

Airman Knowledge Testing Supplement for Airline Transport Pilot and Aircraft Dispatcher

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Flight Standards Service

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LEGEND 17229

INSTRUMENT APPROACH PROCEDURES (CHARTS)

PLANVIEW SYMBOLS

TERMINAL ROUTES

Procedure Track
Missed Approach
Visual Flight Path
Procedure Turn (Type degree and point of turn optional)
Feeder Route
Minimum Altitude
Mileage

3100 NoPT 5.6 NM to GS Intcpt
045°
(14.2 to LOM)
2000
155°
(15.1)

RADIO AIDS TO NAVIGATION

110.1 Underline indicates No Voice transmitted on this frequency

Compulsory:

- VOR
- VORTAC
- DME
- NDB/DME
- VOR/DME
- TACAN
- NDB

Non-Compulsory:

- VOR
- VORTAC
- DME
- NDB/DME
- VOR/DME
- TACAN
- NDB

LOM/LMM (Compass locator at Outer Marker/Middle Marker)
Marker Beacon
Marker beacons that are not specifically part of the procedure but underlie the final approach course are shown in screened color.

Localizer (LOC/LDA) Course
Right side shading- Front course; Left side shading- Back Course
SDF Course

LOC/DME
LOC/LDA/SDF Transmitter (shown when installation is offset from its normal position off the end of the runway.)

HOLDING PATTERNS

Missed Approach
In lieu of Procedure Turn
Arrival
HOLD 8000

Holding pattern with max. restricted airspeed: (175K) applies to all altitudes. (210K) applies to altitudes above 6000' to and including 14000'. Arrival Holding Pattern altitude restrictions will be indicated when they deviate from the adjacent leg. Limits will only be specified when they deviate from the standard. DME fixes may be shown.

FIXES/ATC REPORTING REQUIREMENTS

Reporting Point
▲ Name (Compulsory)
△ Name (Non-Compulsory)

Intersection

WAYPOINT (Compulsory)
WAYPOINT (Non-Compulsory)

FLYOVER POINT
MAP WP (Flyover)

Computer Navigation Fix (CNF)
x (NAME) ("x" omitted when it conflicts with runway pattern)

DME Distance From Facility
ARC/DME/RNAV Fix

R-198 Radial line and value
LR-198 Lead Radial
LB-198 Lead Bearing

ALTITUDES

5500 Mandatory Altitude 3000 Recommended Altitude
2500 Minimum Altitude 5000 Mandatory Block
4300 Maximum Altitude 3000 Altitude

INDICATED AIRSPEED

175K 120K 250K 180K
Mandatory Airspeed Minimum Airspeed Maximum Airspeed Recommended Airspeed

Waypoint Data

Coordinates: PRAYS
N38° 58.30' W89° 51.50'
Frequency: 112.7 CAP 187.1°-56.2
Identifier: 590
Reference Facility Elevation
Radial-Distance (Facility to Waypoint)

