

GENERAL INFORMATION

This Chart Supplement is a Civil Flight Information Publication updated every eight weeks by the U.S. Department of Transportation, Federal Aviation Administration, Aeronautical Information Services, <http://www.faa.gov/go/ais>. It is designed for use with Aeronautical Charts covering the conterminous United States, Puerto Rico and the Virgin Islands.

The Airport/Facility Directory section contains all public-use airports, seaplane bases and heliports, military facilities, and selected private use facilities specifically requested by the Department of Defense (DoD) for which a DoD Instrument Approach Procedure has been published in the U.S. Terminal Procedures Publication. Additionally, this publication contains communications data, navigational facilities and certain special notices and procedures.

Military data contained within this publication is provided by the National Geospatial-Intelligence Agency and is intended to provide reference data for military and/or joint use airports. Not all military data contained in this publication is applicable to civil users.

CORRECTIONS, COMMENTS, AND/OR PROCUREMENT

CRITICAL information such as equipment malfunction, abnormal field conditions, hazards to flight, etc., should be reported as soon as possible.

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NOTICE: Changes must be received by Aeronautical Information Services as soon as possible but not later than the "cut-off" dates listed below to assure publication on the desired effective date. Information cut-off dates that fall on a federal holiday must be received the previous work day.

| Effective Date | Airport Information Cut-off date | Airspace Information* Cut-off date |
|----------------|-------------------------------------|---------------------------------------|
| 21 Mar 24 | 7 Feb 24 | 23 Jan 24 |
| 16 May 24 | 3 Apr 24 | 19 Mar 24 |
| 11 Jul 24 | 29 May 24 | 14 May 24 |
| 5 Sep 24 | 24 Jul 24 | 9 Jul 24 |
| 31 Oct 24 | 18 Sep 24 | 3 Sep 24 |
| 26 Dec 24 | 13 Nov 24 | 29 Oct 24 |

*Airspace Information includes changes to preferred routes and graphic depictions on charts.

FOR PROCUREMENT:

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THIS PUBLICATION COMPRISES PART OF THE FOLLOWING SECTIONS OF THE UNITED STATES AERONAUTICAL INFORMATION PUBLICATION (AIP): GEN, ENR AND AD.

TABLE OF CONTENTS

GENERAL INFORMATION Inside Front Cover

City/Military Airport Cross Reference 2

Seaplane Landing Areas 3

Abbreviations 4

SECTION 1: AIRPORT/FACILITY DIRECTORY LEGEND 12

SECTION 2: AIRPORT/FACILITY DIRECTORY

Connecticut 32

Delaware 44

District Of Columbia 52

Maine 56

Maryland 92

Massachusetts 120

New Hampshire 147

New Jersey 160

New York 187

Pennsylvania 259

Rhode Island 323

Vermont 329

Virginia 339

West Virginia 391

SECTION 3: NOTICES

Special Notices 410

Regulatory Notices 433

SECTION 4: ASSOCIATED DATA

FAA Telephone Numbers and National Weather Service 435

NWS Upper Air Observing Stations 438

Air Route Traffic Control Centers 439

Flight Service Station Communication Frequencies 443

VOR Receiver Checkpoints and VOR Test Facilities 446

Parachute Jumping Areas 449

Supplemental Communication Reference 454

Preferred IFR Routes 460

Tower Enroute Control Routes 523

North American Routes 555

Minimum Operational Network (MON) Airport Listing 595

SECTION 5: AIRPORT DIAGRAMS

Airport Diagrams Legend 596

Airport Hot Spots 598

Airport Diagrams 603

PIREP Form 730

GENERAL INFORMATION

CITY/MILITARY AIRPORT CROSS REFERENCE

Military airports are listed alphabetically by state and official airport name. The following city/military airport cross-reference listing provides alphabetical listing by state and city name for all military airport published in this directory.

| STATE | CITY NAME | AIRPORT NAME |
|-------|---------------------------|-----------------------------------|
| DE | DOVER..... | DOVER AFB |
| MA | FALMOUTH | CAPE COD CGAS |
| MA | SPRINGFIELD/CHICOPEE..... | WESTOVER ARB/METROPOLITAN |
| MD | CAMP SPRINGS | JOINT BASE ANDREWS |
| MD | PATUXENT | PATUXENT RIVER NAS (TRAPNELL FLD) |
| MD | ABERDEEN..... | PHILLIPS AAF |
| NJ | LAKEHURST | LAKEHURST MAXFIELD FLD |
| NJ | WRIGHTSTOWN | JOINT BASE MCGUIRE DIX LAKEHURST |
| NY | FORT DRUM..... | WHEELER SACK AAF |
| PA | FORT INDIANTOWN GAP..... | MUIR AHP (FORT INDIANTOWN GAP) |
| VA | BLACKSTONE | ALLEN C PERKINSON BLACKSTONE AAF |
| VA | FORT A. P. HILL | A P HILL AAF (FORT A P HILL) |
| VA | FORT BELVOIR | DAVISON AAF |
| VA | FORT EUSTIS..... | FELKER AAF |
| VA | FORT LEE..... | FORT LEE HELIPAD NR 3 |
| VA | HAMPTON | LANGLEY AFB |
| VA | NORFOLK..... | NORFOLK NS (CHAMBERS FLD) |
| VA | VIRGINIA BEACH | OCEANA NAS (APOLLO SOUCEK FLD) |
| VA | QUANTICO | QUANTICO MCAF (TURNER FLD) |
| VA | WALLOPS ISLAND..... | WALLOPS FLIGHT FACILITY |
| VA | WILLIAMSBURG | CAMP PEARY LNDG STRIP |

SEAPLANE LANDING AREAS

The following locations have Seaplane Landing Areas (Waterways). See alphabetical listing for complete data on these facilities.

