SAN ANTONIO LEGEND

Airports having Control Towers are shown in Blue, all others in Magenta. Consult Chart Supplement for details involving airport lighting, navigation aids, and services. All times are local. For additional symbol information refer to the Chart User's Guide.

AIRPORTS

- Other than hard-surfaced runways
- Seaplane Base
- Hard-surfaced runways 1500 ft. to 8069 ft. in length
- Hard-surfaced runways greater than 8069 ft. or some multiple runways less than 8069 ft.
- Open dot within hard-surfaced runway configuration indicates approximate VOR, VOR-DME, or VORTAC location.

All recognizable hard-surfaced runways, including those closed, are shown for visual identification. Airports may be public or private.

ADDITIONAL AIRPORT INFORMATION

- Private "(Pvt)" - Non-public use having emergency or landmark value
- Military - Other than hard-surfaced; all military airports are identified by abbreviations AFB, NAS, AAF, etc.
- Heliport Selected
- Unverified
- Abandoned - paved having landmark value, 3000 ft. or greater
- Ultralight Flight Park Selected

Fuel - available Mon thru Fri 10:00 A.M. to 4:00 P.M. depicted by use of ticks around basic airport symbol. Consult Supplement for details and for availability at airports with hard-surfaced runways greater than 8069 ft.

- Rotating airport beacon in operation Sunset to Sunrise

OBJECTIONABLE - Airport may adversely affect airspace use.

AIRPORT DATA

- Box indicates FAR 93 Special Air Traffic Rules & Airport Traffic Patterns.
- Runways with Right Traffic Patterns (public use)
- RP * Special conditions exist - see Supplement.
- FSS - Flight Service Station
- NO SVFR - Fixed-wing special VFR flight is prohibited.
- CT - 118.3 - Control Tower (CT) - primary frequency
- ★ - Star indicates operation part-time. See tower frequencies tabulation for hours of operation.
- © - Follows the Common Traffic Advisory Frequency (CTAF)
- ATIS 123.8 - Automatic Terminal Information Service
- ASOS/AWOS 135.42 - Automated Surface Weather Observing Systems (shown where full-time ATIS not available). Some ASOS/AWOS facilities may not be located at airports.
- UNICOM - Aeronautical advisory station
- VFR Advsy - VFR Advisory Service shown where full-time ATIS not available and frequency is other than primary CT frequency.
- 285 - Elevation in feet
- L - Lighting in operation Sunset to Sunrise
- *L - Lighting limitations exist; refer to Supplement.
- 72 - Length of longest runway in hundreds of feet; usable length may be less.

When information is lacking, the respective character is replaced by a dash. Lighting codes refer to runway edge lights and may not represent the longest runway or full length lighting.

Example: FSS / NO SVFR / NAME (NAM) (PNAM) / CT - 118.3 * © ATIS 123.8 / 285 L 72 122.95 / RP 23, 34 / VFR Advsy 125.0 / AOE — FAR 91, Location Indicator, ICAO Location Indicator shown outside contiguous U.S., UNICOM, Airport of Entry

AIRPORT TRAFFIC SERVICE AND AIRSPACE INFORMATION

Only the controlled and reserved airspace effective below 18,000 ft. MSL are shown.

- Class B Airspace
- Class C Airspace (Mode C - see FAR 91.215/AIM.)
- Class D Airspace
- Ceiling of Class D Airspace in hundreds of feet (A minus ceiling value indicates surface up to but not including that value.)
- Class E (sfc) Airspace
- Class E Airspace with floor 700 ft. above surface that laterally abuts Class G Airspace.
- Class E Airspace with floor 700 ft. above surface that laterally abuts 1200 ft. or higher Class E Airspace
- Class E Airspace with floor 1200 ft. or greater above surface that laterally abuts Class G Airspace
- 2400 MSL / 4500 MSL - Differentiates floors of Class E Airspace greater than 700 ft. above surface.

Class E Airspace exists at 1200' AGL unless otherwise designated as shown above.

Class E Airspace low altitude Federal Airways are indicated by center line.

Intersection - Arrows are directed towards facilities which establish intersection.