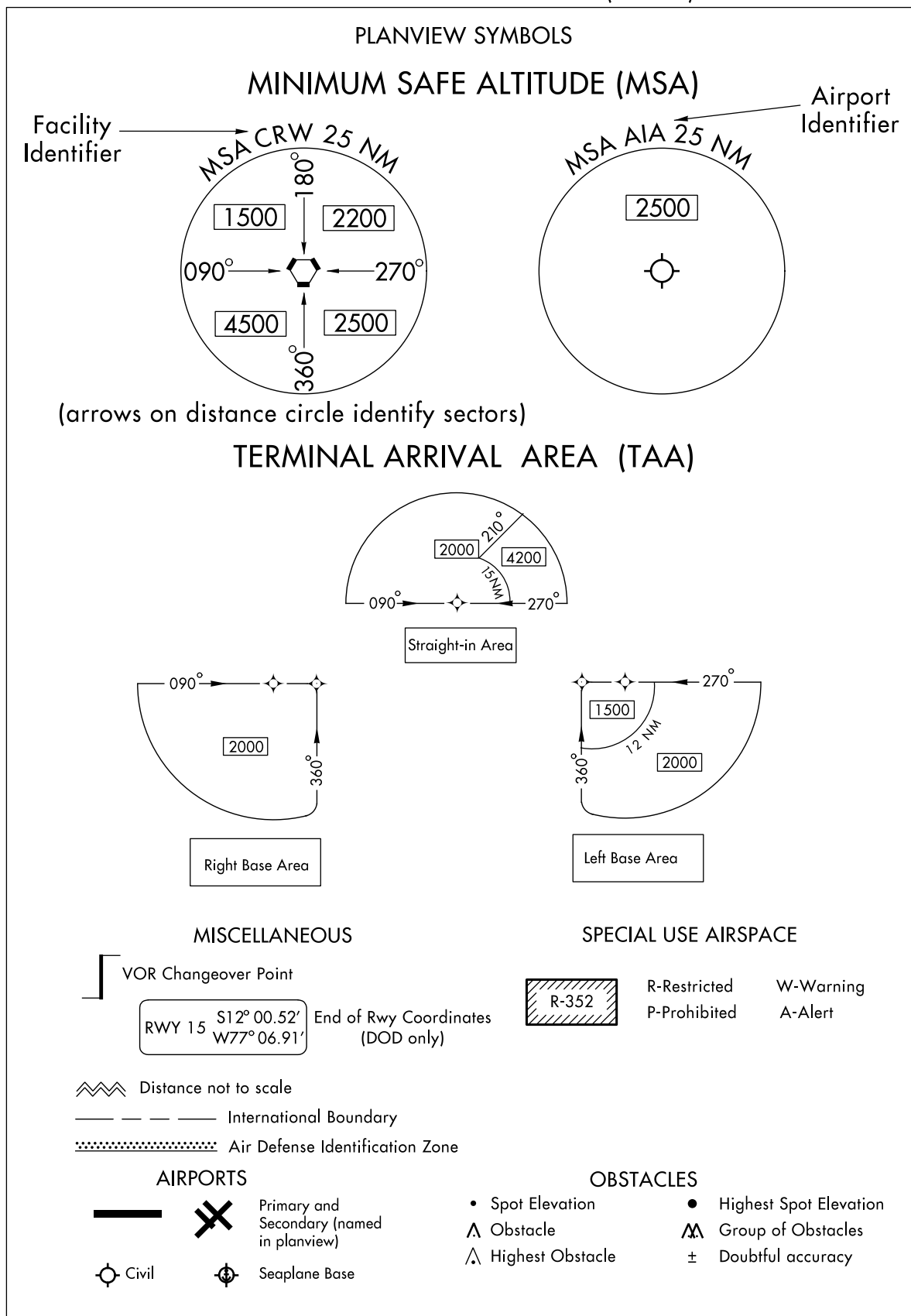
Primary Navaid with Coordinate Values
LIMA
114.5 LIM
Chan 92
S12°00.80'
W77°07.00'

Secondary Navaid
LMM
LIMA
248 NT

SCOTT
Chan 59
SKE
(112.2)
VHF Paired Frequency

LEGEND 17229

Legend 33. U.S. Terminal Procedures Planview Symbols.



Legend 34. U.S. Terminal Procedures Planview Symbols.

LEGEND 17229

INSTRUMENT APPROACH PROCEDURES (CHARTS)

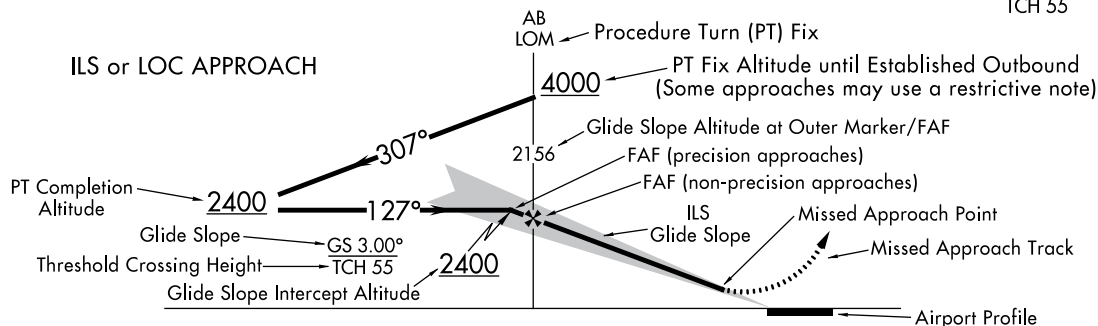
PROFILE VIEW

Three different methods are used to depict either electronic or vertical guidance: "GS", "GP", or "VDA".