| STATE | CITY NAME | FACILITY NAME |
|-------|----------------------|-----------------------------------|
| CT | EAST HADDAM | GOODSPEED |
| ME | ASHLAND | BRADFORD CAMPS SPB |
| ME | AUGUSTA | AUGUSTA |
| ME | BANGOR | LUCKY LANDING MARINA |
| ME | CHESUNCOOK | CHESUNCOOK LAKE HOUSE SPB |
| ME | CHESUNCOOK | NUGENT CHAMBERLAIN LAKE |
| ME | EAST WINTHROP | LAKESIDE LODGE AND MARINA |
| ME | GREENVILLE | MOOSEHEAD AERO MARINE |
| ME | GREENVILLE JUNCTION | CURRIER'S |
| ME | JACKMAN | MOOSE RIVER |
| ME | LINCOLN | LINCOLN RGNL |
| ME | MILLINOCKET | MILLINOCKET |
| ME | NAPLES | BRANDY POND |
| ME | NAPLES | LONG LAKE |
| ME | NORCROSS/MILLINOCKET | BUCKHORN CAMPS |
| ME | OLD TOWN | DEWITT FLD/OLD TOWN MUNI |
| ME | PATTEN | SHIN POND |
| ME | PORTAGE | PORTAGE LAKE MUNI |
| ME | PRESQUE ISLE | PRESQUE ISLE |
| ME | RANGELEY | RANGELEY LAKE |
| ME | SINCLAIR | LONG LAKE |
| ME | TURNER | TWITCHHELL |
| ME | VAN BUREN | VAN BUREN |
| MD | BALTIMORE | ESSEX SKYPARK |
| MD | HAVRE DE GRACE | HAVRE DE GRACE |
| MA | HALIFAX | MONPONSETT POND |
| NH | ALTON BAY | ALTON BAY SPB |
| NJ | LITTLE FERRY | LITTLE FERRY |
| NY | LONG LAKE | LONG LAKE (HELMS) |
| NY | LONG LAKE | LONG LAKE SAGAMORE SPB AND MARINA |
| NY | NEW YORK | EVERS |
| NY | NEW YORK | NEW YORK SKYPORTS INC |
| NY | PORT WASHINGTON | SANDS POINT |
| NY | ROUND LAKE | ROUND LAKE |
| NY | SCHUYLERVILLE | GARNSEYS |
| PA | ERIE | LAKE ERIE LANDING AREA |
| PA | ESSINGTON | PHILADELPHIA |
| PA | SUNBURY | SUNBURY SPB |
| VA | CHESTER | MCLAUGHLIN SPB |

GENERAL INFORMATION

ABBREVIATIONS

The following abbreviations/acronyms are those commonly used within this Directory. Other abbreviations/acronyms may be found in the Legend and are not duplicated below. The abbreviations presented are intended to represent grammatical variations of the basic form. (Example—"req" may mean "request", "requesting", "requested", or "requests").

For additional FAA approved abbreviations/acronyms please see FAA Order JO 7340.2 —Contractions

| Abbreviation | Description | Abbreviation | Description |
|---------------------------|---|---------------------------|---|
| A/G | air/ground | alt | altitude |
| AAF | Army Air Field | altn | alternate |
| AAS | Airport Advisory Service | AM | Amplitude Modulation, midnight til noon |
| AB | Airbase | AMC | Air Mobility Command |
| abm | abeam | amdt | amendment |
| ABn | Aerodrome Beacon | AMSL | Above Mean Sea Level |
| abv | above | ANGS | Air National Guard Station |
| ACC | Air Combat Command Area Control Center | ant | antenna |
| acft | aircraft | AOE | Airport/Aerodrome of Entry |
| ACLS | Automatic Carrier Landing System | AP | Area Planning |
| ACN | Aircraft Classification Number | APAPI | Abbreviated Precision Approach Path Indicator |
| ACR | Aircraft Classification Rating | apch | approach |
| act | activity | apn | apron |
| ACWS | Aircraft Control and Warning Squadron | APP | Approach Control |
| ADA | Advisory Area | Apr | April |
| ADCC | Air Defense Control Center | aprx | approximate |
| ADCUS | Advise Customs | APU | Auxiliary Power Unit |
| addn | addition | apv, apvl | approve, approval |
| ADF | Automatic Direction Finder | ARB | Air Reserve Base |
| adj | adjacent | ARCAL (CANADA) | Aircraft Radio Control of Aerodrome Lighting |
| admin | administration | ARFF | Aircraft Rescue and Fire Fighting |
| ADR | Advisory Route | ARINC | Aeronautical Radio Inc |
| advs | advise | arrg | arrange |
| advy | advisory | arpt | airport |
| AEIS | Aeronautical Enroute Information Service | arr | arrive |
| AER | approach end rwy | ARS | Air Reserve Station |
| AFA | Army Flight Activity | ARSA | Airport Radar Service Area |
| AFB | Air Force Base | ARSR | Air Route Surveillance Radar |
| afct | affect | ARTCC | Air Route Traffic Control Center |
| AFF | Aqueous Film Forming Foam | AS | Air Station |
| AFHP | Air Force Heliport | ASAP | as soon as possible |
| AFIS | Automatic Flight Information Service | ASDA | Accelerate-Stop Distance Available |
| afid | airfield | ASDE | Airport Surface Detection |
| AFOD | Army Flight Operations Detachment | ASDE-X | Airport Surface Detection Equipment-Model X |
| AFR | Air Force Regulation | asgn | assign |
| AFRC | Armed Forces Reserve Center/Air Force Reserve Command | ASL | Above Sea Level |
| AFRS | American Forces Radio Stations | ASOS | Automated Surface Observing System |
| AFS | Air Force Station | ASR | Airport Surveillance Radar |
| AFTN | Aeronautical Fixed Telecommunication Network | ASSC | Airport Surface Surveillance Capability |
| AG | Agriculture | ASU | Aircraft Starting Unit |
| A-G, A-GEAR | Arresting Gear | ATA | Actual Time of Arrival |
| agcy | Agency | ATC | Air Traffic Control |
| AGL | above ground level | ATCC | Air Traffic Control Center |
| AHP | Army heliport | ATCT | Airport Traffic Control Tower |
| AID | Airport Information Desk | ATD | Actual Time of Departure Along Track Distance |
| AIS | Aeronautical Information Services | ATIS | Automatic Terminal Information Service |
| AL | Approach and Landing Chart | ATS | Air Traffic Service |
| ALF | Auxiliary Landing Field | attn | attention |
| ALS | Approach Light System | Aug | August |
| ALSF-1 | High Intensity ALS Category I configuration with sequenced Flashers (code) | auth | authority |
| ALSF-2 | High Intensity ALS Category II configuration with sequenced Flashers (code) | auto | automatic |
| | | AUW | All Up Weight (gross weight) |
| | | aux | auxiliary |
| | | AVASI | abbreviated VASI |
| | | avbl | available |

