Rwy 33, 400-1¾ or std. w/min. climb of 325' per NM to 600.
TAKEOFF OBSTACLE NOTES:
Rwy 15, trees beginning at DER, 173' left of centerline, up to 100' AGL/229' MSL.
Railroad and vehicles beginning at DER, 181' left of centerline, up to 23' AGL/152' MSL.
Trees beginning 214' from DER, 552' right of centerline, up to 100' AGL/189' MSL.
Poles beginning 230' from DER, 239' left of centerline, up to 49' AGL/178' MSL.
Tower 5781' from DER, 1326' left of centerline, 199' AGL/317' MSL.
Rwy 33, trees beginning 2' from DER, 183' left of centerline, up to 100' AGL/249' MSL.
Poles beginning 7' from DER, 61' right of centerline, up to 49' AGL/198' MSL.
Railroad and vehicles beginning 36' from DER, 90' right of centerline, up to 23' AGL/172' MSL.
Antenna 1166' from DER, 539' left of centerline, 29' AGL/173' MSL.
Tower 1.2 NM from DER, 2338' left of centerline, 350' AGL/421' MSL.



- **Diverse Departure** - "*The pilot crossing the departure end of the runway (DER) at least 35 feet above the DER elevation, climbing to 400 feet above the DER elevation before making the initial turn and maintaining a minimum climb gradient of 200 ft/NM, unless required to level off by a crossing restriction, until the minimum IFR altitude is reached.*"

- **Investigating the Destination Airport** - Review A/FD, NAVAIDs, Arrivals, Approaches, etc.
  - **Arrivals** - Are any Arrivals (STARs) *that we can fly* listed?
  - **Note:** When flying without GPS or DME, pay special attention to available NAVAIDs and approaches that do not require GPS or DME.

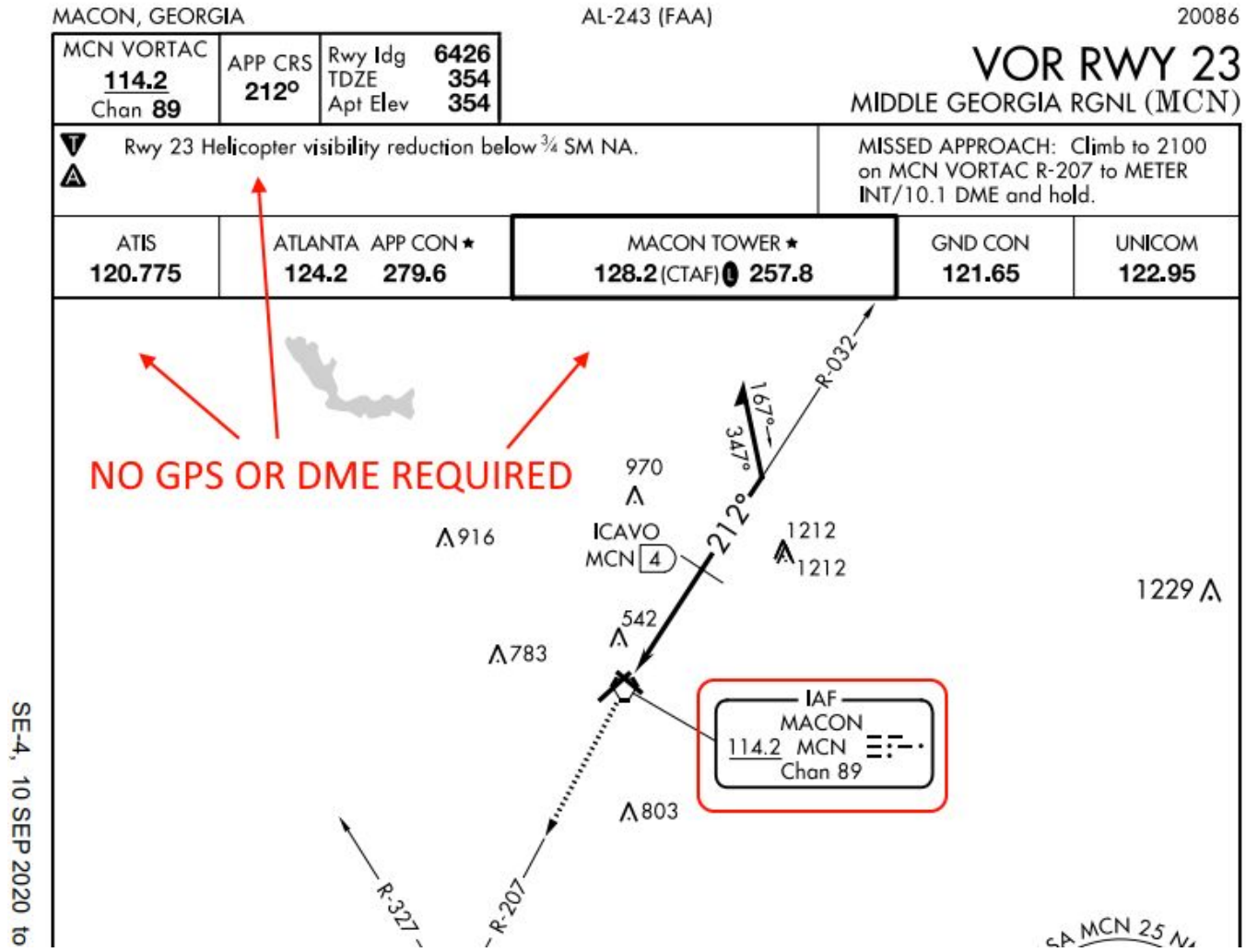
MIDDLE GEORGIA RGNL (MCN)(KMCN) 9 S UTC–5(–4DT) N32°41.57′ W83°38.95′ ATLANTA
354 B Class I, ARFF Index A NOTAM FILE MCN H–9B, 12F, L–18J
RWY 05–23: H6500X150 (ASPH–GRVD) S–80, D–128, 2S–175, 2D–237 PCN 54 F/B/W/U HIRL 0.4% up NE IAP, AD
RWY 05: MALSR. RVR–TR Trees.
RWY 23: REIL. PAPI(P4L)—GA 3.0° TCH 67′. Trees. Rgt tfc.
RWY 14–32: H5000X150 (ASPH) S–44, D–65, 2D–110 PCN 46 F/B/W/U MIRL
RWY 14: VASI(V4L)—GA 3.0° TCH 53′. Trees. Rgt tfc.
RWY 32: REIL. VASI(V4L)—GA 3.0° TCH 58′. Railroad.
RUNWAY DECLARED DISTANCE INFORMATION
RWY 05: TORA–6501 TODA–6501 ASDA–6221 LDA–6221
RWY 14: TORA–5000 TODA–5000 ASDA–5000 LDA–5000
RWY 23: TORA–6501 TODA–6501 ASDA–6426 LDA–6426
RWY 32: TORA–5000 TODA–5000 ASDA–5000 LDA–5000
SERVICE: S4 **FUEL** 100LL, JET A **OX** 3, 4 **LGT** ACTIVATE HIRL Rwy 05–23, MALSR Rwy 05, REIL Rwy 23 and Rwy 32, MIRL Rwy 14–32 and twy lgts—CTAF.
AIRPORT REMARKS: Attended 1100–0300Z‡. Deer on and invof arpt. For svc after hrs ctc 478–788–3491. Robins AFB Class D airspace 0.4 mile SE of dep EOR 14. VFR acft dep Rwy 14 btn 0100–1300Z‡ are advs to ctc Robins ATCT 133.22 prior to dep. PAEW adj to the movement areas from March 1 to Nov 1 for grass cutting.



AIRPORT MANAGER: 478-803-0460
WEATHER DATA SOURCES: ASOS 120.775 (478) 784–8825.
COMMUNICATIONS: CTAF 128.2 **ATIS** 120.775 **UNICOM** 122.95
Ⓡ **ATLANTA APP/DEP CON** 124.2 (1115–0400Z‡)
ATLANTA CENTER APP/DEP CON 134.5 (0400–1115Z‡)
MACON TOWER 128.2 (1300–0100Z‡) **GND CON** 121.65
CLEARANCE DELIVERY PHONE: For CD if una to ctc on FSS freq, ctc Atlanta Apch at 678-364-6132, when ATCT clsd ctc Atlanta ARTCC at 770-210-7692.
AIRSPACE: CLASS D svc 1300–0100Z‡; other times CLASS E.
TRSA svc ctc **APP CON** 20 NM out
RADIO AIDS TO NAVIGATION: NOTAM FILE MCN.
MACON (H) VORTACW 114.2 MCN Chan 89 N32°41.47′ W83°38.83′ at fld. 344/1E.
VOR unusable:
085°–099°
240°–280°
TACAN portion unusable:
240°–280° blo 3,000′
ILS 109.5 I–MCN Rwy 05. Class IIE.

- **Review Available Approaches** - Look for lowest minimums *that you can fly in your aircraft* (equipment and weather permitting)
  - **Caution:** Make sure to review all of the notes to be sure you can actually fly the approach!
    - It may be very difficult to find approaches you can fly without GPS or DME, and using GPS in lieu of DME may leave you with very few options in case of GPS failure.

- **Scenario Example:** The only Non-GPS or DME approaches (in this case only 2 VOR approaches) do not get us very low at all!
    - Even with these approaches, we can only use the lowest minimums if we can identify a stepdown fix with DME or GPS.



CATEGORY	A	B	C	D
S-23	1580-1¼ 1226 (1300-1¼)	1580-1½ 1226 (1300-1½)	1580-3 1226 (1300-3)	
C CIRCLING	1580-1¼ 1226 (1300-1¼)	1580-1½ 1226 (1300-1½)	1580-3 1226 (1300-3)	
ICAVO FIX MINIMUMS (DME OR GPS)				
S-23	860-1 506 (600-1)		860-1⅜ 506 (600-1⅜)	
C CIRCLING	900-1 546 (600-1)		920-1½ 566 (600-1½)	1120-2½ 766 (800-2½)

MIDDLE GEORGIA RGNL (MCN)
32°42'N-83°39'W
VOR RWY 23

CATEGORY	A	B	C	D
S-14	1280-1¼ 926 (1000-1¼)		1280-2½ 926 (1000-2½)	
C CIRCLING	1280-1¼ 926 (1000-1¼)		1280-2¾ 926 (1000-2¾)	1280-3 926 (1000-3)
JIVET FIX MINIMUMS (DME OR GPS)				
S-14	920-1 566 (600-1)		920-1⅝ 566 (600-1⅝)	
C CIRCLING	920-1 566 (600-1)		920-1⅝ 566 (600-1⅝)	1120-2½ 766 (800-2½)

MACON, GEORGIA
Amdt 10C 10NOV16
MIDDLE GEORGIA RGNL (MCN)
VOR RWY 14

- **Precision Approaches / APV Approaches** - Our best bet is generally a precision (i.e. ILS) or APV (i.e. LPV, a WAAS-required GPS approach w/ vertical guidance) approach. These can often get us down to as low as 200 feet AGL.
    - **Note:** Even circling minimums from these approaches can be lower than other options, if the winds make landing on the straight-in runway unsuitable!

CATEGORY	A	B	C	D
LPV DA	544/24 200 (200-½)			
LNAV/VNAV DA	863-1⅜ 519 (600-1⅜)			
LNAV MDA	860/24 516 (600-½)		860/55 516 (600-1)	
C CIRCLING	900-1 546 (600-1)		920-1½ 566 (600-1½)	1120-2½ 766 (800-2½)

MACON, GEORGIA
Amdt 3A 25APR19

MIDDLE GEORGIA RGNL (MCN)
RNAV (GPS) RWY 5

CATEGORY	A	B	C	D	E
S-ILS 5**	544/24 200 (200-½)				
S-LOC 5	840/24 496 (500-½)		840/50 496 (500-1)		
C CIRCLING	900-1 546 (600-1)		920-1½ 566 (600-1½)	1120-2½ 766 (800-2½)	1180-3 826 (900-3)

MACON, GEORGIA
Amdt 3A 25APR19

MIDDLE GEORGIA RGNL (MCN)
ILS or LOC RWY 5

- **Check Approach Notes Carefully!** - Just make sure to read the notes completely to ensure you can actually fly the approach!

MACON, GEORGIA — AL-243 (FAA) — 20086

ILS or LOC RWY 5
MIDDLE GEORGIA RGNL (MCN)

LOC I-MCN 109.5	APP CRS 054°	Rwy Idg 6221 TDZE 344 Apt Elev 354

DME required.

T A — DME from MCN VORTAC. Simultaneous reception of I-MCN and MCN DME required. For inop ALS, increase S-ILS 5 Cat E visibility to RVR 4000 and S-LOC 5 Cats C/D/E visibility to 1⅜ SM.
**RVR 1800 authorized with use of FD or AP or HUD to DA.

MALSR

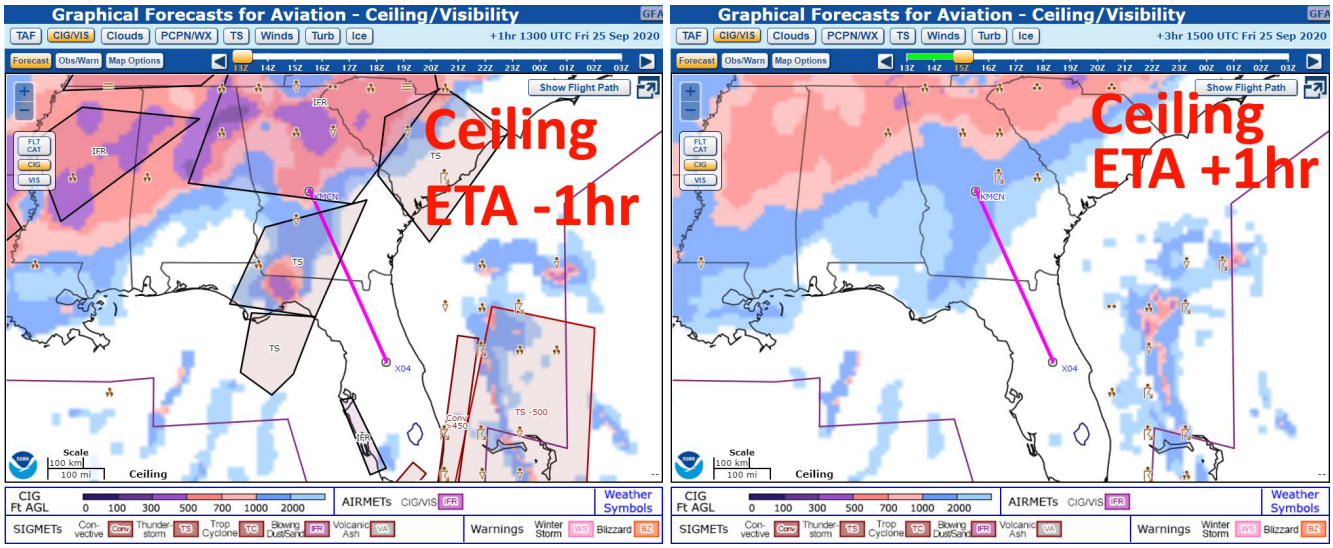
MISSED APPROACH: Climb to 800 then climbing left turn to 2300 on MCN VORTAC R-028 to MURVE INT/MCN 17 DME and hold.

ATIS	ATLANTA APP CON ★	MACON TOWER ★	GND CON	UNICOM
120.775	124.2 279.6	128.2 (CTAF) L 257.8	121.65	122.95

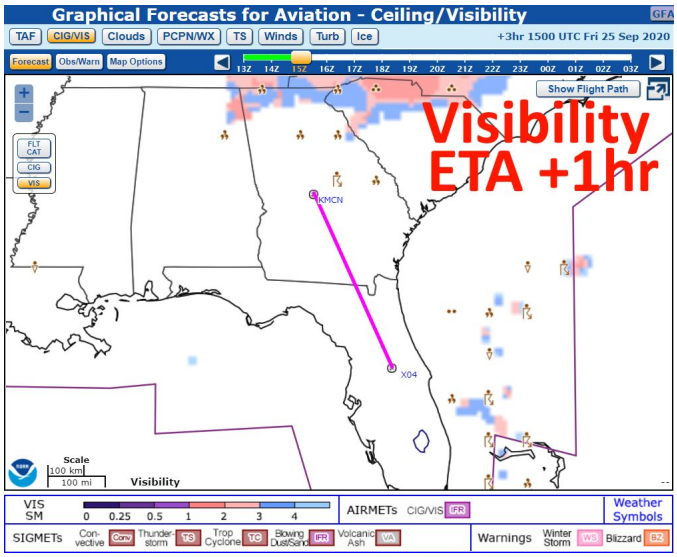
- **Calculate ETE/ETA** - We will use ForeFlight to perform our calculations, including wind, performance, etc.
    - **Flight Planned Route** - 272 nm
    - **Proposed Departure Time:** 1200Z
    - **Estimated Time Enroute:** 2 hours 25 minutes
    - **Estimated Time of Arrival:** 1425Z
- **Determine Alternate Requirements** - Do we need to file an IFR alternate?
    - **Remember the "1 2 3" rule** - 1 hour before or after ETA, at least 2000 ft ceiling and 3 SM visibility
        - For our scenario, we need to file an alternate!
    - Use *Estimated Time Enroute* to determine the window of time to investigate

```
KMCN 251139Z 2512/2612 VRB03KT 6SM -DZ VCSH SCT004 OVC008
        TEMPO 2512/2515 4SM -SHRA BKN004 ← ETA -1 hour
        FM251500 21005KT P6SM OVC012 ← ETA +1 hour
        FM251700 23006KT P6SM BKN025
        FM252000 24006KT P6SM BKN035
        FM252300 00000KT P6SM SCT200
        FM261000 00000KT 5SM BR BKN004 OVC006
```

- **Choosing a Suitable Alternate** - We look for an alternate **in an area that seems like it may have better weather**, and ideally along or near our route of flight. The weather for the alternate is evaluated according to the approximate time of arrival *at the alternate*.
    - **Note:** Extra consideration should be given to airports with a *Precision Approach*. (i.e. An ILS)
        - Precision approaches will also more commonly have approach lighting systems.
    - **Standard Alternate Weather Minimums**
        - **Precision Approach** - 600-2
            - **Caution:** APV (i.e. WAAS/LPV) approaches are *not* considered precision approaches!
        - **Non-Precision Approach** - 800-2
    - **Weather Sources** - Ideally we have a TAF, but what if there are no TAFs?
        - The *Graphical Area Forecast (GFA) Tool* is the "official" source of forecast data in lieu of a TAF. (See Appendix for GFA plots for our scenario.)
    - **Scenario: Weather** - We use GFA plots to see that the primary consideration is the low ceilings forecast during our ETA at *Macon (KMCN)*. The weather clears some 1-2 hours later.

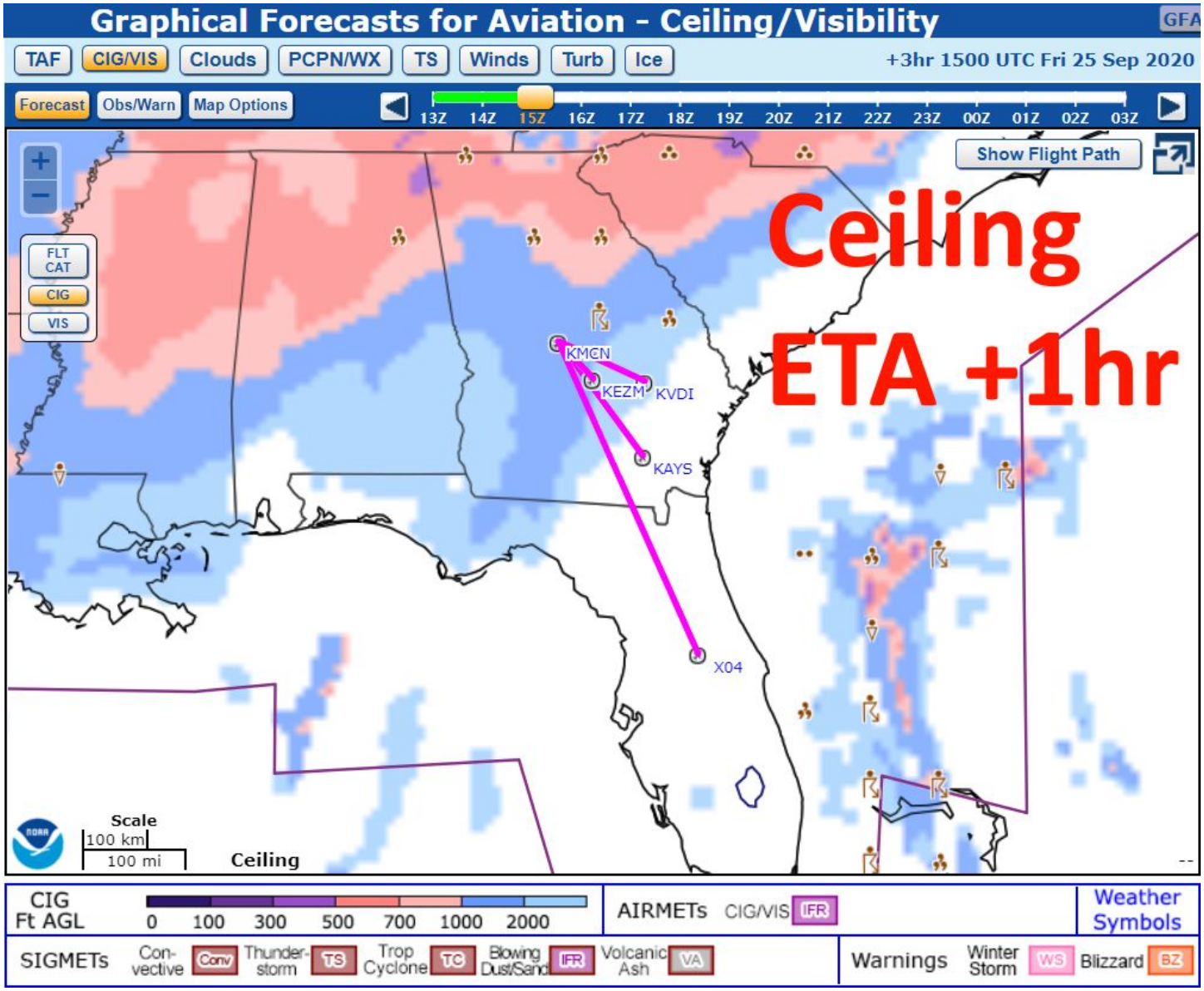


GFA Ceiling Plot 1 hour prior to 1 hour after the Estimated Arrival Time over Macon (KMCN)