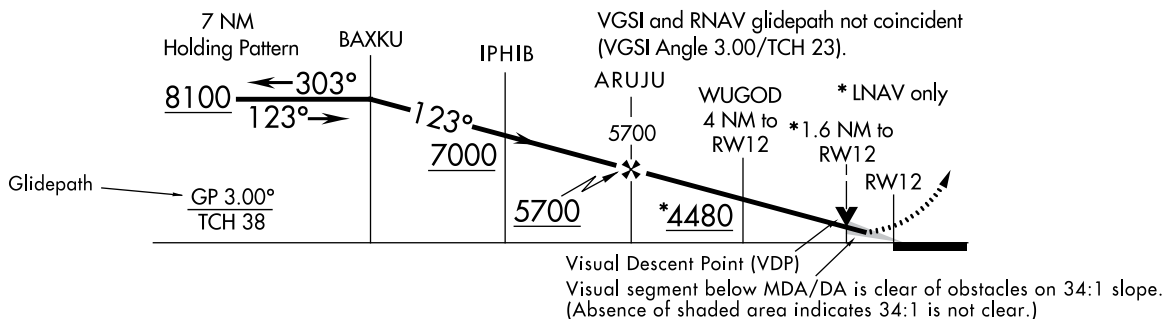
1. "GS" indicates that an Instrument Landing System (ILS) electronic glide slope (a ground antenna) provides vertical guidance. The profile section of ILS procedures depict a GS angle and TCH in the following format: \angle GS 3.00° TCH 55

2. "GP" on GLS and RNAV procedures indicates that either electronic vertical guidance (via Wide Area Augmentation System - WAAS or Ground Based Augmentation System - GBAS) or barometric vertical guidance is provided. GLS and RNAV procedures with a published decision altitude (DA/H) depict a GP angle and TCH in the following format: \angle GP 3.00° TCH 50

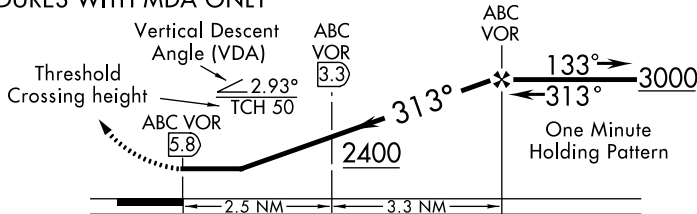
3. An advisory vertical descent angle (VDA) is provided on non-vertically guided conventional procedures and RNAV procedures with only a minimum descent altitude (MDA) to assist in preventing controlled flight into terrain. On Civil (FAA) procedures, this information is placed above or below the procedure track following the fix it is based on. Absence of a VDA or a note that the VDA is not authorized indicates that the prescribed obstacle clearance surface is not clear and the VDA must not be used below MDA. VDA is depicted in the following format: \angle 3.00°. TCH 55



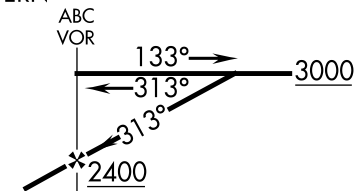
RNAV and GLS PROCEDURES WITH VERTICAL GUIDANCE



NON-VERTICALLY GUIDED CONVENTIONAL PROCEDURES AND RNAV PROCEDURES WITH MDA ONLY



DESCENT FROM HOLDING PATTERN



ALTITUDES

<u>5500</u>	Mandatory Altitude	3000	Recommended Altitude
<u>2500</u>	Minimum Altitude	<u>5000</u>	Mandatory Block Altitude
<u>4300</u>	Maximum Altitude	<u>3000</u>	Altitude

PROFILE SYMBOLS

- Glide Slope/Glidepath Intercept Altitude and final approach fix for vertically guided approach procedures.
- Visual Descent Point (VDP)
- Visual Flight Path
- Note: Facilities and waypoints are depicted as a solid vertical line while fixes and intersections are depicted as a dashed vertical line.

LEGEND 17229

Legend 35. U.S. Terminal Procedures Profile View.

LEGEND 17229

LEGEND

STANDARD TERMINAL ARRIVAL (STAR) CHARTS DEPARTURE PROCEDURE (DP) CHARTS

Applies to both STAR and DP Charts unless otherwise noted.