| Abbreviation | Description | Abbreviation | Description |
|---------------------------|--|---------------------------|---|
| AvGas..... | Aviation gasoline | copter..... | helicopter |
| avn..... | aviation | corr..... | correct |
| AvOil..... | aviation oil | CPDLC..... | Controller Pilot Data Link |
| AWOS..... | Automatic Weather Observing System | | Communication |
| AWSS..... | Automated Weather Sensor System | crdr..... | corridor |
| awt..... | await | cross..... | cross |
| awy..... | airway | CRP..... | Compulsory Reporting Point |
| az..... | azimuth | crs..... | course |
| | | CS..... | call sign |
| BA..... | braking action | CSTMS..... | Customs |
| BASH..... | Bird Aircraft Strike Hazard | CTA..... | Control Area |
| BC..... | back course | CTAF..... | Common Traffic Advisory Frequency |
| bcn..... | beacon | ctc..... | contact |
| bcst..... | broadcast | ctl..... | control |
| bdry..... | boundary | ctn..... | caution |
| bldg..... | building | CTLZ..... | Control Zone |
| blkd..... | blocked | CVFR..... | Controlled Visual Flight Rules Areas |
| blo, blw..... | below | CW..... | Clockwise, Continuous Wave, Carrier Wave |
| BOQ..... | Bachelor Officers Quarters | | |
| brg..... | bearing | dalgt..... | daylight |
| btn..... | between | D-ATIS..... | Digital Automatic Terminal Information Service |
| bus..... | business | daylt..... | daylight |
| byd..... | beyond | db..... | decibel |
| | | DCL..... | Departure Clearance |
| C..... | Commercial Circuit (Telephone) | Dec..... | December |
| CAC..... | Centralized Approach Control | decom..... | decommission |
| cap..... | capacity | deg..... | degree |
| cat..... | category | del..... | delivery |
| CAT..... | Clear Air Turbulence | dep..... | depart |
| CCW or cntclks..... | counterclockwise | DEP..... | Departure Control |
| ceil..... | ceiling | destn..... | destination |
| CERAP..... | Center Radar Approach Control | det..... | detachment |
| CG..... | Coast Guard | DF..... | Direction Finder |
| CGAF..... | Coast Guard Air Facility | DH..... | Decision Height |
| CGAS..... | Coast Guard Air Station | DIAP..... | DoD Instrument Approach Procedure |
| CH, chan..... | channel | dirct..... | directional |
| CHAPI..... | Chase Helicopter Approach Path Indicator | disem..... | disseminate |
| chg..... | change | displ..... | displace |
| cht..... | chart | dist..... | district, distance |
| cir..... | circle, circling | div..... | division |
| CIV, civ..... | Civil, civil, civilian | DL..... | Direct Line to FSS |
| ck..... | check | dlt..... | delete |
| CL..... | Centerline Lighting System | dly..... | daily |
| cl..... | class | DME..... | Distance Measuring Equipment (UHF standard, TACAN compatible) |
| clnc..... | clearance | DNVT..... | Digital Non-Secure Voice Telephone |
| clsd..... | closed | DoD..... | Department of Defense |
| CNATRA..... | Chief of Naval Air Training | drct..... | direct |
| cnl..... | cancel | DSN..... | Defense Switching Network (Telephone) |
| cntr..... | center | DSN..... | Defense Switching Network |
| cntrln..... | centerline | dsplcd..... | displaced |
| Co..... | Company, County | DT..... | Daylight Savings Time |
| CO..... | Commanding Officer | dur..... | during |
| com..... | communication | durn..... | duration |
| comd..... | command | DV..... | Distinguished Visitor |
| Comdr..... | Commander | | |
| coml..... | commercial | E..... | East |
| compul..... | compulsory | ea..... | each |
| comsn..... | commission | EAT..... | Expected Approach Time |
| conc..... | concrete | ECN..... | Enroute Change Notice |
| cond..... | condition | eff..... | effective, effect |
| const..... | construction | E-HA..... | Enroute High Altitude |
| cont..... | continue | E-LA..... | Enroute Low Altitude |
| CONUS..... | Continental United States | | |
| convl..... | conventional | | |
| coord..... | coordinate | | |

| Abbreviation | Description | Abbreviation | Description |
|---------------------------|--|---------------------------|--|
| elev | elevation | GA | Glide Angle |
| ELT | Emergency Locator Transmitter | gal | gallon |
| EMAS | Engineered Material Arresting System | GAT | General Air Traffic (Europe-Asia) |
| emerg | emergency | GCA | Ground Control Approach |
| eng | engine | GCO | Ground Communication Outlet |
| EOR | End of Runway | gldr | glider |
| eqpt | equipment | GND | Ground Control |
| ERDA | Energy Research and Development Administration | gnd | ground |
| E-S | Enroute Supplement | govt | government |
| est | estimate | GP | Glide Path |
| estab | establish | Gp | Group |
| ETA | Estimated Time of Arrival | GPI | Ground Point of Intercept |
| ETD | Estimated Time of Departure | grad | gradient |
| ETE | Estimated Time Enroute | grd | guard |
| ETS | European Telephone System | GS | glide slope |
| EUR | European (ICAO Region) | GWT | gross weight |
| ev | every | H | Enroute High Altitude Chart (followed by identification) |
| evac | evacuate | H+ | Hours or hours plus...minutes past the hour |
| exc | except | H24 | continuous operation |
| excl | exclude | HAA | Height Above Airport/Aerodrome |
| exer | exercise | HAL | Height Above Landing Area |
| exm | exempt | HAR | Height Above Runway |
| exp | expect | HAT | Height Above Touchdown |
| extd | extend | haz | hazard |
| extn | extension | hdg | heading |
| extv | extensive | HDTA | High Density Traffic Airport/Aerodrome |
| F/W | Fixed Wing | HF | High Frequency (3000 to 30,000 KHz) |
| FAA | Federal Aviation Administration | hgr | hangar |
| fac | facility | hgt | height |
| FAWS | Flight Advisory Weather Service | hi | high |
| fax | facsimile | HIRL | High Intensity Runway Lights |
| FBO | Fixed Base Operator | HO | Service available to meet operational requirements |
| FCC | Flight Control Center | hol | holiday |
| FCG | Foreign Clearance Guide | HOLF | Helicopter Outlying Field |
| FCLP | field carrier landing practice | hosp | hospital |
| fcst | forecast | HQ | Headquarters |
| Feb | February | hr | hour |
| FIC | Flight Information Center | HS | Service available during hours of scheduled operations |
| FIH | Flight Information Handbook | hsg | housing |
| FIR | Flight Information Region | hvy | heavy |
| FIS | Flight Information Service | HW | Heavy Weight |
| FL | flight level | hwy | highway |
| fld | field | HX | station having no specific working hours |
| flg | flashing | Hz | Hertz (cycles per second) |
| FLIP | Flight Information Publication | I | Island |
| flt | flight | IAP | Instrument Approach Procedure |
| flw | follow | IAS | Indicated Air Speed |
| FM | Fan Marker, Frequency Modulation | IAW | in accordance with |
| FOC | Flight Operations Center | ICAO | International Civil Aviation Organization |
| FOD | Foreign Object Damage | ident | identification |
| fone | telephone | IFF | Identification, Friend or Foe |
| FPL | Flight Plan | IFR | Instrument Flight Rules |
| fpm | feet per minute | IFR-S | FLIP IFR Supplement |
| fr | from | ILS | Instrument Landing System |
| freq | frequency, frequent | IM | Inner Marker |
| Fri | Friday | IMC | Instrument Meteorological Conditions |
| frng | firing | IMG | Immigration |
| FSS | Flight Service Station | | |
| ft | foot | | |
| ftt | fighter | | |