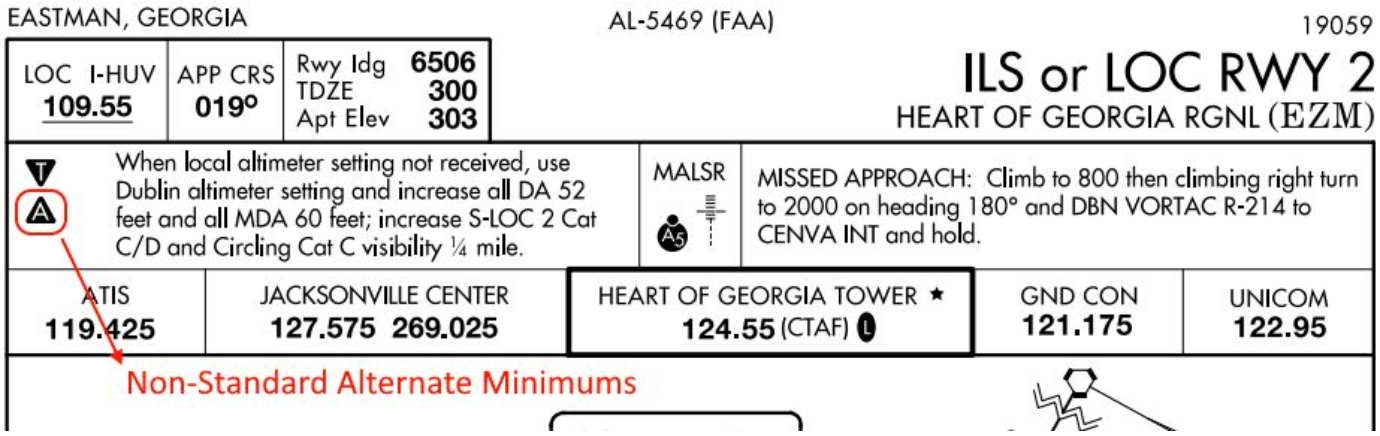


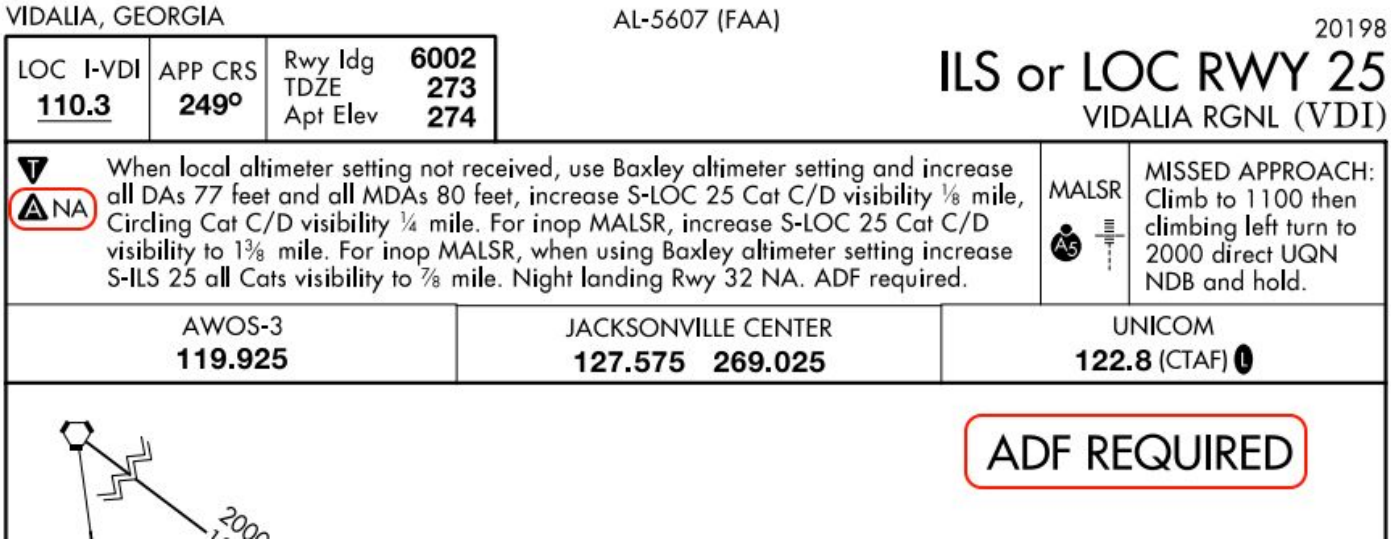
GFA Visibility Plot (right) at Estimated Arrival Time over Macon (KMCN) +1 hour

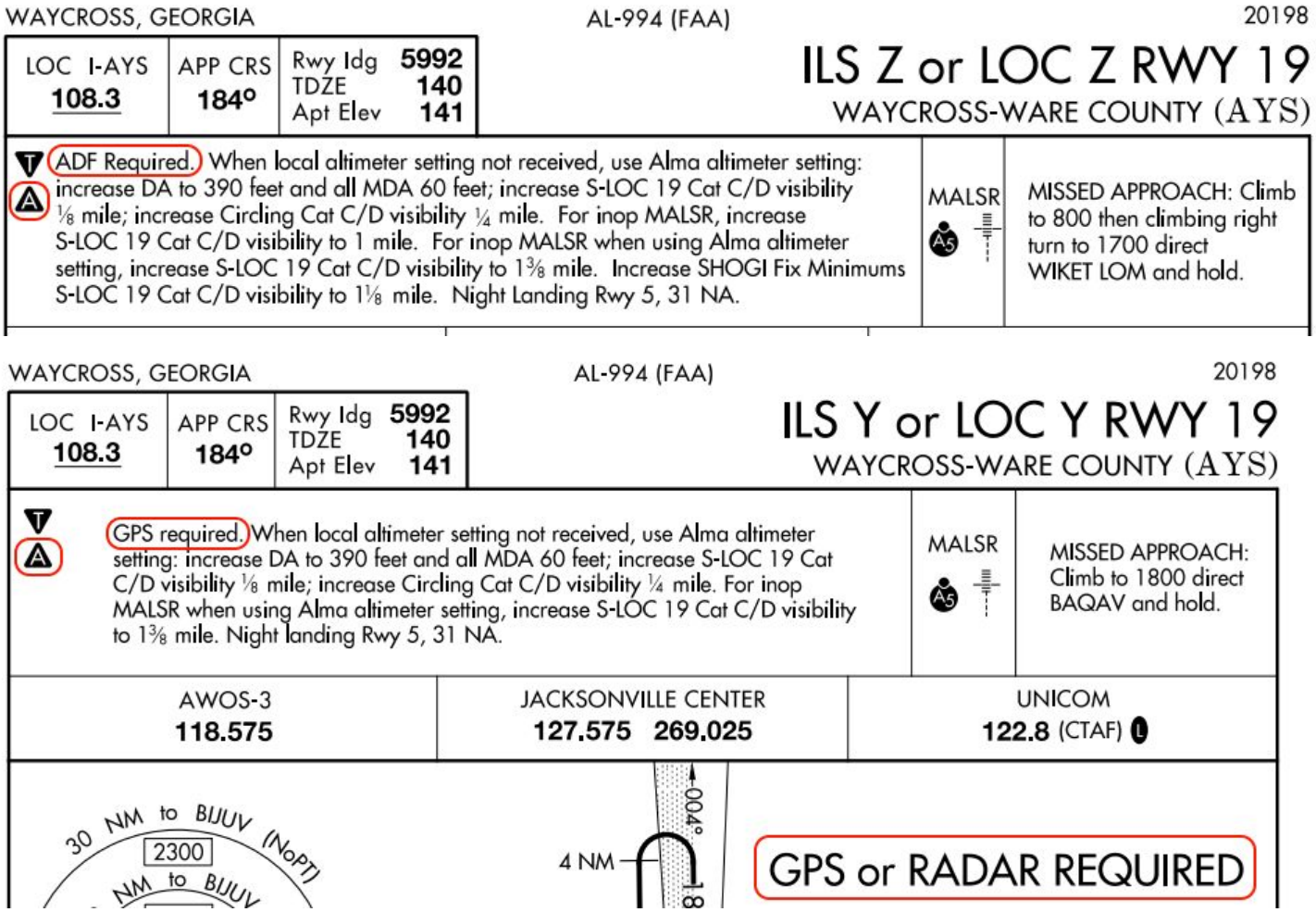
- **Scenario: Possible Alternates** - We can see from the GFA tool that there will be broad areas of low ceilings, with **clearer weather to the southeast**. We have identified the following 3 possible alternates:
  - *Eastman / Heart of Georgia Regional (KEZM)* - **+39nm +3gal +21m**
    - Close by, VOR MON Airport, ILS, 2 RNAV (LPV) Approaches
  - *Vidalia Municipal (KVDI)* - **+71nm +6gal +36m**
    - Slightly further, ILS/LOC, 2 RNAV (LPV) Approaches
  - *Waycross / Ware County (KAYS)* - **+107nm +9gal +1h1m**
    - Much further, 2 ILS, 2 RNAV (LPV), VOR-A Approaches



- **Evaluate Suitability of the Alternate** - Review available approaches to determine:
  - **Can I fly this approach with my aircraft and equipment?**
    - Can I fly GPS approaches? Do I have DME or ADF?
    - **Caution:** *Many modern ILS approaches will require GPS or ADF!*
  - Is the approach marked *Not Authorized* for use, or *Not Authorized as an Alternate*?
  - Does the approach have *Non-Standard Alternate Minimums*?
  - Is the approach not flyable because of weather?
    - Minimums not low enough
    - Winds or other conditions would be make it impossible
    - Not Authorized at night, etc.







WAYCROSS, GEORGIA AL-994 (FAA) 20198

LOC I-AYS	APP CRS	Rwy Idg	TDZE	Apt Elev
108.3	184°	5992	140	141

ILS Z or LOC Z RWY 19
WAYCROSS-WARE COUNTY (AYS)

T A ADF Required. When local altimeter setting not received, use Alma altimeter setting: increase DA to 390 feet and all MDA 60 feet; increase S-LOC 19 Cat C/D visibility ⅛ mile; increase Circling Cat C/D visibility ¼ mile. For inop MALSR, increase S-LOC 19 Cat C/D visibility to 1 mile. For inop MALSR when using Alma altimeter setting, increase S-LOC 19 Cat C/D visibility to 1⅜ mile. Increase SHOGI Fix Minimums S-LOC 19 Cat C/D visibility to 1⅛ mile. Night Landing Rwy 5, 31 NA.

MALSR (A5)

MISSED APPROACH: Climb to 800 then climbing right turn to 1700 direct WIKET LOM and hold.

WAYCROSS, GEORGIA AL-994 (FAA) 20198

LOC I-AYS	APP CRS	Rwy Idg	TDZE	Apt Elev
108.3	184°	5992	140	141

ILS Y or LOC Y RWY 19
WAYCROSS-WARE COUNTY (AYS)

T A GPS required. When local altimeter setting not received, use Alma altimeter setting: increase DA to 390 feet and all MDA 60 feet; increase S-LOC 19 Cat C/D visibility ⅛ mile; increase Circling Cat C/D visibility ¼ mile. For inop MALSR when using Alma altimeter setting, increase S-LOC 19 Cat C/D visibility to 1⅜ mile. Night landing Rwy 5, 31 NA.

MALSR (A5)

MISSED APPROACH: Climb to 1800 direct BAQAV and hold.

AWOS-3	JACKSONVILLE CENTER	UNICOM
118.575	127.575 269.025	122.8 (CTAF) L

M4

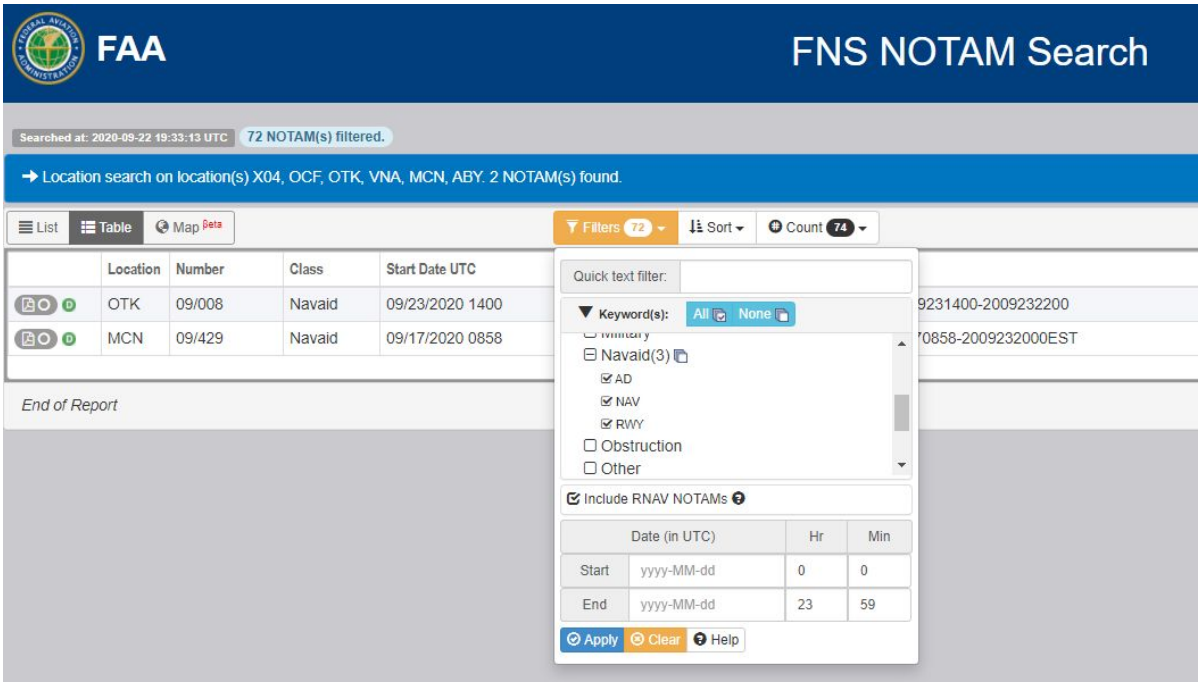
A ALTERNATE MINS A

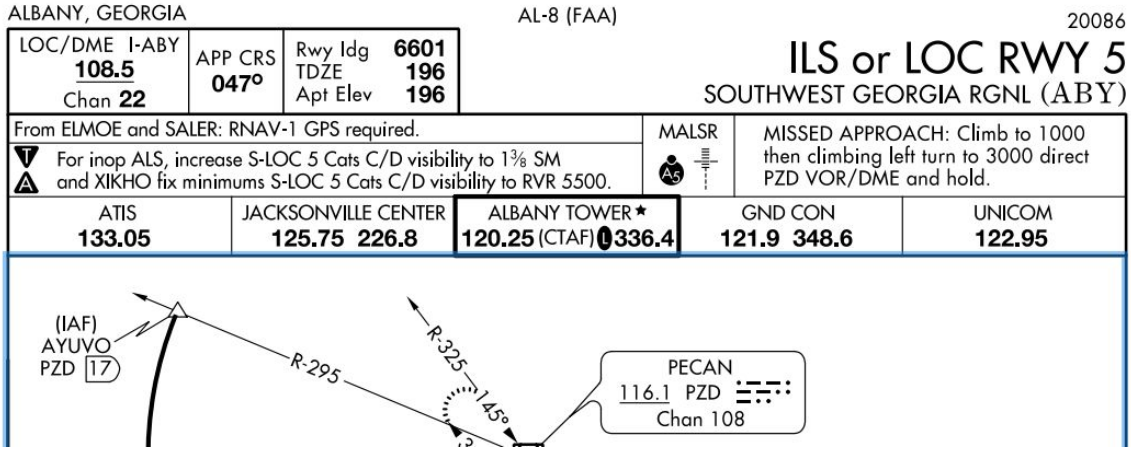
20254

NAME	ALTERNATE MINIMUMS
EASTMAN, GA	
HEART OF GEORGIA RGNL (EZM)	**ILS or LOC Rwy 2[1]**
	RNAV (GPS) Rwy 2
	RNAV (GPS) Rwy 20
NA when local weather not available.	
[1]NA when control tower closed.	

NAME	ALTERNATE MINIMUMS
FORT STEWART (HINESVILLE), GA	
WRIGHT AAF (FORT STEWART)/ MIDCOAST RGNL (LHW)	**NDB Rwy 33R**
	RNAV (GPS) Rwy 33R
NA when local weather not available.	
GADSDEN, AL	

- **Evaluate NOTAMs** - Ideally retrieve a full briefing from Flight Service
  - Search NOTAMs: https://notams.aim.faa.gov/notamSearch/nsapp.html
  - NOTAMs may affect an IFR flight plan in many ways:
    - Airport, Runway, Taxiway or other important closures.
    - Approaches NOTAM'd as Not Authorized
    - Approaches NOTAM'd to change: minimums, equipment requirements, etc.
    - NAVAIDs NOTAM'd out of service





- **Consider IFR Fuel Requirements** - Recall the regulatory IFR fuel requirements:
  - Per FAR § 91.167, you will need at least:
    - Enough fuel to fly to the destination, and
    - ...then to the alternate, and
    - ...then 45 minutes thereafter at normal cruising speed.
  - *Personal Minimums can increase this number.*
    - **For example:** Add 15 minutes per airport to allow for an approach, plus 60 minutes thereafter.
  - **Caution:** Notice that when you are required to select an IFR Alternate that is far away from your destination, your IFR range is reduced significantly!

- **Filing the IFR Flight Plan** - After we've done all the preparation and determined that we can fly the scenario, we can proceed to file the flight plan.
    - **Information Required** - An IFR flight plan requires certain basic information…
        - Tail Number
        - Origin
        - Destination
        - Cruising Altitude
        - True Airspeed
        - Route of Flight
        - Estimated Time of Departure (ETD)
        - Estimated Time Enroute (ETE)
        - Fuel Onboard (in hours and minutes)
        - Alternate (if required)
        - Pilot's Name / Contact Details
        - Aircraft Color(s)
        - Aircraft ICAO Equipment and Surveillance Codes - See below
        - Souls Onboard
    - **ICAO Equipment Codes** - The ICAO equipment codes are fairly complex, however they are split into basic groups. *You must consult your POH and POH Supplements to determine the appropriate filing codes for your installed equipment.*
        - **Basic Equipment** - What type of basic NAV radios are installed, GPS, etc.
        - **Surveillance Equipment** - What type of transponder/ADS-B solution is installed, etc.
        - **Performance Based Navigation (PBN)** - What are the navigation capabilities of the GPS, etc.
        - **Wake Category** - What wake turbulence category applies?
    - **How to File** - When ready to file the flight plan, there are several options…
        - **Use an EFB/Online Tool** - Using *ForeFlight* for example, we can easily file from within the application
        - **Call Flight Service** - Call a briefer at 1-800-WX-BRIEF to file the flight plan.
        - **Contact Flight Service over VHF** - We can talk to a Flight Service Station over our VHF COM radios to file a flight plan, if we're already in flight, for example.
        - **Ask ATC for a "Pop Up" IFR** - This is only used in situations where you are already airborne and did not expect to encounter IFR weather, and you want a short-duration IFR flight to land somewhere.

- **ICAO Equipment** - See: https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/fs/wd/media/ICAO_Equip_Code_Definitions.pdf
    - **Example:** *Our Scenario Airplane*

FAA Equipment

- ( ) /A - DME w/ Mode C
- ( ) /B - DME no Mode C
- ( ) /C - RNAV no Mode C
- ( ) /D - DME no Transponder
- (•) /G - GPS/GNSS w/ enrte/term/appr
- ( ) /H - RVSM w/ no Mode C
- ( ) /I - RNAV w/ Mode C
- ( ) /L - GPS w/ enrte/term/appr/RVSM
- ( ) /M - TACAN no Transponder
- ( ) /N - TACAN no Mode C
- ( ) /P - TACAN w/ Mode C
- ( ) /S - GNSS w/ Mode A
- ( ) /T - no DME no Mode C
- ( ) /U - no DME w/ Mode C
- ( ) /V - GNSS w/ no Transponder
- ( ) /W - RVSM w/ Mode C
- ( ) /X - no DME no Transponder
- ( ) /Y - RNAV w/ no Transponder
- ( ) /Z - RVSM w/ RNAV/Mode C, no GNSS

ICAO Equipment

- [ ] A - GBAS Landing Sys
- [ ] B - LPV (APV with SBAS)
- [ ] C - LORAN C
- [x] D - DME
- [ ] E1 - FMC WPR ACARS
- [ ] E2 - D-FIS ACARS
- [ ] E3 - PDC ACARS
- [ ] F - ADF
- [x] G - GNSS
- [ ] H - HF RTF
- [ ] I - Inertial Nav
- [ ] J1 - CPDLC ATN DL Mode 2
- [ ] J2 - CPDLC FANS 1/A HFDL
- [ ] J3 - CPDLC FANS 1/A VDL Mode A
- [ ] J4 - CPDLC FANS 1/A VDL Mode 2
- [ ] J5 - CPDLC FANS 1/A (INMARSAT)
- [ ] J6 - CPDLC FANS 1/A (MTSAT)
- [ ] J7 - CPDLC FANS 1/A (Iridium)
- [ ] K - MLS
- [ ] L - ILS
- [ ] M1 - ATC RTF (INMARSAT)
- [ ] M2 - ATC RTF (MTSAT)
- [ ] M3 - ATC RTF (Iridium)
- [ ] N - NIL
- [ ] O - VOR
- [ ] P1 - CPDLC RCP 400
- [ ] P2 - CPDLC RCP 240
- [ ] P3 - SATVOICE RCP 400
- [x] R - PBN Approved
- [x] S (VOR, VHF RTF, ILS)
- [ ] T - TACAN
- [ ] U - UHF RTF
- [ ] V - VHF RTF
- [ ] W - RVSM
- [ ] X - MNPS or NAT HLA Approved
- [ ] Y - VHF 8.33 kHz spacing
- [ ] Z - Other

ICAO Surveillance Codes

- [ ] A - Mode A
- [x] B1 - ADS-B, Dedicated 1090 Out
- [ ] B2 - ADS-B, Dedicated 1090 Out+In
- [ ] C - Modes A and C
- [ ] D1 - ADS-C, FANS
- [ ] E - Mode S, ID, Alt, Squitter
- [ ] G1 - ADS-C, ATN
- [ ] H - Mode S, ID, Alt, Enhanced Surv
- [ ] I - Mode S, ID no Alt
- [x] L - Mode S, ID, Alt, Enhanced Surv
- [ ] N - NIL
- [ ] P - Mode S, Alt no ID
- [ ] S - Mode S, ID and Alt
- [ ] U1 - ADS-B, UAT Out
- [ ] U2 - ADS-B, UAT Out+In
- [ ] V1 - ADS-B, VDL Mode 4 Out
- [ ] V2 - ADS-B, VDL Mode 4 Out+In
- [ ] X - Mode S, no ID no Alt

