Aeronautical Charting Meeting – Charting Group

Instrument Approach Chart Modernization Working Group's Recommendation Document

Introduction

In 2018, NBAA introduced an agenda item to the ACM-CG concerning the increasing complexity of the FAA's instrument approach chart: IAP Chart Modernization (faa.gov). As stated in the recommendation document, this complexity results from TERPS and PBN requirements, multiple lines of minima, voluminous chart notes, just to name a few. As a result, pilots find it difficult to extract necessary information to fly the approach. In response to this agenda item, the Instrument Approach Chart Modernization Working Group was established to review the recommendations proposed, identify additional beneficial changes to the approach chart, and to coordinate a roadmap towards implementation. This recommendation document identifies the changes to the FAA and National Geospatial-Intelligence Agency /Department of Defense (NGA) instrument approach procedure (IAP) chart.

The recommendations below are listed in order of significance; however, there is no preference provided to their significance, as many of the smaller changes proposed are the result of the more significant changes. The working group **does not recommend** a partial or piece-meal adoption of these recommendations since many of them are interrelated. For example, the simplified Airport Sketch by itself brings little benefit over the current sketch. However, the simplified Airport Sketch is a necessary requirement to implement the expanded profile view and to add the inoperative component minima to the approach chart. The working group believes that the users will appreciate the full benefits of this change when they see the full implementation as opposed to small, incremental changes over time.

Recommendations

Below is the set of recommended changes to the FAA/NGA-DoD instrument approach chart layout and depiction proposed by the working group.

*NOTE: The chart specimens illustrating the proposed changes to the IAP charts below **DO NOT** reflect the current IAP chart. These specimens have been developed over the course of the working group's discussions. To avoid unnecessary burden on AJV-A and FAA Terminal Charting, we have not requested updated specimen charts to reflect the current procedure. At the end of the document, we provide four examples, two IAP charts and two Airport Diagram charts incorporating these proposed changes.*

ALL IAP CHARTS DEPICTED IN THIS PUBLICATION ARE NOT FOR NAVIGATION USE

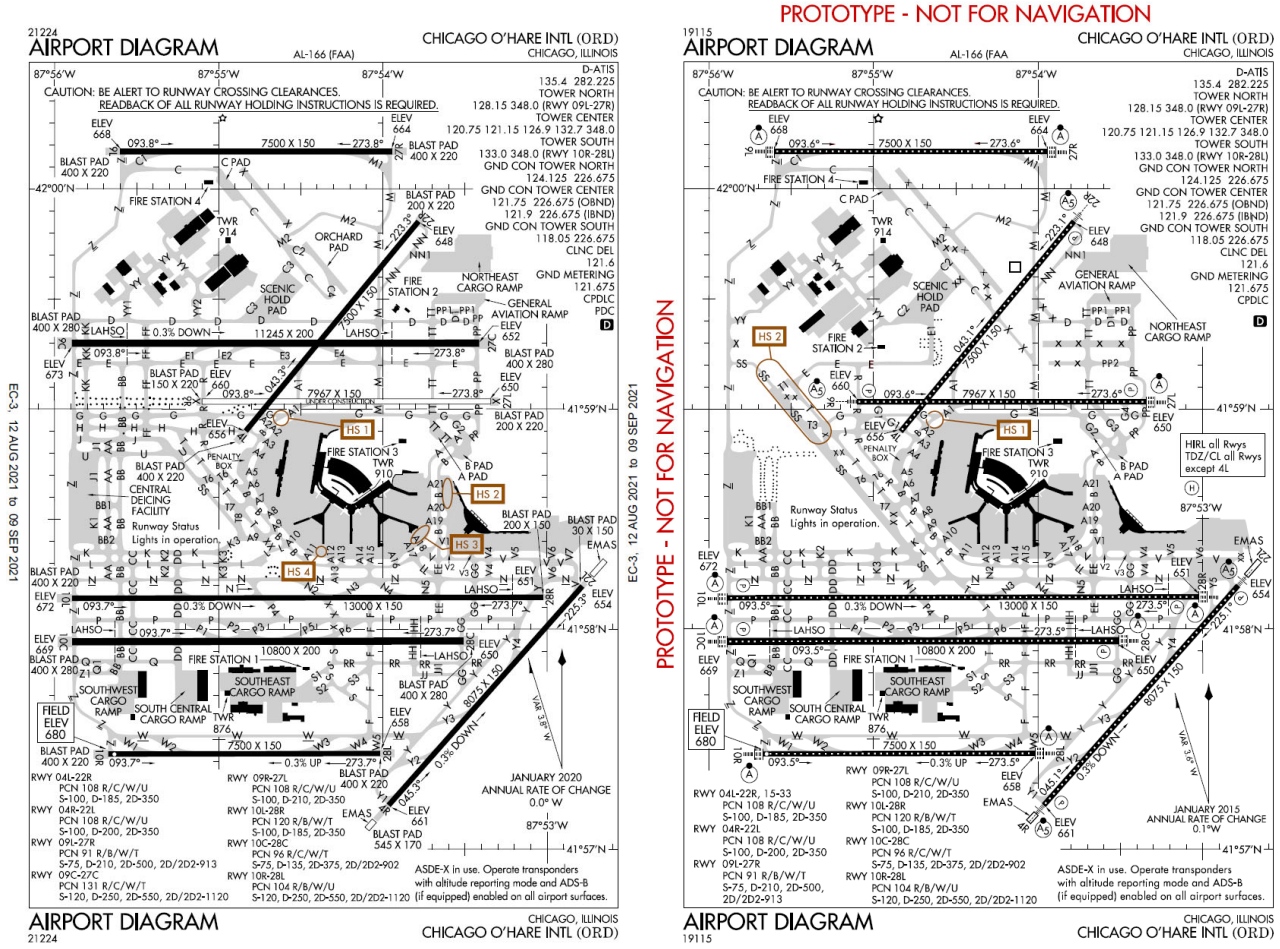
Airport Diagram

The working group proposes that each airport with an IAP in the Terminal Procedures Publication (TPP) have an Airport Diagram. This Airport Diagram will be expanded to include selected information from the Airport Sketch published on the IAP Chart.

Example: Chicago, IL – O'Hare (KORD)

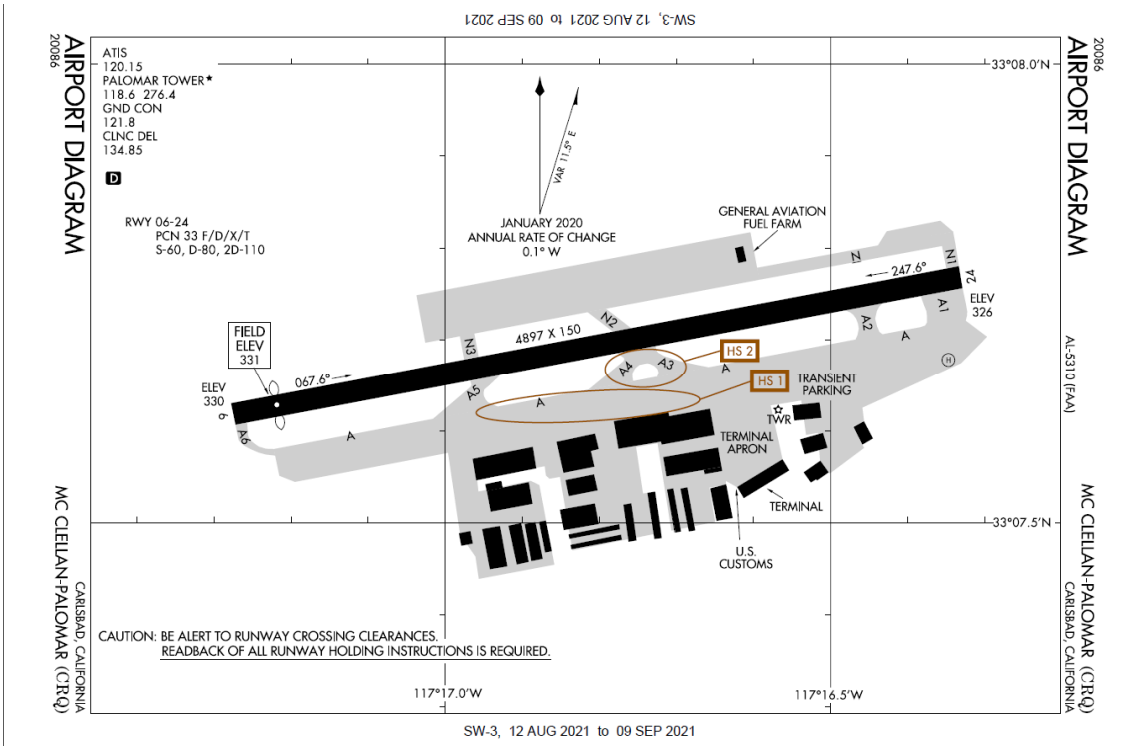
CURRENT AIRPORT DIAGRAM:

PROPOSED AIRPORT DIAGRAM:

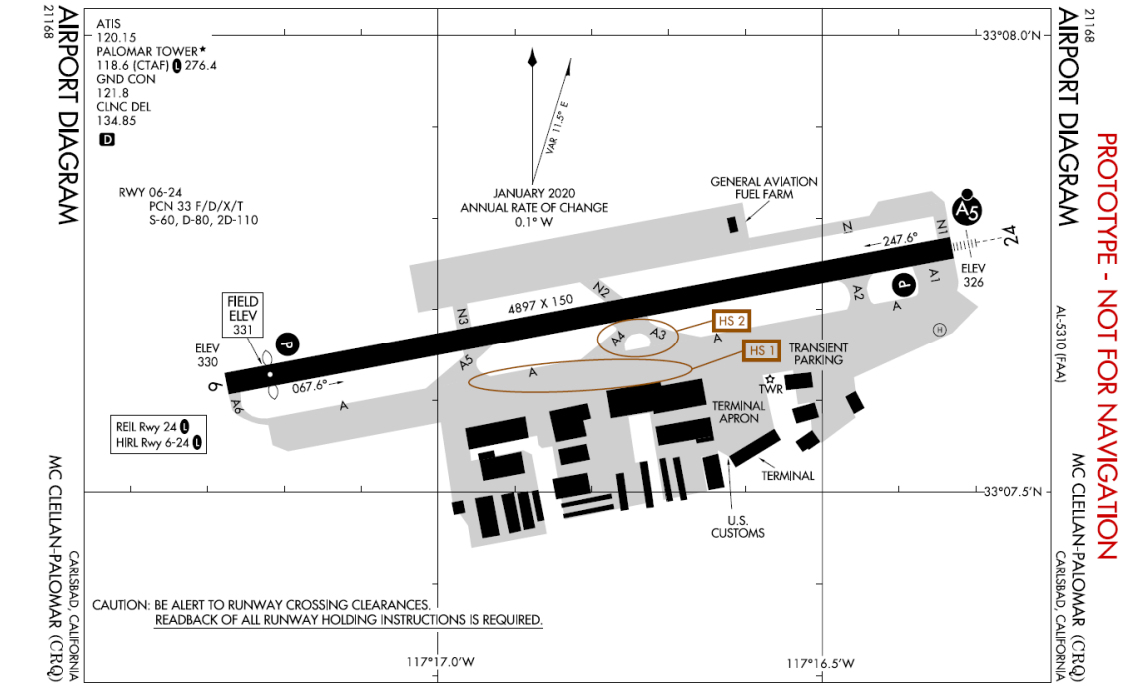


Example: Carlsbad, CA (KCRQ)

CURRENT AIRPORT DIAGRAM:



PROPOSED AIRPORT DIAGRAM:



Recommended Changes:

Sketch items migrated to, or that are already shown, on Airport Diagrams:

- Runway width
- Ultralight areas, ski landing areas, seaplane landing or waterways, new/existing runways under construction, and hard surfaced overruns
- Taxiways, aprons, and hardstands
- Displaced thresholds
- Runway slope
- Runway surface
- Arresting gear and jet barriers
- U.S. Navy Optical Landing System
- Helicopter alighting area
- Control tower
- Navaids
- Beacons
- Pilot Controlled Lighting (PCL), including frequency for activation
- Obstacles
    - Airport Diagram shows highest obstacle within area of the chart
    - Any obstacles in the sketch that pierce the 67:1 slope may be plotted in the planview
- Approach Lighting Systems symbols and circled letters associated with identifying the system for all runways
- Availability of REIL, RLLS, HIRL, MIRL, LIRL, TDZL, TDZ/CL shown in note format

Anticipated Benefits:

- Each airport with an IAP chart in the TPP will have a dedicated Airport Diagram.
- The Airport Diagram may be referenced inflight for information migrated from the small airport sketch, and its larger typefaces and font sizes are more easily read in the cockpit than the small airport sketch.
- The Airport Diagram aids in pilot awareness during airport surface operations, reducing the likelihood of runway incursion and excursion accidents and incidents.
- Airport Diagram charts may be geo-referenced by non-government chart/data providers allowing own-ship position display. This feature increases situational awareness during ground operations and will be available on supporting electronic flight bag (EFB) applications at all airports, including those previously limited to the Airport Sketch.
- The Airport Diagram depicts the airport operating surface in greater detail than the Airport Sketch, to include taxiway designations, ramp & parking designations, etc. Every airport with an IAP chart will benefit from this added detail.
- Pilot Controlled Lighting will be shown on the Airport Diagram. This change provides information not previously available to IFR departing aircraft using the Airport Diagram. Pilots had to refer to the Chart Supplement or the IAP chart for this information.