| Abbreviation | Description | Abbreviation | Description |
|---------------------------|--|---------------------------|--|
| immed..... | immediate | LLZ..... | Localizer (Instrument Approach Procedures Identification only) |
| inbd..... | inbound | LMM..... | Compass locator at Middle Marker ILS |
| Inc..... | Incorporated | lo..... | low |
| incl..... | include | LoALT or LA..... | Low Altitude |
| incr..... | increase | LOC..... | Localizer |
| indef..... | indefinite | LOM..... | Compass locator at Outer Marker ILS |
| info..... | information | LR..... | Long Range, Lead Radial |
| inop..... | inoperative | LRA..... | Landing Rights Airport |
| inst..... | instrument | LRRS..... | Long Range RADAR Station |
| instl..... | install | LSB..... | lower side band |
| instr..... | instruction | ltd..... | limited |
| int..... | intersection | M..... | meters, magnetic (after a bearing), Military Circuit (Telephone) |
| intcntl..... | intercontinental | MACC..... | Military Area Control Center |
| intcp..... | intercept | mag..... | magnetic |
| intl..... | international | maint..... | maintain, maintenance |
| intmt..... | intermittent | maj..... | major |
| ints..... | intense, intensity | MALS..... | Medium Intensity Approach Lighting System |
| invo..... | in the vicinity of | MALSF..... | MALS with Sequenced Flashers |
| irreg..... | Irregularly | MALSR..... | MALS with Runway Alignment Indicator Lights |
| Jan..... | January | Mar..... | March |
| JASU..... | Jet Aircraft Starting Unit | MARA..... | Military Activity Restricted Area |
| JATO..... | Jet Assisted Take-Off | MATO..... | Military Air Traffic Operations |
| JOAP..... | Joint Oil Analysis Program | MATZ..... | Military Aerodrome Traffic Zone |
| JOSAC..... | Joint Operational Support Airlift Center | max..... | maximum |
| JRB..... | Joint Reserve Base | mb..... | millibars |
| Jul..... | July | MCAC..... | Military Common Area Control |
| Jun..... | June | MCAF..... | Marine Corps Air Facility |
| K or Kt..... | Knots | MCALF..... | Marine Corps Auxiliary Landing Field |
| kHz..... | kilohertz | MCAS..... | Marine Corps Air Station |
| KIAS..... | Knots Indicated Airspeed | MCB..... | Marine Corps Base |
| KLIZ..... | Korea Limited Identification Zone | MCC..... | Military Climb Corridor |
| km..... | Kilometer | MCOLF..... | Marine Corps Outlying Field |
| kw..... | kilowatt | MDA..... | Minimum Descent Altitude |
| L..... | Compass locator (Component of ILS system) under 25 Watts, 15 NM, Enroute Low Altitude Chart (followed by identification) | MEA..... | Minimum Enroute Altitude |
| L..... | Local Time | med..... | medium |
| LAHSO..... | Land and Hold-Short Operations | MEHT..... | Minimum Eye Height over Threshold |
| L-AOE..... | Limited Airport of Entry | mem..... | memorial |
| LAWRS..... | Limited Aviation Weather Reporting Station | MET..... | Meteorological, Meteorology |
| lb, lbs..... | pound (weight) | METAR..... | Aviation Routine Weather Report (in international MET figure code) |
| LC..... | local call | METRO..... | Pilot-to-Metro voice cell |
| lcl..... | local | MF..... | Medium Frequency (300 to 3000 KHz), Mandatory Frequency (Canada) |
| LCP..... | French Peripheral Classification Line | MFA..... | Minimum Flight Altitude |
| lctd..... | located | mgmt..... | Management |
| lctn..... | location | mgr..... | manager |
| lctr..... | locator | MHz..... | Megahertz |
| LCVASI..... | Low Cost Visual Approach Slope Indicator | mi..... | mile |
| lczr..... | localizer | MID/ASIA..... | Middle East/Asia (ICAO Region) |
| LD..... | long distance | MIJI..... | Meaconing, Intrusion, Jamming, and Interference |
| LDA..... | Landing Distance Available | Mil, mil..... | military |
| ldg..... | landing | min..... | minimum, minute |
| LDIN..... | Lead-in Lights | MIRL..... | Medium Intensity Runway Lights |
| LDOCF..... | Long Distance Operations Control Facility | misl..... | missile |
| len..... | length | mkr..... | marker (beacon) |
| lgt, lgtd, lgts..... | light, lighted, lights | MM..... | Middle Marker of ILS |
| LIRL..... | Low Intensity Runway Lights | mnt..... | monitor |
| LLWAS..... | Low-Level Wind Shear Alert System | MOA..... | Military Operations Area |

| Abbreviation | Description | Abbreviation | Description |
|---------------------------|---|---------------------------|--|
| MOCA | Minimum Obstruction Clearance Altitude | NSTD, nstd | nonstandard |
| mod | modify | ntc | notice |
| MOG | Maximum (aircraft) on the Ground | NVD | Night Vision Devices |
| MON | Minimum Operational Network | NVG | Night Vision Goggles |
| Mon | Monday | NW | Northwest |
| MP | Maintenance Period | NWC | Naval Weapons Center |
| MR | Medium Range | O/A | On or about |
| MRA | Minimum Reception Altitude | O/S | out of service |
| mrk | mark, marker | O/R | On Request |
| MSAW | minimum safe altitude warning | OAT | Operational Air Traffic |
| msg | message | obsn | observation |
| MSL | Mean Sea Level | obst | obstruction |
| msn | Mission | OCA | Oceanic Control Area |
| mt | mount, mountain | ocnl | occasional |
| MTAF | Mandatory Traffic Advisory Frequency | Oct | October |
| MTCA | Military Terminal Control Area | ODALS | Omnidirectional Approach Lighting System |
| mtly | monthly | ODO | Operations Duty Officer |
| MUAC | Military Upper Area Control | offl | official |
| muni | municipal | OIC | Officer In Charge |
| MWARA | Major World Air Route Area | OLF | Outlying Field |
| N | North | OLS | Optical Landing System |
| N/A | not applicable | OM | Outer Marker, ILS |
| NA | not authorized (For Instrument Approach Procedure take-off and alternate MINIMA only) | opr | operate, operator, operational |
| NAAS | Naval Auxiliary Air Station | OPS, ops | operations |
| NADC | Naval Air Development Center | orig | original |
| NADEP | Naval Air Depot | OROCA | Off Route Obstruction Clearance Altitude |
| NAEC | Naval Air Engineering Center | ORTCA | Off Route Terrain Clearance Altitude |
| NAES | Naval Air Engineering Station | OT | other times |
| NAF | Naval Air Facility | OTS | out of service |
| NALCO | Naval Air Logistics Control Office | outbd | outbound |
| NALF | Naval Auxiliary Landing Field | ovft | overflight |
| NALO | Navy Air Logistics Office | ovrn | overrun |
| NAS | Naval Air Station | OX | oxygen |
| NAT | North Atlantic (ICAO Region) | P/L | plain language |
| natl | national | PAC | Pacific (ICAO Region) |
| nav | navigation | PAEW | personnel and equipment working |
| navaid | navigation aid | PALS | Precision Approach and Landing System (NAVY) |
| NAVMTO | Navy Material Transportation Office | PAPI | Precision Approach Path Indicator |
| NAWC | Naval Air Warfare Center | PAR | Precision Approach Radar |
| NAWS | Naval Air Weapons Station | para | paragraph |
| NCRP | Non-Compulsory Reporting Point | parl | parallel |
| NDB | Non-Directional Radio Beacon | pat | pattern |
| NE | Northeast | PAX | Passenger |
| nec | necessary | PCL | pilot controlled lighting |
| NEW | Net Explosives Weight | PCN | Pavement Classification Number |
| ngt | night | PCR | Pavement Classification Rating |
| NM | nautical miles | PDC | Pre-Departure Clearance |
| nml | normal | pent | penetrate |
| NMR | nautical mile radius | perm | permanent |
| No or Nr | number | perms | permission |
| NOLF | Naval Outlying Field | pers | personnel |
| NORDO | Lost communications or no radio installed/available in aircraft | PFC | Porous Friction Courses |
| NOTAM | Notice to Air Missions | PJE | Parachuting Activities/Exercises |
| Nov | November | p-line | power line |
| npi | non precision instrument | PM | Post meridian, noon til midnight |
| Nr or No | number | PMRF | Pacific Missile Range Facility |
| NS | Naval Station | PMSV | Pilot-to-Metro Service |
| NS ABTMT | Noise Abatement | PN | prior notice |
| NSA | Naval Support Activity | POB | persons on board |
| NSF | Naval Support Facility | POL | Petrol, Oils and Lubricants |
| | | posn | position |