Total mileage between NAVAIDs on direct Airways

Class E Airspace low altitude RNAV 2 Routes are indicated by center line.

- T 319 / TK 313 (Helicopter Only) / RNAV Waypoint
- Prohibited, Restricted, and Warning Areas; Canadian Advisory, Danger, and Restricted Areas
- Alert Area and MOA - Military Operations Area
- Special Airport Traffic Area (See FAR 93 for details.)
- ADIZ - Air Defense Identification Zone MODE C (See FAR 91.215/AIM.)
- National Security Area
- Terminal Radar Service Area (TRSA)
- IR211 - MTR - Military Training Route

COMMUNICATION BOXES

- Underline indicates no voice on frequency.
- Crosshatch indicates Shutdown status.
- Operates less than continuous or On-Request.
- ASOS/AWOS
- HIWAS
- Heavy line box indicates Flight Service Station (FSS). Frequencies 121.5, 122.2, 243.0 and 255.4 (Canada - 121.5, 126.7 and 243.0) are available at many FSSs and are not shown above boxes. All other frequencies are shown.
- R - Receive only
- Frequencies above thin line box are remoted to NAVAID site. Other FSS frequencies providing voice communication may be available as determined by altitude and terrain. Consult Supplement for complete information.
- FSS radio providing voice communication

RADIO AIDS TO NAVIGATION

- VHF OMNI RANGE (VOR)
- VORTAC
- VOR-DME
- DME
- Other facilities, i.e., FSS Outlet, RCO, etc.
- Non-Directional Radio Beacon (NDB)
- NDB - DME

OBSTRUCTIONS

- 1000 ft and higher AGL
- Above 200 ft & below 1000 ft AGL (above 299 ft AGL in urban area)
- Wind Turbine
- Group Obstruction
- Wind Turbine Farm
- Obstruction with high-intensity lights; may operate part-time
- 2049 (1149) UC - Elevation of the top above mean sea level; Height above ground; Under construction or reported; position and elevation unverified

NOTICE: Guy wires may extend outward from structures.

MISCELLANEOUS

- Stadium - Intermittent TFR site (within 3 NM, up to & incl 3000' AGL)
- Space Launch Activity Area (See Supplement.)
- A - Aerobatic Practice Area (See Supplement.)
- G - Glider Operations
- H - Hang Glider Activity
- U - Ultralight Activity
- UA - Unmanned Aircraft Activity
- Parachute Jumping Area (See Supplement.)
- Marine Light
- Isogonic Line (2015 VALUE)
- VFR Waypoints (See chart tabulation for latitude/longitude.)

TOPOGRAPHIC INFORMATION

- Power Transmission Line
- Aerial Cable
- Lookout Tower 618 (Elevation Base of Tower)
- Mountain Pass 11823 (Elevation of Pass)

Pass symbol does not indicate a recommended route or direction of flight and pass elevation does not indicate a recommended clearance altitude. Hazardous flight conditions may exist within and near mountain passes.

SAN ANTONIO SECTIONAL

SECTIONAL AERONAUTICAL CHART SCALE 1:500,000

Federal Aviation Administration

98TH EDITION EFFECTIVE 0901Z 10 NOV 2016
TO 0901Z 27 APR 2017

Includes airspace amendments effective 10 NOV 2016 and all other aeronautical data received by 15 SEP 2016

Information on this chart will change; consolidated major updates of chart changes are available every 56 days in the CHART SUPPLEMENT Aeronautical Chart Bulletin section (online at http://faa.gov/go/ais). Also consult appropriate NOTICES TO AIRMEN (NOTAMs) and other FLIGHT INFORMATION PUBLICATIONS (FLIPs) for the latest changes. Consult/Subscribe to FAA Safety Alerts and Charting Notices at: http://www.faa.gov/air_traffic/flight_info/aeronav/safety_alerts/

Published from digital files compiled in accordance with Interagency Air Cartographic Committee specifications and agreements approved by Department of Defense - Federal Aviation Administration.

Warning: Refer to current foreign charts and flight information publications for information within foreign airspace.