- Runway lighting information will now be available to aircraft departing IFR without having to refer to the IAP chart. This will aid in compliance with an operator's OpSpec/MSpec authorizing lower than standard takeoff minimums.

Potential Negatives:

- The transfer of information from the Airport Sketch to the Airport Diagram makes this information unavailable for review during the performance of the instrument approach – See Airport Sketch discussion below.
- Additional pages will be required in the TPP and Chart Supplement along with additional cost to publish paper products.
    - AJV-A states that the increased number will not be excessive compared with the benefits obtained by implementing this change.

HAZARDS & MITIGATIONS:

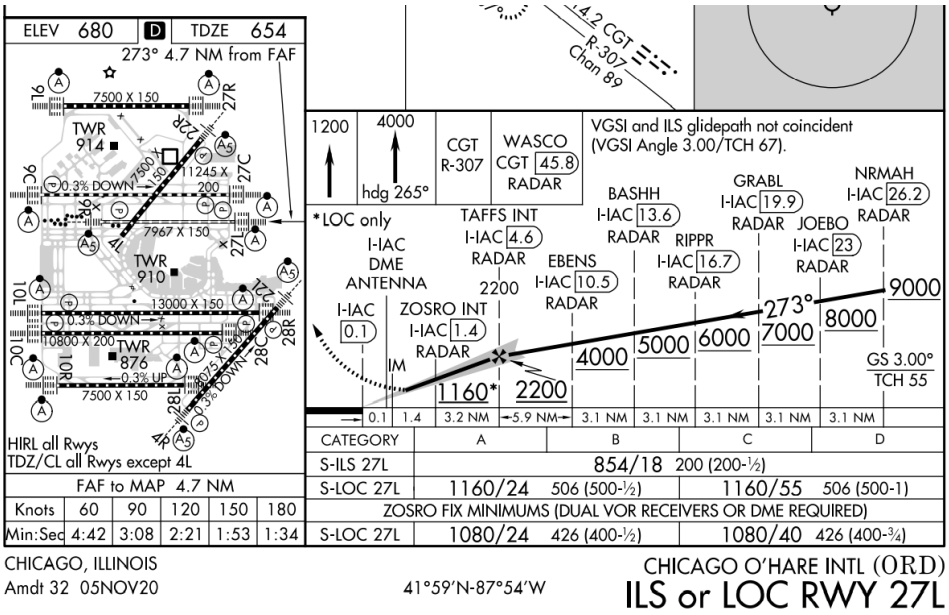
- There are no identified hazards & mitigations directly related to the adding Airport Diagrams to all airports with an IAP chart in the TPP.
- See the simplified Airport Sketch discussion for hazards and mitigations related to transfer/migration of information from the Airport Sketch and its placement on the Airport Diagram.

Expanded Profile View

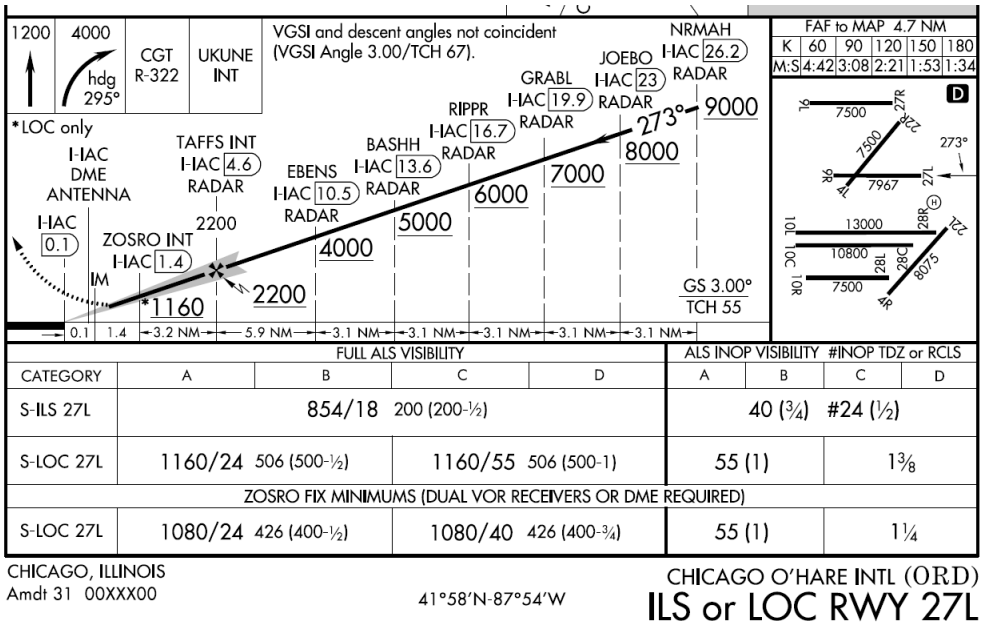
The working group recommends an expanded Profile View of the instrument approach that depicts the course reversal and/or the intermediate/final approach segment minimum altitudes, as required by the procedure.

Example: ILS or LOC Rwy 27C – Chicago, IL – KORD

CURRENT PROFILE VIEW:



PROPOSED PROFILE VIEW:



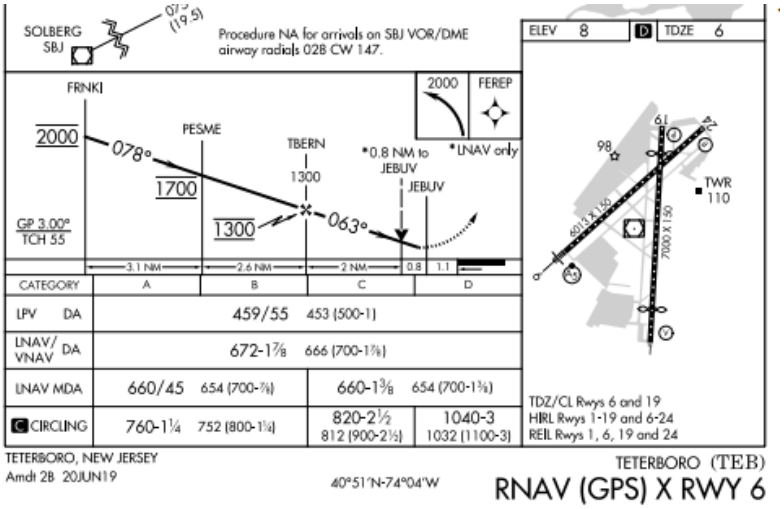
Recommended Changes:

- Expanded the profile box width allowing for improved depiction of the Profile View.
- Placement of simplified Airport Sketch to the right of the profile.
    - This may be moved to the left of the Profile View if required for space.
- The Time/Distance table (when applicable) is placed above the simplified Airport sketch.

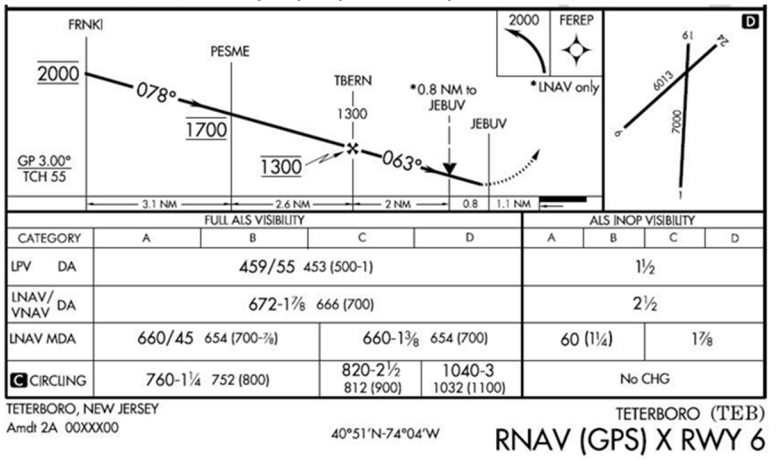
Anticipated Benefits:

- Improves the readability of the Profile View.
- There is less crowding and compression of information on the profile view of IAPs with long intermediate segments that are often found at major airports in the National Airspace System (NAS) supporting simultaneous parallel runway instrument approaches.
- Reduces the need to stagger fix names and fix data for intermediate stepdown fixes.
- Improved depiction and readability of altitude restrictions in the Profile View.

    - TEB RNAV (GPS) X Rwy 6 current depiction:



    - TEB RNAV (GPS) X Rwy 6 proposed depiction:



Potential Negatives:

- It is impossible to implement an expanded Profile View without significant changes to the existing Airport Sketch. The adoption of the simplified Airport Sketch is a prerequisite for this recommendation to proceed. See further discussion concerning the simplified Airport Sketch.

HAZARDS & MITIGATIONS:

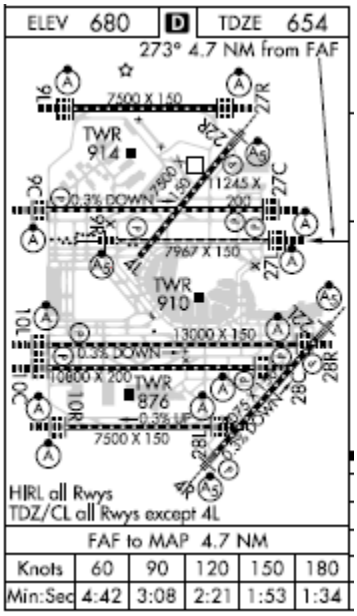
- No hazards and mitigations directly related to the expanded Profile View were identified.

Simplified Airport Sketch

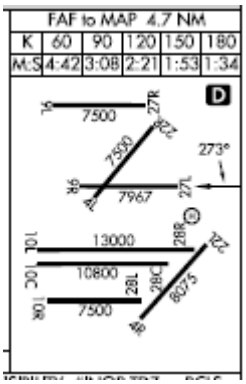
As noted from the discussion contained in the History Document for ACM-CG #12-02-257 (12-02-257_simplification_and_stndz_FAC_in_airport_sketch.pdf (faa.gov)), the primary purpose of the Airport Sketch is to assist the pilot in verifying their orientation to the airport environment and the aircraft's relationship to the landing runway when transition from instrument flight to visual flight at the completion of the approach. To meet this requirement, the working group proposes a simplified, smaller Airport Sketch to only include runways, runway numbers, runway length, final approach course and bearing (when the final approach course is within the scale of the sketch box) and the declared distance icon (if applicable). The simplified Airport Sketch will represent an expanded version of the Planview airport pattern depiction.

Example: ILS or LOC Rwy 27C – Chicago, IL – KORD

CURRENT AIRPORT SKETCH:



PROPOSED SIMPLIFIED AIRPORT SKETCH:



Note: Scale on both examples is set to 100%

Recommended Changes:

- **<u>Each airport will have a dedicated Airport Diagram page – No Exceptions</u>**.
- Placement of the simplified Airport Sketch almost universally to the right of the profile
  - May be moved to the left only if needed for space.
- Simplified Airport Sketch will include runway pattern, runway, runways numbers, runway length, Final Approach Track and bearing (when the final approach course is within the scale of the sketch box) *, declared distance icon (if applicable, upper right corner), and helipad symbol (if applicable, scaled to 50%).
  - Final Approach Track will be limited to track arrow and bearing only.