| Abbreviation | Description |
|---------------------|--|
| PPR | prior permission required |
| prcht | parachute |
| pref | prefer |
| prev | previous |
| prim | primary |
| prk | park |
| PRM | Precision Runway Monitor |
| pro | procedure |
| proh | prohibited |
| pt | point |
| PTD | Pilot to Dispatcher |
| pub | publication |
| publ | publish |
| PVASI | Pulsating Visual Approach Slope Indicator |
| pvt | private |
| pwr | power |
| QFE | Altimeter Setting above station |
| QNE | Altimeter Setting of 29.92 inches which provides height above standard datum plane |
| QNH | Altimeter Setting which provides height above mean sea level |
| qtrs | quarters |
| quad | quadrant |
| R/T | Radiotelephony |
| R/W | Rotary/Wing |
| RACON | Radar Beacon |
| rad | radius, radial |
| RAIL | Runway Alignment Indicator Lights |
| RAMCC | Regional Air Movement Control Center |
| R-AOE | Regular Airport of Entry |
| RAPCON | Radar Approach Control (USAF) |
| RATCF | Radar Air Traffic Control Facility (Navy) |
| RCAG | Remote Center Air to Ground Facility |
| RCAGL | Remote Center Air to Ground Facility Long Range |
| RCL | runway centerline |
| RCLS | Runway Centerline Light System |
| RCO | Remote Communications Outlet |
| rcpt | reception |
| RCR | Runway Condition Reading |
| rcv | receive |
| rcvr | receiver |
| rdo | radio |
| reconst | reconstruct |
| reful | refueling |
| reg | regulation, regular |
| REIL | Runway End Identifier Lights |
| rel | reliable |
| relocd | relocated |
| REP | Reporting Point |
| req | request |
| RETIL | Rapid Exit Taxiway Indicator Light |
| Rgn | Region |
| Rgnl | Regional |
| rgt | right |
| rgt tfc | right traffic |
| rlgd | realigned |
| RLLS | Runway Lead-in Light System |
| rmk | remark |
| rng | range, radio range |
| RNP | Required Navigation Performance |

| Abbreviation | Description |
|---------------------|--|
| RON | Remain Overnight |
| Rot Lt or Bcn | Rotating Light or Beacon |
| RPI | Runway Point of Intercept |
| rpt | report |
| rqr | require |
| RR | Railroad |
| RRP | Runway Reference Point |
| RSC | Runway Surface Condition |
| RSDU | Radar Storm Detection Unit |
| RSE | Runway Starter Extension/Starter Strip |
| RSRS | Reduced Same Runway Separation |
| rstd | restricted |
| rte | route |
| ruf | rough |
| RVR | Runway Visual Range |
| RVSM | Reduced Vertical Separation Minima |
| rwy | runway |
| S | South |
| S/D | Seadrome |
| SALS | Short Approach Lighting System |
| SAR | Search and Rescue |
| Sat | Saturday |
| SAVASI | Simplified Abbreviated Visual Approach Slope Indicator |
| SAWRS | Supplement Aviation Weather Reporting Station |
| sby | standby |
| Sched | scheduled services |
| sctr | sector |
| SDF | Simplified Directional Facility |
| SE | Southeast |
| sec | second, section |
| secd | secondary |
| SELCAL | Selective Calling System |
| SELF | Strategic Expeditionary Landing Field |
| SEng | Single Engine |
| Sep | September |
| SFA | Single Frequency Approach |
| SFB | Space Force Base |
| sfc | surface |
| SFL | Sequence Flashing Lights |
| SFRA | Special Flight Rules Area |
| SID | Standard Instrument Departure |
| SIDA | Secure Identification Display Area |
| SIF | Selective Identification Feature |
| sked | schedule |
| SM | statute miles |
| SOAP | Spectrometric Oil Analysis Program |
| SOF | Supervisor of Flying |
| SPB | Seaplane Base |
| SR | sunrise |
| SRE | Surveillance Radar Element of GCA (Instrument Approach Procedures Identification only) |
| SS | sunset |
| SSALS/R | Simplified Short Approach Lighting System/with RAIL |
| SSB | Single Sideband |
| SSR | Secondary Surveillance Radar |
| STA | Straight-in Approach |
| std | standard |
| stn | station |
| stor | storage |
| str-in | Straight-in |