RADIO AIDS TO NAVIGATION

Compulsory:

- VOR VORTAC DME NDB/DME
- VOR/DME TACAN NDB

Non-Compulsory:

- VOR VORTAC DME
- VOR/DME TACAN NDB NDB/DME

LMM, LOM (Compass locator) LOC LOC/DME
(shown when installation is offset from its normal position off the end of the runway.) (DP)

Marker Beacon

Localizer Course

SDF Course

ROUTES

4500 MEA-Minimum Enroute Altitude
*3500 MOCA-Minimum Obstruction Clearance Altitude

Departure Route - Arrival Route
(65) Mileage between Radio Aids, Reporting Points, and Route Breaks

Transition Route

R-275 Radial line and value

Lost Communications Track

V12 J80 Airway/Jet Route Identification

DP Holding Pattern STAR Holding Pattern

(IAS) Holding pattern with max. restricted airspeed (175K) applies to all altitudes (210K) applies to altitudes above 6000' to and including 14000'

SPECIAL USE AIRSPACE

R-352 R-Restricted W-Warning
P-Prohibited A-Alert
MOA-Military Operations Area

ALTITUDES

5500 Mandatory Altitude (Cross at) 2300 Minimum Altitude (Cross at or above) 4800 Maximum Altitude (Cross at or below)

15000 Block Altitude Altitude change at other than Radio Aids (STAR)

INDICATED AIRSPEED

175K Mandatory Airspeed 120K Minimum Airspeed 250K Maximum Airspeed

AIRPORTS

(DP) Civil Military Joint Civil-Military

Airports not served by the procedure shown in screened color (STAR)

Civil Military Joint Civil-Military

MISCELLANEOUS

Changeover Point

Distance not to scale (DP)

International Boundary (DP)

Air Defense Identification Zone

Takeoff Minimums and (Obstacle) Departure Procedures entry published. (DP)

FIXES/ATC REPORTING REQUIREMENTS

Reporting Points
N00°00.00' W00°00.00'

75 → DME Mileage (when not obvious)

▲ Fix-Compulsory and
△ Non-Compulsory Position Report

DME fix

WAYPOINT (Compulsory) WAYPOINT (Non-Compulsory)

FLYOVER POINT

X Computer Navigation Fix (CNF)
N00°00.00' W00°00.00'

(T) indicates frequency protection range (STAR) (Y) TACAN must be placed in "Y" mode to receive distance information

Identifier Frequency Geographic Position

112.25 (T) ORL Chan 59 (Y) N28°32.56' - W81°20.10'

Underline indicates no voice transmitted on this frequency Enroute Chart Reference DME or TACAN Channel

Coordinates Waypoint Name Radial-Distance (Facility to Waypoint)

112.7 CAP 187.1°-56.2 590 PRAYS

LEGEND 17229

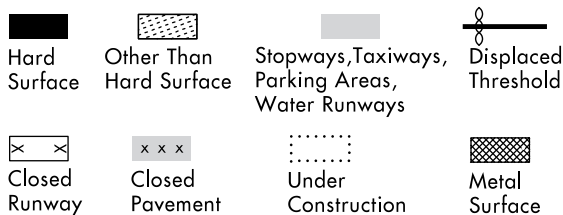
Legend 36. U.S. Terminal Procedures STAR and DP Charts.

LEGEND

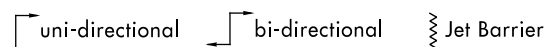
INSTRUMENT APPROACH PROCEDURES (CHARTS)

AIRPORT DIAGRAM/AIRPORT SKETCH

Runways

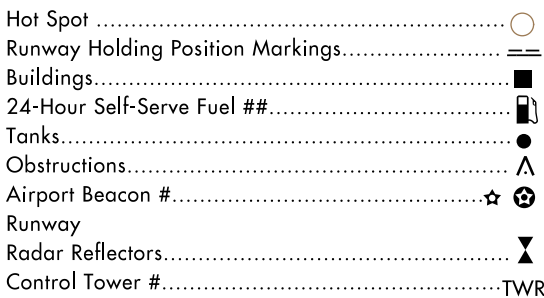


ARRESTING GEAR: Specific arresting gear systems; e.g., BAK12, MA-1A etc., shown on airport diagrams, not applicable to Civil Pilots. Military Pilots refer to appropriate DOD publications.