- Only runways in the authoritative database will be shown. All runways will be depicted as a solid black line.
- Permanently closed runways will be shown with an "X" in place of the runway identifier. The length will not be published.
- Indefinitely closed runways will be shown with runway length and runway identifier with an "X" above the published runway ident.
- Ultralight areas, ski landing areas, seaplane landing or waterways, new/existing runways under construction, and hard surfaced overruns will not be shown on the sketch but are shown on the Airport Diagram.
- Text uses 5 point font with the exception of that a 6 point font "X" is used for closed runways.
- Airport elevation and touchdown zone elevation (TDZE) are available in the IAP chart top briefing strip and will not be repeated in the simplified sketch.

**An ACM-CG agenda item has been submitted requesting an evaluation of always including on the Airport Sketch the Final Approach Track or the Final Approach Track extended when the Final Approach Course terminates outside of the boundaries of the Sketch.*

Anticipated Benefits:

- Each airport with an instrument approach will have an Airport Diagram page (see benefits provided by the Airport Diagram for every airport).
- Airport Diagrams will include all airport and approach lighting information in one location.
- Removes redundant information that clutters the chart, for example, ELEV and TDZE, which exist elsewhere on the chart.
- Simplified Airport Sketch contains less clutter, making its use easier for its recognized purposes.
- The runway details provide sufficient information to support the transition from instrument flight to the visual flight during a straight-in or a circling approach to the desired landing runway.
- The simplified Airport Sketch is a necessary requirement to support:
    - Expanded Profile View
    - Expanded Minima Box

Potential Negatives:

- The transfer of individual taxiway and ramp detail from the approach chart to the Airport Diagram.
- The transfer of all runway lighting information for runways *other than* the approach runway to the Airport Diagram.

  Note: Lighting information for the approach runway is published in the Briefing Strip.

- Pilots will need to develop new habits to reference a separate chart, the Airport Diagram, for runway exit and ground operations.

Hazards & Mitigations:

HAZARD: Loss of airport taxiway and ramp detail & single pilot, high performance aircraft operations. High speed, single pilot tactical airplanes and helicopters are workload intensive aircraft. Single pilot general aviation aircraft may also be considered high workload depending on pilot experience. Removing taxiway and ramp detail requires pilots of these aircraft to refer to the Airport Diagram, located on a separate chart, to obtain ground movement information.

MITIGATION: The working group recognizes and acknowledges the loss of ground movement information on the simplified Airport Sketch. However, we also recognize that at complex airports, the current Airport Sketch is virtually useless for airport ground movement. The following is stated in the FAA's Chart User's Guide:

> *Airport Diagrams are specifically designed to assist in the movement of ground traffic at locations with complex runway/ taxiway configurations. Airport Diagrams are not intended for use in approach and landing or departure operations. An airport diagram assists pilots in identifying their location on the airport, thus reducing requests for "progressive taxi instructions" from controllers.*

Concurrent with the proposed change, **every airport with an instrument approach will have separate Airport Diagram**. In general, Airport Diagrams were originally published at airports with an Air Traffic Control Tower (ATCT) as part of the Federal Aviation Administration's Runway Incursion Program with the goal of reducing the frequency of runway incursions. The program has been expanded to include non-towered airports with complex runway configurations as well.

Since the stated purpose of the Airport Diagram is to "assist in the movement of ground traffic at locations with complex runway/taxiway configurations", the working group believes that by providing a separate Airport Diagram for every airport will not only offset the loss of taxiway/ramp information from the Airport Sketch but may also help reduce the frequency of runway incursions at airports that currently do not have an Airport Diagram.

The working group also believes that advances in electronic charting products (e.g., EFBs) and the functionality that may be built into them may lead non-government charting providers to implement a means to quickly display the Airport Diagram from the IAP chart. For example, the simplified Airport Sketch could be hyperlinked to bring up the Airport Diagram page when the sketch is tapped. We also note that other types of innovations are currently available to assist single pilot aircraft users in quickly transitioning from one chart to another. For example, the ForeFlight product shown below currently allows the user to select charts intended to be used for the flight, and then to display those selected charts with one touch, moving from the arrival chart to the IAP chart, and then to the Airport Diagram with relative ease.

The working group appreciates that this level of functionality and automation is currently not available for users of the paper Terminal Procedures Publication. However, it is believed that these limitations are not insurmountable. Briefing the runway exit point should be part of every pilot's pre-approach briefing. This is stated in FAA's Instrument Procedures Handbook – FAA-H-8083-16B:

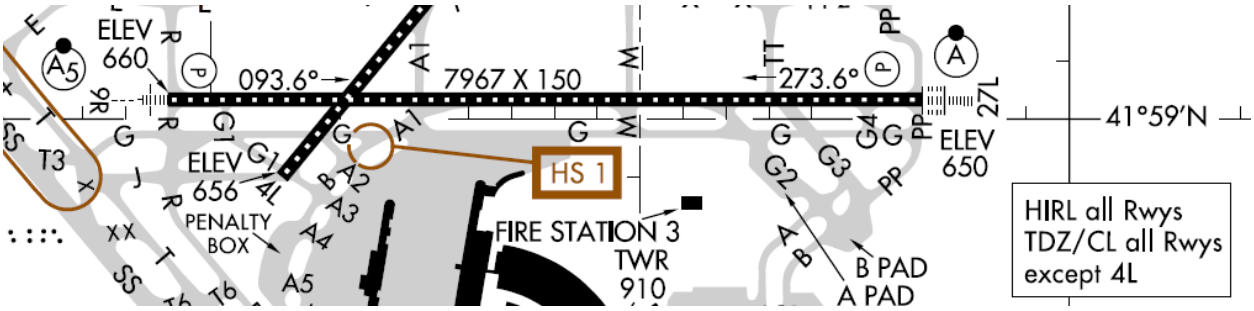
> *Airport/Runway Information*
>
> *Another important piece of a thorough approach briefing is the discussion of the airport and runway environment. A detailed examination of the runway length (this must include the A/FD section of the CS for the landing distance available), the intended turnoff taxiway, and the route of taxi to the parking area, are all important briefing items. In addition, runway conditions should be discussed. The effect on the aircraft's performance must be considered if the runway is contaminated.*
>
> *FAA approach charts include a runway sketch on each approach chart to make important airport information easily accessible to pilots. In addition, at airports that have complex runway/taxiway configurations, a separate full-page airport diagram is published.*
>
> *The airport diagram also includes the latitude/longitude information required for initial programming of FMS equipment. The included latitude/longitude grid shows the specific location of each parking area on the airport surface for use in initializing FMS. Figure 4-19 shows the airport sketch and diagram for Chicago-O'Hare International Airport (KORD).*

Pilots making approaches to airports that have this type of complex runway and taxiway configuration must ensure that they are familiar with the airport diagram prior to initiating an instrument approach. A combination of poor weather, high traffic volume, and high ground controller workload makes the pilot's job on the ground every bit as critical as the one just performed in the air.

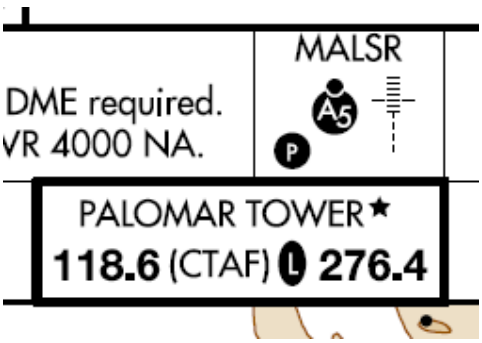
The working group believes that the addition of an Airport Diagram for every airport with an IAP chart adequately mitigates the loss of taxiway and ramp data for ground maneuvering that currently exists on the Airport Sketch. it is believed that the expanded use of EFB charting products will greatly mitigate the increased pilot workload resulting from the need to reference a separate chart (the Airport Diagram) for ground operations. The working group also believe safety will be enhanced during ground operations by a dedicated Airport Diagram for every airport.

HAZARD: Transfer of approach lighting information and visual glideslope indication (VGSI) information from the Airport Sketch to the pilot's briefing strip with full airport lighting and VGSI information shown on the Airport Diagram means the pilot must reference this important information from a separate chart (Airport Diagram).

MITIGATION: All lighting information will be available on the Airport Diagram. Additionally, the runway approach lighting configuration will be depicted on the Airport Diagram (see Airport Diagram recommendation below):



For straight-in approaches, the approach light system type and VGSI configuration, if applicable, will be provided in the IAP's Briefing Strip lighting box:



Information for the side-step runway will also be provided. For circling, pilots will need to refer to the Airport Diagram for lighting information.

HAZARD: Absence of readily available obstacle information on the Airport Sketch could create an additional hazard for the pilot when performance a during circle-to-land maneuver.

MITIGATION: Any obstacle that penetrates a 67:1 surface emanating from any point along the centerline of any runway *are considered* and may be charted within the area shown to scale on the IAP chart's Planview. In addition, any obstacle specifically identified by the approving authority for charting shall be depicted in the Planview. Obstacles ***currently*** depicted on the Airport Sketch follow the same IAC specification requirements (ref: Interagency Charting Specification (IAC) #4 3.4.4.6)

Obstacles depicted on the Planview are not shown on the Airport Sketch. Likewise, obstacles depicted on the Airport Sketch are not depicted on the Planview. Obstacles removed from the simplified Airport Sketch, by existing specifications would naturally move to the IAP Planview.

It should be noted there is a change to the IAC 4 specification in coordination, RD 839 Obstacles Depicted in the Airport Sketch. The RD was submitted independently from the recommendations made by this working group. It documents current practice, which as a result, provides more accurate obstacle data. Obstacles which penetrate a slope of 67:1, and those obstacles identified on the authoritative source as "chart" are being migrated from the Airport Sketch to the Planview portion of the chart. The RD recommends the removal of paragraph 3.4.7.7 Obstacles from the IAC 4 Specification.

HAZARD: Various users identified the transfer of runway widths, arresting gear, displaced threshold, and lighting from the Airport Sketch to the Airport Diagram as potential hazard for landing operations, in the event of an alternate diversion, or in the case of an alternate runway landing.

MITIGATION: The simplified Airport Sketch is not able to support publishing the runway's width, arresting gear, and displaced thresholds. To address the removal of this information from simplified Airport Sketch, every airport will have a dedicated Airport Diagram page. The runway length, width, arresting gear location, and displaced threshold information along complete airport runway and approach/VGSI lighting information will be available on the Airport Diagram.

Landing Minimums

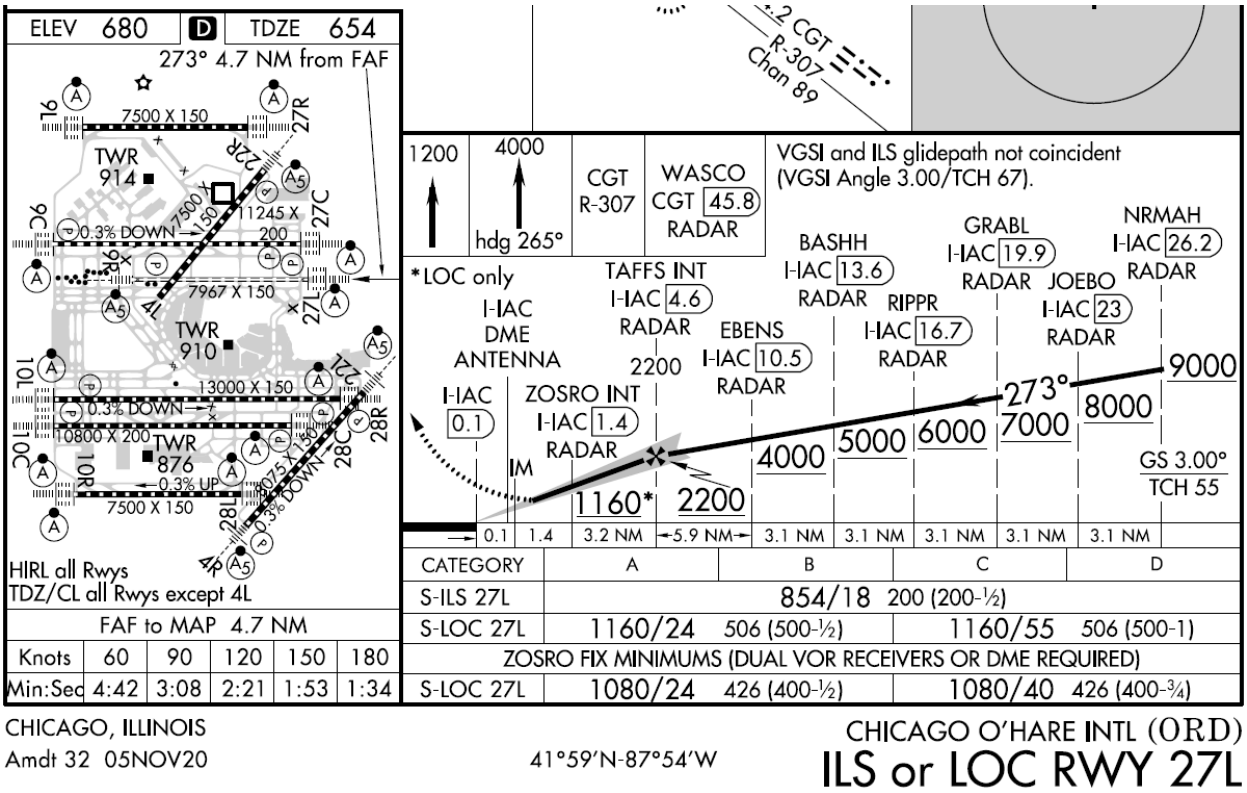
The working group proposes incorporating the Inoperative Components Table landing minima adjustments into the Landing Minima published on the IAP chart. The Landing Minimums for inoperative approach lighting systems (ALS), touchdown zone lighting (TDZ) or runway centerline lighting system (RCLS) will be sourced on FAA Form 8260-3. Non-standard inoperative component landing minima will no longer be published as notes in the Briefing Strip but will be incorporated into the tabulated minima. When the inoperative component adjustment does not apply, the applicable inoperative component minimums will be annotated as "No CHG".