ICAO Wake Category

- (•) Light - 15,500 lbs or less
- ( ) Medium - 15,501 to 299,999 lbs
- ( ) Heavy - 300,000 lbs or more

ICAO Perf-Based Nav (PBN)

- [ ] A1 - RNAV 10 (RNP10)
- [ ] B1 - RNAV 5 All Sensors
- [x] B2 - RNAV 5 GNSS
- [ ] B3 - RNAV 5 DME/DME
- [ ] B4 - RNAV 5 VOR/DME
- [ ] B5 - RNAV 5 INS/IRS
- [ ] B6 - RNAV 5 LORAN C
- [ ] C1 - RNAV 2 All Sensors
- [x] C2 - RNAV 2 GNSS
- [ ] C3 - RNAV 2 DME/DME
- [ ] C4 - RNAV 2 DME/IRU
- [ ] D1 - RNAV 1 All Sensors
- [x] D2 - RNAV 1 GNSS
- [ ] D3 - RNAV 1 DME/DME

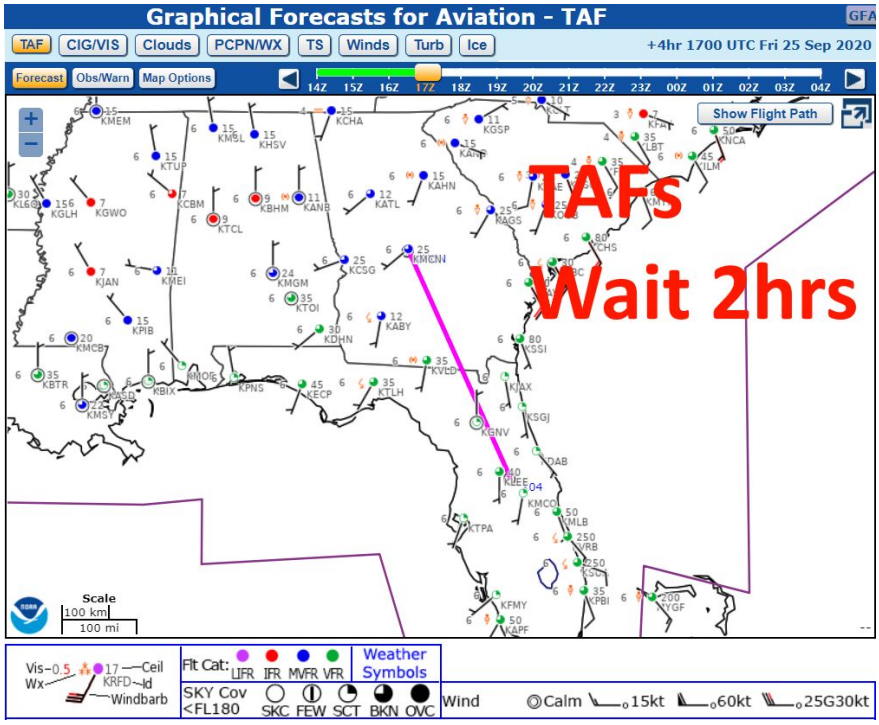
STS Special Handling

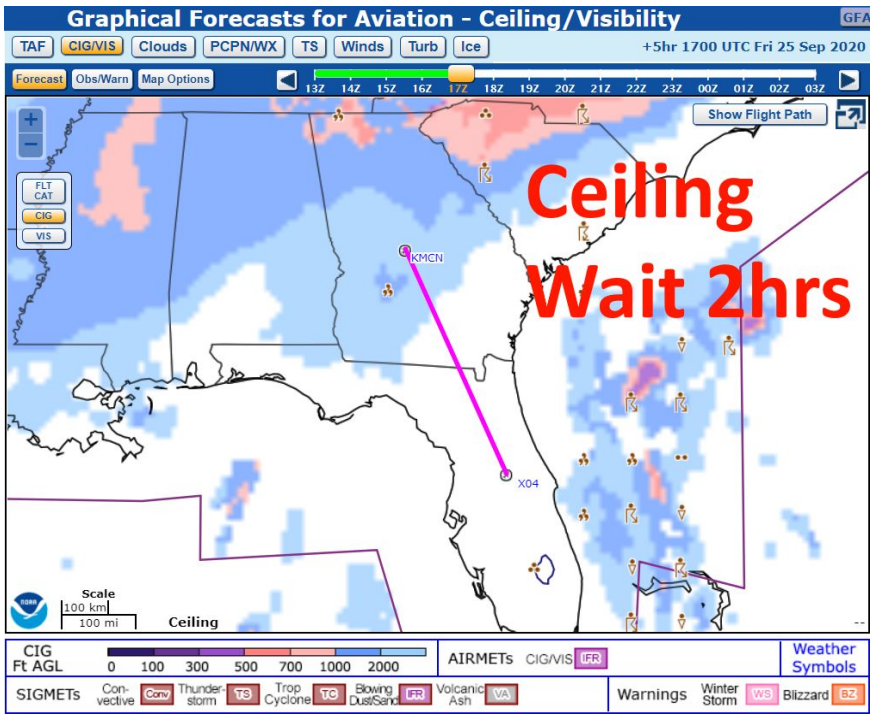
- [ ] ALTRV - Altitude Reservation
- [ ] ATFMX - ATFM exempt
- [ ] FFR - Firefighting
- [ ] FLTCK - Flight check
- [ ] HAZMAT - Hazardous material
- [ ] HEAD - Head of state
- [ ] HOSP - Medical flight
- [ ] HUM - Humanitarian
- [ ] MARSA - Military separation
- [ ] MEDEVAC - Medical evacuation
- [ ] NONRVSM - Non-RVSM in RVSM
- [ ] SAR - Search and rescue
- [ ] STATE - Military/police

Other Information

CODE Optional
COM Optional
DAT Optional
DLE Optional
EET Optional
NAV Optional
OPR Optional
ORGN Optional
PER Optional
RALT Optional

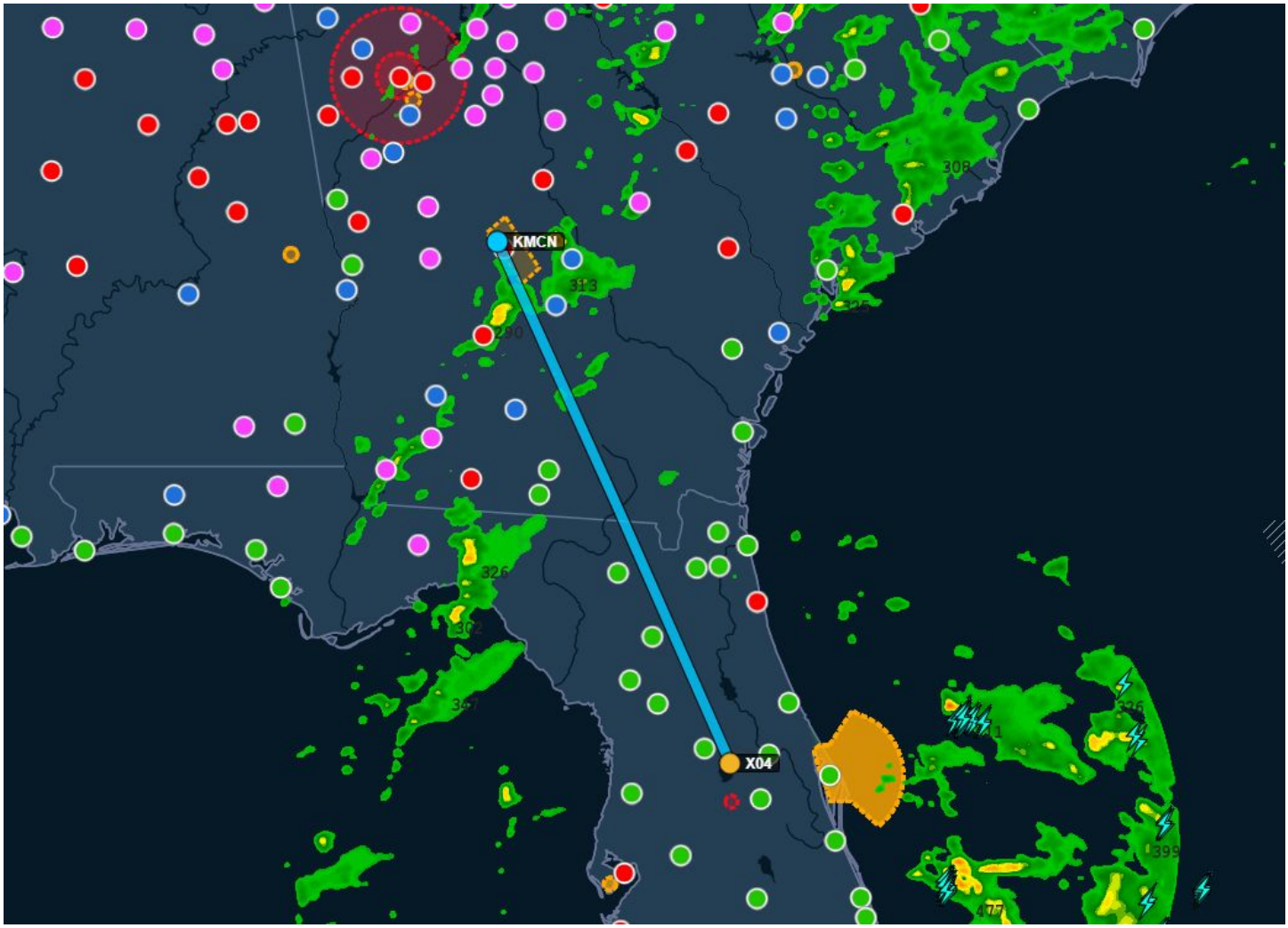
- **Making a Final Go/No-Go Decision** - The most important part of planning an IFR flight is the final go/no-go decision.
    - **Get Updated Weather** - It is best to get an IFR flight briefing from Flight Service just before departure to ensure that conditions have not changed, or new NOTAMs published, etc.
    - **Consider PAVE Checklist** - Think again about the PAVE checklist and identify any unacceptable risks.
    - ***Is it better to wait?*** - In our scenario, the weather improves considerably with just a short 2 hour wait! **Less chance of going missed, less chance of going to an alternate!**



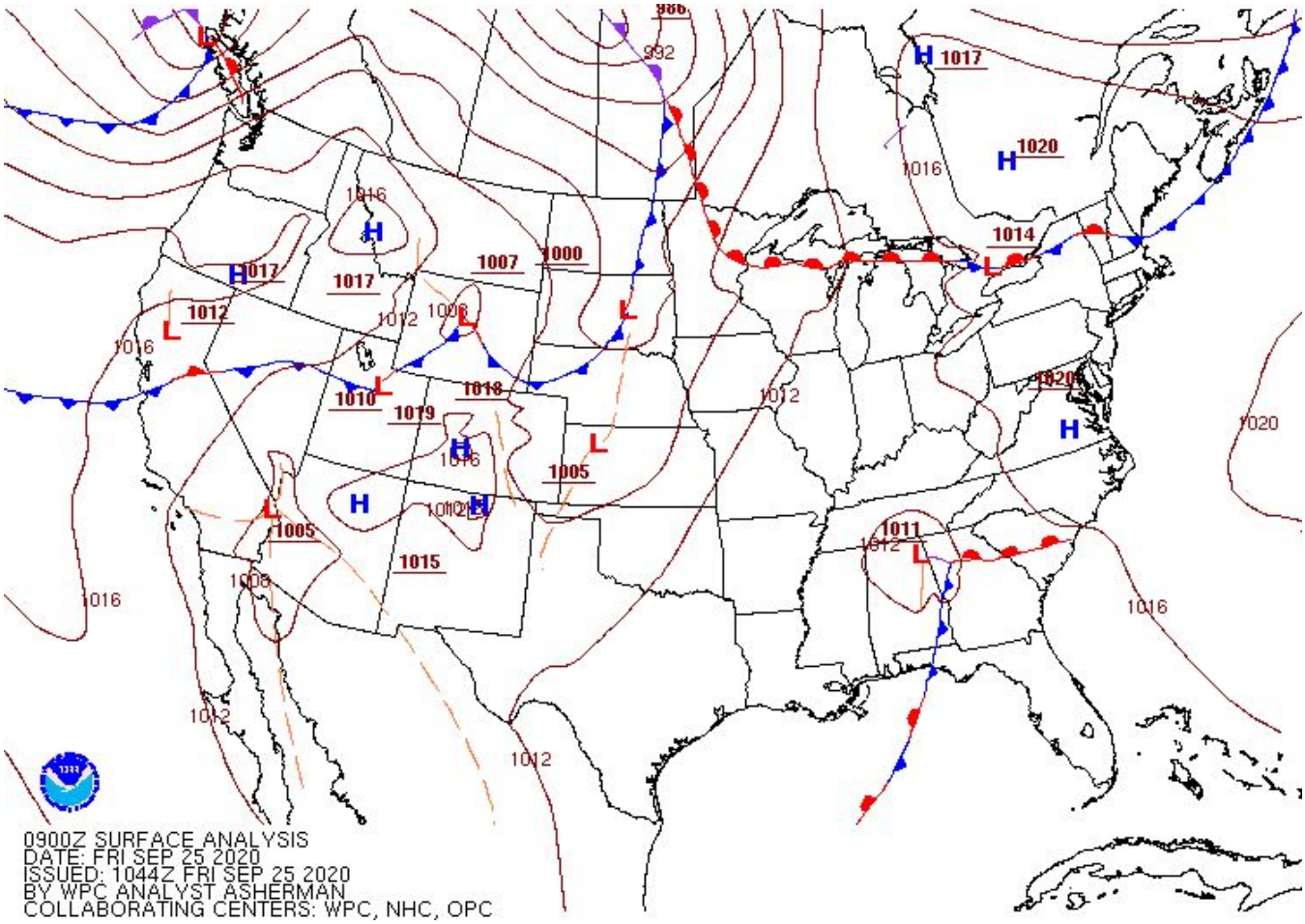


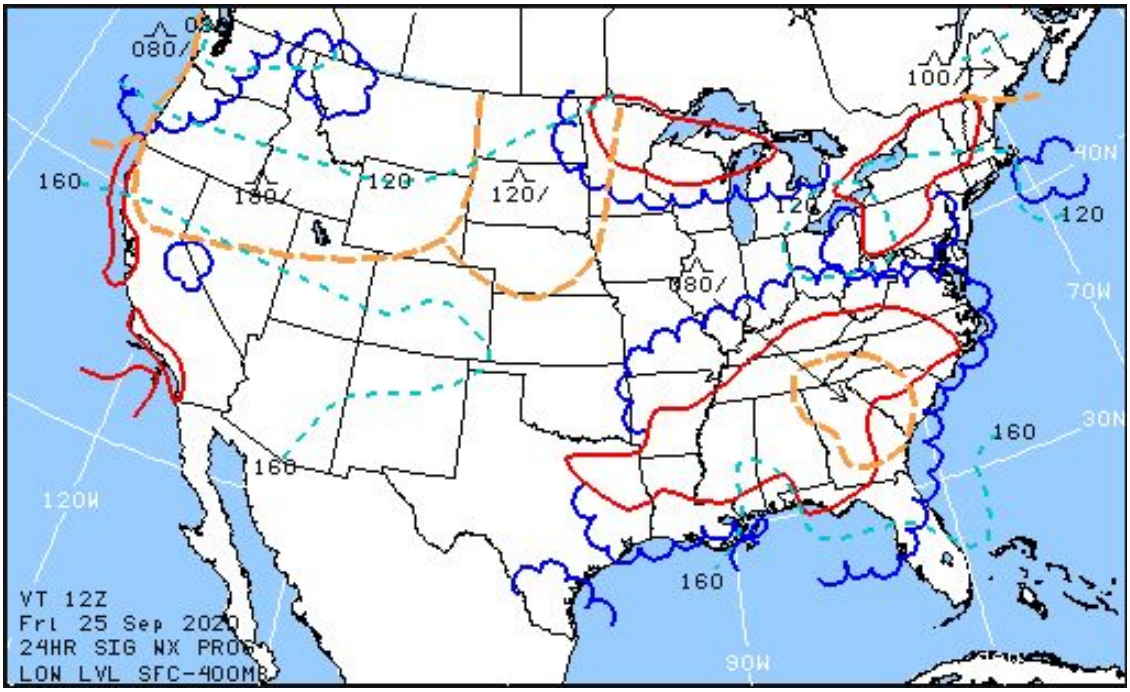
Appendix - Scenario Weather and Selected Procedures

NEXRAD Composite 1130Z

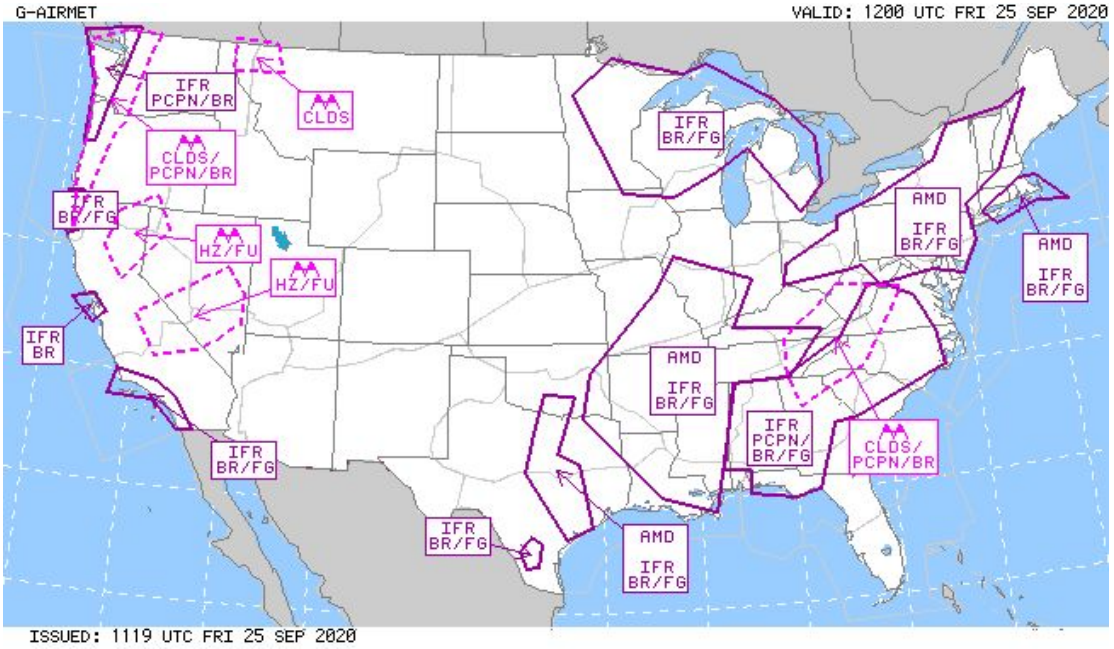


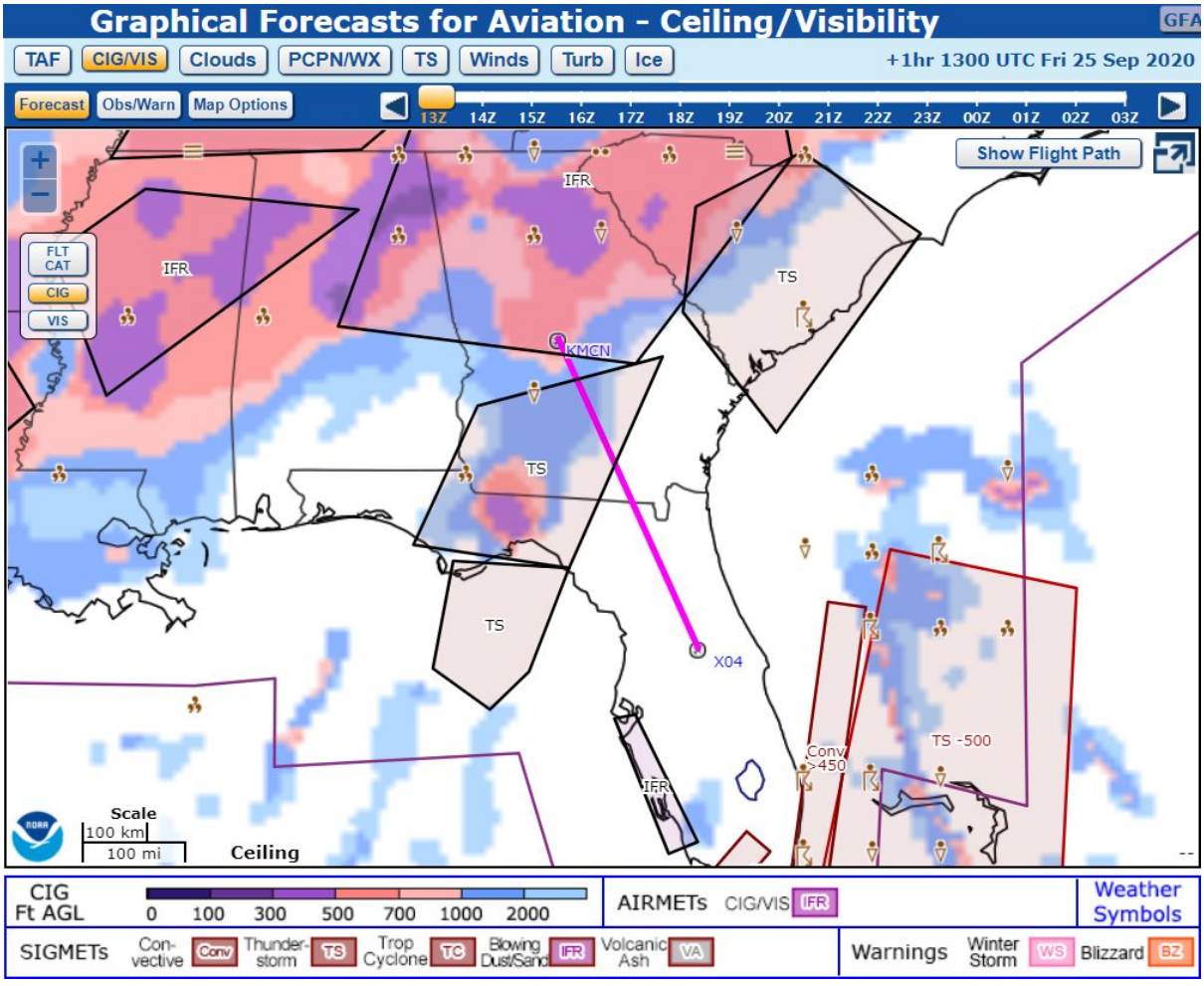
Surface Analysis 0900Z / SIGWX Prog 1200Z