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NSN 7641014100168
NGA REF. NO. SECXXSANANTONIO
EFF. DATE 16315

PLOTTING DIRECT ROUTE ON NORTH/SOUTH SIDE

There are approximately two minutes of latitude overlap between the north and south sides of each sectional/WAC chart. To plot a course line from one side to the other, the user must first locate two pair of corresponding latitude tick marks, one pair on each side of the chart and follow the steps below.

STEP 1 - Draw a horizontal line (MATCH LINE) between each pair of corresponding latitude tick marks on each side of the chart just to the left or right of where your plot line crosses. (Figure 1)

STEP 2 - Decide which side of the chart has the departure or destination point closer to the edge of the chart. On that side, line up a blank piece of paper along the MATCH LINE (the paper should be completely on the chart, not extending beyond its edge).

STEP 3 - Slide the paper sideways left or right so that a side edge of the paper aligns with the departure or destination point (POINT A). Make a MARK A on an edge of the paper where it meets that point.

STEP 4 - Without moving the paper, on the same edge as MARK A, extend a short line on the chart from the corner of the paper where it meets the MATCH LINE out to the edge of the chart. Make that LINE B.

STEP 5 - Turn the chart over and transfer the end of LINE B to the other side, and extend it straight to the MATCH LINE. (Figure 2)

STEP 6 - Take the sheet of paper with MARK A on it and align the (top or bottom) edge of the paper with the MATCH LINE and side edge with LINE B with the bulk of the sheet extending off of the chart. Plot a line from POINT A to the departure or destination point (POINT B).

STEP 7 - Where your plot line crosses the MATCH LINE make a MARK C. Extend a line straight from that mark to the edge of the chart.

STEP 8 - Turn the chart back over and transfer MARK C to that side and extend it to the MATCH LINE. Plot a line from MARK C to the destination. (Figure 3)

ATTENTION

THIS CHART CONTAINS MAXIMUM ELEVATION FIGURES (MEF). The Maximum Elevation Figures shown in quadrangles bounded by ticked lines of latitude and longitude are represented in THOUSANDS and HUNDREDS of feet above mean sea level. The MEF is based on information available concerning the highest known feature in each quadrangle, including terrain and obstructions (trees, towers, antennas, etc.).

Example: 12,500 feet 12⁵

CONTROL TOWER FREQUENCIES ON SAN ANTONIO SECTIONAL CHART

Airports with control towers are indicated on the face of the chart by the letters CT followed by the primary VHF tower frequency(ies). Information for each tower is listed in the table below. Operational hours are local time. The primary VHF and UHF tower and ground control frequencies are listed.

Automatic Terminal Information Service (ATIS) frequencies shown on the face of the chart are arrival VHF/UHF frequencies. All ATIS frequencies are listed in the table below. ATIS operational hours may differ from tower operational hours.

ASR and/or PAR indicate Radar Instrument Approach available.

"MON-FRI" indicates Monday through Friday.

O/T indicates other times.

CONTROL TOWER	OPERATES	TOWER	GND CON	ATIS	ASR/PAR
AUSTIN-BERGSTROM INTL	CONTINUOUS	121.0 281.5	121.9 348.6	124.4	
GEORGETOWN	0700-2200	120.225	119.12	118.6	
HOOD AAF	0800-2400 MON-FRI EXC HOL O/T CTC ROBERT GRAY TWR	119.65 269.45	133.85 225.4		
KELLY	CONTINUOUS	124.3 322.35	121.8 289.4	120.45 273.5	
LAUGHLIN AFB	0700-1900 MON-FRI 1500-1759 SUN EXC HOL	125.2 307.375	275.8	114.4 269.9	
MIDLAND INTL	0600-2400	118.7 273.45	121.9 348.6	126.8 235.975	ASR
NEW BRAUNFELS RGNL	0700-1900	127.75 285.4	120.175	119.325	
RANDOLPH AFB	0700-1900 MON-FRI CLSD FED HOL	128.25 294.7	119.65 275.8	290.525	
HANGOVER	CTL RWY 14L/32R DUR STU TRNG	120.5 291.1	124.75 353.75	327.8	
ROBERT GRAY AAF	CONTINUOUS	120.75 285.5	126.2 379.5	124.9	ASR/PAR
SAN ANGELO RGNL/MATHIS	0700-2100	118.3 284.7	121.9 348.6	128.45 319.0	ASR
SAN ANTONIO INTL	CONTINUOUS	119.8 257.8	121.9 348.6	118.9	
SAN MARCOS RGNL	0700-1900	126.825	120.125		
STINSON	0700-2200	118.2 379.9	121.7 379.9	128.8	
TSTC WACO	0700-2300	124.0 255.7	121.7		ASR
VICTORIA RGNL	0700-2200	126.075 257.95	120.525 239.25	119.025	
WACO RGNL	0600-2400	119.3 257.8	121.9	123.85	ASR