ARRESTING SYSTEM  (EMAS)

REFERENCE FEATURES



When Control Tower and Rotating Beacon are co-located, Beacon symbol will be used and further identified as TWR.

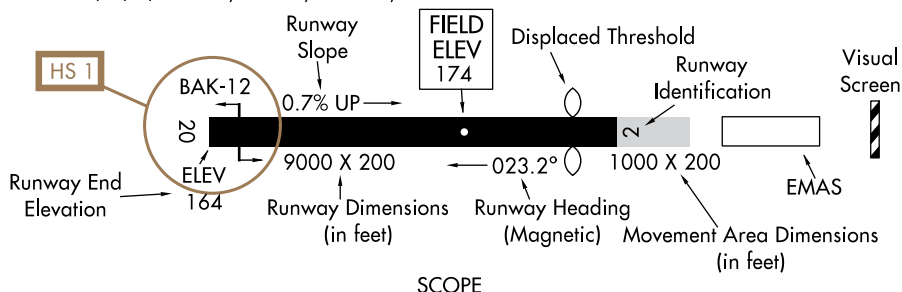
A fuel symbol is shown to indicate 24-hour self-serve fuel available, see appropriate Chart Supplement for information.

Runway length depicted is the physical length of the runway (end-to-end, including displaced thresholds if any) but excluding areas designated as stopways.

A **D** symbol is shown to indicate runway declared distance information available, see appropriate Chart Supplement for distance information.



Runway Weight Bearing Capacity/or PCN Pavement Classification Number is shown as a codified expression.

Refer to the appropriate Supplement/Directory for applicable codes e.g., RWY 14-32 PCN 80 F/D/X/U S-75, D-185, 2S-175, 2D-325



SCOPE


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 to be used for approach and landing or departure operations. For revisions to Airport Diagrams: Consult FAA Order 7910.4.

Helicopter Alighting Areas 
 Negative Symbols used to identify Copter Procedures landing point..... 

Runway Threshold elevation.....THRE 123
 Runway TDZ elevation.....TDZE 123
 Runway Slope.....0.3% DOWN

(shown when runway slope is greater than or equal to 0.3%)
 Runway Slope.....0.8% UP →

NOTE:
 Runway Slope measured to midpoint on runways 8000 feet or longer.

 U.S. Navy Optical Landing System (OLS) "OLS" location is shown because of its height of approximately 7 feet and proximity to edge of runway may create an obstruction for some types of aircraft.

Approach light symbols are shown in the Flight Information Handbook.

Airport diagram scales are variable.

True/magnetic North orientation may vary from diagram to diagram

Coordinate values are shown in 1 or 1/2 minute increments. They are further broken down into 6 second ticks, within each 1 minute increments.

Positional accuracy within ±600 feet unless otherwise noted on the chart.

NOTE:
 All new and revised airport diagrams are shown referenced to the World Geodetic System (WGS) (noted on appropriate diagram), and may not be compatible with local coordinates published in FLIP. (Foreign Only)

LEGEND

Legend 37. U.S. Terminal Procedures Airport Diagram/Airport Sketch.

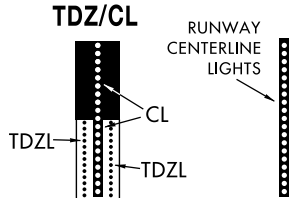
LEGEND 15344

INSTRUMENT APPROACH PROCEDURES (CHARTS)
APPROACH LIGHTING SYSTEM - UNITED STATES

Approach lighting and visual glide slope systems are indicated on the airport sketch by an identifier, e.g., (A2), (V), etc.

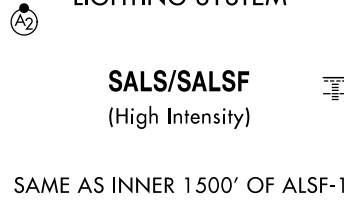
A dot "•" portrayed with approach lighting letter identifier indicates sequenced flashing lights (F) installed with the approach lighting system e.g., (A1). Negative symbology, e.g., (A1), (V) indicates Pilot Controlled Lighting (PCL).