Additionally, the working group proposes removing the parenthetical SM visibility minimums from the Military Minimums unless RVR is the charted visibility, in which case the parenthetical SM visibility will remain. This charted SM visibility is obtained from the Comparable Values of RVR and Visibility Table from the TPP Front Matter Section. Military Minimums will continue to include the ceiling.

The Landing Minimums box will be extended across the full width of the IAP chart.

Example: ILS or LOC Rwy 27C – Chicago, IL – KORD

CURRENT LANDING MINIMUMS:



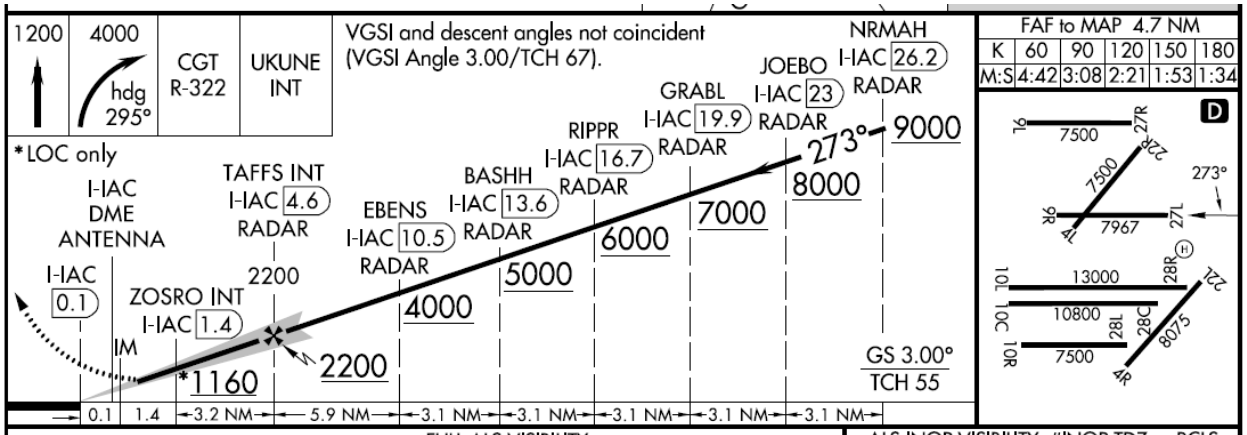
For inoperative ALS, TDZ, or RCLS, the pilot must refer to the Inoperative Components Table in the TPP Front Matter section:

(2) ILS, LPV, GLS with visibility minima of RVR 1800†/2000*/2200*

Inoperative Component or Visual Aid	Increase Visibility
ALSF 1 & 2, MALSR, SSALR	To RVR 4000† To RVR 4500*
TDZL or RCLS	To RVR 2400#
RVR	To ½ mile

#For ILS, LPV, GLS procedures with a 200 foot HAT, RVR 1800 authorized with use of FD or AP or HUD to DA.

PROPOSED LANDING MINIMUMS:



	FULL ALS VISIBILITY				ALS INOP VISIBILITY #INOP TDZ or RCLS			
CATEGORY	A	B	C	D	A	B	C	D
S-ILS 27L	854/18 200 (200-½)				40 (¾) #24 (½)			
S-LOC 27L	1160/24 506 (500-½)		1160/55 506 (500-1)		55 (1)		1⅜	
ZOSRO FIX MINIMUMS (DUAL VOR RECEIVERS OR DME REQUIRED)								
S-LOC 27L	1080/24 426 (400-½)		1080/40 426 (400-¾)		55 (1)		1¼	

CHICAGO, ILLINOIS
Amdt 31 00XXX00

41°58'N-87°54'W

CHICAGO O'HARE INTL (ORD)
ILS or LOC RWY 27L

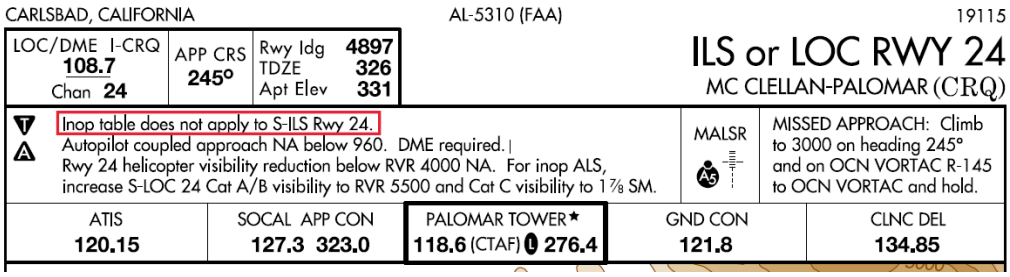
Recommended Changes:

- Expansion of the Landing Minimums across full width of the chart.
- Removal of repeated parenthetical SM visibility. When RVR is charted, parenthetical SM will remain.
- ALS INOP Visibility Minimums added when applicable.
    - Title bar added when both Full ALS and ALS INOP are shown.
- When an airport has TDZ or RCLS that could be inoperative, the inoperative visibility will be shown with a referenced note symbol to distinguish it from the ALS inoperative minima.
- In the case where INOP component visibility minima vary in different approach categories and space does not allow for inclusion of the inoperative component visibilities in the INOP minima table, the minima will be published as a note in the Briefing Strip.
    - Military IAP are most likely to be affected.
    - NGA FTIPs (foreign plates) are published per the Host Nation in meters (RVR & Vis). INOP table does not include meters (pilots must take table RVR & Vis values to conversion page to translate data). There may be times when CAT D (and/or CAT E) does not require increase for #INOP TDZ or RCLS and there is limited space for CAT NA #INOP with an added increase for ALS INOP
    - To provide necessary clarity, INOP Components minima will need to be published in the Briefing Strip Notes.
    - Working Group believes that guidance in the 8260.19 Order is still required should this case eventually occur.

Anticipated Benefits:

- Pilots will no longer be required to refer to the Inoperative Components Table when the ALS, TDZ, or RCLS are inoperative. No flight deck math will be required.
- Briefing Strip notes for non-standard inoperative component minima will be removed and incorporated into the inoperative component minima published in the Landing Minimums section.
- Briefing Strip notes for not-applicable inoperative component minima will be removed from the Briefing Strip notes. The not-applicable nature of the inoperative component minima will be specifically stated in the Landing Minimums Section using the annotation “No CHG”:

    - Current depiction: ILS or LOC Rwy 24 Carlsbad, CA (KCRQ)


CARLSBAD, CALIFORNIA AL-5310 (FAA) 19115

ILS or LOC RWY 24

MC CLELLAN-PALOMAR (CRQ)

LOC/DME I-CRQ	APP CRS	Rwy Idg	4897
108.7 Chan 24	245°	TDZE	326
		Apt Elev	331

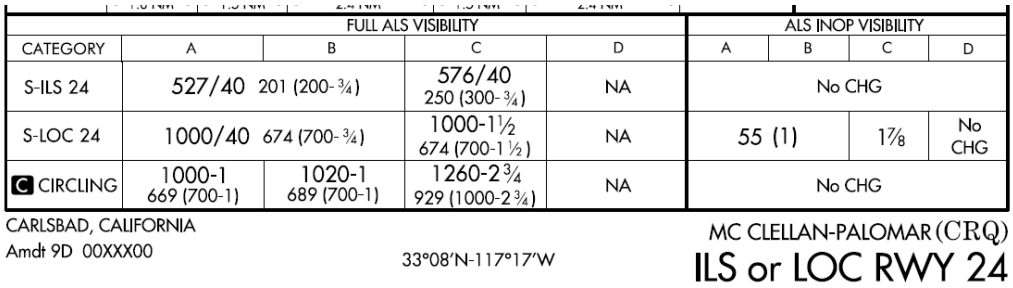
Inop table does not apply to S-ILS Rwy 24.
Autopilot coupled approach NA below 960. DME required.
Rwy 24 helicopter visibility reduction below RVR 4000 NA. For inop ALS, increase S-LOC 24 Cat A/B visibility to RVR 5500 and Cat C visibility to 1⅞ SM.

MALSR

MISSED APPROACH: Climb to 3000 on heading 245° and on OCN VORTAC R-145 to OCN VORTAC and hold.

ATIS	SOCAL APP CON	PALOMAR TOWER★	GND CON	CLNC DEL
120.15	127.3 323.0	118.6 (CTAF) 276.4	121.8	134.85

    - Proposed depiction: ILS or LOC Rwy 24 Carlsbad, CA (KCRQ)



	FULL ALS VISIBILITY				ALS INOP VISIBILITY			
CATEGORY	A	B	C	D	A	B	C	D
S-ILS 24	527/40 201 (200-¾)		576/40 250 (300-¾)	NA	No CHG			
S-LOC 24	1000/40 674 (700-¾)		1000-1½ 674 (700-1½)	NA	55 (1)		1⅞	No CHG
C CIRCLING	1000-1 669 (700-1)	1020-1 689 (700-1)	1260-2¾ 929 (1000-2¾)	NA	No CHG			

CARLSBAD, CALIFORNIA
Amdt 9D 00XXX00

33°08'N-117°17'W

MC CLELLAN-PALOMAR (CRQ)
ILS or LOC RWY 24

Potential Negatives:

- NGA/DoD expressed concerns over the removal of the SM visibility value from the Military Minimums regarding the training required to familiarize military pilots with this change.

HAZARDS & MITIGATIONS:

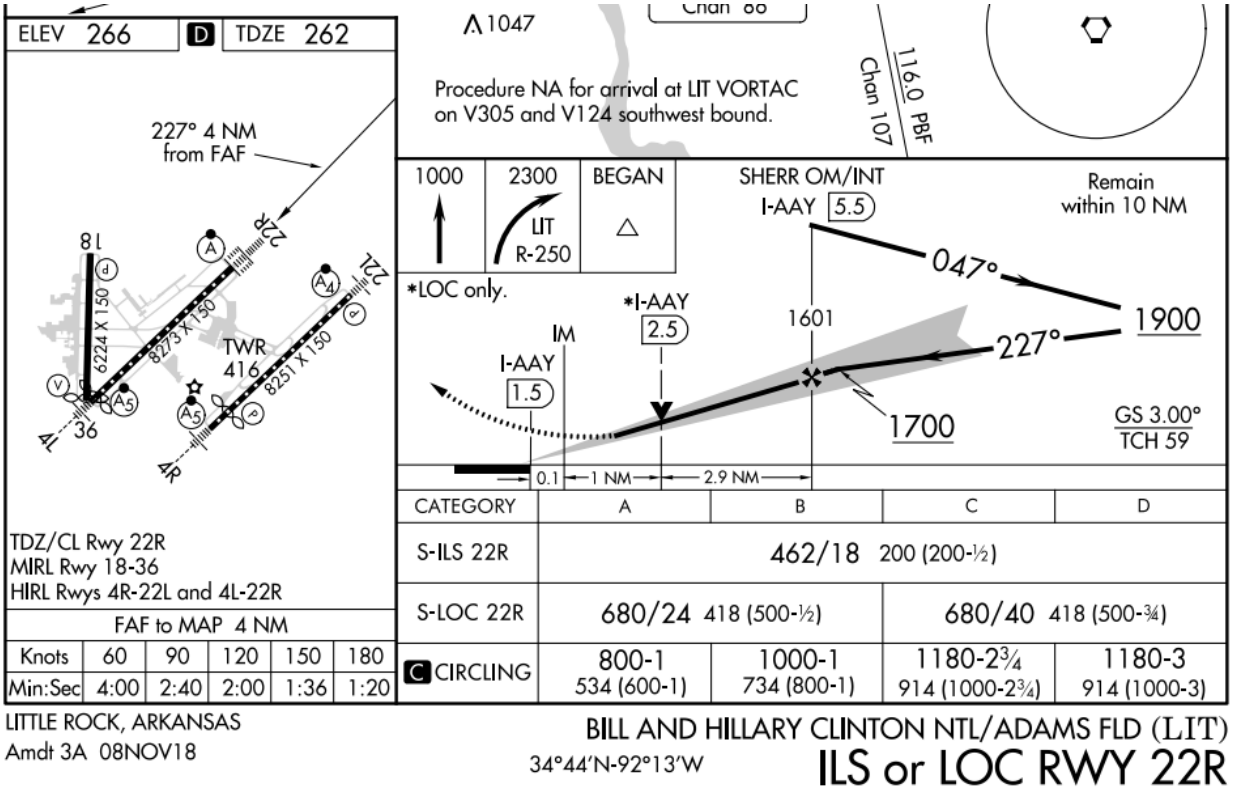
- No hazards and mitigations directly related to the expanded Landing Minimums identified.
- Inoperative component minima require replacement of the existing Airport Sketch with the new simplified Airport Sketch. See simplified Airport Sketch discussion.