CLASS B, CLASS C, TRSA, AND SELECTED APPROACH CONTROL FREQUENCIES

FACILITY	FREQUENCIES	SERVICE AVAILABILITY
AUSTIN CLASS C	127.225 317.65 (E) 119.0 370.85 (W) 120.875 270.25 (S)	CONTINUOUS
LAUGHLIN AFB CLASS C	119.6 259.1 O/T 125.75 346.4 HOUSTON CNTR	0700-1900 MON-FRI 1500-1759 SUN EXC HOL; O/T CLASS G
MIDLAND CLASS C	121.1 256.875 (137°-240°) 124.6 290.4 (241°-136°) O/T 133.1 298.95 FORT WORTH CNTR	0600-2400; O/T CLASS E
SAN ANTONIO CLASS C	124.45 335.625 (360°-090°) 128.05 318.1 (091°-140°) 118.05 353.5 (141°-270°) 125.1 307.0 (271°-359°)	CONTINUOUS
HOOD AAF	120.075 323.15	CONTINUOUS
KELLY	118.05 353.5	CONTINUOUS
ROBERT GRAY AAF	120.075 323.15	CONTINUOUS

SPECIAL USE AIRSPACE ON SAN ANTONIO SECTIONAL CHART

Unless otherwise noted altitudes are MSL and in feet. Time is local. "TO" an altitude means "To and including." FL - Flight Level. NO A/G - No air to ground communications. Contact Flight Service for information.