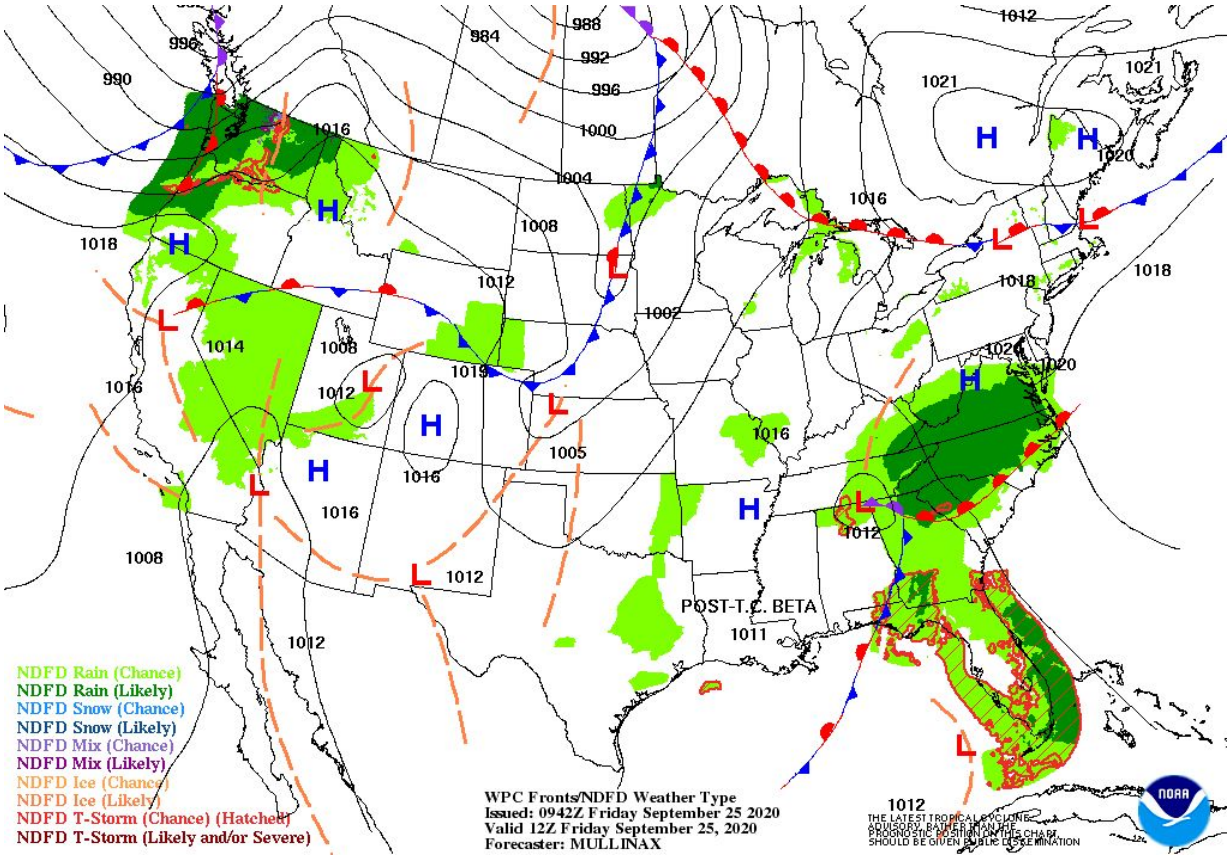


Graphical AIRMETs 1200Z / GFA Ceiling Plot 1300Z

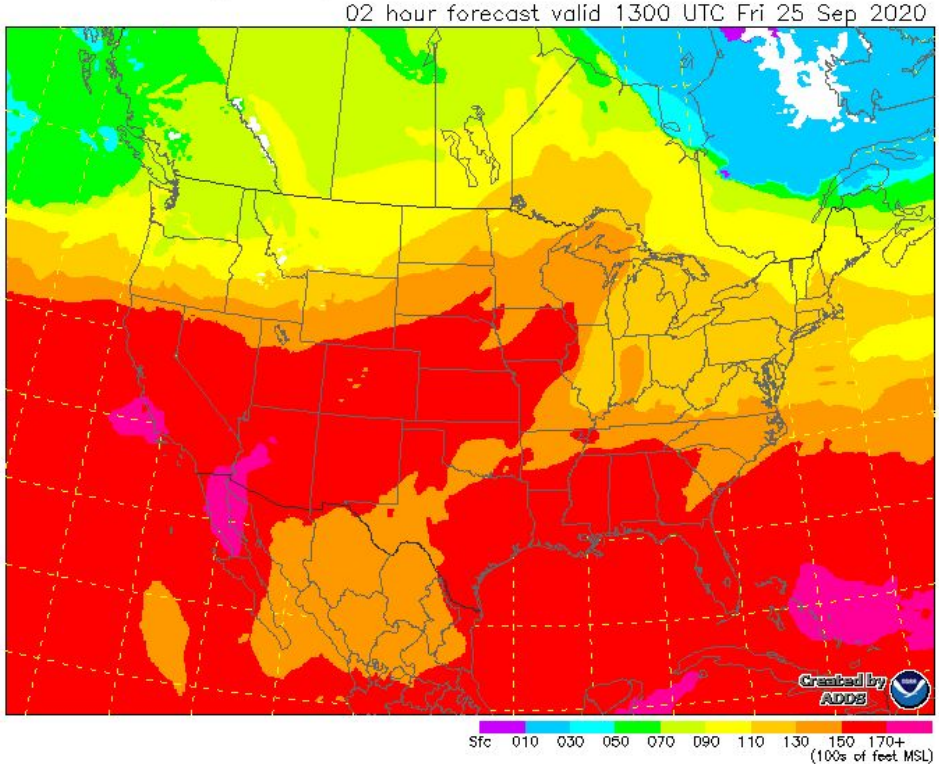




Low Level Prog Chart 1200Z / Lowest Freezing Level 1300Z



Lowest freezing level (100s of feet MSL)



METARs / TAFs / Winds Aloft - Retrieved 1130Z

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METAR KLEE 251153Z 14003KT 10SM CLR 24/24 A2999 RMK AO2 SLP153 T02440239 10250 20228 53010=

METAR KSFB 251153Z 00000KT 10SM CLR 24/23 A2997 RMK AO2 SLP148 T02390228 10250 20228 53010=

METAR KGNV 251153Z 00000KT 10SM CLR 21/21 A3000 RMK AO2 SLP157 T02110211 10233 20211 53010=

KSFB 251136Z 2512/2612 14004KT P6SM FEW025 BKN250
  FM251500 17007KT P6SM SCT025 SCT050
  FM251900 12008KT P6SM VCTS SCT030CB BKN050
  TEMPO 2520/2522 3SM TSRA BKN030CB
  FM260000 19005KT P6SM FEW030 SCT060 BKN250

KLEE 251136Z 2512/2612 14004KT P6SM SCT060 BKN100
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  FM252000 VRB05KT P6SM VCTS SCT030CB BKN250
  TEMPO 2521/2523 3SM TSRA BKN030CB
  FM260100 18004KT P6SM FEW030 SCT060 BKN250

KGNV 251125Z 2512/2612 VRB04KT P6SM FEW040 SCT150
  FM252000 22006KT P6SM VCTS SCT040CB SCT200
  FM260000 00000KT P6SM FEW040 SCT200

KVLD 251125Z 2512/2612 19003KT P6SM VCSH BKN035
  FM251800 19004KT P6SM VCTS BKN040CB
  TEMPO 2518/2522 4SM TSRA OVC040CB
  FM252200 19003KT P6SM VCSH BKN070
  FM260000 VRB03KT P6SM BKN100
  FM260900 00000KT 3SM BR SCT004

KMCN 251139Z 2512/2612 VRB03KT 6SM -DZ VCSH SCT004 OVC008
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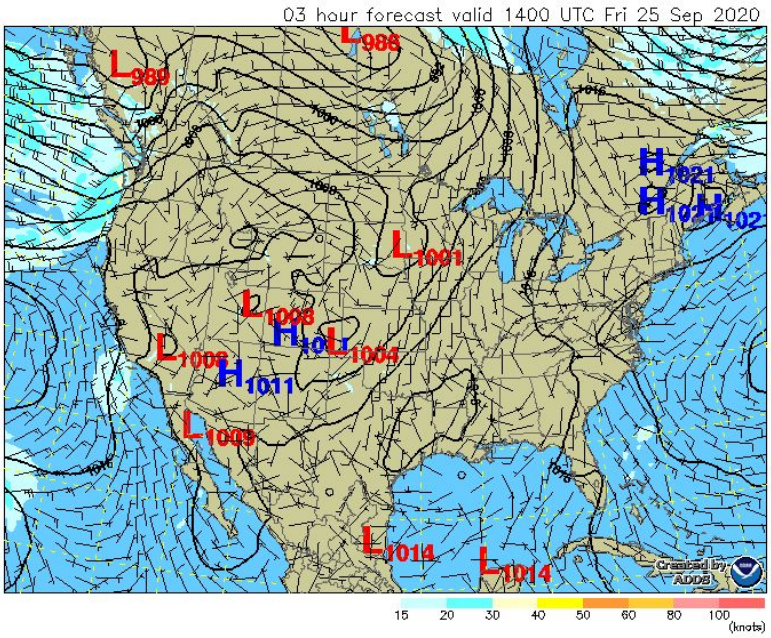
  FM251500 21005KT P6SM OVC012
  FM251700 23006KT P6SM BKN025
  FM252000 24006KT P6SM BKN035
  FM252300 00000KT P6SM SCT200
  FM261000 00000KT 5SM BR BKN004 OVC006
```

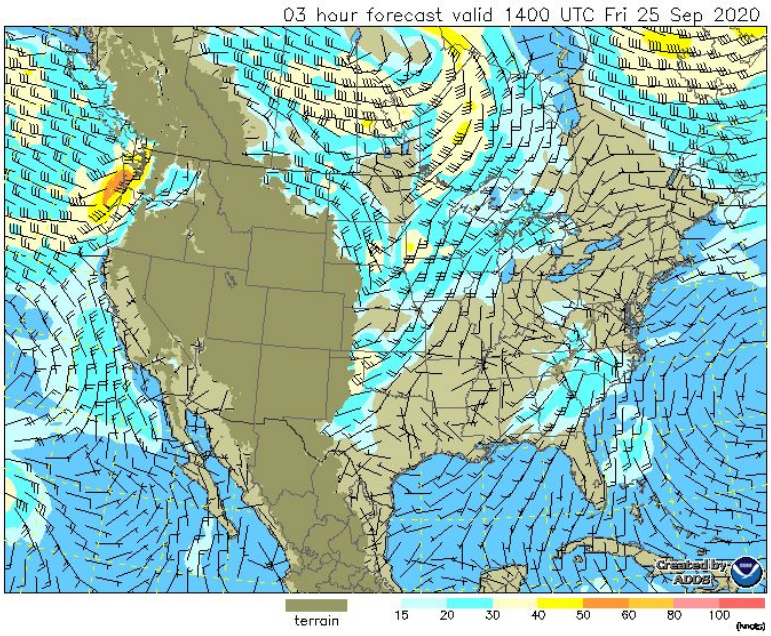
```
 (Extracted from FBUS31 KWNO 251354)
FD1US1
DATA BASED ON 251200Z
VALID 251800Z   FOR USE 1400-2100Z. TEMPS NEG ABV 24000