RUNWAY TOUCHDOWN ZONE AND CENTERLINE LIGHTING SYSTEMS



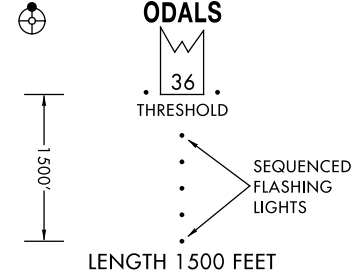
AVAILABILITY of TDZ/CL will be shown by NOTE in SKETCH e.g. "TDZ/CL Rwy 15"

SHORT APPROACH LIGHTING SYSTEM

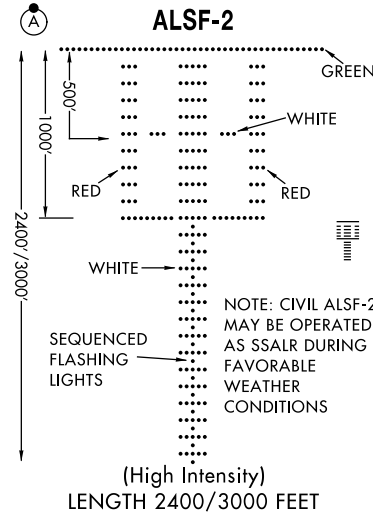


SAME AS INNER 1500' OF ALSF-1

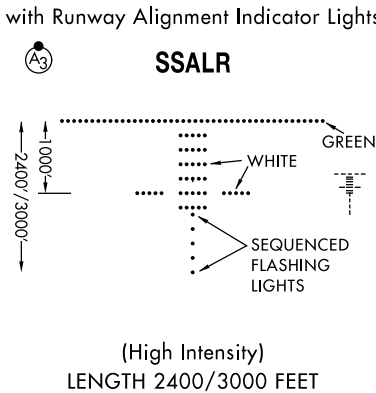
OMNIDIRECTIONAL APPROACH LIGHTING SYSTEM



APPROACH LIGHTING SYSTEM

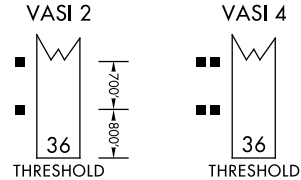


SIMPLIFIED SHORT APPROACH LIGHTING SYSTEM with Runway Alignment Indicator Lights

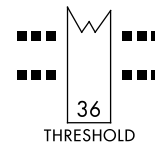


VISUAL APPROACH SLOPE INDICATOR VASI

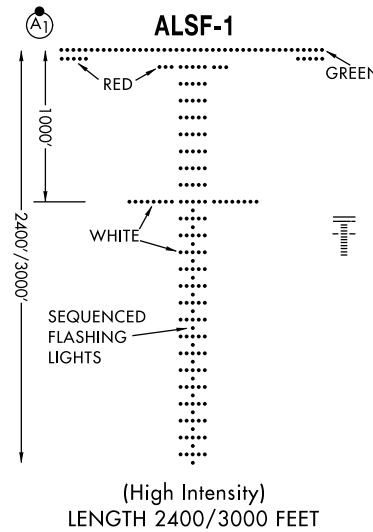
VISUAL APPROACH SLOPE INDICATOR WITH STANDARD THRESHOLD CLEARANCE PROVIDED.
ALL LIGHTS WHITE — TOO HIGH
FAR LIGHTS RED — ON GLIDE SLOPE
NEAR LIGHTS WHITE — ON GLIDE SLOPE
ALL LIGHTS RED — TOO LOW



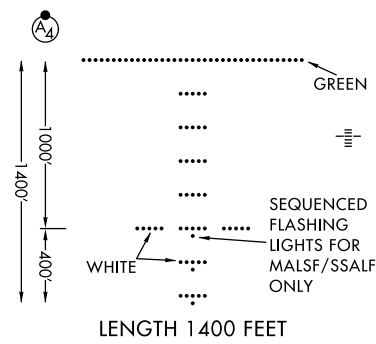
VASI 12



APPROACH LIGHTING SYSTEM

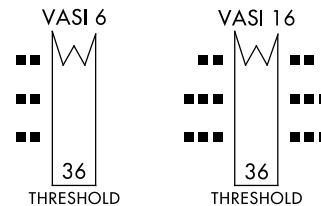


MEDIUM INTENSITY (MALS and MALSF) OR SIMPLIFIED SHORT (SSALS and SSALF) APPROACH LIGHTING SYSTEMS



VISUAL APPROACH SLOPE INDICATOR VASI

3-BAR, 6 OR 16 BOX, VISUAL APPROACH SLOPE INDICATOR THAT PROVIDES 2 GLIDE ANGLES AND 2 THRESHOLD CROSSING HEIGHTS.