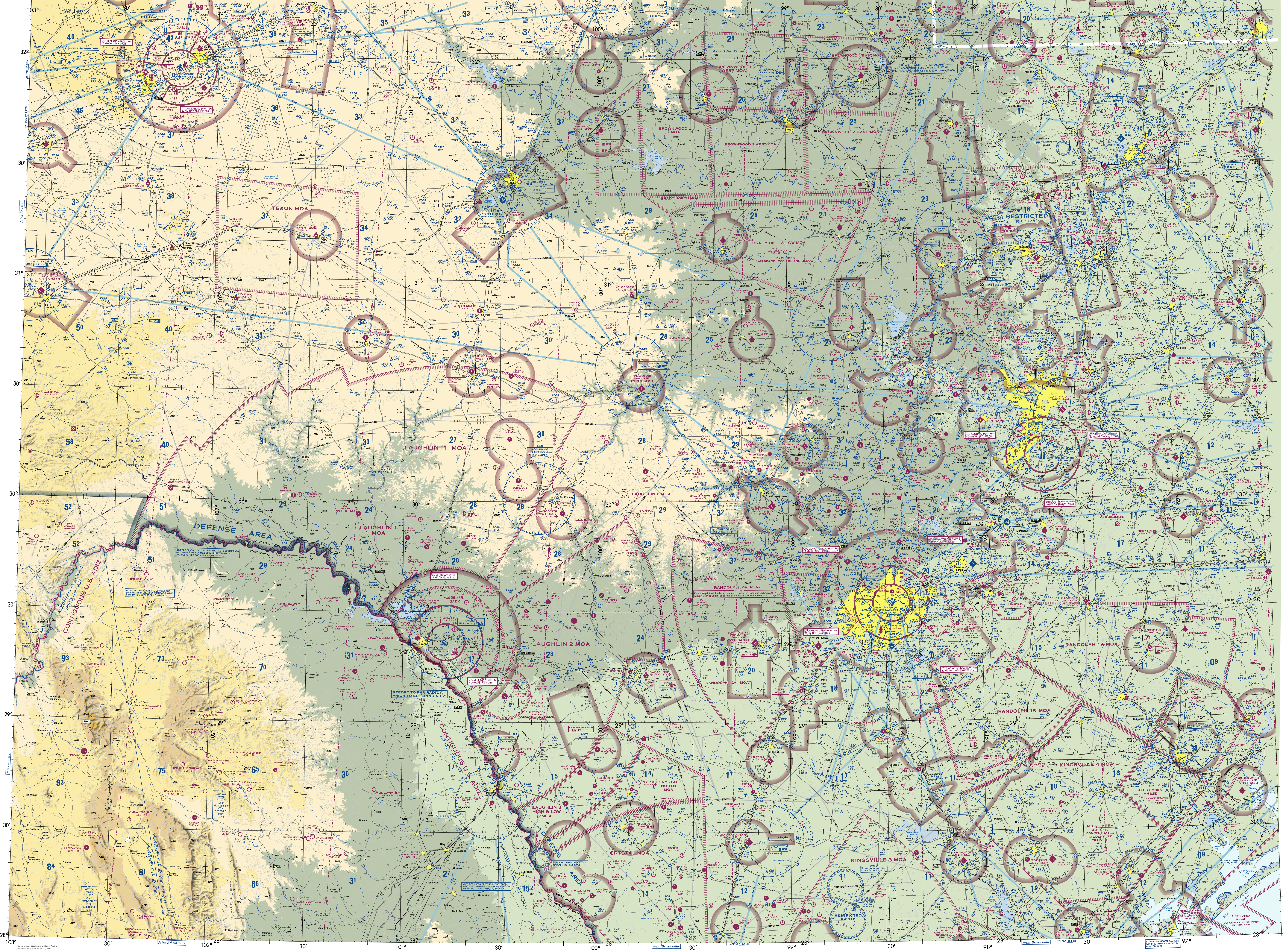
† Other times by NOTAM. NOTAM - Use of this term in Restricted Areas indicates FAA and DoD NOTAM systems. Use of this term in all other Special Use areas indicates the DoD NOTAM system.

U.S. P-PROHIBITED, R-RESTRICTED, W-WARNING, A-ALERT, MOA-MILITARY OPERATIONS AREA

NUMBER	ALTITUDE	TIME OF USE	CONTROLLING AGENCY/ CONTACT FACILITY	FREQUENCIES
P-49	TO 2000	CONTINUOUS	NO A/G	
R-6302 A	TO 30,000	CONTINUOUS	HOUSTON CNTR	
R-6302 B	TO 11,000	1800-0600 MON-SAT†	HOUSTON CNTR	
R-6302 C, D	TO 30,000	0700-1900 MON-FRI†	HOUSTON CNTR	
R-6312	TO FL 230	SR-SS†	HOUSTON CNTR	
R-6316	TO 15,000	CONTINUOUS	HOUSTON CNTR	
A-632 B	TO BUT NOT INCL FL 180	0700-2400	NO A/G	
A-632 C	TO BUT NOT INCL FL 180	SR-2400 MON-FRI	NO A/G	
A-632 D	6000 TO BUT NOT INCL 11,000	SR-2400 MON-FRI 1400-2400 SUN†	NO A/G	
A-632 E	6000 TO BUT NOT INCL 9000	SR-2400 MON-FRI 1400-2400 SUN	NO A/G	
A-632 F	3000 AGL TO BUT NOT INCL FL 180	0700-2400 MON-SAT	NO A/G	
A-633 A	TO 7000	SR-SS MON-FRI	NO A/G	
A-633 B	TO 4000	SR-SS MON-FRI	NO A/G	
A-635	1500 TO 4000	SR TO 3 HRS AFTER SS MON-FRI	NO A/G	
A-638	TO 3000	SR-SS MON-FRI	NO A/G	