FT  3000    6000    9000   12000   18000   24000  30000  34000  39000
EYW 2311 2214+17 2212+12 2409+08 2508-05 2707-15 990030 990040 311153
JAX 1905 2109+16 2409+11 2416+07 2426-06 2526-17 244033 264242 274651
MIA 1811 2315+16 2318+12 2517+07 2815-05 2907-15 990029 990040 300953
MLB 1806 2110+17 2209+12 2410+07 2612-06 2419-15 243130 243340 263653
PFN 2508 2413+15 2223+11 2425+07 2427-06 2329-17 273332 274441 274652
PIE 9900 9900+16 2507+12 2509+08 2513-06 2418-16 253230 263740 263553
TLH 2108 2416+16 2321+12 2426+07 2430-06 2428-17 273232 274341 285052
ATL 2307 2421+13 2330+10 2423+07 2625-07 2637-18 265534 275943 276451
CSG 2408 2423+16 2427+11 2520+08 2622-07 2534-18 264933 275543 276751
SAV 1915 2117+15 2321+10 2423+06 2536-07 2535-18 244434 254043 274551
HAT 1815 1917+13 2221+09 2325+04 2546-09 2550-19 265534 256244 266654
ILM 1822 2017+14 2522+09 2528+05 2441-08 2549-19 255534 256143 256153
RDU 1928 2333+13 2531+08 2433+03 2434-09 2443-21 246534 256744 257053
CAE 1914 2227+15 2326+10 2428+05 2532-08 2545-18 255234 255243 266051
CHS 1917 2218+15 2320+10 2423+06 2539-07 2540-18 244733 245043 254851
FLO 1919 2126+14 2324+09 2426+04 2534-08 2544-19 255734 255643 255852
GSP 2311 2328+14 2331+10 2334+05 2530-09 2542-21 256534 266643 266151
2XG 1828 1922+16 2117+11 2314+06 2719-06 2522-17 233832 244441 255253
```

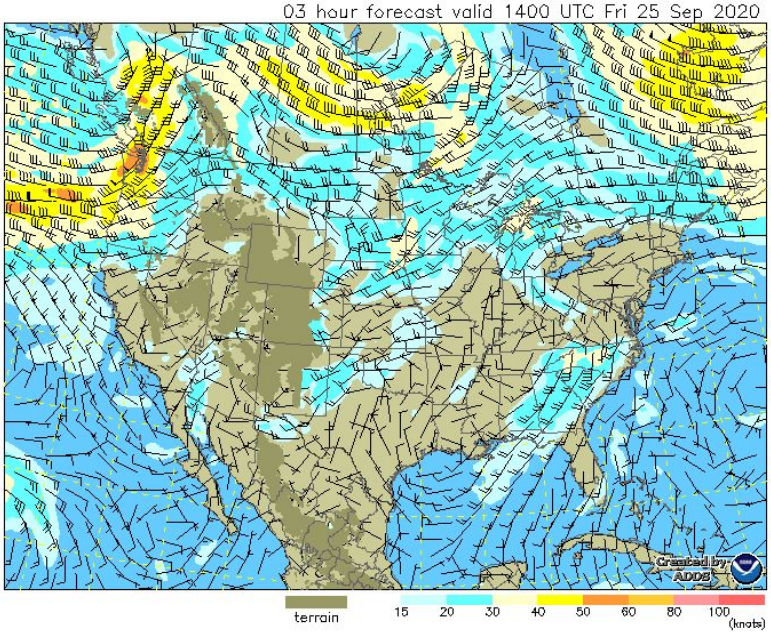
Sea-level pressure (mb) / surface wind speed (kts)



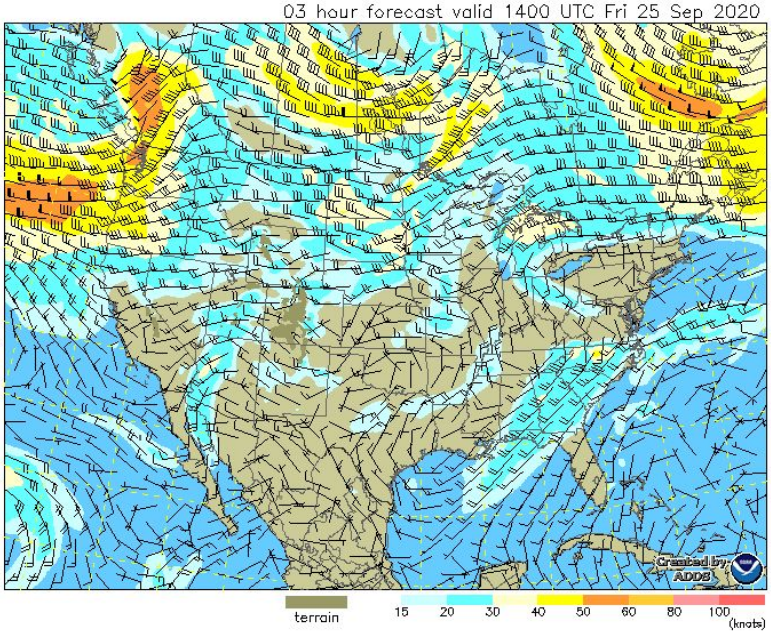
Wind speed (kts) at 3,000 MSL (900 mb)



Wind speed (kts) at 6,000 MSL (800 mb)

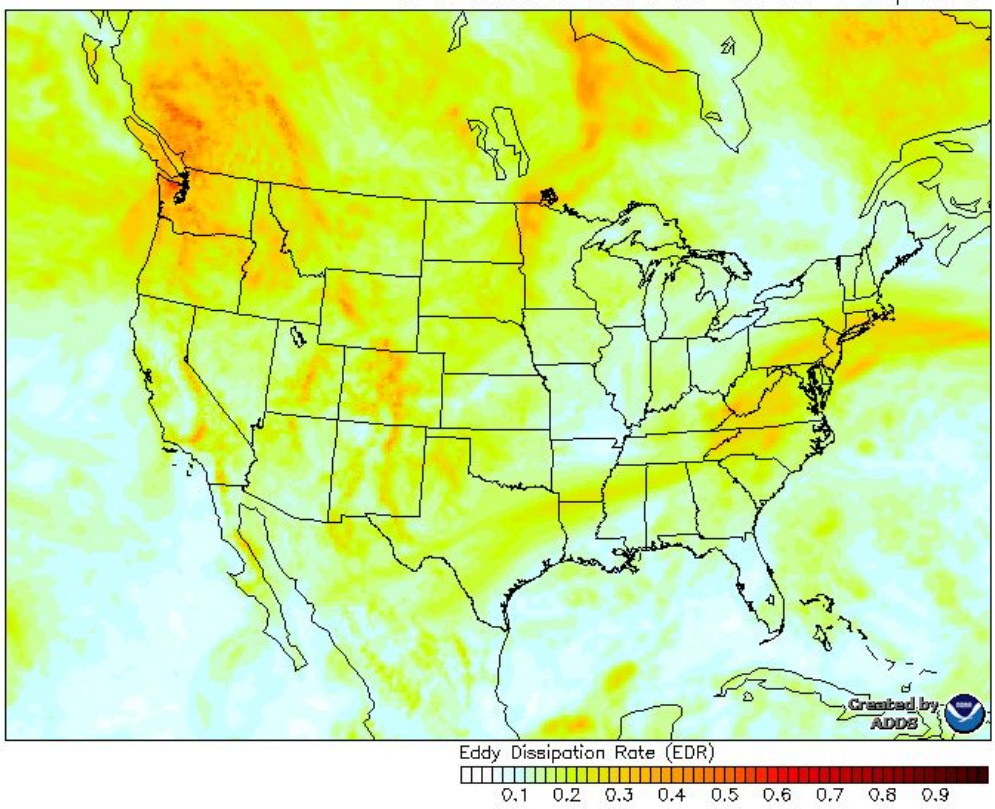


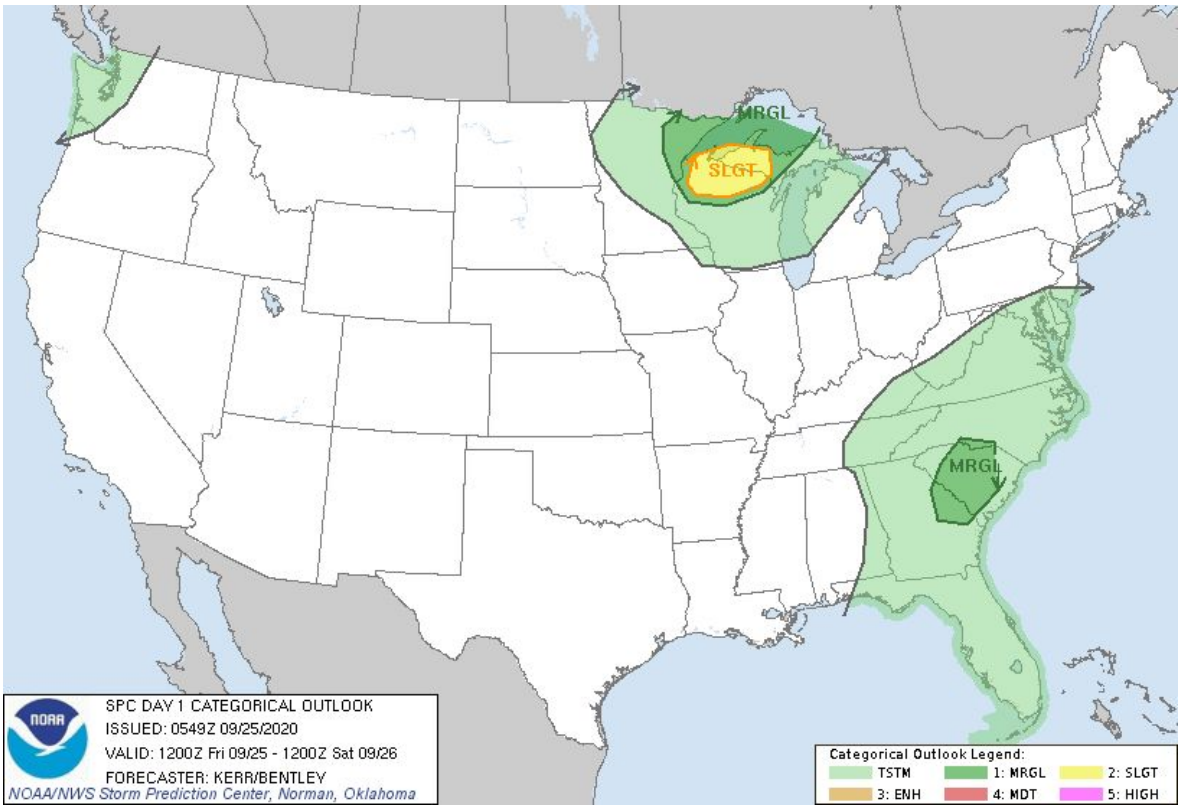
Wind speed (kts) at 9,000 MSL (725 mb)

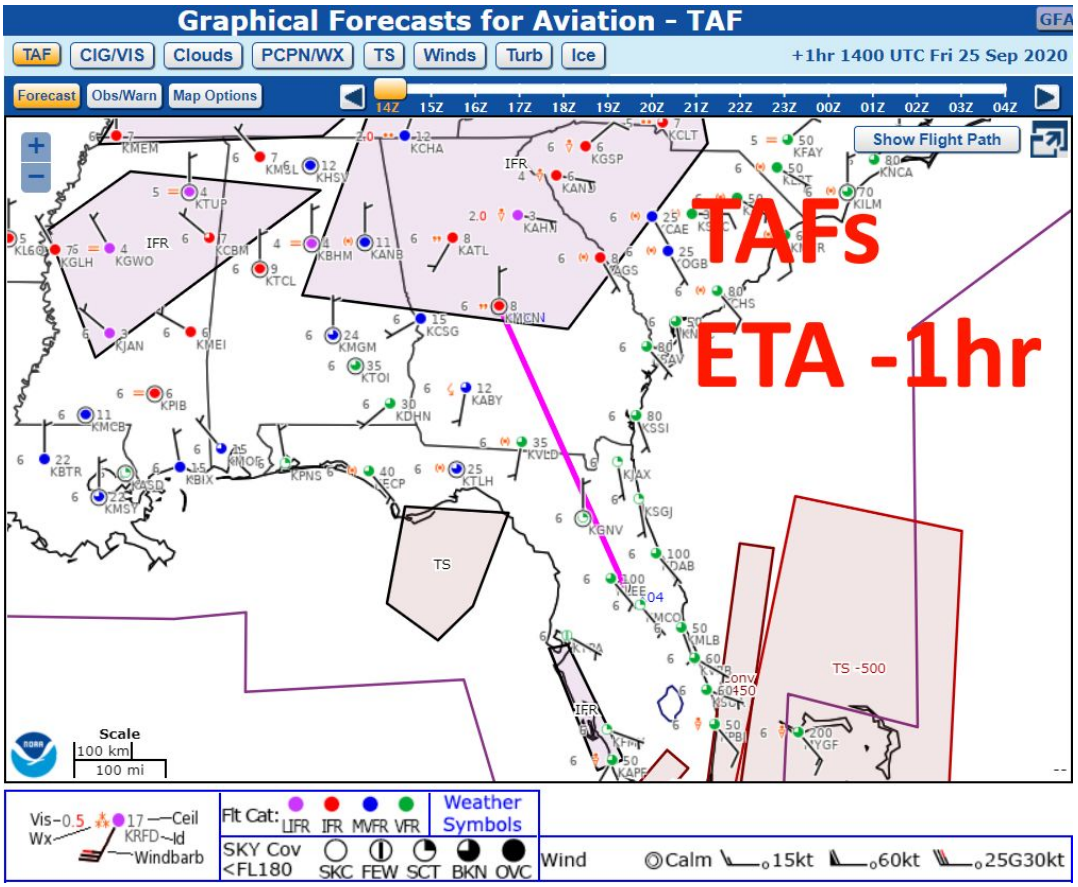


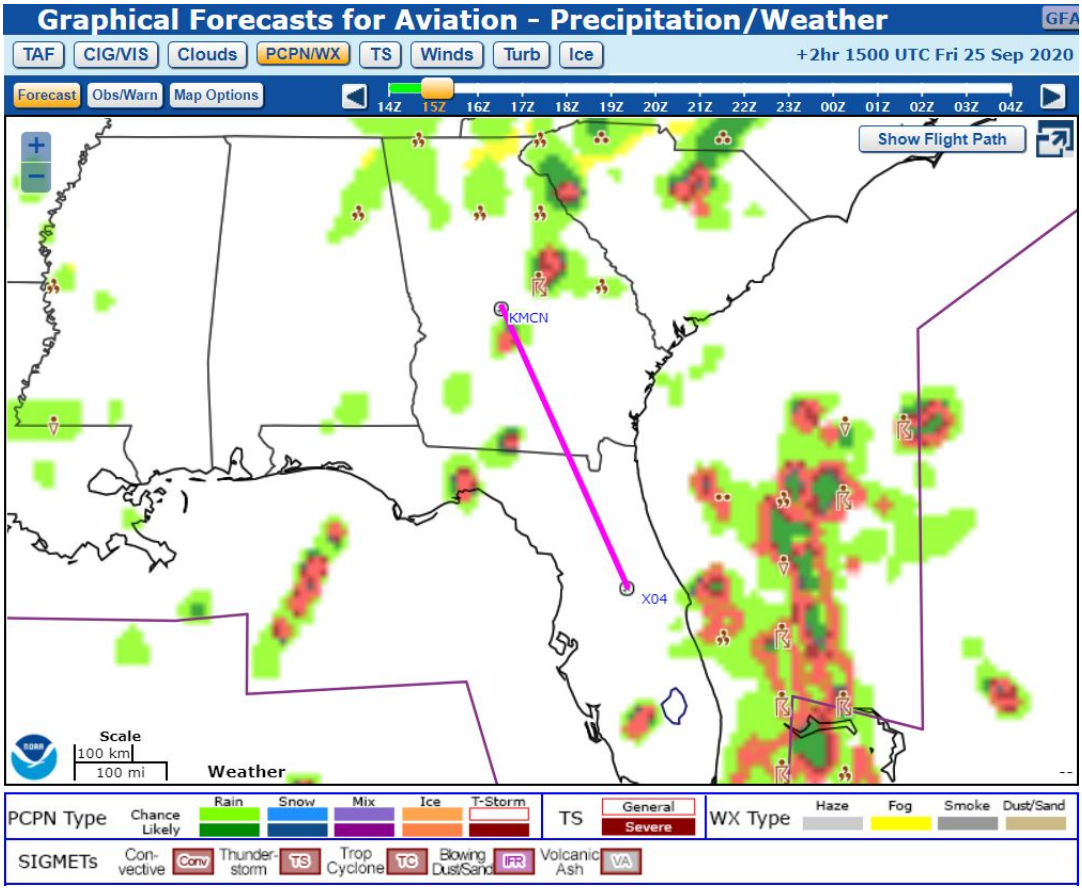
GTG - Max clear air turbulence (1000 ft. MSL to FL500)

03 hr forecast valid 1400 UTC Fri 25 Sep 2020






Graphical Forecasts for Aviation - TAF
GFA
TAF
CIG/VIS
Clouds
PCPN/WX
TS
Winds
Turb
Ice
+1hr 1400 UTC Fri 25 Sep 2020
Forecast
Obs/Warn
Map Options
14Z 15Z 16Z 17Z 18Z 19Z 20Z 21Z 22Z 23Z 00Z 01Z 02Z 03Z 04Z
Show Flight Path
TAFs
ETA -1hr
TS
TS -500
Scale
100 km
100 mi
Vis-0.5
Wx
17
KRFD
Ceil
Id
Windbarb
Flt Cat:
LIFR IFR MVFR VFR
Weather Symbols
SKY Cov <FL180
SKC FEW SCT BKN OVC
Wind
Calm
15kt
60kt
25G30kt


Graphical Forecasts for Aviation - Precipitation/Weather
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CIG/VIS
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PCPN/WX
TS
Winds
Turb
Ice
+2hr 1500 UTC Fri 25 Sep 2020
Forecast
Obs/Warn
Map Options
14Z 15Z 16Z 17Z 18Z 19Z 20Z 21Z 22Z 23Z 00Z 01Z 02Z 03Z 04Z
Show Flight Path
KMCN
X04
Scale
100 km
100 mi
Weather
PCPN Type
Chance
Likely
Rain
Snow
Mix
Ice
T-Storm
TS
General
Severe
WX Type
Haze
Fog
Smoke
Dust/Sand
SIGMETs
Con-vective
Conv
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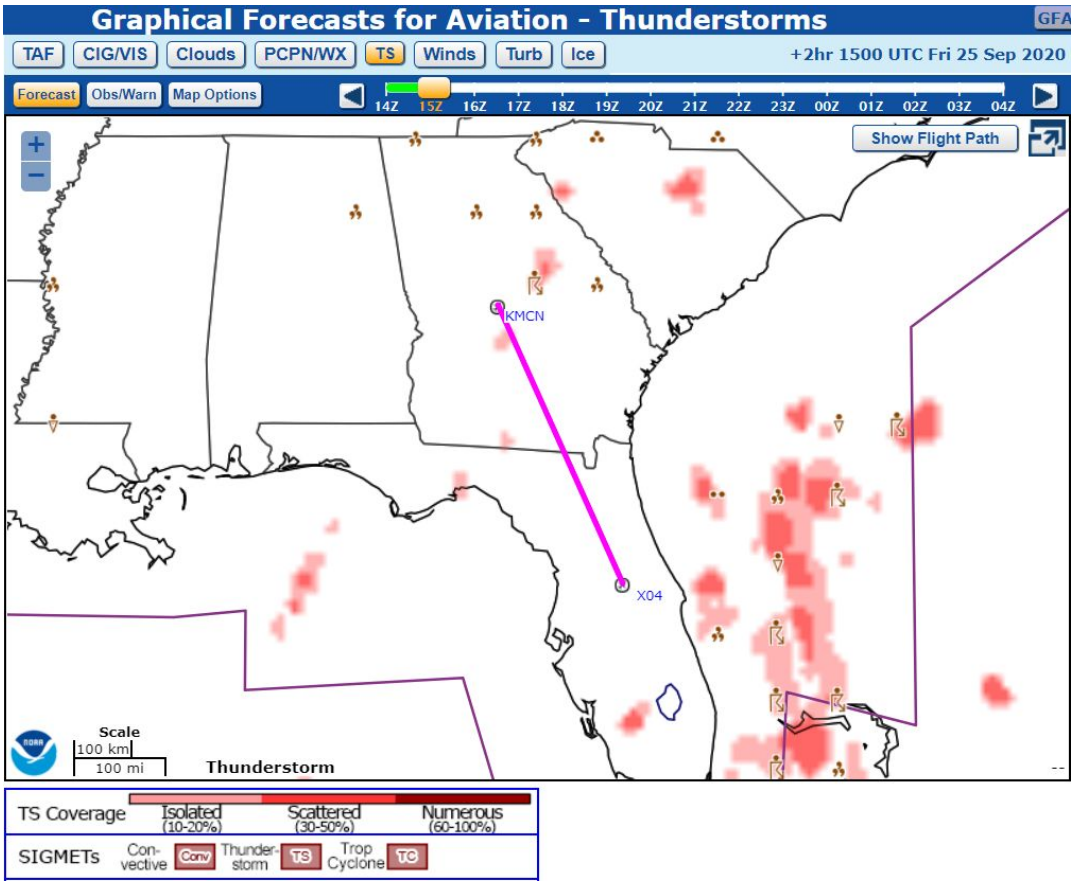
TS
Trop Cyclone
TC
Blowing Dust/Sand
IFR
Volcanic Ash
VA


Graphical Forecasts for Aviation - Thunderstorms
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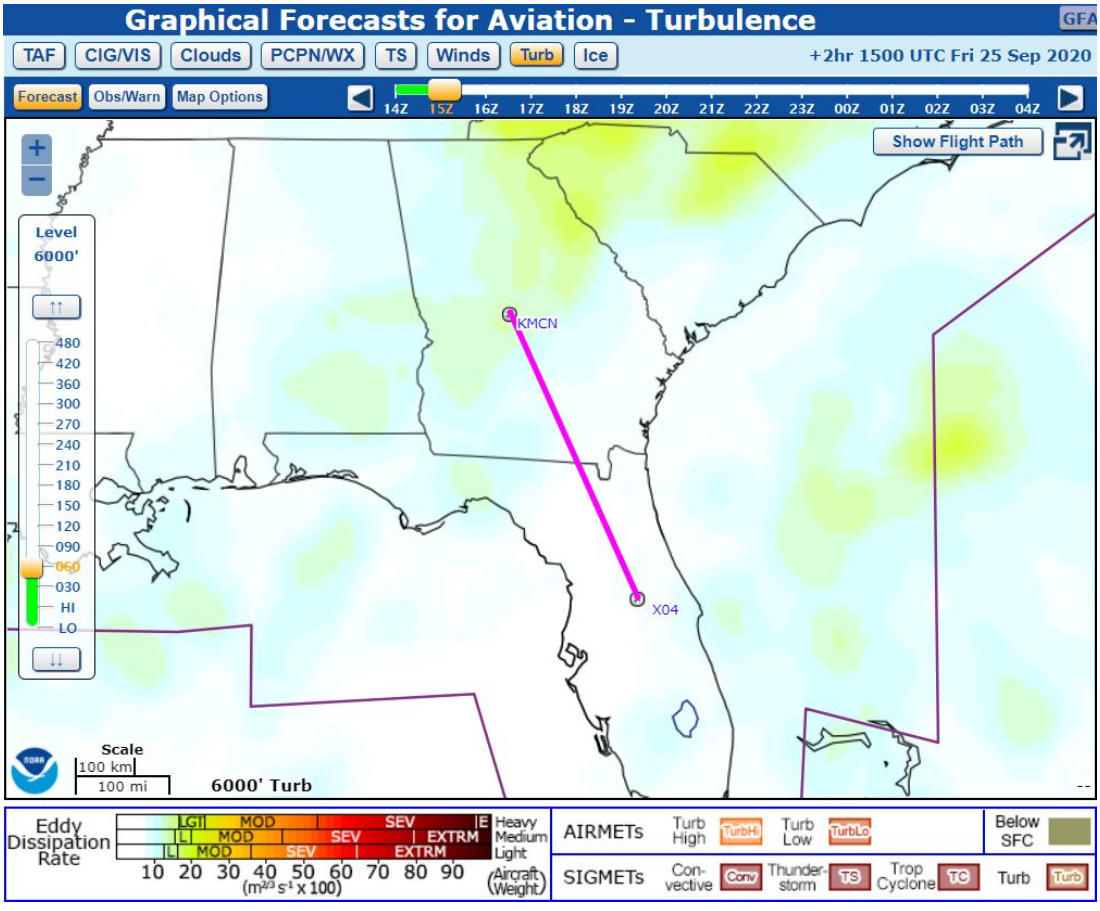
TAF
CIG/VIS
Clouds
PCPN/WX
TS
Winds
Turb
Ice
+2hr 1500 UTC Fri 25 Sep 2020
Forecast
Obs/Warn
Map Options
14Z 15Z 16Z 17Z 18Z 19Z 20Z 21Z 22Z 23Z 00Z 01Z 02Z 03Z 04Z
Show Flight Path
KMCN
X04
Scale
100 km
100 mi
Thunderstorm
TS Coverage
Isolated (10-20%)
Scattered (30-50%)
Numerous (60-100%)
SIGMETs
Con-vective
Conv
Thunder-storm
TS
Trop Cyclone
TC


Graphical Forecasts for Aviation - Turbulence
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CIG/VIS
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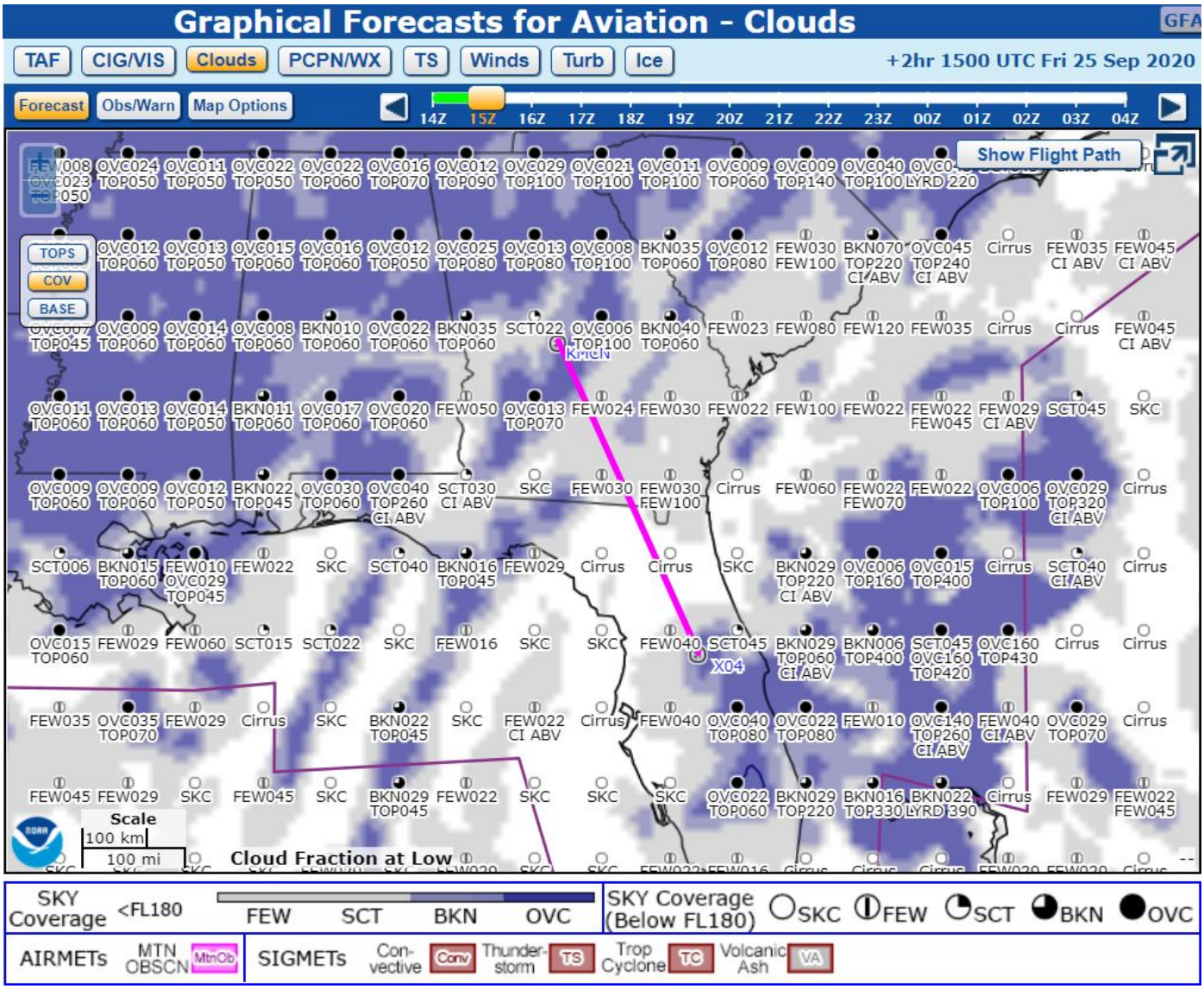
PCPN/WX
TS
Winds
Turb
Ice
+2hr 1500 UTC Fri 25 Sep 2020
Forecast
Obs/Warn
Map Options
14Z 15Z 16Z 17Z 18Z 19Z 20Z 21Z 22Z 23Z 00Z 01Z 02Z 03Z 04Z
Show Flight Path
Level
6000'
480
420
360
300
270
240
210
180
150
120
090
060
030
HI
LO
KMCN
X04
Scale
100 km
100 mi
6000' Turb
Eddy Dissipation Rate
LGT MOD SEV EXTRM
L MOD SEV EXTRM
L MOD SEV EXTRM
10 20 30 40 50 60 70 80 90
(m^2/3 s^-1 x 100)
Heavy
Medium
Light
Aircraft Weight
AIRMETs
Turb High
TurbHi
Turb Low
TurbLo
Below SFC
SIGMETs
Con-vective
Conv
Thunder-storm
TS
Trop Cyclone
TC
Turb
Turb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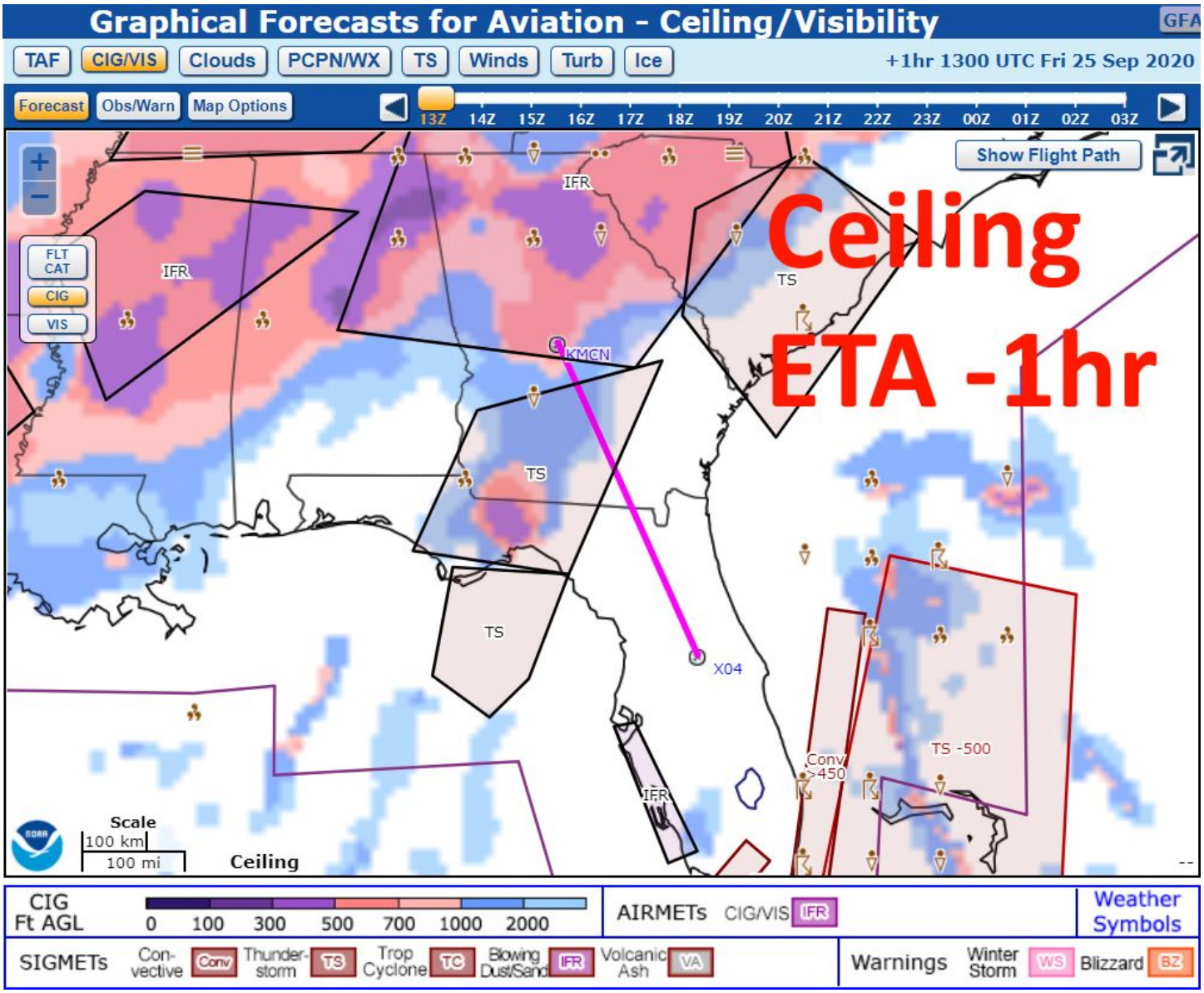
CIG/VIS
Clouds
PCPN/WX
TS
Winds
Turb
Ice
+2hr 1500 UTC Fri 25 Sep 2020
Forecast
Obs/Warn
Map Options
14Z 15Z 16Z 17Z 18Z 19Z 20Z 21Z 22Z 23Z 00Z 01Z 02Z 03Z 04Z
Show Flight Path
TOPS
COV
BASE
Scale
100 km
100 mi
Cloud Fraction at Low
SKY Coverage <FL180
FEW SCT BKN OVC
SKY Coverage (Below FL180)
SKC FEW SCT BKN OVC
AIRMETs
MTN OBSCN
MtnOb
SIGMETs
Con-vective
Conv
Thunder-storm
TS
Trop Cyclone
TC
Volcanic Ash
VA


Graphical Forecasts for Aviation - Ceiling/Visibility
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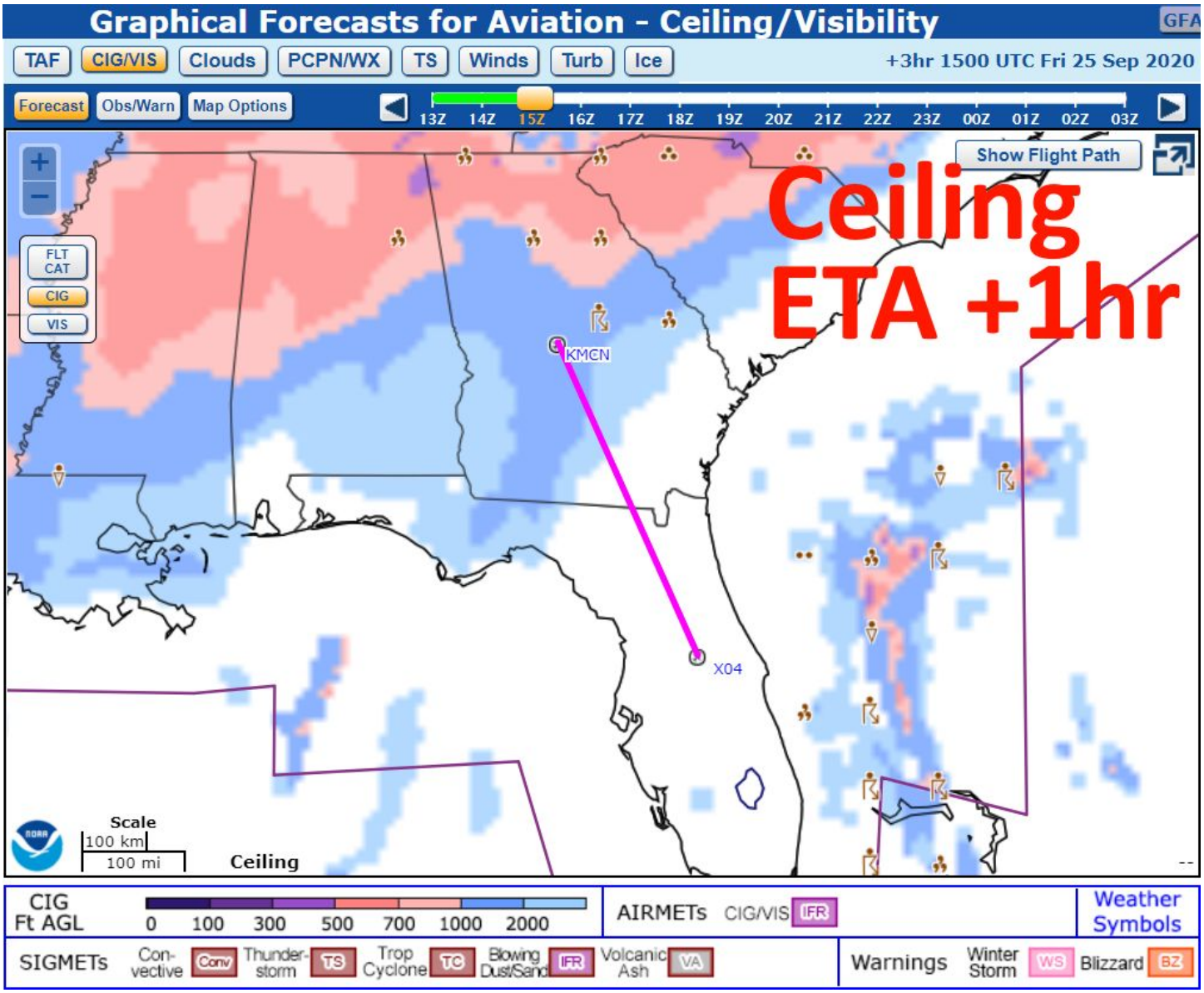
TAF
CIG/VIS
Clouds
PCPN/WX
TS
Winds
Turb
Ice
+1hr 1300 UTC Fri 25 Sep 2020
Forecast
Obs/Warn
Map Options
13Z 14Z 15Z 16Z 17Z 18Z 19Z 20Z 21Z 22Z 23Z 00Z 01Z 02Z 03Z
Show Flight Path
FLT CAT
CIG
VIS
Ceiling
ETA -1hr
IFR
TS
KMCN
X04
Conv >450
TS -500
Scale
100 km
100 mi
Ceiling
CIG Ft AGL
0 100 300 500 700 1000 2000
AIRMETs CIG/VIS IFR
Weather Symbols
SIGMETs
Con-vective Conv
Thunder-storm TS
Trop Cyclone TC
Blowing Dust/Sand IFR
Volcanic Ash VA
Warnings
Winter Storm WS
Blizzard BZ


Graphical Forecasts for Aviation - Ceiling/Visibility
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TAF
CIG/VIS
Clouds
PCPN/WX
TS
Winds
Turb
Ice
+3hr 1500 UTC Fri 25 Sep 2020
Forecast
Obs/Warn
Map Options
13Z 14Z 15Z 16Z 17Z 18Z 19Z 20Z 21Z 22Z 23Z 00Z 01Z 02Z 03Z
Show Flight Path
FLT CAT
CIG
VIS
Ceiling
ETA +1hr
KMCN
X04
Scale
100 km
100 mi
Ceiling
CIG Ft AGL
0 100 300 500 700 1000 2000
AIRMETs
CIG/VIS
IFR
Weather Symbols
SIGMETs
Con-vective
Conv
Thunder-storm
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Trop Cyclone