| Abbreviation | Description |
|--------------------|---|
| stu | student |
| subj | subject |
| survl | survival, surveillance |
| sum | summer |
| Sun | Sunday |
| sur | surround |
| suspd | suspended |
| sUAS | small Unmanned Aerial Systems |
| svc | service |
| svcg | servicing |
| SW | Southwest |
| sys | system |
| TA | Transition Altitude |
| TAC | Tactical Air Command |
| TAF | Aerodrome (terminal or alternate) forecast in abbreviated form |
| TALCE | Tanker Aircraft Control Element |
| TCA | Terminal Control Area |
| TCH | Threshold Crossing Height |
| TCTA | Transcontinental Control Area |
| TD | Touchdown |
| TDWR | Terminal Doppler Weather Radar |
| TDZ | Touchdown Zone |
| TDZL | Touchdown Zone Lights |
| tf | traffic |
| thld | threshold |
| thou | thousand |
| thru | through |
| Thu | Thursday |
| til | until |
| tkf, tkof | take-off |
| TLv | Transition Level |
| tmpry | temporary |
| TODA | Take-Off Distance Available |
| TORA | Take-Off Run Available |
| TP | Tire Pressure |
| TPA | Traffic Pattern Altitude |
| TRACON | Terminal Radar Approach Control (FAA) |
| tran | transient |
| trans | transmit |
| trml | terminal |
| trng | training |
| trns | transition |
| TRSA | Terminal Radar Service Area |
| Tue | Tuesday |
| TV | Television |
| twr | tower |
| twy | taxiway |
| UACC | Upper Area Control Center (used outside US) |
| UAS | Unmanned Aerial Systems |
| UC | Under Construction |
| UCN | Urgent Change Notice |
| UDA | Upper Advisory Area |
| UDF | Ultra High Frequency Direction Finder |
| UFN | until further notice |
| UHF | Ultra High Frequency (300 to 3000 MHz) |
| UIR | Upper Flight Information Region |
| una | unable |
| unauthd | unauthorized |
| unavbl | unavailable |
| unctl | uncontrolled |
| unk | unknown |
| unlgtd | unlighted |

| Abbreviation | Description |
|---------------------|--|
| unltd | unlimited |
| unmrk | unmarked |
| unmto | unmonitored |
| unrel | unreliable |
| unrst | unrestricted |
| unsatfy | unsatisfactory |
| unsked | unscheduled |
| unsvc | unserviceable |
| unuse, unusbl | unusable |
| USA | United States Army |
| USAF | United States Air Force |
| USB | Upper Side Band |
| USCG | United States Coast Guard |
| USMC | United States Marine Corps |
| USSF | United States Space Force |
| USN | United States Navy |
| UTA | Upper Control Area |
| UTC | Coordinated Universal Time |
| V | Defense Switching Network (telephone, formerly AUTOVON) |
| V/STOL | Vertical and Short Take-off and Landing aircraft |
| VAL | Visiting Aircraft Line |
| var | variation (magnetic variation) |
| VASI | Visual Approach Slope Indicator |
| vcnty | vicinity |
| VDF | Very High Frequency Direction Finder |
| veh | vehicle |
| vert | vertical |
| VFR | Visual Flight Rules |
| VFR-S | FLIP VFR Supplement |
| VHF | Very High Frequency (30 to 300 MHz) |
| VIP | Very Important Person |
| vis | visibility |
| VMC | Visual Meteorological Conditions |
| VOIP | Voice Over Internet Protocol |
| VOT | VOR Receiver Testing Facility |
| W | Warning Area (followed by identification), Watts, West, White |
| WCH | Wheel Crossing Height |
| Wed | Wednesday |
| Wg | Wing |
| WIE | with immediate effect |
| win | winter |
| WIP | work in progress |
| WSO | Weather Service Office |
| WSFO | Weather Service Forecast Office |
| wk | week |
| wkd | weekday |
| wkly | weekly |
| wng | warning |
| wo | without |
| WSP | Weather System Processor |
| wt | weight |
| wx | weather |
| yd | yard |
| yr | year |
| Z | Greenwich Mean Time (time groups only) |

INTENTIONALLY
LEFT
BLANK

AIRPORT/FACILITY DIRECTORY LEGEND

SAMPLE

①
CITY NAME
AIRPORT NAME (ALTERNATE NAME) (LTS)(KLTS) CIV/MIL 3 N UTC-6(-5DT) N34°41.93' W99°20.20'
200 B TPA—1000(800) AOE LRA Class IV, ARFF Index A NOTAM FILE ORL Not insp. MON Airport
② ③ ④ ⑤ ⑥ ⑦ ⑧
⑨ JACKSONVILLE
COPTER
H-4G, L-19C
IAP, DIAP, AD

⑩
RWY 18-36: H12004X200 (ASPH-CONC-GRVD)
S-90, D-160, 2D-300 PCN 80 R/B/W/T HIRL CL
RWY 18: RLLS. MALSF. TDZL. REIL. PAPI(P2R)—GA 3.0° TCH 36'.
RVR—TMR. Thld dsplcd 300'. Trees. Rgt tfc. 0.3% up.
RWY 36: ALSF1. 0.4% down.
RWY 09-27: H6000X150 (ASPH) PCR 1234 R/B/W/T MIRL
RWY 173-353: H3515X150 (ASPH-PFC) AUW PCN 59 F/A/W/T

⑪
LAND AND HOLD—SHORT OPERATIONS
LDG RWY HOLD—SHORT POINT AVBL LGD DIST
RWY 18 09-27 6500
RWY 36 09-27 5400

⑫
RUNWAY DECLARED DISTANCE INFORMATION
RWY 18: TORA-12004 TODA-12004 ASDA-11704 LDA-11504
RWY 36: TORA-12004 TODA-12004 ASDA-12004 LDA-11704

⑬
ARRESTING GEAR/SYSTEM
RWY 18 HOOK E5 (65' OVRN) BAK-14 BAK-12B (1650')
BAK-14 BAK-12B (1087') HOOK E5 (74' OVRN) RWY 36

⑭
SERVICE: S4 FUEL 100LL, JET A QX 1, 3 LGT ACTIVATE MALSR Rwy 29,
REIL Rwy 11, VASI Rwy 11, HIRL Rwy 11-29, PAPI Rwy 17 and Rwy
35, MIRL Rwy 17-35—CTAF. **MILITARY—A-GEAR** E-5 connected on dep
end, disconnected on apch end.
JASU 3(AM32A-60) 2(A/M32A-86) FUEL J8(Mil)(NC-100, A)
FLUID W SP PRESAIR LOX OIL O-128 MAINT S1 Mon-Fri 1000-2200Z†
TRAN ALERT Avbl 1300-0200Z† svc limited weekends.

⑮
NOISE: Noise abatement 3 miles from Rwy 18. Contact tower manager.
⑯
AIRPORT REMARKS: Special Air Traffic Rules—Part 93, see Regulatory Notices. Attended 1200-0300Z†. Parachute Jumping. Deer
invof arpt. Heavy jumbo jet training surface to 9000'. Twy A clsd indef. Flight Notification Service (ADCUS) avbl.

⑰
MILITARY REMARKS: ANG PPR/Official Business Only. Base OPS DSN 638-4390, C503-335-4222. Ctc Base OPS 15 minutes prior
to ldg and after dep. Limited train parking.
⑱
AIRPORT MANAGER: (580) 481-5739

⑲
WEATHER DATA SOURCES: AWOS-1 120.3 (202) 426-8000. LAWRS.