MOA NAME	ALTITUDE*	TIME OF USE†	CONTROLLING AGENCY/ CONTACT FACILITY	FREQUENCIES
BRADY HIGH	6000	SR-2200 MON-FRI	HOUSTON CNTR	
BRADY LOW	500 AGL TO BUT NOT INCL 6000	SR-2200 MON-FRI	HOUSTON CNTR	
BRADY NORTH	3600	SR-2200 SUN-FRI	HOUSTON CNTR	
BROWNWOOD 1 EAST, WEST	7000	0700-2200	FORT WORTH CNTR	127.45 290.3 135.37 354.05
BROWNWOOD 2 EAST, WEST	7000	0700-2200	FORT WORTH CNTR	127.45 290.3 135.37 354.05
BROWNWOOD 3, 4	13,000	0700-2200	FORT WORTH CNTR	127.45 290.3 135.37 354.05
CRYSTAL	6000	0700-1800	HOUSTON CNTR	
CRYSTAL NORTH	6000	0800-0930 & 1300-1430 TUE-FRI	HOUSTON CNTR	
GRAY	2000 TO 10,000	0700-1900 MON-FRI	HOUSTON CNTR	
HOOD	2000 TO 10,000	0700-1900 MON-FRI	HOUSTON CNTR	
HOOD HIGH	10,000	BY NOTAM 48 HRS IN ADVANCE	HOUSTON CNTR	
KINGSVILLE 3	8000	SR-2400 MON-FRI 1400-2400 SUN	HOUSTON CNTR	
KINGSVILLE 4, 5	9000	SR-2400 MON-FRI 1400-2400 SUN	HOUSTON CNTR	
LAUGHLIN 1	9000	0600-2000 MON-FRI	HOUSTON CNTR	
LAUGHLIN 2	7000	0600-2000 MON-FRI	HOUSTON CNTR	
LAUGHLIN 3 HIGH	15,000	0600-2000 MON-FRI	HOUSTON CNTR	
LAUGHLIN 3 LOW	7000 TO BUT NOT INCL 15,000	0600-2000 MON-FRI	HOUSTON CNTR	
RANDOLPH 1A	8000	SR-SS MON-FRI	HOUSTON CNTR	
RANDOLPH 1B	7000	SR-SS MON-FRI	SAN ANTONIO TRACON	
RANDOLPH 2A	9000	SR-SS MON-FRI	HOUSTON CNTR	
RANDOLPH 2B	14,000	SR-SS MON-FRI	HOUSTON CNTR	
TEXON	6000	SR-SS MON-FRI	HOUSTON CNTR	

*Altitudes indicate floor of MOA. All MOAs extend to but do not include FL 180 unless otherwise indicated in tabulation or on chart.
†Other times by DoD NOTAM.



Entire area of this chart is within the Central Standard Time Zone +6 (+5 DT) = UTC

NAUTICAL MILES / STATUTE MILES / KILOMETERS

CAUTION: This chart is primarily designed for VFR navigational purposes and does not purport to indicate the presence of all power transmission and telecommunication lines, terrain or obstacles which may be encountered below reasonable and safe altitudes.

Lambert Conformal Conic Projection Standard Parallels 25°20' and 30°40'
Horizontal Datum: North American Datum of 1983 (World Geodetic System 1984)

CONTOUR INTERVAL 500 feet
Intermediate contours 250 feet
Auxiliary contours 100 feet
HIGHEST TERRAIN elevation is 8960 feet located at 28° 58'N - 102° 37'W
Spot elevation 4254
Approximate elevation .... x 3200

CONVERSION OF ELEVATIONS
FEET (Thousands) 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
METERS (Thousands) 0 1 2 3 4 5 6 7 8 9

8960 / 7000 / 5000 / 3000 / 2000 / 1000 / Sea Level

FOR PROCUREMENT: For digital products, visit http://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/ For a list of approved FAA Print Providers, visit our website at: http://www.faa.gov/air_traffic/flight_info/aeronav/print_providers/

AIRSPACE CLASSIFICATION/OPERATIONAL REQUIREMENTS MAY DIFFER BETWEEN MEXICO AND UNITED STATES (DOD USERS, SEE DOD AREA PLANNING AP/1)

NOTE: DOD USERS, REFER TO CURRENT DOD (NGA) FLIGHT INFORMATION PUBLICATIONS FOR INFORMATION OUTSIDE OF U.S. AIRSPACE

CAUTION: Severe turbulence may occur over rugged terrain. See AIM.