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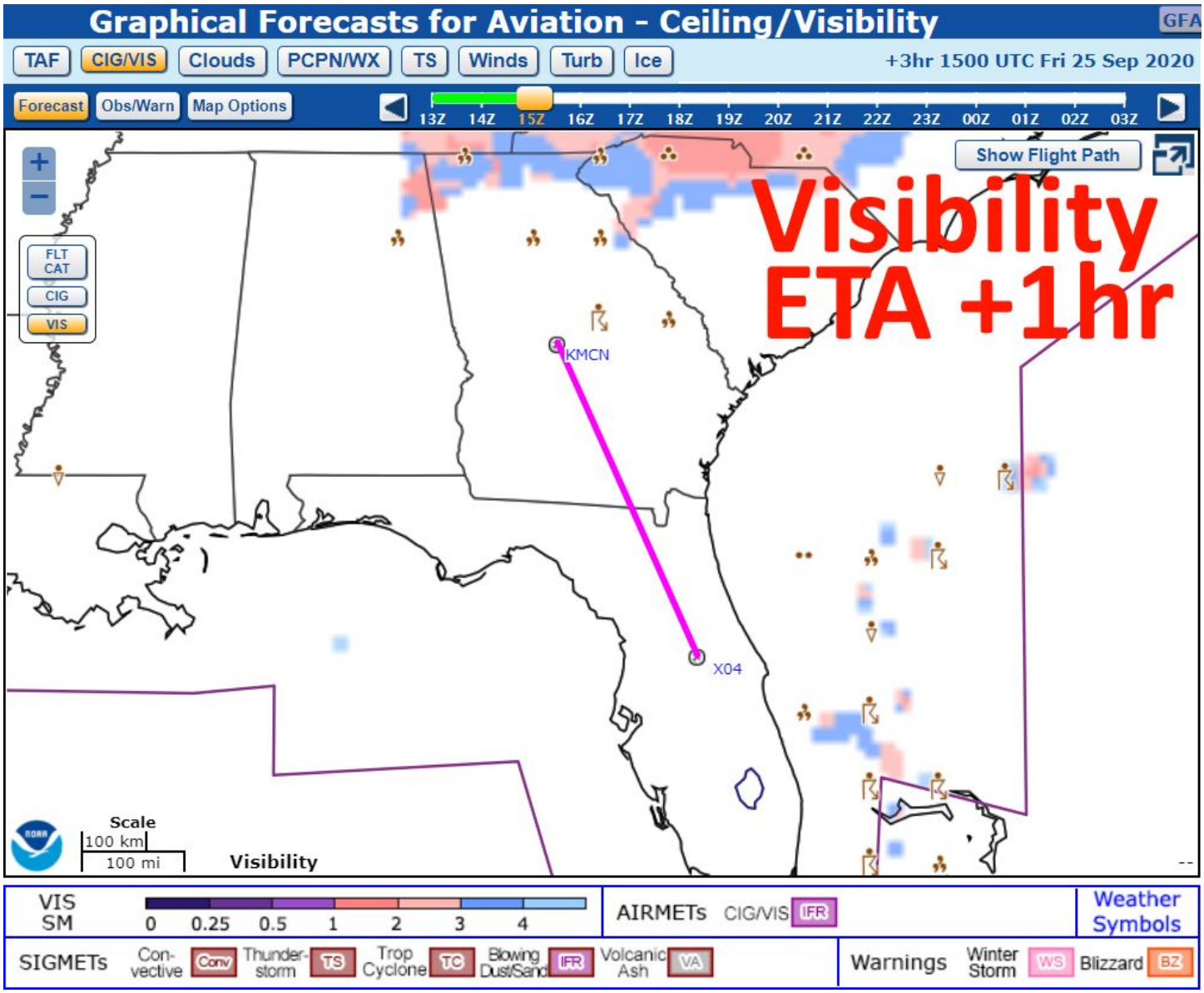
Blowing Dust/Sand
IFR
Volcanic Ash
VA
Warnings
Winter Storm
WS
Blizzard
BZ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GFA
TAF
CIG/VIS
Clouds
PCPN/WX
TS
Winds
Turb
Ice
+3hr 1500 UTC Fri 25 Sep 2020
Forecast
Obs/Warn
Map Options
13Z 14Z 15Z 16Z 17Z 18Z 19Z 20Z 21Z 22Z 23Z 00Z 01Z 02Z 03Z
Show Flight Path
FLT CAT
CIG
VIS
Visibility
ETA +1hr
KMCN
X04
Scale
100 km
100 mi
Visibility
VIS SM
0 0.25 0.5 1 2 3 4
AIRMETs
CIG/VIS
IFR
Weather Symbols
SIGMETs
Con-vective
Conv
Thunder-storm
TS
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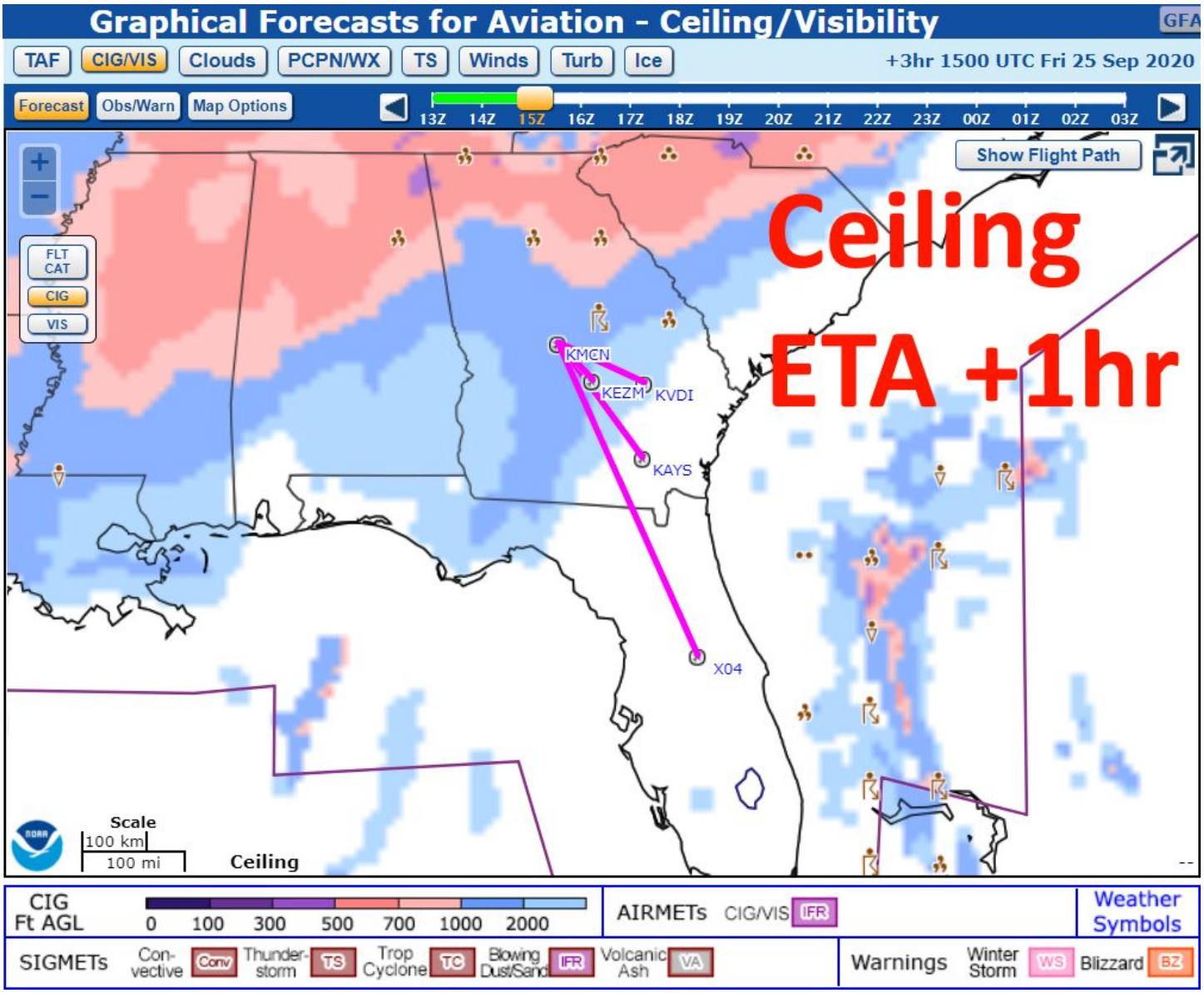
Blowing Dust/Sand
IFR
Volcanic Ash
VA
Warnings
Winter Storm
WS
Blizzard
BZ


Graphical Forecasts for Aviation - Ceiling/Visibility
GFA
TAF
CIG/VIS
Clouds
PCPN/WX
TS
Winds
Turb
Ice
+3hr 1500 UTC Fri 25 Sep 2020
Forecast
Obs/Warn
Map Options
13Z 14Z 15Z 16Z 17Z 18Z 19Z 20Z 21Z 22Z 23Z 00Z 01Z 02Z 03Z
Show Flight Path
FLT CAT
CIG
VIS
Ceiling
ETA +1hr
KMCN
KEZM
KVDI
KAYS
X04
Scale
100 km
100 mi
Ceiling
CIG Ft AGL
0 100 300 500 700 1000 2000
AIRMETs
CIG/VIS
IFR
Weather Symbols
SIGMETs
Con-vective
Conv
Thunder-storm
TS
Trop Cyclone
TC
Blowing Dust/Sand
IFR
Volcanic Ash
VA
Warnings
Winter Storm
WS
Blizzard
BZ

ORLANDO APOPKA (XØ4) 4 NW UTC–5(–4DT) N28°42.45′ W81°34.92′ **JACKSONVILLE**
150 B NOTAM FILE PIE **L–21D, 24F**
RWY 15–33: H3987X60 (ASPH) LIRL 0.4% up NW **IAP**

RWY 15: PAPI(P2L)—GA 3.5° TCH 10′. Thld dsplcd 943′. Berm. Rgt tfc.

RWY 33: PAPI(P2L)—GA 3.0° TCH 25′. Tree.

RUNWAY DECLARED DISTANCE INFORMATION

RWY 15: TORA–3987 TODA–3987 ASDA–3987 LDA–3044
RWY 33: TODA–3987 ASDA–3987 LDA–3987

SERVICE: S4 **FUEL** 100LL, JET A **OX** 2, 4 **LGT** PAPI Rwy 15 and 33 on cont durg dalgt. After SS, ACTVT PAPI Rwy 15 and 33; LIRL Rwy 15–33—CTAF.

AIRPORT REMARKS: Attended 1300–2300Z‡. Ctc UNICOM or 407–308–5904 for safety briefing. Rwy 15–33 clsd to touch and go ldgs by tran helicopters. Steep dropoff 63′ fm SE end and aprxly 60′ off west and east edge. Acft hldg shrt Rwy 15 may be una to see acft on final for Rwy 15.

AIRPORT MANAGER: 407-308-5904

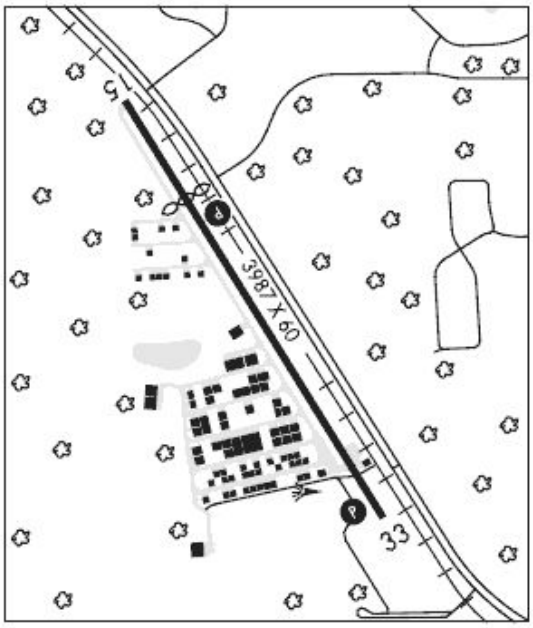
COMMUNICATIONS: CTAF/AUNICOM 123.05
Ⓡ **ORLANDO APP/DEP CON** 135.3

CLEARANCE DELIVERY PHONE: For CD or to cnl IFR ctc Orlando Apch at 407-825-3398.

RADIO AIDS TO NAVIGATION: NOTAM FILE ORL.

(H) VORTACW 112.2 ORL Chan 59 N28°32.56′ W81°20.10′ 307° 16.3 NM to fld. 102/0E.
TACAN AZIMUTH unusable:
066°–084°
246°–289° byd 17 NM blo 2,000′
246°–289° byd 28 NM blo 2,500′

COMM/NAV/WEATHER REMARKS: ACTVT automated UNICOM—CTAF.



NOT FOR NAVIGATION

TAKEOFF MINIMUMS, (OBSTACLE) DEPARTURE PROCEDURES, AND DIVERSE VECTOR AREA (RADAR VECTORS)

20254

APOPKA, FL
ORLANDO APOPKA (X04)
TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES
ORIG 20SEP12 (12264) (FAA)

TAKEOFF MINIMUMS:
Rwy 15, 300-2 or std. w/min. climb of 263' per NM to 400.
Rwy 33, 400-1¾ or std. w/min. climb of 325' per NM to 600.

TAKEOFF OBSTACLE NOTES:
Rwy 15, trees beginning at DER, 173' left of centerline, up to 100' AGL/229' MSL.
Railroad and vehicles beginning at DER, 181' left of centerline, up to 23' AGL/152' MSL.
Trees beginning 214' from DER, 552' right of centerline, up to 100' AGL/189' MSL.
Poles beginning 230' from DER, 239' left of centerline, up to 49' AGL/178' MSL.
Tower 5781' from DER, 1326' left of centerline, 199' AGL/317' MSL.
Rwy 33, trees beginning 2' from DER, 183' left of centerline, up to 100' AGL/249' MSL.
Poles beginning 7' from DER, 61' right of centerline, up to 49' AGL/198' MSL.
Railroad and vehicles beginning 36' from DER, 90' right of centerline, up to 23' AGL/172' MSL.
Antenna 1166' from DER, 539' left of centerline, 29' AGL/173' MSL.
Tower 1.2 NM from DER, 2338' left of centerline, 350' AGL/421' MSL.

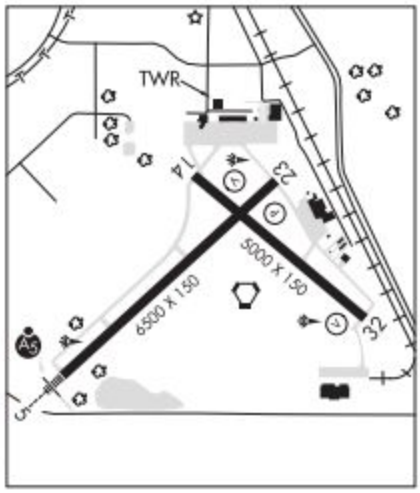
NOT FOR NAVIGATION

MIDDLE GEORGIA RGNL (MCN)(KMCN) 9 S UTC-5(-4DT) N32°41.57′ W83°38.95′ ATLANTA
354 B Class I, ARFF Index A NOTAM FILE MCN H-9B, 12F, L-18J
IAP, AD

RWY 05-23: H6500X150 (ASPH-GRVD) S-80, D-128, 2S-175, 2D-237 PCN 54 F/B/W/U HIRL 0.4% up NE
RWY 05: MALSR. RVR-TR Trees.
RWY 23: REIL. PAPI(P4L)—GA 3.0° TCH 67′. Trees. Rgt tfc.
RWY 14-32: H5000X150 (ASPH) S-44, D-65, 2D-110 PCN 46 F/B/W/U MIRL
RWY 14: VASI(V4L)—GA 3.0° TCH 53′. Trees. Rgt tfc.
RWY 32: REIL. VASI(V4L)—GA 3.0° TCH 58′. Railroad.

RUNWAY DECLARED DISTANCE INFORMATION

RWY 05:	TORA-6501	TODA-6501	ASDA-6221	LDA-6221
RWY 14:	TORA-5000	TODA-5000	ASDA-5000	LDA-5000
RWY 23:	TORA-6501	TODA-6501	ASDA-6426	LDA-6426
RWY 32:	TORA-5000	TODA-5000	ASDA-5000	LDA-5000



SERVICE: S4 **FUEL** 100LL, JET A **OX** 3, 4 **LGT** ACTIVATE HIRL Rwy 05-23, MALSR Rwy 05, REIL Rwy 23 and Rwy 32, MIRL Rwy 14-32 and twy lgts—CTAF.
AIRPORT REMARKS: Attended 1100-0300Z‡. Deer on and invof arpt. For svc after hrs ctc 478-788-3491. Robins AFB Class D airspace 0.4 mile SE of dep EOR 14. VFR acft dep Rwy 14 btn 0100-1300Z‡ are advs to ctc Robins ATCT 133.22 prior to dep. PAEW adj to the movement areas from March 1 to Nov 1 for grass cutting.
AIRPORT MANAGER: 478-803-0460
WEATHER DATA SOURCES: ASOS 120.775 (478) 784-8825.
COMMUNICATIONS: CTAF 128.2 **ATIS** 120.775 **UNICOM** 122.95
Ⓡ **ATLANTA APP/DEP CON** 124.2 (1115-0400Z‡)
ATLANTA CENTER APP/DEP CON 134.5 (0400-1115Z‡)
MACON TOWER 128.2 (1300-0100Z‡) **GND CON** 121.65

NOT FOR NAVIGATION

CLEARANCE DELIVERY PHONE: For CD if una to ctc on FSS freq, ctc Atlanta Apch at 678-364-6132, when ATCT clsd ctc Atlanta ARTCC at 770-210-7692.
AIRSPACE: CLASS D svc 1300-0100Z‡; other times CLASS E.
TRSA svc ctc **APP CON** 20 NM out
RADIO AIDS TO NAVIGATION: NOTAM FILE MCN.
MACON (H) VORTACW 114.2 MCN Chan 89 N32°41.47′ W83°38.83′ at fld. 344/1E.
VOR unusable:
085°-099°
240°-280°
TACAN portion unusable:
240°-280° blo 3,000′
ILS 109.5 I-MCN Rwy 05. Class IIE.