⑳
COMMUNICATIONS: SFA CTAF 122.8 UNICOM 122.95 ATIS 127.25 273.5 (202) 426-8003 PTD 372.2
NAME FSS (ORL) on arpt. 123.65 122.65 122.2
NAME RCO 112.2T 112.1R (NAME RADIO)
⑳
NAME APP/DEP CON 128.35 257.725 (1200-0400Z†)
TOWER 119.65 255.6 (1200-0400Z†) GND CON 121.7 GCO 135.075 (ORLANDO CLNC) CLNC DEL 125.55
CPDLC D-HZWXR, D-TAXI, DCL (LOGON KMEM)
NAME COMD POST (GERONIMO) 311.0 321.4 6761 PMSV METRO 239.8 NAME OPS 257.5

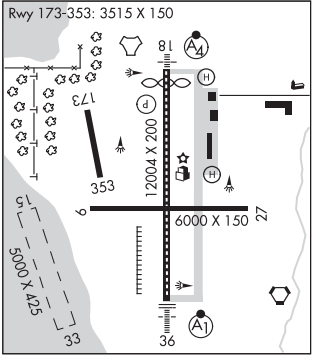
㉑
AIRSPACE: CLASS B See VFR Terminal Area Chart.

㉒
VOR TEST FACILITY (VOT): 116.7

㉓
RADIO AIDS TO NAVIGATION: NOTAM FILE ORL. VHF/DF ctc FSS.
(VH) (H) VORTAC 112.2 MCO Chan 59 N28°32.55' W81°20.12' at fld. 1110/8E.
(H) TACAN Chan 29 CBU (109.2) N28°32.65' W81°21.12' at fld. 1115/8E.
HERNY NDB (LOM) 221 OR N28°37.40' W81°21.05' 177° 5.4 NM to fld.
ILS/DME 108.5 I-ORL Chan 22 Rwy 18. Class IIE. LOM HERNY NDB.
ASR/PAR (1200-0400Z†)

㉔
COMM/NAV/WEATHER REMARKS: Emerg frequency 121.5 not avbl at twr.
HELIPAD H1: H100X75 (ASPH)
HELIPAD H2: H60X60 (ASPH)
HELIPORT REMARKS: Helipad H1 lctd on general aviation side and H2 lctd on air carrier side of arpt.
187 TPA 1000(813)

㉕
WATERWAY 15-33: 5000X425 (WATER)
SEAPLANE REMARKS: Birds roosting and feeding areas along river banks. Seaplanes operating adjacent to SW side of arpt not visible
from twr and are required to ctc twr.



All bearings and radials are magnetic unless otherwise specified. All mileages are nautical unless otherwise noted.
All times are Coordinated Universal Time (UTC) except as noted. All elevations are in feet above/below Mean Sea Level (MSL) unless otherwise noted.
The horizontal reference datum of this publication is North American Datum of 1983 (NAD83), which for charting purposes is considered equivalent to World Geodetic System 1984 (WGS 84).

10

SKETCH LEGEND

19171

RUNWAYS/LANDING AREAS

- Hard Surface
- Metal Surface
- Other than Hard Surface Runways
- Water Runway
- Under Construction
- Closed Rwy
- Closed Pavement
- Helicopter Landings Area
- Displaced Threshold
- Taxiway, Apron and Stopways

MISCELLANEOUS BASE AND CULTURAL FEATURES

- Buildings
- Power Lines
- Towers
- Wind Turbine
- Tanks
- Oil Well
- Smoke Stack
- Obstruction
- Controlling Obstruction
- Trees
- Populated Places
- Cuts and Fills
- Cliffs and Depressions
- Ditch
- Hill

RADIO AIDS TO NAVIGATION

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

MISCELLANEOUS AERONAUTICAL FEATURES

- Airport Beacon
- Wind Cone
- Landing Tee
- Tetrahedron
- Control Tower

When control tower and rotating beacon are co-located beacon symbol will be used and further identified as TWR.

APPROACH LIGHTING SYSTEMS

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 Centerline Lighting
- (A) Approach Lighting System ALSF-2
- (A1) Approach Lighting System ALSF-1
- (A2) Short Approach Lighting System SALS/SALSF
- (A3) Simplified Short Approach Lighting System (SSALR) with RAIL
- (A4) Medium Intensity Approach Lighting System (MALS and MALSF)/(SSALS and SSALF)
- (A5) Medium Intensity Approach Lighting System (MALSR) and RAIL
- (V) Omnidirectional Approach Lighting System (ODALS)
- (D) Navy Parallel Row and Cross Bar
- (F) Air Force Overrun
- (V) Visual Approach Slope Indicator with Standard Threshold Clearance provided
- (V2) Pulsating Visual Approach Slope Indicator (PVASI)
- (V3) Visual Approach Slope Indicator with a threshold crossing height to accommodate long bodied or jumbo aircraft
- (V4) Tri-color Visual Approach Slope Indicator (TRCV)
- (V5) Approach Path Alignment Panel (APAP)
- (P) Precision Approach Path Indicator (PAPI)

LEGEND

This directory is a listing of data on record with the FAA on public-use airports, military airports and selected private-use airports specifically requested by the Department of Defense (DoD) for which a DoD Instrument Approach Procedure has been published in the U.S. Terminal Procedures Publication. Additionally this listing contains data for associated terminal control facilities, air route traffic control centers, and radio aids to navigation within the conterminous United States, Puerto Rico and the Virgin Islands. Civil airports and joint Civil/Military airports which are open to the public are listed alphabetically by state, associated city and airport name and cross-referenced by airport name. Military airports and private-use (limited civil access) joint Military/Civil airports are listed alphabetically by state and official airport name and cross-referenced by associated city name. Nav aids, flight service stations and remote communication outlets that are associated with an airport, but with a different name, are listed alphabetically under their own name, as well as under the airport with which they are associated.

The listing of an airport as open to the public in this directory merely indicates the airport operator's willingness to accommodate transient aircraft, and does not represent that the airport conforms with any Federal or local standards, or that it has been approved for use on the part of the general public. Military airports, private-use airports, and private-use (limited civil access) joint Military/Civil airports are open to civil pilots only in an emergency or with prior permission. See Special Notice Section, Civil Use of Military Fields.

The information on obstructions is taken from reports submitted to the FAA. Obstruction data has not been verified in all cases. Pilots are cautioned that objects not indicated in this tabulation (or on the airports sketches and/or charts) may exist which can create a hazard to flight operation. Detailed specifics concerning services and facilities tabulated within this directory are contained in the Aeronautical Information Manual, Basic Flight Information and ATC Procedures.

The legend items that follow explain in detail the contents of this Directory and are keyed to the circled numbers on the sample on the preceding pages.

① CITY/AIRPORT NAME

Civil and joint Civil/Military airports which are open to the public are listed alphabetically by state and associated city. Where the city name is different from the airport name the city name will appear on the line above the airport name. Airports with the same associated city name will be listed alphabetically by airport name and will be separated by a dashed rule line. A solid rule line will separate all others. FAA approved helipads and seaplane landing areas associated with a land airport will be separated by a dotted line. Military airports and private-use (limited civil access) joint Military/Civil airports are listed alphabetically by state and official airport name.