Time & Distance Table Changes

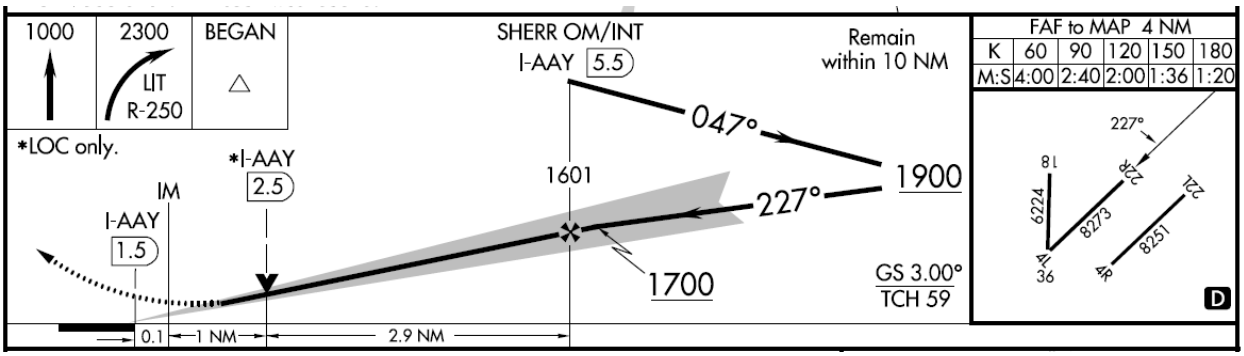
The current Time & Distance Table is shown below the Airport Sketch. It will remain associated with the revised simplified Airport Sketch; however, it will be repositioned to the top of the Airport Sketch.

Example: ILS or LOC Rwy 22R – Little Rock, AR – KLIT

CURRENT TIME & DISTANCE TABLE:



PROPOSED TIME & DISTANCE TABLE:



Recommended Changes:

- Time/Distance table is depicted within the sketch box.
- Table width is reduced.
- All text 6 point font.
- On the revised table “Knots” is abbreviated as “K”, “Min:Sec” is abbreviated as “M:S”.

Anticipated Benefits:

- Changes in dimensions, font size, and abbreviations are required to support the redesign and relocation of the simplified Airport Sketch.
    - Changes to the Airport Sketch are required to support the recommendations for expanded Planview and Landing Minimums supporting inoperative components.

Potential Negatives:

- Reduced font size and compressed appearance in comparison with existing Time & Distance table and Airport Sketch.

HAZARDS & MITIGATIONS:

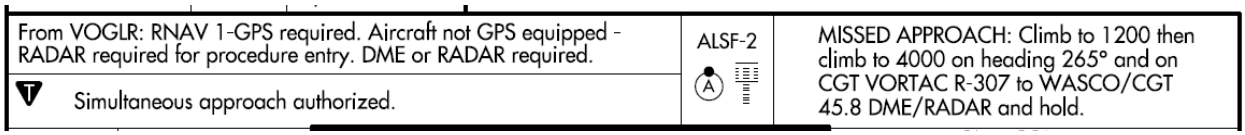
- No identified hazards and mitigations directly related to the change in the Time & Distance Table.

Briefing Strip Lighting Box

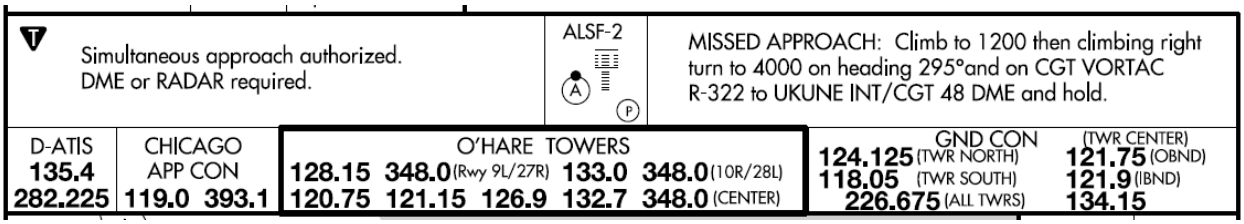
To mitigate hazards identified with the removal of runway, approach, and VGSI lighting information from the Airport Sketch, the working group proposes expanding the Briefing Strip Lighting Box to include all approach and VGSI lighting information for the primary runway associated with a straight-in IAP. If side-step minimums are published, the Briefing Strip Lighting Box will contain lighting information for both the primary runway and authorized side-step runways. Standard TPP lighting icons along with a graphic of the ALS will be used in the box, including negative symbology indicating pilot-controlled lighting (PCL). Placement of the VGSI icon will be relative to its position left or right of the runway.

Example: ILS or LOC Rwy 27L – Chicago, IL – KORD

CURRENT IAP CHART:

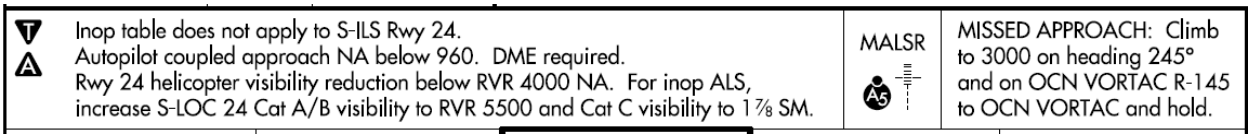


PROPOSED BRIEFING STRIP LIGHTING BOX:

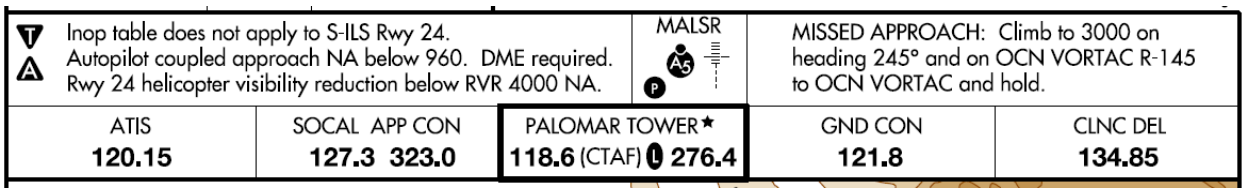


Example: ILS or LOC Rwy 24 – Carlsbad, CA – KCRQ

CURRENT IAP CHART:



PROPOSED BRIEFING STRIP LIGHTING BOX:

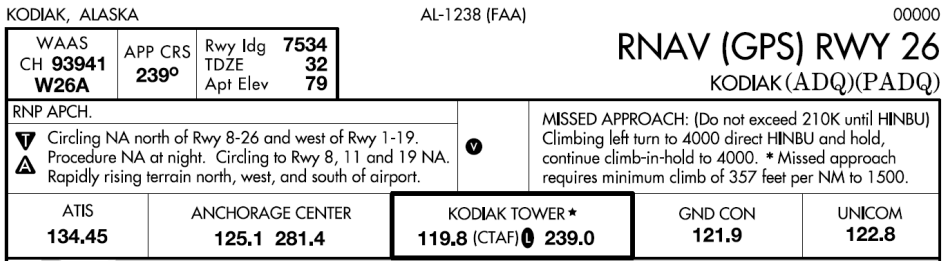


Recommended Changes:

- When applicable, VGSI and ALS will be shown in the Briefing Strip Lighting Box. If the lighting is pilot-controlled, the "negative" symbol will be used. The VGSI symbol will be depicted on the right or left side of the box matching the side of the runway where it is located.
- For sidestep approaches, multiple lighting systems may be shown. Each box will include the proper runway identification.

Anticipated Benefits:

- Complete approach and VGSI lighting information will be contained in the Briefing Strip Lighting Box.
- Added VGSI configuration and location relative to runway based on Industry request. Airports without an ALS will have the VGSI placed in the Briefing Strip Lighting Box in its relative position.
    - Example: RNAV (GPS) Rwy 26 – Kodiak, AK (ADQ/PADQ):


KODIAK, ALASKA AL-1238 (FAA) 00000

RNAV (GPS) RWY 26

KODIAK (ADQ)(PADQ)

WAAS	APP CRS		
CH 93941 W26A	239°	Rwy Idg 7534 TDZE 32 Apt Elev 79	

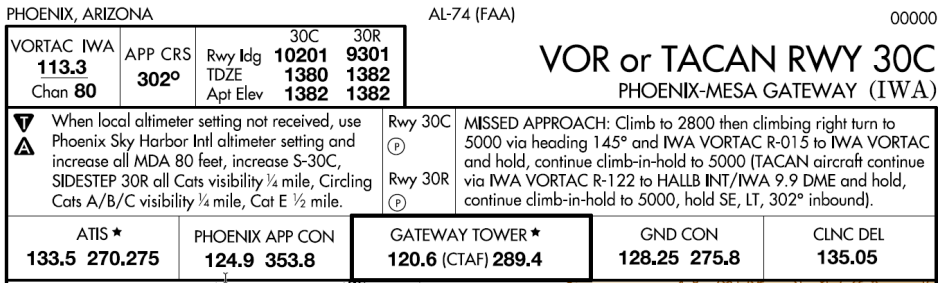
RNP APCH.

Circling NA north of Rwy 8-26 and west of Rwy 1-19. Procedure NA at night. Circling to Rwy 8, 11 and 19 NA. Rapidly rising terrain north, west, and south of airport.

MISSED APPROACH: (Do not exceed 210K until HINBU) Climbing left turn to 4000 direct HINBU and hold, continue climb-in-hold to 4000. * Missed approach requires minimum climb of 357 feet per NM to 1500.

ATIS	ANCHORAGE CENTER	KODIAK TOWER *	GND CON	UNICOM
134.45	125.1 281.4	119.8 (CTAF) 239.0	121.9	122.8

- Lighting Information for authorized side-step runways will be included in the Briefing Strip Lighting Box:
    - Example: VOR or TACAN Rwy 30C – Phoenix-Mesa Gateway, AZ (KIWA):


PHOENIX, ARIZONA AL-74 (FAA) 00000

VOR or TACAN RWY 30C

PHOENIX-MESA GATEWAY (IWA)

VORTAC IWA 113.3 Chan 80	APP CRS 302°		30C	30R
		Rwy Idg	10201	9301
		TDZE	1380	1382
		Apt Elev	1382	1382

When local altimeter setting not received, use Phoenix Sky Harbor Intl altimeter setting and increase all MDA 80 feet, increase S-30C, SIDESTEP 30R all Cats visibility ¼ mile, Circling Cats A/B/C visibility ¼ mile, Cat E ½ mile.

Rwy 30C (P) Rwy 30R (P)

MISSED APPROACH: Climb to 2800 then climbing right turn to 5000 via heading 145° and IWA VORTAC R-015 to IWA VORTAC and hold, continue climb-in-hold to 5000 (TACAN aircraft continue via IWA VORTAC R-122 to HALLB INT/IWA 9.9 DME and hold, continue climb-in-hold to 5000, hold SE, LT, 302° inbound).

