

EXPLANATION OF TPP TERMS AND SYMBOLS

The discussions and examples in this section will be based primarily on the IFR (Instrument Flight Rule) Terminal Procedures Publication (TPP). Other IFR products use similar symbols in various colors (see Section 2 of this guide). The publication legends list aeronautical symbols with a brief description of what each symbol depicts. This section will provide a more detailed discussion of some of the symbols and how they are used on TPP charts.

NACO charts are prepared in accordance with specifications of the Interagency Air Cartographic Committee (IACC), which are approved by representatives of the Federal Aviation Administration, and the Department of Defense. Some information on these charts may only apply to military pilots.

NEW IAP CHART FORMAT

A new format for Instrument Approach Procedure (IAP) charts has been developed by the United States Government. This new IAP format was found to be easier to read, and resulted in reduced "head-down" time by pilots referring to the chart during approach. The implementation plan calls for the conversion to be done airport by airport. This will result in both old and new formats being mixed in the Terminal Procedures Publications (TPPs), but with all IAP charts for any particular airport in a common format. Eventually, all US Government IAP charts will be charted in the new format.

PILOT BRIEFING INFORMATION

The pilot briefing information format consists of three horizontal rows of boxed procedure-specific information along the top edge of the chart. Altitudes, fre-

RNAV CHART MINIMA

RNAV instrument approach procedure charts will now incorporate all types of approaches using Area Navigation systems, both ground based and satellite based. New RNAV approach charts will be in the new IAP format explained above. Below is an explanation of the RNAV minima.

The standard format for RNAV minima (and landing minima) is as shown below. RNAV minima are

CATEGORY	A	B	C	D
GLS PA DA	NA			
LNAV/VNAV DA	460-1 433 (500-1)			
LNAV MDA	460-½ 433 (500-½)	460-¾ 433 (500-¾)		460-1 433 (500-1)
CIRCLING	520-1½ 490 (500-1½)			640-2 610 (700-2)

dependent on navigational equipment capability, as stated in the applicable AFM or AFMS, and as outlined below.

GLS (Global Navigation Satellite System (GNSS) Landing System)

Must have WAAS (Wide Area Augmentation System) equipment approved for precision approach.

NOTE: "PA" indicates that the runway environment, i.e. runway markings, runway lights, parallel taxiway, etc., meets precision approach requirements. If the GLS minimums line does not contain "PA", then the runway environment does not meet precision requirements.

NOTE: When WAAS approach minima are charted the GLS PA DA minima line will be replaced with "LPV DA". LPV is not an official abbreviation for a certain phrase, but may be thought of as standing for localizer precision or lateral precision with vertical guidance.

LNAV/VNAV (Lateral Navigation/Vertical Navigation)

Must have WAAS equipment approved for precision approach, or RNP-0.3 system based on GPS or DME/DME, with an IFR approach approved Baro-VNAV system. Other RNAV approach systems require special approval. Use of Baro-VNAV systems is limited by temperature, i.e. "Baro-VNAV NA below -20°C (-4°F)". (Not applicable if chart is annotated "Baro-VNAV NA".)

JACKSONVILLE, FLORIDA				
APP CRS 133°	Rwy Idg TDZE Apt Elev 7701 27 30	RNAV (GPS) RWY 13 JACKSONVILLE INTL (JAX)		
▲NA ASR	Baro-VNAV not authorized below -15°C (5°F). GPS or RNP-0.3 Required. DME/DME RNP-0.3 not authorized.	MALSR	MISSED APPROACH: Climb to 2000 via course 134° to ZIHGE WP then left turn via course 058° to YEJWO WP and hold.	
ATIS 125.85	JACKSONVILLE APP CON 119.0 335.6	JACKSONVILLE TOWER 118.3 317.7	GND CON 121.9 348.6	CLNC DEL 119.5 290.275

quencies, course and elevation values (except HATs and HAAs) are charted in bold type. The top row contains the primary procedure navigation information, final approach course, landing distance available, touchdown zone and airport elevations. The middle row contains procedure notes and limitations, icons indicating if nonstandard alternate and/or take-off minimums apply, approach lighting symbology, and the full text description of the missed approach procedure. The bottom row contains air to ground communication facilities and frequencies in the order in which they are used during an approach. Tower frequency box is bolded.

MISSED APPROACH ICONS

In addition to the full text description of the missed approach procedure contained in the notes section of the middle-briefing strip, the initial (up to four) steps are also charted as boxed icons in the chart profile view. These icons provide simple-to-interpret instruc-



tions, such as direction of initial turn, next heading and/or course, next altitude, etc.

NOTE: DME/DME RNP-0.3 systems may be used only when a chart note indicates DME/DME availability, for example, "DME/DME RNP-0.3 Authorized." Specific DME facilities may be required, for example: "DME/DME RNP-0.3 Authorized. ABC, XYZ required."

LNAV (Lateral Navigation)

Must have IFR approach approved WAAS, GPS, GPS based FMS systems, or RNP-0.3 systems based on GPS or DME/DME. Other RNAV approach systems require special approval.