```
!FDC 0/5399 MCN IAP MIDDLE GEORGIA RGNL, MACON, GA.
ILS OR LOC RWY 5, AMDT 3A...
S-LOC 5: NA EXCEPT FOR AIRCRAFT EQUIPPED WITH SUITABLE RNAV SYSTEM WITH GPS, MCN TACAN OUT OF SERVICE.
2009170911-2010170911EST

!FDC 0/5396 MCN IAP MIDDLE GEORGIA RGNL, MACON, GA.
VOR RWY 14, AMDT 10C...
VDP AND JIVET FIX MINIMUMS: NA EXCEPT FOR AIRCRAFT EQUIPPED WITH SUITABLE RNAV SYSTEM WITH GPS, MCN TACAN
OUT OF SERVICE.
2009170911-2010170911EST

!MCN 09/592 MCN NAV TACAN U/S 2009231257-2009302000EST
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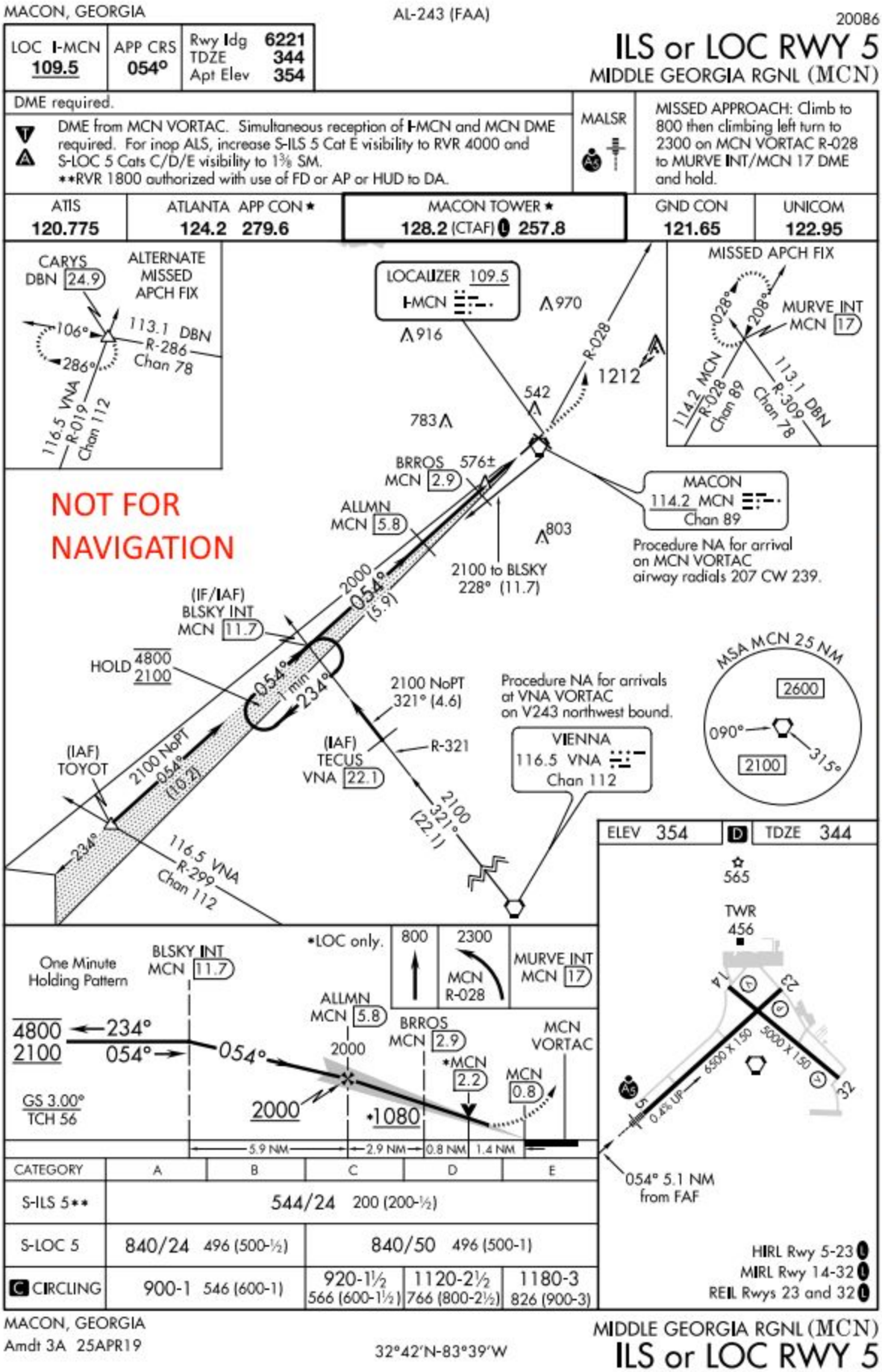
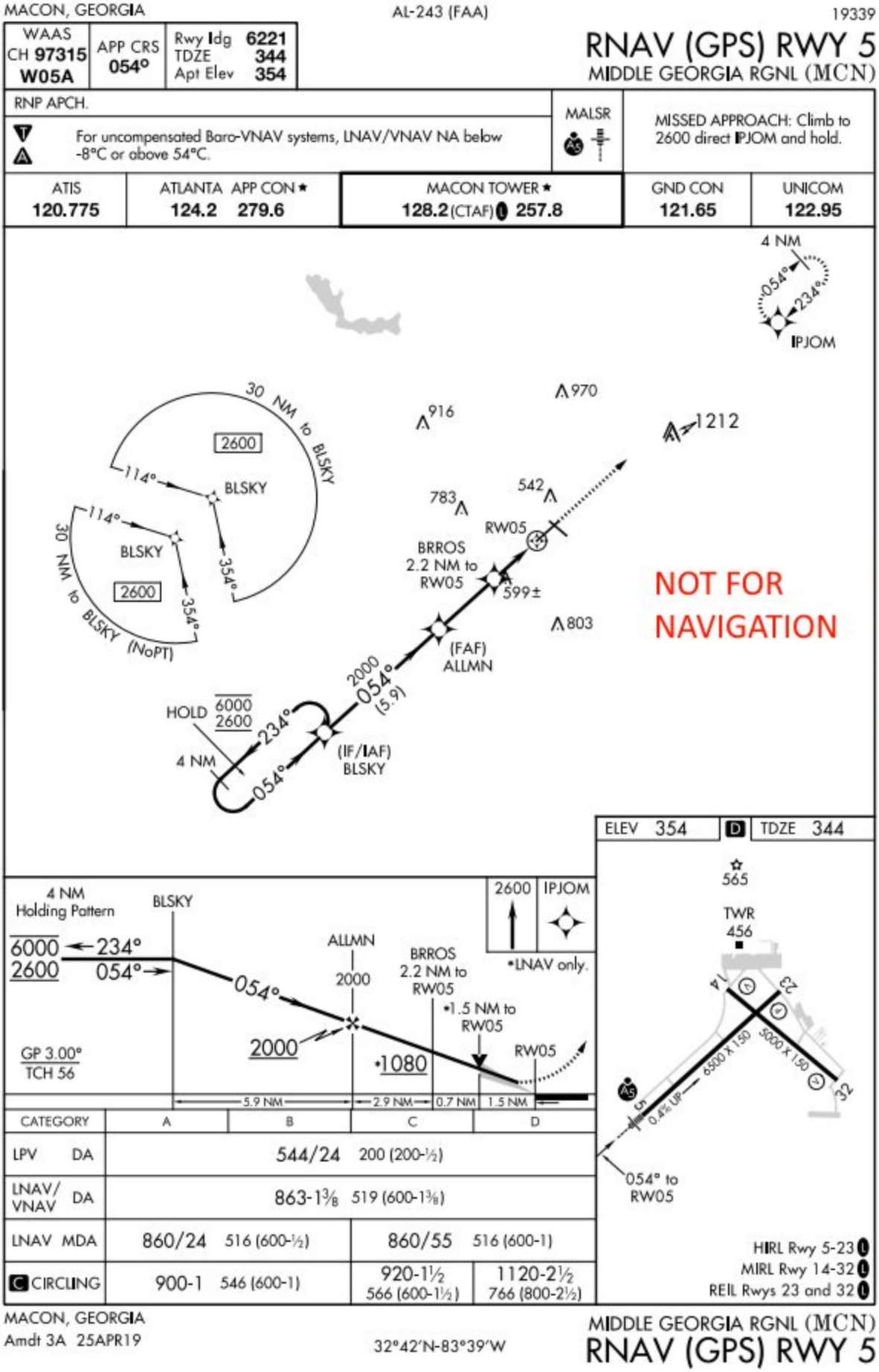
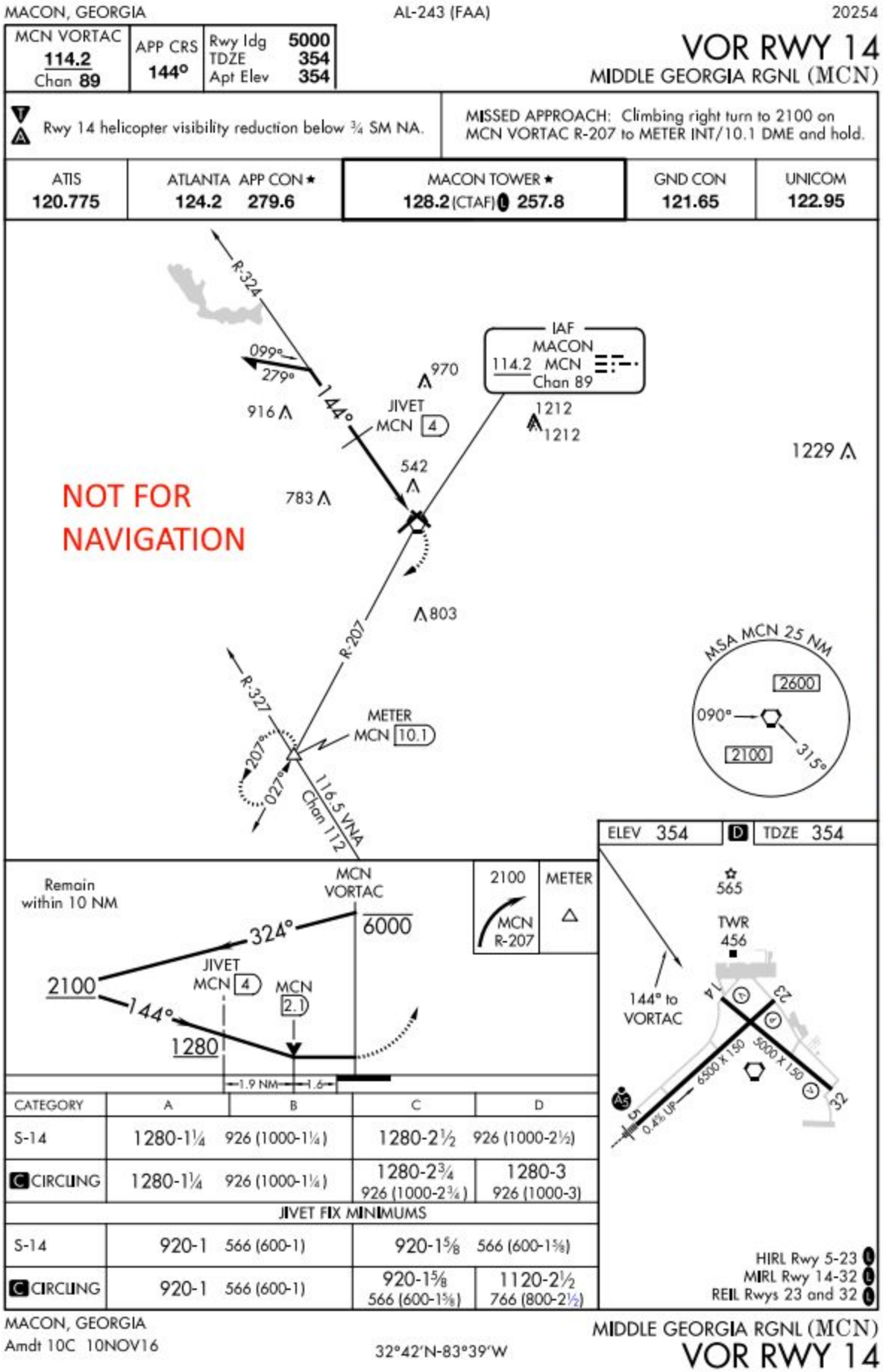

MACON, GEORGIA
AL-243 (FAA)
20086
ILS or LOC RWY 5
MIDDLE GEORGIA RGNL (MCN)
LOC I-MCN 109.5
APP CRS 054°
Rwy Idg 6221
TDZE 344
Apt Elev 354
DME required.
DME from MCN VORTAC. Simultaneous reception of I-MCN and MCN DME required. For inop ALS, increase S-ILS 5 Cat E visibility to RVR 4000 and S-LOC 5 Cats C/D/E visibility to 1⅜ SM.
**RVR 1800 authorized with use of FD or AP or HUD to DA.
MALSR
MISSED APPROACH: Climb to 800 then climbing left turn to 2300 on MCN VORTAC R-028 to MURVE INT/MCN 17 DME and hold.
ATIS 120.775
ATLANTA APP CON* 124.2 279.6
MACON TOWER* 128.2 (CTAF) 257.8
GND CON 121.65
UNICOM 122.95
CARYS DBN 24.9
ALTERNATE MISSED APCH FIX
106°
286°
113.1 DBN R-286 Chan 78
116.5 VNA R-019 Chan 112
LOCALIZER 109.5 I-MCN
970
916
R-028
1212
542
783
MISSED APCH FIX
028°
208°
MURVE INT MCN 17
114.2 MCN R-028 Chan 89
113.1 DBN R-309 Chan 78
BRROS MCN 2.9
576±
ALLMN MCN 5.8
803
MACON 114.2 MCN Chan 89
Procedure NA for arrival on MCN VORTAC airway radials 207 CW 239.
NOT FOR NAVIGATION
2100 to BLSKY 228° (11.7)
2000
054°
(5.9)
(IF/IAF) BLSKY INT MCN 11.7
HOLD 4800 2100
054°
1 min
234°
2100 NoPT 321° (4.6)
Procedure NA for arrivals at VNA VORTAC on V243 northwest bound.
MSA MCN 25 NM
2600
090°
315°
2100
(IAF) TOYOT
2100 NoPT
054°
(10.2)
(IAF) TECUS VNA 22.1
R-321
2100
321°
(22.1)
VIENNA 116.5 VNA Chan 112
234°
116.5 VNA R-299 Chan 112
ELEV 354
D
TDZE 344
565
TWR 456
14
23
32
5
6500 X 150
5000 X 150
0.4% UP
054° 5.1 NM from FAF
One Minute Holding Pattern
BLSKY INT MCN 11.7
*LOC only.
800
2300
MCN R-028
MURVE INT MCN 17
ALLMN MCN 5.8
BRROS MCN 2.9
MCN VORTAC
*MCN 2.2
MCN 0.8
4800 2100
234°
054°
GS 3.00°
TCH 56
2000
1080
5.9 NM
2.9 NM
0.8 NM
1.4 NM
CATEGORY A B C D E
S-ILS 5** 544/24 200 (200-½)
S-LOC 5 840/24 496 (500-½) 840/50 496 (500-1)
C CIRCLING 900-1 546 (600-1) 920-1½ 566 (600-1½) 1120-2½ 766 (800-2½) 1180-3 826 (900-3)
HIRL Rwy 5-23
MIRL Rwy 14-32
REIL Rwys 23 and 32
SE-4, 10 SEP 2020 to 08 OCT 2020
SE-4, 10 SEP 2020 to 08 OCT 2020
MACON, GEORGIA
Amdt 3A 25APR19
32°42'N-83°39'W
MIDDLE GEORGIA RGNL (MCN)
ILS or LOC RWY 5

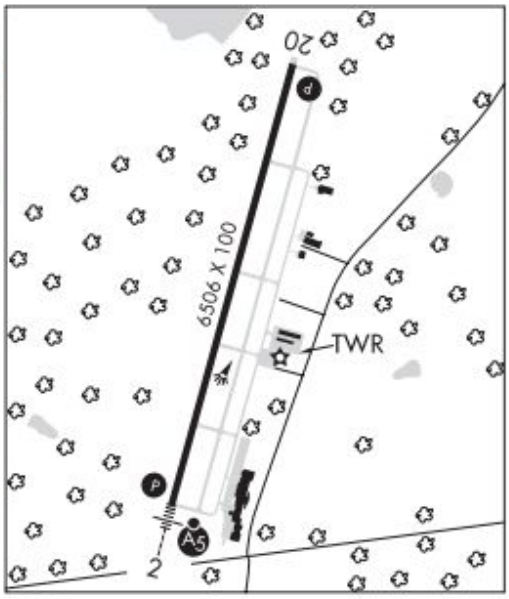

MACON, GEORGIA
AL-243 (FAA)
19339
WAAS CH 97315 W05A
APP CRS 054°
Rwy Idg 6221
TDZE 344
Apt Elev 354
RNAV (GPS) RWY 5
MIDDLE GEORGIA RGNL (MCN)
RNP APCH.
For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -8°C or above 54°C.
MALSR
MISSED APPROACH: Climb to 2600 direct IPJOM and hold.
ATIS 120.775
ATLANTA APP CON ★ 124.2 279.6
MACON TOWER ★ 128.2 (CTAF) 257.8
GND CON 121.65
UNICOM 122.95
4 NM
054°
234°
IPJOM
30 NM to BLSKY
2600
114°
BLSKY
354°
30 NM to BLSKY (NoPT)
916
970
1212
783
542
RW05
BRROS
2.2 NM to RW05
599±
803
NOT FOR NAVIGATION
(FAF)
ALLMN
2000
054°
(5.9)
HOLD
6000
2600
234°
4 NM
054°
(IF/IAF)
BLSKY
SE-4, 10 SEP 2020 to 08 OCT 2020
SE-4, 10 SEP 2020 to 08 OCT 2020
ELEV 354
D
TDZE 344
565
TWR
456
14
23
32
5000 X 150
6500 X 150
0.4% UP
054° to RW05
4 NM
Holding Pattern
BLSKY
6000
2600
234°
054°
ALLMN
2000
BRROS
2.2 NM to RW05
•1.5 NM to RW05
RW05
2000
•1080
GP 3.00°
TCH 56
2600
IPJOM
•LNAV only.
5.9 NM
2.9 NM
0.7 NM
1.5 NM
CATEGORY A B C D
LPV DA 544/24 200 (200-½)
LNAV/VNAV DA 863-1⅜ 519 (600-1⅜)
LNAV MDA 860/24 516 (600-½) 860/55 516 (600-1)
C CIRCLING 900-1 546 (600-1) 920-1½ 566 (600-1½) 1120-2½ 766 (800-2½)
HIRL Rwy 5-23
MIRL Rwy 14-32
REIL Rwys 23 and 32
MACON, GEORGIA
Amdt 3A 25APR19
32°42'N-83°39'W
MIDDLE GEORGIA RGNL (MCN)
RNAV (GPS) RWY 5