ATIS *	PHOENIX APP CON	GATEWAY TOWER *	GND CON	CLNC DEL
133.5 270.275	124.9 353.8	120.6 (CTAF) 289.4	128.25 275.8	135.05

Potential Negatives:

- Briefing Strip Lighting Box size could increase and crowd the Briefing Strip Notes Box and the Missed Approach Box.

HAZARDS & MITIGATIONS:

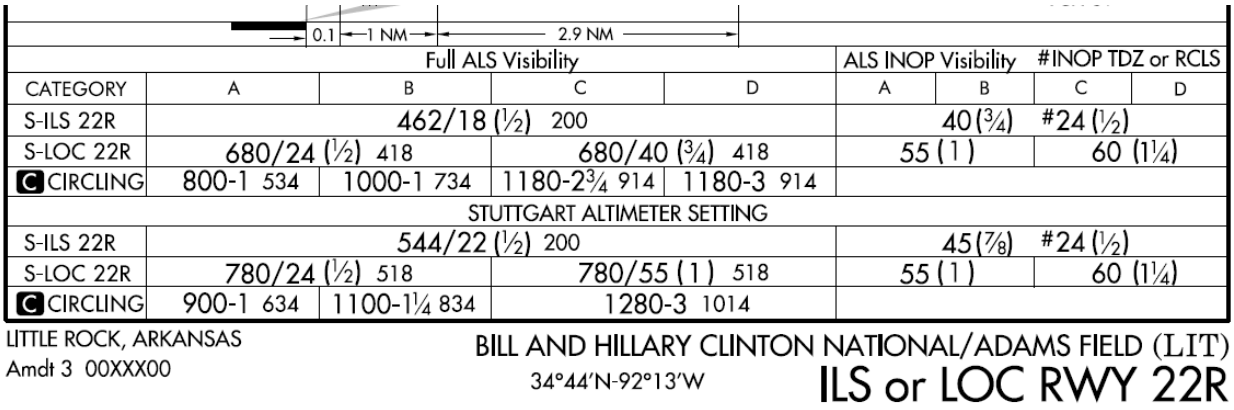
- No identified hazards and mitigations directly related to the change in the changes proposed to the Briefing Strip Lighting Box.

Additional Changes

Other minor changes are proposed to the IAP chart, such as better delineation between the profile and the minima. In addition, notes that were once published in the Briefing Strip Notes Box have been incorporated into the Landing Minimums.

Proposals Rejected for Incorporation

The working group considered incorporating Remote Altimeter Source Setting (RASS) landing minimums into the Landing Minimums section. This is an example of the proposal depicted for the ILS or LOC Rwy 22R at Little Rock, AR (KLIT) where the Stuttgart altimeter setting could be used if the Little Rock altimeter was not available:



0.1 — 1 NM — 2.9 NM

	Full ALS Visibility				ALS INOP Visibility		#INOP TDZ or RCLS	
CATEGORY	A	B	C	D	A	B	C	D
S-ILS 22R	462/18 (½) 200				40 (¾)		#24 (½)	
S-LOC 22R	680/24 (½) 418		680/40 (¾) 418		55 (1)		60 (1¼)	
C CIRCLING	800-1 534	1000-1 734	1180-2¾ 914	1180-3 914				
STUTTGART ALTIMETER SETTING								
S-ILS 22R	544/22 (½) 200				45 (⅞)		#24 (½)	
S-LOC 22R	780/24 (½) 518		780/55 (1) 518		55 (1)		60 (1¼)	
C CIRCLING	900-1 634	1100-1¼ 834	1280-3 1014					

LITTLE ROCK, ARKANSAS
Amdt 3 00XXX00

BILL AND HILLARY CLINTON NATIONAL/ADAMS FIELD (LIT)
34°44'N-92°13'W
ILS or LOC RWY 22R

FAA Terminal Charting determined that they were not able to support this option when up to five lines of landing minima are sometimes published on IAP charts. Space restrictions prohibited consideration of including RASS landing minima. AJV-A believes that recent changes to criteria will significantly reduce approaches where RASS will be required in the future. Adjustments to RASS landing minima will remain published in the IAP Briefing Strip Notes section.

Exclusions from Proposed Changes

The working group, at AJV's request, is excluding Copter Point-in-Space instrument approach charting from these proposed changes and this recommendation. These IAP charts are a recent addition to the NAS. Early on, AJV-A and the working agreed that these charts, being a relatively new addition and distinctly different from the standard IAP chart, warranted exclusion.

FAA, NGA/DoD, and Industry Participation

The original ACM-CG agenda item was sponsored by the National Business Aviation Associated (NBAA). The Instrument Approach Chart Modernization Working Group was formed in response to the agenda item. It drew participation from FAA, NGA, and DoD components along with industry parties including NBAA, the Aircraft Owners and Pilots Association (AOPA), Garmin, and Jeppesen. The Royal Canadian Air Force also participated adding their knowledge and experience with changes to their IAP charts similar to those changes proposed in the original agenda item.

AOPA was instrumental in presenting the working group's proposals to their membership to gauge interest and identify potential issues that the group may have missed. In October 2018, AOPA completed a survey of its member with the charting proposals to date. 1,899 pilots responded to the survey.

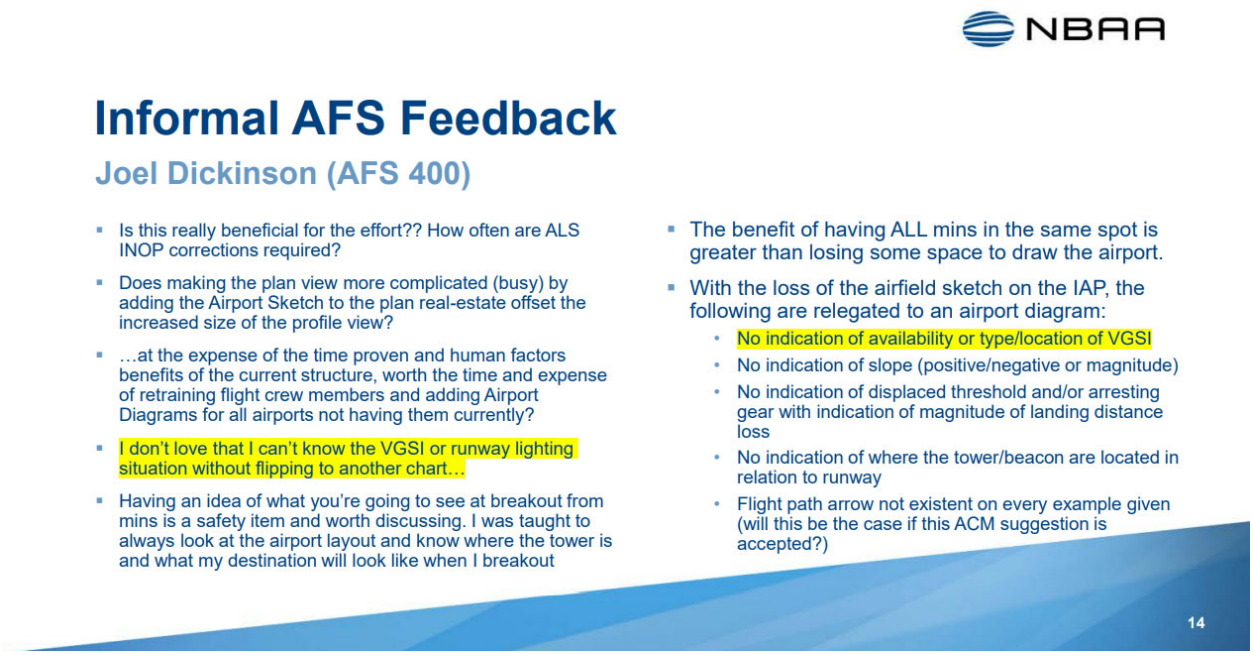
The following comments were provided from the AOPA survey concerning the current FAA IAP chart:

The comments above along with additional comments from the USAF, USN, USA, and Industry resulted in the retention of the Airport Sketch in the new format, runway number, the actual length of the runway (pavement, end to end), but excluding those areas designated as overruns, and the declared distances icon. As noted earlier, space constraints dictated that the runway slope and displaced threshold marker could not be included on the simplified Airport Sketch.

The original ACM-CG agenda item included two proposals for the Landing Minimums section: a "stacked" method and a "side-by-side" method. Please refer to the ACM-CG History Document for details on these two proposals. AOPA's survey indicated overwhelming support for the "side-by-side" method:

These comments along with those from NGA and DoD guided the working group towards the recommendations presented above.

FAA Flight Standards – Flight Procedures & Airspace Group (AFS 400) was able to furnish ***informal*** feedback that helped guide the working group to these recommendations:



In response to these comments and in consideration of other limitations, the following items are incorporated into the working group's recommendations:

1. The simplified Airport Sketch has been located to the right side of the Profile View (left side may be used if space required).
2. The ALS type, VGSI configuration & location relative to the runway, and PCL have been added to the Briefing Strip's Lighting Box.
3. The simplified Airport Sketch is retained to aid in identifying the relative position of the airfield when transitioning from instrument to visual conditions.
4. The working group introduced an ACM-CG agenda item concerning publishing the Final Approach Track on the Airport Sketch when the FAC lies outside of the sketch's boundaries.

The working group reminds everyone that an Airport Diagram chart will be published for all airports with an IAP published in the TPP. The information on the current Airport Sketch that is not published on the simplified Airport Sketch will be transferred to the Airport Diagram.

Our outreach continued through the ACM-CG. At the conclusion of our April 2021 briefing at the 21-01 meeting, we requested questions, comments, and feedback on the proposed changes. As of the close of the comment period at the end of June, the working group had received no comments.

Roadmap for Implementation

The working group has identified the following steps as necessary to implement these recommendations, if accepted by the ACM-CG:

1. *FAA Flight Standards Review of IFR Flight Procedure Criteria*

   The 8260 TERPS Orders reference several aspects of the IAP chart layout and content. A thorough review of these orders is required to identify necessary revisions or deletions resulting from the change. Orders that have been identified for review include 8260.3 US TERPS and 8260.19 Flight Procedures & Airspace.

2. *FAA Flight Standards Safety Risk Management Determination*

   Any significant change to the US National Airspace System (NAS) requires an assessment and determination that there are either no safety hazard being introduced into the system as result of that change, or if there are hazards introduced the level of risk is acceptable. The FAA Flight Standards Safety Management System (SMS) process will be used to ensure that these recommendations do not introduce a safety or an unacceptable level of risk into the NAS. It is believed that this recommendation document will assist Flight Standards in meeting this requirement.

3. *DoD Component Review, Acceptance, and Implementation*

   The DoD components are major users of US Government IAP charts. Their regulations, directives, and training programs are all tailored to the format, layout, and content of the IAP chart. Any change to that layout of the instrument approach chart results in cascading changes to these documents. Further, the DoD must review the final recommendations of this working group to determine if they are acceptable, and that they do not introduce any safety hazards into their operations. We hope that this recommendation document will assist the DoD components in their SMS review of these recommended changes to the IAP chart.

4. *Interagency Charting Specification (IAC) Revision*

   AJV-A has started the process of drafting IAC Specification revisions supporting these recommendations. However, before these revisions may be submitted for consideration, the first three steps above must be completed with an affirmative response received to proceed towards implementation.

5. *Update of Publications*

   Numerous FAA and NGA/DoD publications require updating and revision to inform users of the changes to the layout and content of the US Government IAP chart. For the FAA, the Chart Users Guide, Instrument Procedure Handbook, Instrument Flying Handbook, and AIM/AIP will need to be updated to reflect layout and content changes to the IAP chart and the TPP. A

schedule of these changes will need to be developed and implemented prior to or in close occurrence with the implementation of these changes.

6. User Community Training & Outreach

These changes to the IAP chart and TPP, if adopted, will require significant outreach to both the military and civilian user community. This outreach must carefully explain each significant change, the rationale for each change, along with the anticipated benefits provided to the users resulting from these changes. This will be the most significant change to the IAP layout and content since the introduction of the Briefing Strip in the early 2000's. The working group anticipates that the FAA and NGA/DoD will use the Briefing Strip introduction as a guide on how to best communicate these changes to their respective users.