NORTH AMERICAN AEROSPACE DEFENSE COMMAND (NORAD) PROCEDURES

All aircraft operating in the U.S. national airspace, if capable, will maintain a listening watch on guard frequencies VHF 121.5 or UHF 243.0. It is incumbent upon all aviators to know and understand their responsibilities if intercepted. Review "AIM" section 5-6-2 for intercept procedures. Additionally, if U.S. military fighter jets intercept an aircraft and flares are dispensed in the area of that aircraft, aviators will pay strict attention, contact air traffic control immediately on the local frequency or on VHF guard 121.5 or UHF guard 243.0 and follow the interceptor visual ICAO signals. Be advised that non-compliance may result in the use of force.

MILITARY TRAINING ROUTES (MTRs)

All IR and VR MTRs are shown, and may extend from the surface upwards. Only the route centerline, direction of flight along the route, and the route designator are depicted - route widths and altitudes are not shown.

Since these routes are subject to change every 56 days, you are cautioned and advised to contact Flight Service for route dimensions and current status for those routes affecting your flight.

Routes with a change in the alignment of the charted route centerline will be indicated in the Aeronautical Chart Bulletin of the Chart Supplement.

DoD users refer to Area Planning AP/1B Military Training Routes North and South America for current routes.

Flight Following Services are available on request and highly recommended in and around Class B, C, and TRSA areas.

REGULATIONS REGARDING FLIGHTS OVER CHARTED NATIONAL PARK SERVICE AREAS, U.S. FISH AND WILDLIFE SERVICE AREAS, AND U.S. FOREST SERVICE AREAS

The landing of aircraft is prohibited on lands or waters administered by the National Park Service, U.S. Fish and Wildlife Service or U.S. Forest Service without authorization from the respective agency. Exceptions include: 1) when forced to land due to an emergency beyond the control of the operator, 2) at officially designated landing sites, or 3) on approved official business of the Federal Government.

All aircraft are requested to maintain a minimum altitude of 2,000 feet above the surface of the following: National Parks, Monuments, Seashores, Lakeshores, Recreation Areas and Scenic Riverways administered by the National Park Service; National Wildlife Refuges, Big Game Refuges, Game Ranges and Wildlife Ranges administered by the U.S. Fish and Wildlife Service; and Wilderness and Primitive areas administered by the U.S. Forest Service. FAA Advisory Circular (AC) 91-36, "Visual Flight Rules (VFR) Flight Near Noise-Sensitive Areas," defines the surface as: the highest terrain within 2,000 feet laterally of the route of flight, or the upper-most rim of a canyon or valley.

Federal regulations also prohibit airdrops by parachute or other means of persons, cargo, or objects from aircraft on lands administered by the three agencies without authorization from the respective agency. Exceptions include: 1) emergencies involving the safety of human life, or 2) threat of serious property loss.

Boundary of National Park Service areas, U.S. Fish and Wildlife Service areas, and U.S. Forest Service Wilderness and Primitive areas.

Features normally used as checkpoints for controlling VFR traffic are emphasized on this series of charts so they may be readily identified.

Example: POWER PLANT

The name shown is that used by the controlling personnel and is not necessarily the official name of the feature.

Class G Airspace within the United States extends up to 14,500 feet MSL. At and above this altitude all airspace is within Class E Airspace, excluding the airspace less than 1500 feet above the terrain and certain special use airspace areas.

HIGH DENSITY HELICOPTER ACTIVITY AREA FREQUENCIES
ROCKPORT, TX 123.05

REPORTING CHART ERRORS

You are requested to inform us of chart errors and/or additions that come to your attention while using this chart. Frequently asked questions (FAQs) are answered on our website at http://faa.gov/go/ais. See the FAQs prior to contact via toll free number or email. Telephone toll free at 1-800-638-8972, or email us at 9-AMC-Aerochart@faa.gov or mail to: FAA, Aeronautical Information Services, Customer Operations Team, 1305 East-West Highway, SSMC 4, Suite 4400, Silver Spring, MD 20910-3281.