NOTE: DME/DME RNP-0.3 systems may be used only when a chart note indicates DME/DME availability, for example, "DME/DME RNP-0.3 Authorized." Specific DME facilities may be required, for example: "DME/DME RNP-0.3 Authorized. ABC, XYZ required."

TERMINAL ARRIVAL AREAS (TAAs)

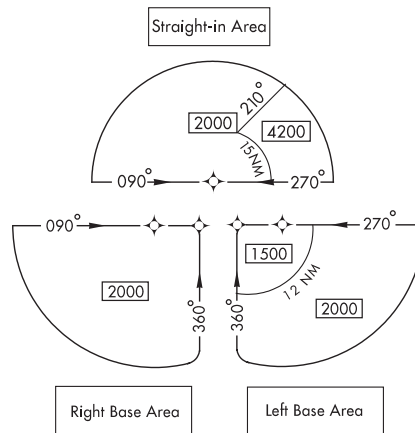
The objective of the Terminal Arrival Area (TAA) is to provide a seamless transition from the enroute structure to the terminal environment for arriving aircraft equipped with Flight Management System (FMS) and/or Global Positioning System (GPS) navigational equipment. The underlying instrument approach procedure is an area navigation (RNAV) procedure. The TAA contains within it a "T" structure that normally provides for a No Procedure Turn (NoPT) for aircraft using the approach. The TAA provides the pilot and air traffic controller with a very efficient method for routing traffic into the terminal environment with little required air traffic control interface, and with minimum altitudes depicted that provide standard obstacle clearance compatible with the instrument procedure associated with it. The TAA will not be found on all RNAV procedures, particularly in areas of heavy concentration of air traffic. When the TAA is published, it replaces the MSA for that approach procedure. TAAs may appear on current and new format GPS and RNAV IAP charts.

The standard TAA consists of three areas defined by the extension of the Initial Approach Fix (IAF) legs and the intermediate segment course. These areas are called the straight-in, left-base, and the right-base areas. TAA area lateral boundaries are identified by magnetic courses TO the IAF. The straight-in area can further be divided into pie-shaped sectors with the boundaries identified by magnetic courses TO the IF/IAF, and many contain stepdown sections defined by arcs based on RNAV distances (DME or ATD) from the IF/IAF. The right/left-base areas can only be subdivided using arcs based on RNAV distances from the IAF's for those areas.

Straight-In Area: The straight-in area is defined by a semi-circle with a 30 NM radius centered on and extending outward from the IF/IAF. The altitude shown within the straight-in area icon provides minimum IFR obstacle clearance

Base Area: the left and right base areas are bounded

by the straight-in TAA and the extension of the intermediate segment course. The base areas are defined by a 30 NM radius centered on the IAF on either side of the IF/IAF. The IF/IAF is shown in the base area icons without its name. The altitude shown within the base area icons provides minimum IFR obstacle clearance.



Minimum MSL altitudes are charted within each of these defined/subdivisions that provide at least 1,000 feet of obstacle clearance, or more as necessary in mountainous areas

NOTE: Additional information for the TAAs can be found in the Aeronautical Information Manual (AIM) Para 5-4-5-d.

ALTERNATE MINIMUMS

When an alternate airport is required, standard IFR alternate minimums apply. Precision approach procedures require a 600-foot ceiling and 2 statute miles visibility; nonprecision approaches require an 800-foot

ceiling and 2 statute miles visibility. When a **▲** appears in the Notes section of the approach chart, it indicates non-standard IFR alternate minimums exist for the airport. This information is found in Section E of the TPP. If

▲ NA appears, alternate minimums are not authorized due to unmonitored facility or absence of weather reporting service. Civil pilots see FAR 91. IFR Alternate Minimums: Ceiling and Visibility Minimums not applicable to USA/USN/USAF. Pilots must review the IFR Alternate Minimums Notes for alternate airfield suitability.

Alternate Take-Off Minimums and (Obstacle Departure Procedures

When a **▼** appears in the Notes section, it signifies the airport has nonstandard IFR takeoff minimums.

CIVIL USERS NOTE: FAR 91 prescribes standard take-off rules and establishes take-off minimums for certain operators as follows: (1) Aircraft having two engines or less - one statute mile. (2) Aircraft having more than two engines - one-half statute mile. These standard min-