Appendix A – Specimen Instrument Approach Charts

ILS or LOC RWY 27L
CHICAGO O'HARE INTL (ORD)

LOC/DME I-IAC	APP CRS	Rwy ldg	7782
110.5	273°	TDZE	654
Chan 42		Apt Elev	680

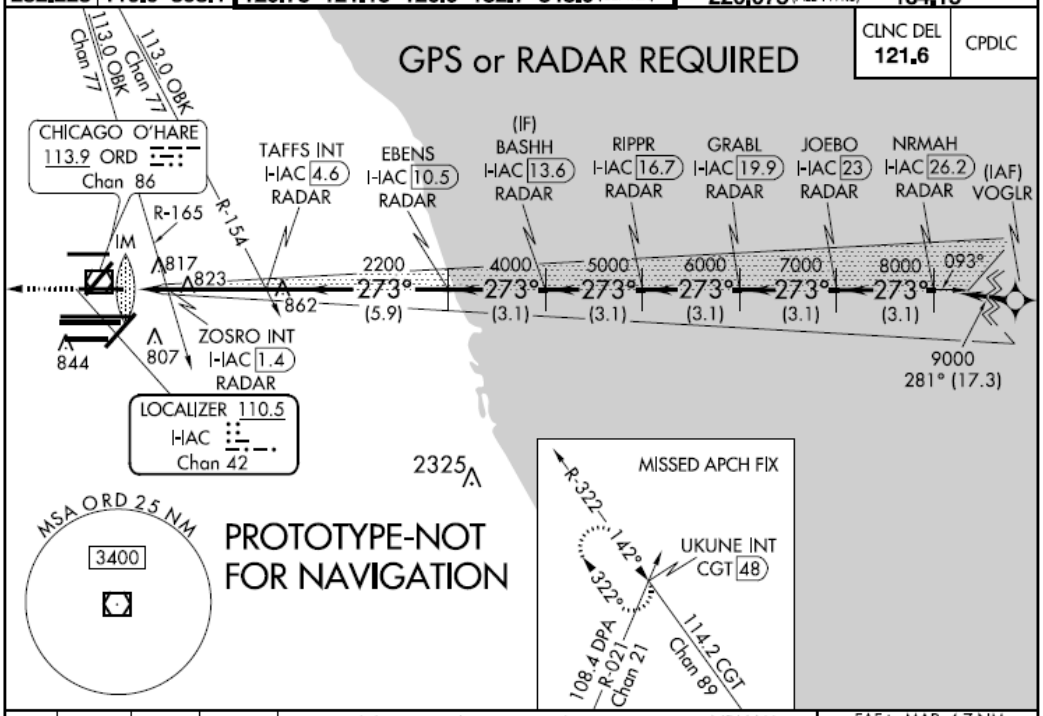
Simultaneous approach authorized.
DME or RADAR required.

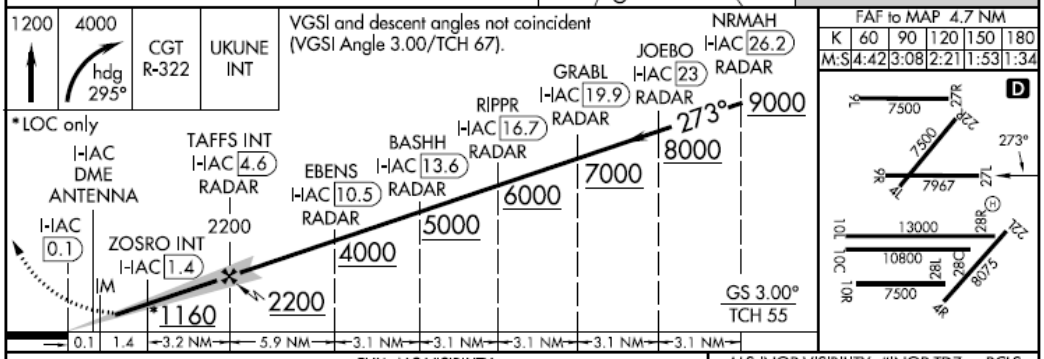
ALSF-2

MISSED APPROACH: Climb to 1200 then climbing right turn to 4000 on heading 295°and on CGT VORTAC R-322 to UKUNE INT/CGT 48 DME and hold.

D-ATIS	CHICAGO APP CON	O'HARE TOWERS	GND CON	(TWR CENTER)
135.4	119.0 393.1	128.15 348.0 (Rwy 9L/27R) 133.0 348.0 (10R/28L)	124.125 (TWR NORTH)	121.75 (OBND)
282.225		120.75 121.15 126.9 132.7 348.0 (CENTER)	118.05 (TWR SOUTH)	121.9 (IBND)
			226.675 (ALL TWRS)	134.15

CLNC DEL 121.6 | CPDLC



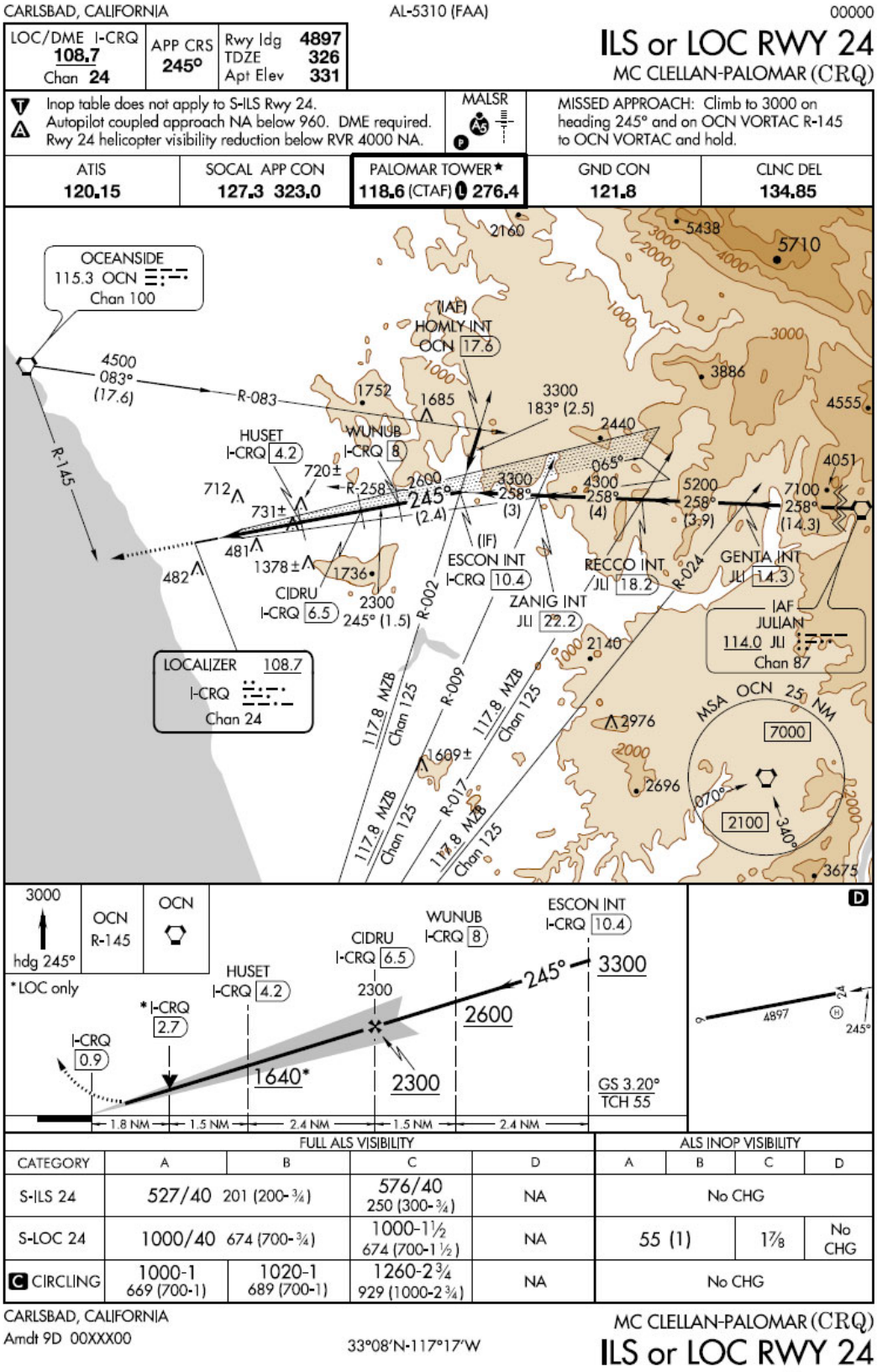


FULL ALS VISIBILITY					ALS INOP VISIBILITY #INOP TDZ or RCLS			
CATEGORY	A	B	C	D	A	B	C	D
S-ILS 27L	854/18 200 (200-½)				40 (¾) #24 (½)			
S-LOC 27L	1160/24 506 (500-½)		1160/55 506 (500-1)		55 (1)		1⅜	
ZOSRO FIX MINIMUMS (DUAL VOR RECEIVERS OR DME REQUIRED)								
S-LOC 27L	1080/24 426 (400-½)		1080/40 426 (400-¾)		55 (1)		1¼	

CHICAGO, ILLINOIS
Amdt 31 00XXX00

41°58'N-87°54'W

CHICAGO O'HARE INTL (ORD)
ILS or LOC RWY 27L


CARLSBAD, CALIFORNIA
AL-5310 (FAA)
00000
LOC/DME I-CRQ 108.7 Chan 24
APP CRS 245°
Rwy Idg 4897
TDZE 326
Apt Elev 331
ILS or LOC RWY 24
MC CLELLAN-PALOMAR (CRQ)
Inop table does not apply to S-ILS Rwy 24.
Autopilot coupled approach NA below 960. DME required.
Rwy 24 helicopter visibility reduction below RVR 4000 NA.
MALSR
MISSED APPROACH: Climb to 3000 on heading 245° and on OCN VORTAC R-145 to OCN VORTAC and hold.
ATIS 120.15
SOCAL APP CON 127.3 323.0
PALOMAR TOWER* 118.6 (CTAF) 276.4
GND CON 121.8
CLNC DEL 134.85
OCEANSIDE 115.3 OCN Chan 100
4500
083°
(17.6)
R-083
R-145
(IAF)
HOMLY INT
OCN 17.6
3300
183° (2.5)
HUSET
I-CRQ 4.2
WUNUB
I-CRQ 8
720±
R-258
245°
(2.4)
3300
258°
(3)
4300
258°
(4)
5200
258°
(3.9)
7100
258°
(14.3)
065°
712
731±
481
482
1378±
1736
CIDRU
I-CRQ 6.5
2300
245° (1.5)
R-002
(IF)
ESCON INT
I-CRQ 10.4
ZANIG INT
JLI 22.2
RECCO INT
JLI 18.2
R-024
GENTA INT
JLI 14.3
IAF
JULIAN
114.0 JLI
Chan 87
LOCALIZER 108.7
I-CRQ
Chan 24
117.8 MZB
Chan 125
R-009
R-017
2160
5438
5710
3886
4555
4051
1752
1685
2440
2140
2976
1609±
2696
MSA OCN 25 NM
7000
2100
070°
340°
3675
3000
hdg 245°
OCN
R-145
OCN
*LOC only
*I-CRQ 2.7
I-CRQ 0.9
HUSET
I-CRQ 4.2
CIDRU
I-CRQ 6.5
2300
WUNUB
I-CRQ 8
2600
ESCON INT
I-CRQ 10.4
3300
245°
1640*
2300
GS 3.20°
TCH 55
1.8 NM
1.5 NM
2.4 NM
1.5 NM
2.4 NM
D
4897
24
245°
FULL ALS VISIBILITY
ALS INOP VISIBILITY
CATEGORY
A
B
C
D
S-ILS 24
527/40 201 (200-¾)
576/40 250 (300-¾)
NA
No CHG
S-LOC 24
1000/40 674 (700-¾)
1000-1½ 674 (700-1½)
NA
55 (1)
1⅞
No CHG
C CIRCLING
1000-1 669 (700-1)
1020-1 689 (700-1)
1260-2¾ 929 (1000-2¾)
NA
No CHG
CARLSBAD, CALIFORNIA
Amdt 9D 00XXX00
33°08'N-117°17'W
MC CLELLAN-PALOMAR (CRQ)
ILS or LOC RWY 24

TETERBORO, NEW JERSEY AL-890 (FAA) 00000

RNAV (GPS) X RWY 6

TETERBORO (TEB)