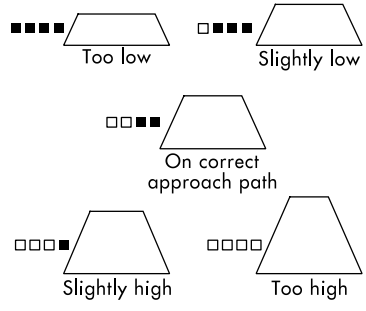
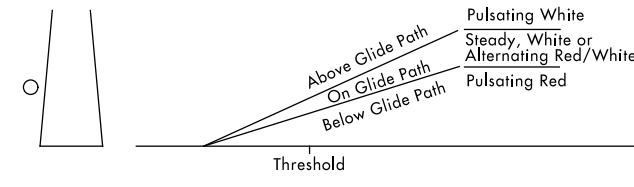
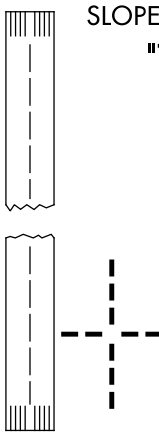
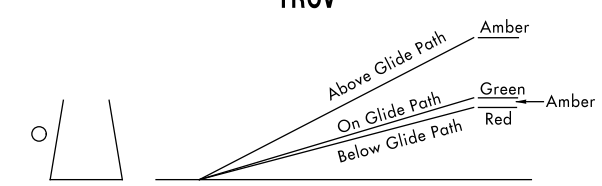
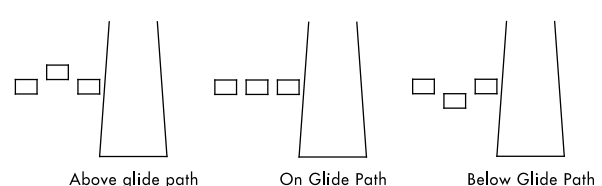


LEGEND 15344

Legend 38. U.S. Terminal Procedures Approach Lighting System.

LEGEND 04330

INSTRUMENT APPROACH PROCEDURES (CHARTS)
APPROACH LIGHTING SYSTEM - UNITED STATES

<p>Approach lighting and visual glide slope systems are indicated on the airport sketch by an identifier, (A₂), (V) etc.</p> <p>A dot "•" portrayed with approach lighting letter identifier indicates sequenced flashing lights (F) installed with the approach lighting system e.g., (A₁). Negative symbology, e.g., (A₁), (V) indicates Pilot Controlled Lighting (PCL).</p>	
<p>(P) PRECISION APPROACH PATH INDICATOR PAPI</p>  <p>Legend: □ White ■ Red</p>	<p>(V₂) PULSATING VISUAL APPROACH SLOPE INDICATOR PVASI</p>  <p>CAUTION: When viewing the pulsating visual approach slope indicators in the pulsating white or pulsating red sectors, it is possible to mistake this lighting aid for another aircraft or a ground vehicle. Pilots should exercise caution when using this type of system.</p>
<p>(V₁) "T"-VISUAL APPROACH SLOPE INDICATOR "T"-VASI</p>  <p>"T" ON BOTH SIDES OF RWY ALL LIGHTS VARIABLE WHITE. CORRECT APPROACH SLOPE- ONLY CROSS BAR VISIBLE. UPRIGHT "T"- FLY UP. INVERTED "T"- FLY DOWN. RED "T"- GROSS UNDERSHOOT.</p>	<p>(V₄) TRI-COLOR VISUAL APPROACH SLOPE INDICATOR TRCV</p>  <p>CAUTION: When the aircraft descends from green to red, the pilot may see a dark amber color during the transition from green to red.</p>
<p>(V₅) ALIGNMENT OF ELEMENTS SYSTEMS APAP</p>  <p>Painted panels which may be lighted at night. To use the system the pilot positions the aircraft so the elements are in alignment.</p>	

LEGEND 04330