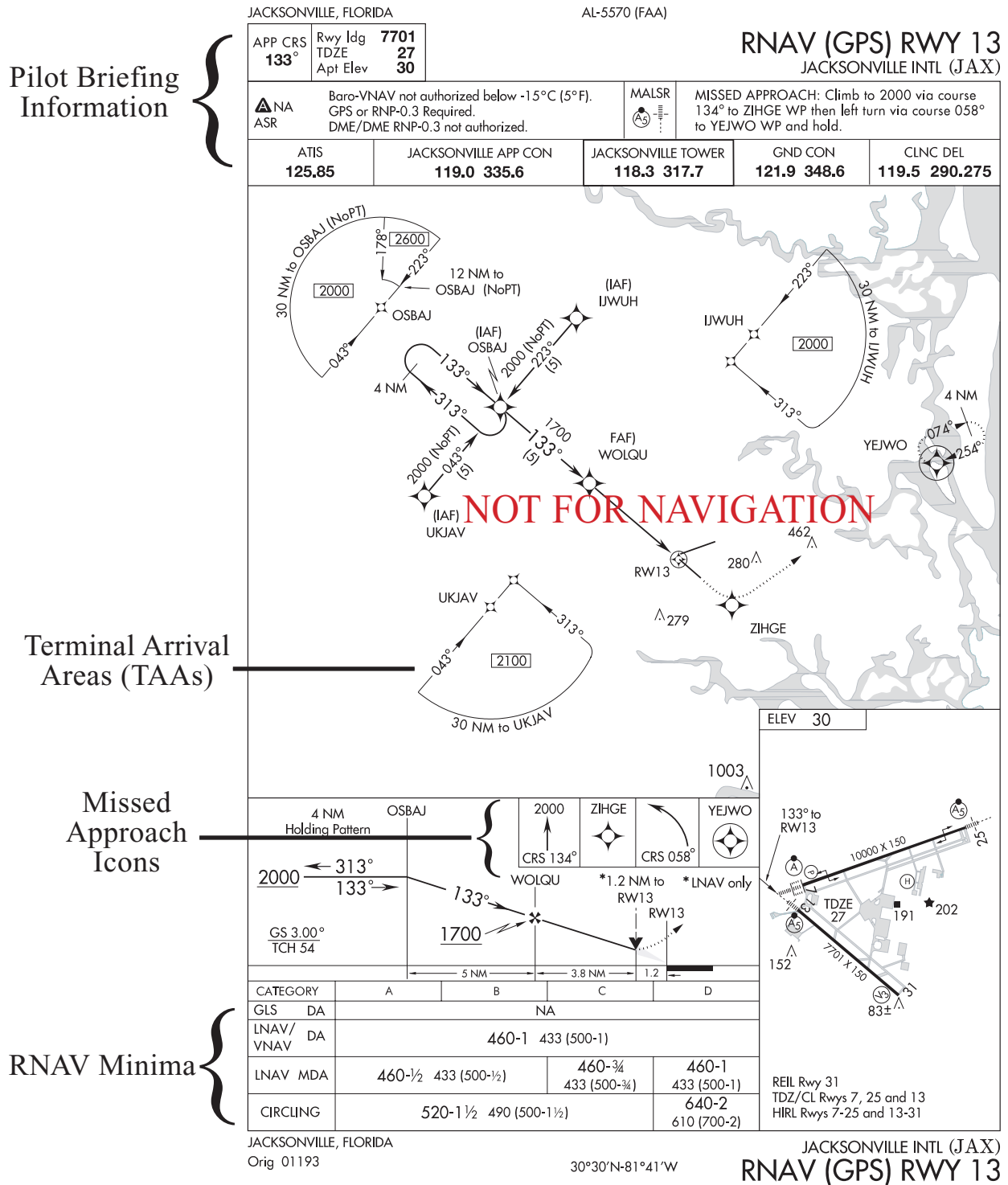
ima apply in the absence of any different minima listed in Section C of the TPP.

ALL USERS: Airports that have Departure Procedures (DPs) designed specifically to assist pilots in avoiding obstacles during the climb to the minimum enroute altitude, and/or airports that have civil IFR take-off minimums other than standard, are listed in Section C of the TPP by city. Take-off Minimums and Departure Procedures apply to all runways unless otherwise specified. Altitudes, unless otherwise indicated, are minimum altitudes in MSL.

DPs specifically designed for obstacle avoidance may be described in Section C of the TPP in text or published as a graphic procedure. Its name will be listed, and it can be found in either the TPPs (civil) or a separate Departure Procedure volume (military), as appropriate. Users will recognize (Obstacle) graphic DPs by the word "(OBSTACLE)" printed in the charted procedure title.

NOTE: Graphic Departure Procedures that have been designed primarily to assist Air Traffic Control in providing air traffic separation (as well as providing obstacle clearance) are usually assigned by name in an ATC clearance and are not listed by name in Section C of the TPP.

Instrument Approach Chart Format



The National Transportation Safety Board (NTSB) and the Government/Industry Aeronautical Charting Forum (ACF) have recommended terrain depiction on IAP charts for pilot situational awareness. Additionally, the International Civil Aviation Organization (ICAO) and the ACF have both recommended that the terrain be depicted in shades of brown. Terrain will be added to the planview portion of all IAP's that meet the following criteria:

- If the terrain within the planview exceeds 4,000 feet above the airport elevation,
- or
- If the terrain within a 6.0 nautical mile radius of the Airport Reference Point (ARP) rises to at least 2,000 feet above the airport elevation.

This change will affect approximately 235 airports throughout the US.