WAAS	APP CRS	Rwy ldg	6013
CH 65634	063°	TDZE	6
W06B		Apt Elev	8

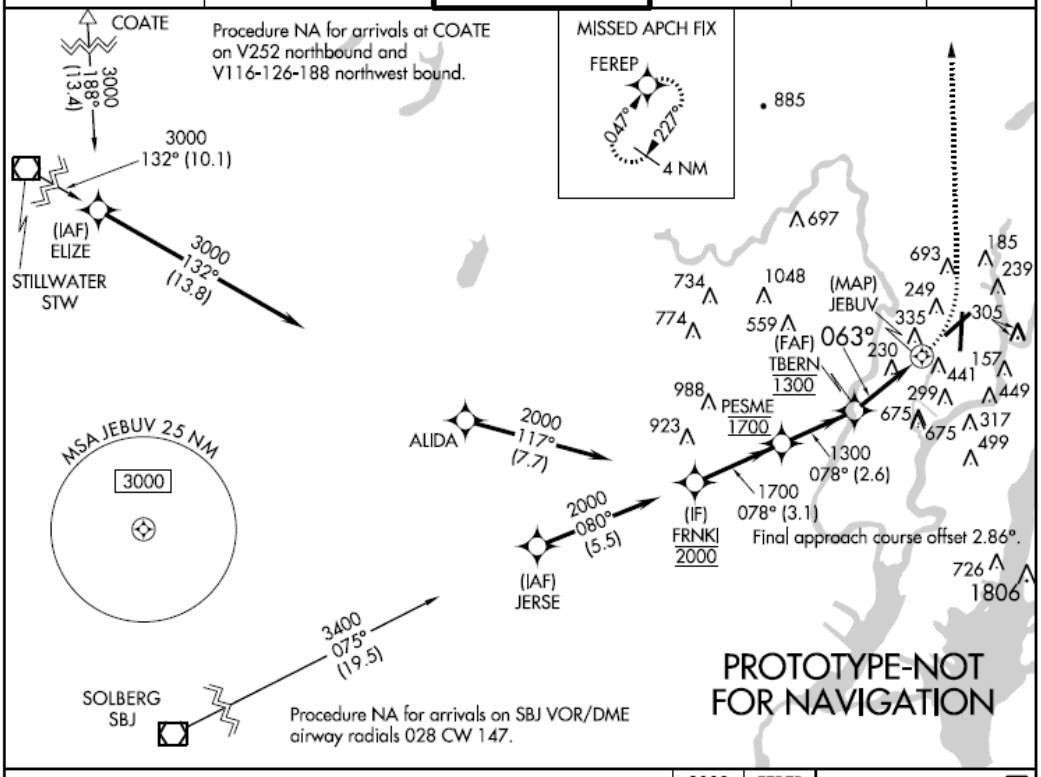
RNP APCH.

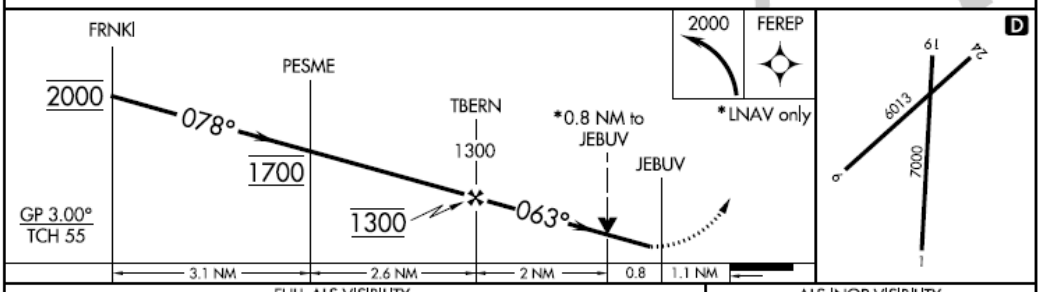
For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -13°C (9°F) or above 54°C (130°F). Circling NA for Cats B, C and D NW of Rwys 6 and 19. Circling Rwy 24 NA at night.

MALSR

MISSED APPROACH: Climbing left turn to 2000 direct FEREP and hold.

D-ATIS	NEW YORK APP CON	TETERBORO TOWER	GND CON	CLNC DEL	CPDLC
114.2 132.85	127.6 379.9	119.5	121.9	128.05	





	FULL ALS VISIBILITY				ALS INOP VISIBILITY			
CATEGORY	A	B	C	D	A	B	C	D
LPV DA	459/55 453 (500-1)				1½			
LNAV/VNAV DA	672-1⅞ 666 (700)				2½			
LNAV MDA	660/45 654 (700-⅞)		660-1⅜ 654 (700)		60 (1¼)		1⅞	
C CIRCLING	760-1¼ 752 (800)		820-2½ 812 (900)	1040-3 1032 (1100)	No CHG			

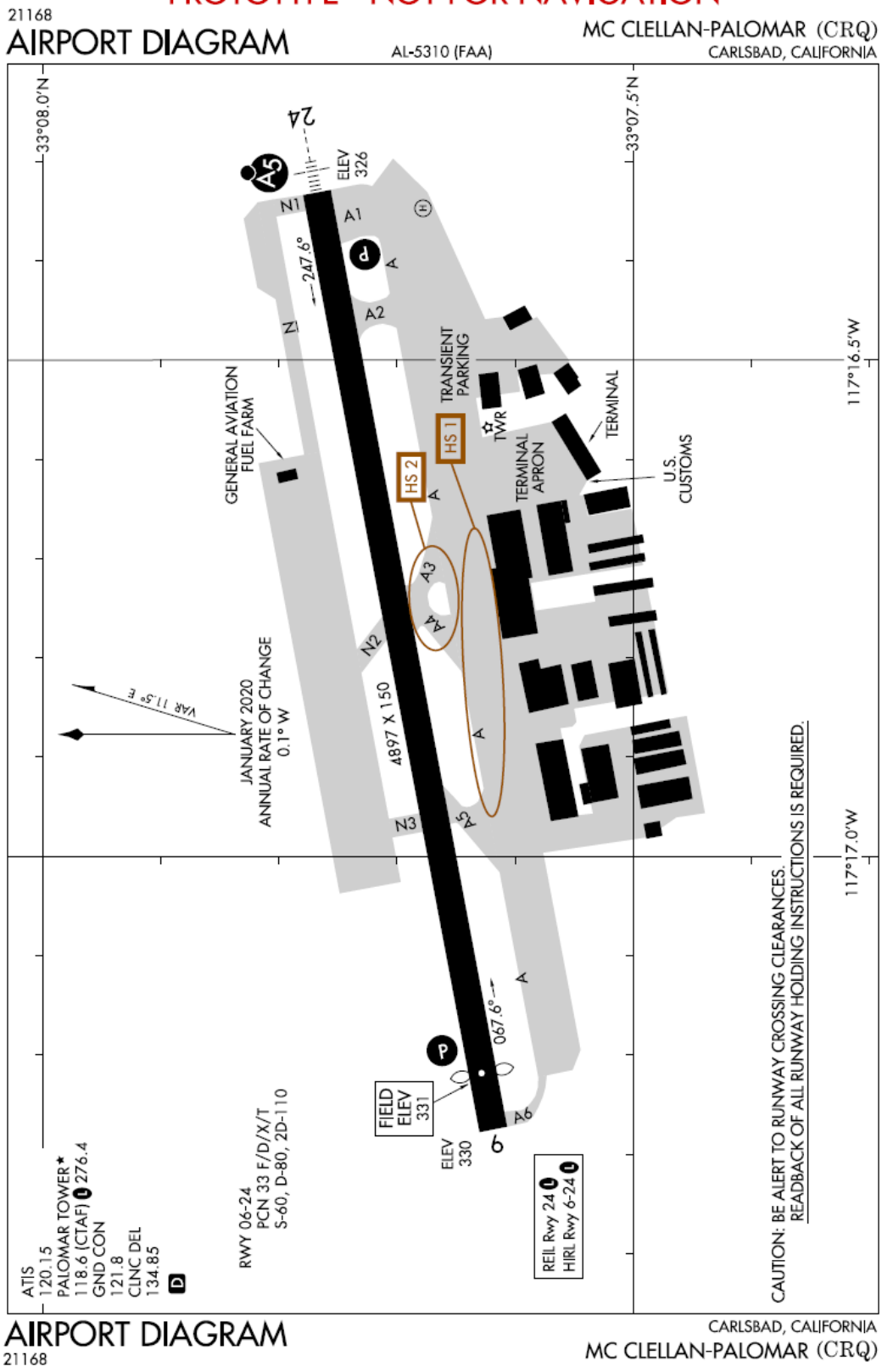
TETERBORO, NEW JERSEY
Amdt 2A 00XXX00

40°51'N-74°04'W

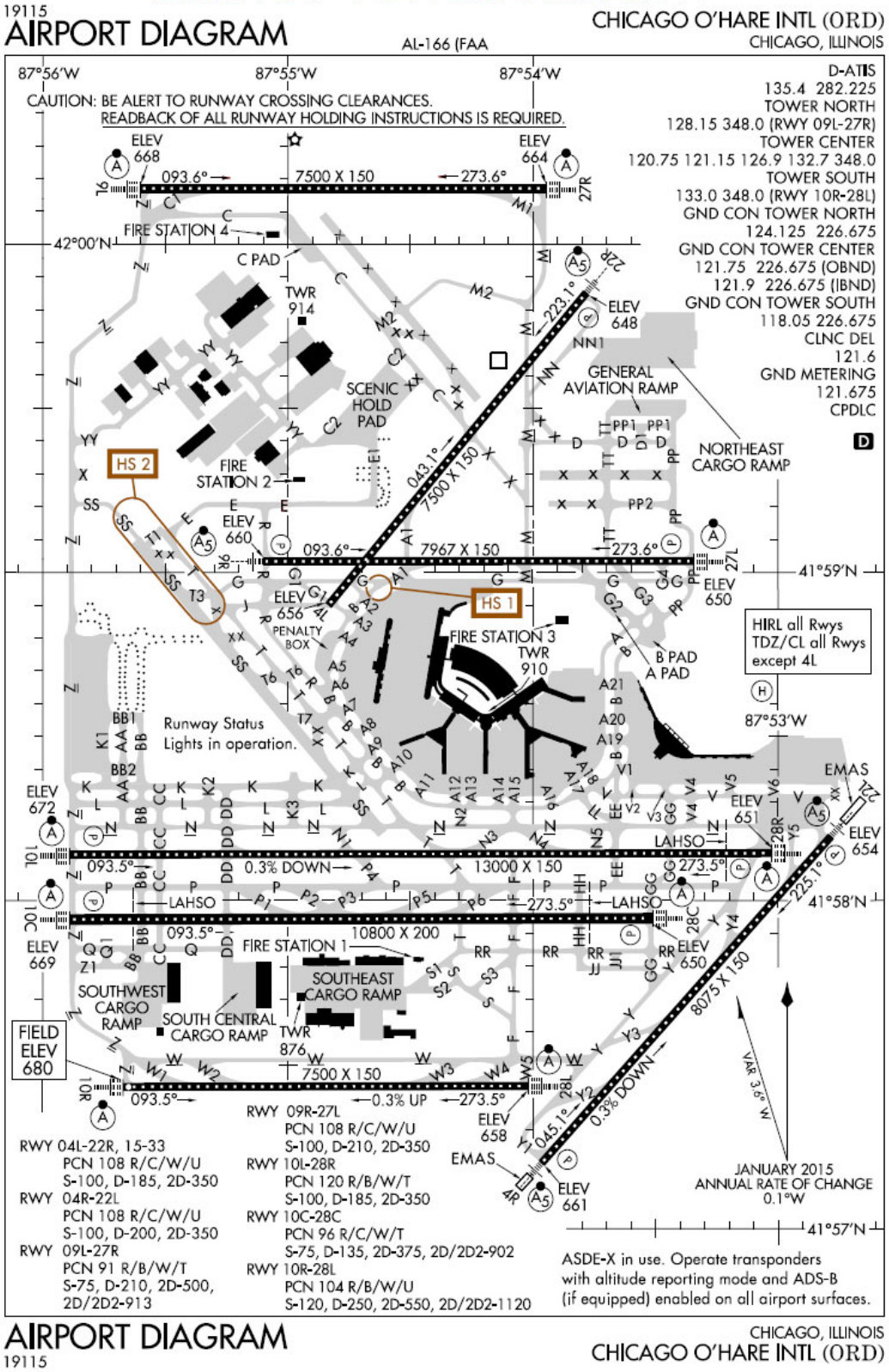
TETERBORO (TEB)

RNAV (GPS) X RWY 6

PROTOTYPE - NOT FOR NAVIGATION



PROTOTYPE - NOT FOR NAVIGATION



PROTOTYPE - NOT FOR NAVIGATION