MACON, GEORGIA
AL-243 (FAA)
20254
MCN VORTAC
114.2
Chan 89
APP CRS
144°
Rwy Idg 5000
TDZE 354
Apt Elev 354
VOR RWY 14
MIDDLE GEORGIA RGNL (MCN)
Rwy 14 helicopter visibility reduction below ¾ SM NA.
MISSED APPROACH: Climbing right turn to 2100 on MCN VORTAC R-207 to METER INT/10.1 DME and hold.
ATIS 120.775
ATLANTA APP CON 124.2 279.6
MACON TOWER 128.2 (CTAF) 257.8
GND CON 121.65
UNICOM 122.95
NOT FOR NAVIGATION
R-324
099°
279°
144°
916
970
IAF
MACON
114.2 MCN
Chan 89
1212
1212
JIVET
MCN 4
542
783
1229
803
R-207
R-327
METER
MCN 10.1
207°
027°
116.5 VNA
Chan 112
MSA MCN 25 NM
2600
2100
090°
315°
SE-4, 10 SEP 2020 to 08 OCT 2020
SE-4, 10 SEP 2020 to 08 OCT 2020
Remain within 10 NM
MCN VORTAC
6000
324°
144°
2100
JIVET
MCN 4
MCN 2.1
1280
1.9 NM
1.6
2100
MCN R-207
METER
ELEV 354
D
TDZE 354
565
TWR
456
144° to VORTAC
14
23
32
6500 X 150
5000 X 150
0.4% UP
CATEGORY
A
B
C
D
S-14
1280-1¼ 926 (1000-1¼)
1280-2½ 926 (1000-2½)
C CIRCLING
1280-1¼ 926 (1000-1¼)
1280-2¾ 926 (1000-2¾)
1280-3 926 (1000-3)
JIVET FIX MINIMUMS
S-14
920-1 566 (600-1)
920-1⅝ 566 (600-1⅝)
C CIRCLING
920-1 566 (600-1)
920-1⅝ 566 (600-1⅝)
1120-2½ 766 (800-2½)
HIRL Rwy 5-23
MIRL Rwy 14-32
REIL Rwys 23 and 32
MACON, GEORGIA
Amdt 10C 10NOV16
32°42'N-83°39'W
MIDDLE GEORGIA RGNL (MCN)
VOR RWY 14

EASTMAN

HEART OF GEORGIA RGNL (EZM)(KEZM) 3 E UTC–5(–4DT) N32°12.98′ W83°07.72′ **ATLANTA**
303 B NOTAM FILE MCN MON Airport **H–9B, 12F, L–18J**
 IAP, AD

RWY 02–20: H6506X100 (ASPH) S–75, D–120 HIRL
RWY 02: MALSR. PAPI(P4L)—GA 3.0° TCH 45′.
RWY 20: REIL. PAPI(P4L)—GA 3.0° TCH 45′. Trees.
SERVICE: S4 **FUEL** 100LL, JET A+ **LGT** HIRL Rwy 02–20 and PAPI Rwy 02 and Rwy 20 and REIL Rwy 20 and MALSF Rwy 02—CTAF. Rotating bcn ops dusk–0500Z‡.
AIRPORT REMARKS: Attended Mon–Sat 1300–2300Z‡, Sun 1800–2200Z‡. 24 hr self–fueling with credit card. Deer and other wildlife invof arpt. Flt trng in area.
AIRPORT MANAGER: 478-374-4411
WEATHER DATA SOURCES: AWOS–3 119.425 (478) 374–9979.
COMMUNICATIONS: CTAF 124.55 **ATIS** 119.425 **UNICOM** 122.95
Ⓡ **ATLANTA APP/DEP CON** 124.2 (1115–0400Z‡)
JAX CENTER APP/DEP CON 127.575 (0400–1115Z‡)
TOWER 124.55 (Mon–Thu 1300–2300Z‡, Fri 1300–1700Z‡)
GND CON 121.175
AIRSPACE: CLASS D svc Mon–Thu 1300–2300Z‡, Fri 1300–1700Z‡; other times CLASS G.
RADIO AIDS TO NAVIGATION: NOTAM FILE MCN.
VIENNA (L) VORTAC 116.5 VNA Chan 112 N32°12.81′ W83°29.84′ 088° 18.8 NM to fld. 300/1E.
EASTMAN NDB (MHW) 366 EZM N32°07.90′ W83°09.24′ 018° 5.2 NM to fld. 321/4W.
ILS 109.55 I–HUV Rwy 02. Class IT.

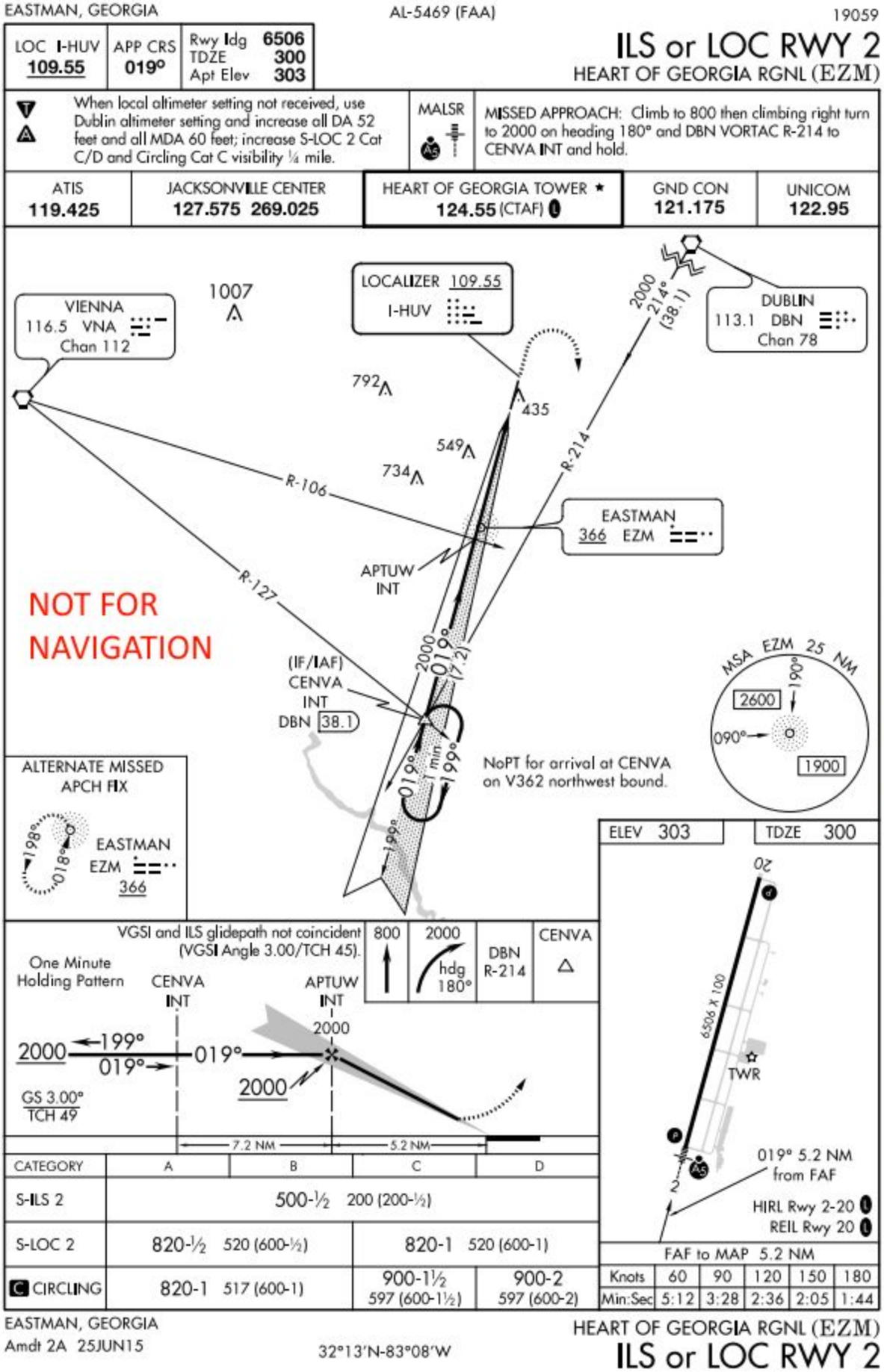


ALTERNATE MINS

M4

20254

NAME	ALTERNATE MINIMUMS
EASTMAN, GA	
HEART OF GEORGIA RGNL (EZM)	**ILS or LOC Rwy 2**[1] **RNAV (GPS) Rwy 2** **RNAV (GPS) Rwy 20**
NA when local weather not available.	
[1]NA when control tower closed.	
ELBERTON, GA	
ELBERT COUNTY-PATZ FIELD (EBA)	**RNAV (GPS) Rwy 11** **RNAV (GPS) Rwy 29**
NA when local weather not available.	
FORT STEWART (HINESVILLE), GA	
WRIGHT AAF (FORT STEWART)/ MIDCOAST RGNL (LHW)	**NDB Rwy 33R** **RNAV (GPS) Rwy 33R**
NA when local weather not available.	
GADSDEN, AL	
NORTHEAST ALABAMA RGNL (GAD)	**ILS or LOC Rwy 24**[1] **RNAV (GPS) Rwy 6** **RNAV (GPS) Rwy 18**[2] **RNAV (GPS) Rwy 24** **RNAV (GPS) Rwy 36**[3] **VOR Rwy 6**[4]


EASTMAN, GEORGIA
AL-5469 (FAA)
19059
ILS or LOC RWY 2
HEART OF GEORGIA RGNL (EZM)
LOC I-HUV 109.55
APP CRS 019°
Rwy Idg 6506
TDZE 300
Apt Elev 303
When local altimeter setting not received, use Dublin altimeter setting and increase all DA 52 feet and all MDA 60 feet; increase S-LOC 2 Cat C/D and Circling Cat C visibility ¼ mile.
MALSR
MISSED APPROACH: Climb to 800 then climbing right turn to 2000 on heading 180° and DBN VORTAC R-214 to CENVA INT and hold.
ATIS 119.425
JACKSONVILLE CENTER 127.575 269.025
HEART OF GEORGIA TOWER ★ 124.55 (CTAF)
GND CON 121.175
UNICOM 122.95
VIENNA 116.5 VNA Chan 112
1007
LOCALIZER 109.55 I-HUV
DUBLIN 113.1 DBN Chan 78
2000 214° (38.1)
792
435
549
734
R-106
R-214
R-127
EASTMAN 366 EZM
APTUW INT
NOT FOR NAVIGATION
(IF/IAF) CENVA INT DBN 38.1
2000 019° (7.2)
MSA EZM 25 NM
190°
2600
090°
1900
NoPT for arrival at CENVA on V362 northwest bound.
ALTERNATE MISSED APCH FIX
198°
018°
EASTMAN EZM 366
ELEV 303
TDZE 300
VGSI and ILS glidepath not coincident (VGSI Angle 3.00/TCH 45).
800
2000 hdg 180°
DBN R-214
CENVA
One Minute Holding Pattern
CENVA INT
APTUW INT
2000
199°
019°
GS 3.00°
TCH 49
7.2 NM
5.2 NM
6506 X 100
TWR
019° 5.2 NM from FAF
HIRL Rwy 2-20
REIL Rwy 20
FAF to MAP 5.2 NM
CATEGORY A B C D
S-ILS 2 500-½ 200 (200-½)
S-LOC 2 820-½ 520 (600-½) 820-1 520 (600-1)
C CIRCLING 820-1 517 (600-1) 900-1½ 597 (600-1½) 900-2 597 (600-2)
Knots 60 90 120 150 180
Min:Sec 5:12 3:28 2:36 2:05 1:44
EASTMAN, GEORGIA
Amdt 2A 25JUN15
32°13'N-83°08'W
HEART OF GEORGIA RGNL (EZM)
ILS or LOC RWY 2
SE-4, 10 SEP 2020 to 08 OCT 2020
SE-4, 10 SEP 2020 to 08 OCT 2020

EASTMAN, GEORGIA — AL-5469 (FAA) — 20254

VOR/DME-A

HEART OF GEORGIA RGNL (EZM)

VORTAC VNA	APP CRS	Rwy Idg	N/A
116.5 Chan 112	088°	TDZE	N/A
		Apt Elev	303

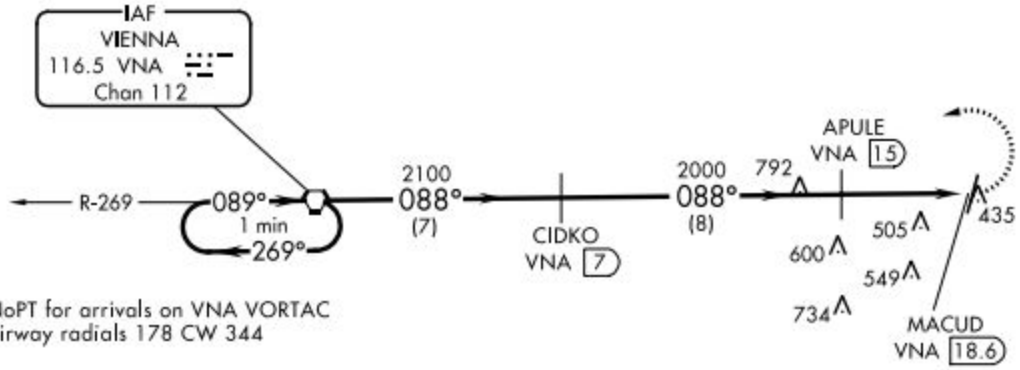
▼ NA — When local altimeter setting not received, use Dublin altimeter setting and increase all MDAs 60 feet, increase Circling Cat C visibility ½ SM.

MISSED APPROACH: Climbing left turn to 2100 direct VNA VORTAC and hold.

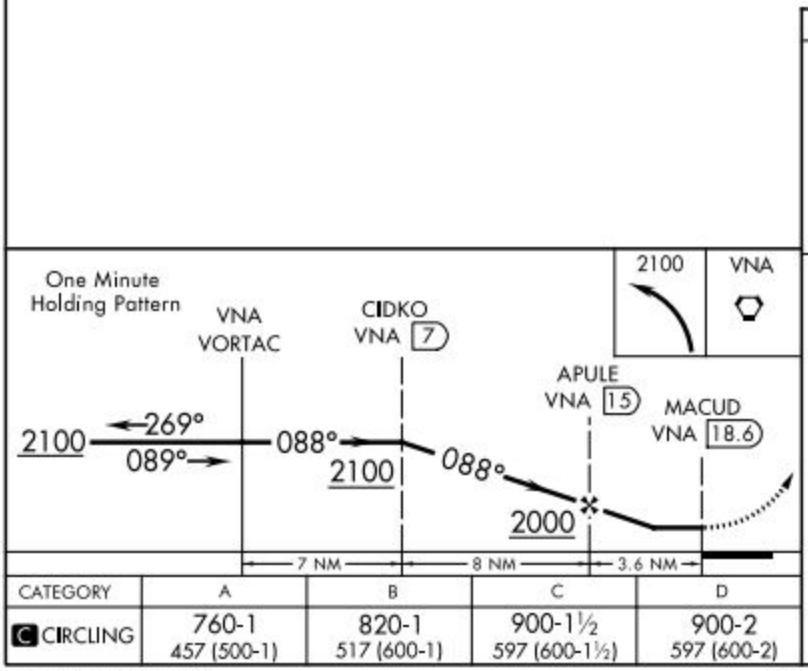
ATIS	JACKSONVILLE CENTER	HEART OF GEORGIA TOWER ★	GND CON	UNICOM
119.425	127.575 269.025	124.55 (CTAF) L	121.175	122.95

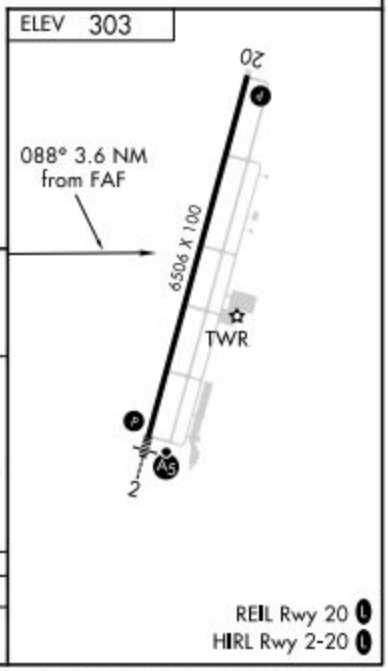
1568

NOT FOR NAVIGATION



NoPT for arrivals on VNA VORTAC airway radials 178 CW 344





CATEGORY	A	B	C	D
C CIRCLING	760-1 457 (500-1)	820-1 517 (600-1)	900-1½ 597 (600-1½)	900-2 597 (600-2)

REIL Rwy 20 L
HIRL Rwy 2-20 L

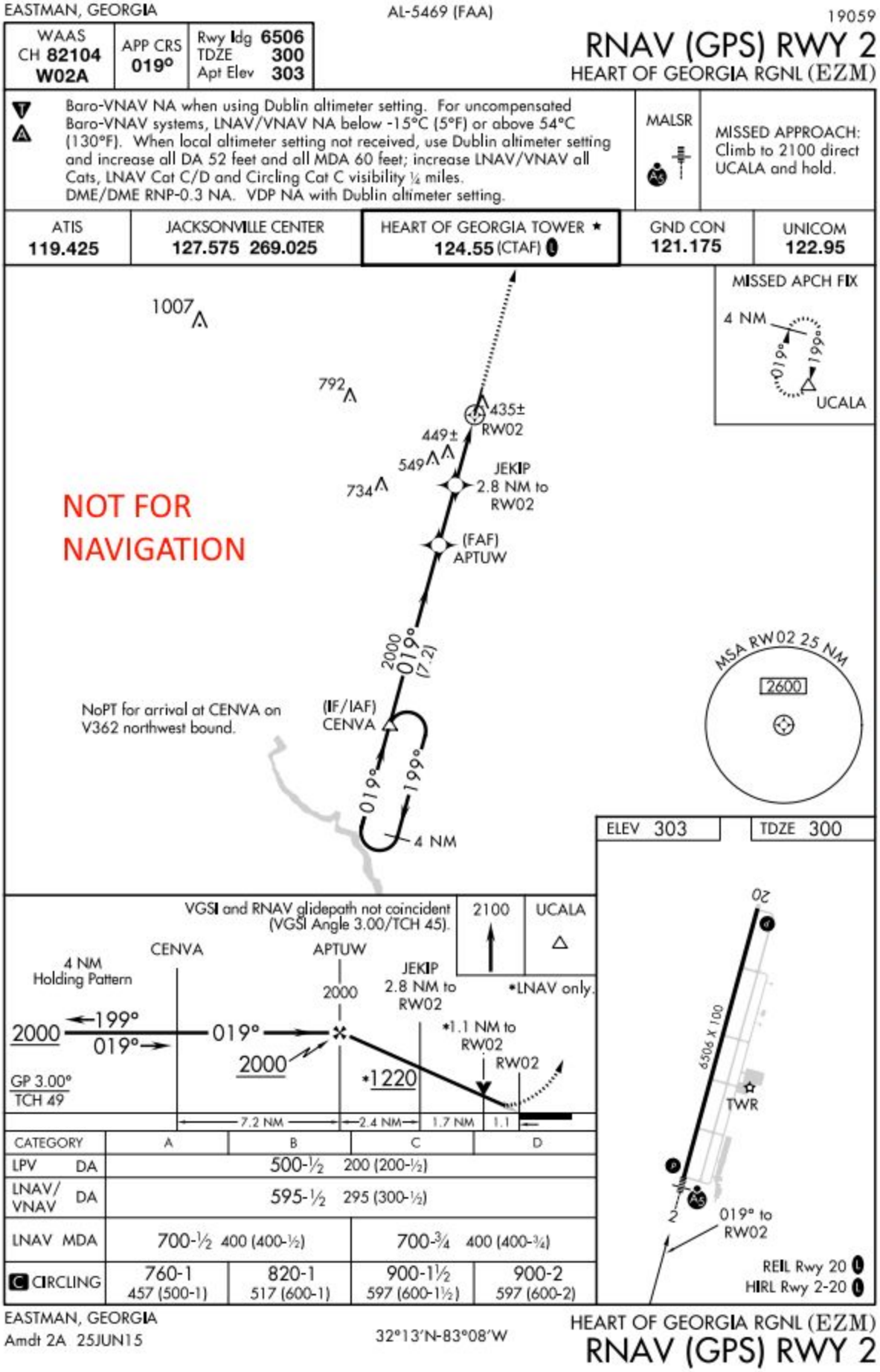
EASTMAN, GEORGIA
Amdt 8A 23APR20

32°13′N-83°08′W

HEART OF GEORGIA RGNL (EZM)
VOR/DME-A

SE-4, 10 SEP 2020 to 08 OCT 2020

SE-4, 10 SEP 2020 to 08 OCT 2020


EASTMAN, GEORGIA
AL-5469 (FAA)
19059
WAAS CH 82104 W02A
APP CRS 019°
Rwy Idg 6506
TDZE 300
Apt Elev 303
RNAV (GPS) RWY 2
HEART OF GEORGIA RGNL (EZM)
Baro-VNAV NA when using Dublin altimeter setting. For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -15°C (5°F) or above 54°C (130°F). When local altimeter setting not received, use Dublin altimeter setting and increase all DA 52 feet and all MDA 60 feet; increase LNAV/VNAV all Cats, LNAV Cat C/D and Circling Cat C visibility ¼ miles.
DME/DME RNP-0.3 NA. VDP NA with Dublin altimeter setting.
MALSR
MISSED APPROACH: Climb to 2100 direct UCALA and hold.
ATIS 119.425
JACKSONVILLE CENTER 127.575 269.025
HEART OF GEORGIA TOWER ★ 124.55 (CTAF)
GND CON 121.175
UNICOM 122.95
MISSED APCH FIX
4 NM
019°
199°
UCALA
1007
792
435±
RW02
449±
549
734
JEKIP
2.8 NM to RW02
(FAF)
APTUW
2000
019°
(7.2)
NOT FOR NAVIGATION
NoPT for arrival at CENVA on V362 northwest bound.
(IF/IAF)
CENVA
019°
199°
4 NM
MSA RW02 25 NM
2600
ELEV 303
TDZE 300
VGSI and RNAV glidepath not coincident (VGSI Angle 3.00/TCH 45).
2100
UCALA
CENVA
APTUW
4 NM Holding Pattern
2000
JEKIP
2.8 NM to RW02
*LNAV only.
2000
←199°
019°→
019°
2000
*1220
*1.1 NM to RW02
RW02
GP 3.00°
TCH 49
7.2 NM
2.4 NM
1.7 NM
1.1
CATEGORY A B C D
LPV DA 500-½ 200 (200-½)
LNAV/VNAV DA 595-½ 295 (300-½)
LNAV MDA 700-½ 400 (400-½) 700-¾ 400 (400-¾)
CIRCLING 760-1 457 (500-1) 820-1 517 (600-1) 900-1½ 597 (600-1½) 900-2 597 (600-2)
20
6506 X 100
TWR
2
019° to RW02
REIL Rwy 20
HIRL Rwy 2-20
EASTMAN, GEORGIA
Amdt 2A 25JUN15
32°13'N-83°08'W
HEART OF GEORGIA RGNL (EZM)
RNAV (GPS) RWY 2
SE-4, 10 SEP 2020 to 08 OCT 2020
SE-4, 10 SEP 2020 to 08 OCT 2020