② ALTERNATE NAME

Alternate names, if any, will be shown in parentheses.

③ LOCATION IDENTIFIER

The location identifier is a three or four character FAA code followed by a four-character ICAO code, when assigned, to airports. If two different military codes are assigned, both codes will be shown with the primary operating agency's code listed first. These identifiers are used by ATC in lieu of the airport name in flight plans, flight strips and other written records and computer operations. Zeros will appear with a slash to differentiate them from the letter "O".

④ OPERATING AGENCY

Airports within this directory are classified into two categories, Military/Federal Government and Civil airports open to the general public, plus selected private-use airports. The operating agency is shown for military, private-use and joint use airports. The operating agency is shown by an abbreviation as listed below. When an organization is a tenant, the abbreviation is enclosed in parenthesis. No classification indicates the airport is open to the general public with no military tenant.

| | | | |
|---------|---|---------|---|
| A | US Army | MC | Marine Corps |
| AFRC | Air Force Reserve Command | MIL/CIV | Joint Use Military/Civil Limited Civil Access |
| AF | US Air Force | N | Navy |
| ANG | Air National Guard | NAF | Naval Air Facility |
| AR | US Army Reserve | NAS | Naval Air Station |
| ARNG | US Army National Guard | NASA | National Air and Space Administration |
| CG | US Coast Guard | P | US Civil Airport Wherein Permit Covers Use by Transient Military Aircraft |
| CIV/MIL | Joint Use Civil/Military Open to the Public | | |
| DND | Department of National Defense Canada | PVT | Private Use Only (Closed to the Public) |
| DOE | Department of Energy | | |

⑤ AIRPORT LOCATION

Airport location is expressed as distance and direction from the center of the associated city in nautical miles and cardinal points, e.g., 3 N.

⑥ TIME CONVERSION

Hours of operation of all facilities are expressed in Coordinated Universal Time (UTC) and shown as "Z" time. The directory indicates the number of hours to be subtracted from UTC to obtain local standard time and local daylight saving time UTC-5(-4DT). The symbol † indicates that during periods of Daylight Saving Time (DST) effective hours will be one hour earlier than shown. In those areas where daylight saving time is not observed the (-4DT) and † will not be shown. Daylight saving time is in effect from 0200 local time the second Sunday in March to 0200 local time the first Sunday in November. Canada and all U.S. Conterminous States observe daylight saving time except Arizona and Puerto Rico, and the Virgin Islands. If the state observes daylight saving time and the operating times are other than daylight saving times, the operating hours will include the dates, times and no † symbol will be shown, i.e., April 15-Aug 31 0630-1700Z, Sep 1-Apr 14 0600-1700Z.

7 GEOGRAPHIC POSITION OF AIRPORT—AIRPORT REFERENCE POINT (ARP)

Positions are shown as hemisphere, degrees, minutes and hundredths of a minute and represent the approximate geometric center of all usable runway surfaces.

8 CHARTS

Charts refer to the Sectional Chart and Low and High Altitude Enroute Chart and panel on which the airport or facility is depicted. Pacific Enroute Chart will be indicated by P. Area Enroute Charts will be indicated by A. Helicopter Chart depictions will be indicated as COPTER. IFR Gulf of Mexico West and IFR Gulf of Mexico Central will be referenced as GOMW and GOMC.

9 INSTRUMENT APPROACH PROCEDURES, AIRPORT DIAGRAMS

IAP indicates an airport for which a prescribed (Public Use) FAA Instrument Approach Procedure has been published. DIAP indicates an airport for which a prescribed DoD Instrument Approach Procedure has been published in the U.S. Terminal Procedures. See the Special Notice Section of this directory, Civil Use of Military Fields and the Aeronautical Information Manual 5-4-5 Instrument Approach Procedure Charts for additional information. AD indicates an airport for which an airport diagram has been published. Airport diagrams are located in the back of each Chart Supplement volume alphabetically by associated city and airport name.

10 AIRPORT SKETCH

The airport sketch, when provided, depicts the airport and related topographical information as seen from the air and should be used in conjunction with the text. It is intended as a guide for pilots in VFR conditions. Symbolry that is not self-explanatory will be reflected in the sketch legend. The airport sketch will be oriented with True North at the top.

11 ELEVATION

The highest point of an airport's usable runways measured in feet from mean sea level. When elevation is sea level it will be indicated as "00". When elevation is below sea level a minus "-" sign will precede the figure.

12 ROTATING LIGHT BEACON

B indicates rotating beacon is available. Rotating beacons operate sunset to sunrise unless otherwise indicated in the AIRPORT REMARKS or MILITARY REMARKS segment of the airport entry.

13 TRAFFIC PATTERN ALTITUDE

Traffic Pattern Altitude (TPA)—The first figure shown is TPA above mean sea level. The second figure in parentheses is TPA above airport elevation. TPA will only be published if they differ from the recommended altitudes as described in the AIM, Traffic Patterns. Multiple TPA shall be shown as "TPA—See Remarks" and detailed information shall be shown in the Airport or Military Remarks Section. Traffic pattern data for USAF bases, USN facilities, and U.S. Army airports (including those on which ACC or U.S. Army is a tenant) that deviate from standard pattern altitudes shall be shown in Military Remarks.

14 AIRPORT OF ENTRY, LANDING RIGHTS, AND CUSTOMS USER FEE AIRPORTS

U.S. CUSTOMS USER FEE AIRPORT—Private Aircraft operators are frequently required to pay the costs associated with customs processing.

AOE—Airport of Entry. A customs Airport of Entry where permission from U.S. Customs is not required to land. However, at least one hour advance notice of arrival is required.

LRA—Landing Rights Airport. Application for permission to land must be submitted in advance to U.S. Customs. At least one hour advance notice of arrival is required.

NOTE: Advance notice of arrival at both an AOE and LRA airport may be included in the flight plan when filed in Canada or Mexico. Where Flight Notification Service (ADCUS) is available the airport remark will indicate this service. This notice will also be treated as an application for permission to land in the case of an LRA. Although advance notice of arrival may be relayed to Customs through Mexico, Canada, and U.S. Communications facilities by flight plan, the aircraft operator is solely responsible for ensuring that Customs receives the notification. (See Customs, Immigration and Naturalization, Public Health and Agriculture Department requirements in the International Flight Information Manual for further details.)

U.S. CUSTOMS AIR AND SEA PORTS, INSPECTORS AND AGENTS

| | |
|---|--------------|
| Northeast Sector (New England and Atlantic States—ME to MD) | 407-975-1740 |
| Southeast Sector (Atlantic States—DC, WV, VA to FL) | 407-975-1780 |
| Central Sector (Interior of the US, including Gulf states—MS, AL, LA) | 407-975-1760 |
| Southwest East Sector (OK and eastern TX) | 407-975-1840 |
| Southwest West Sector (Western TX, NM and AZ) | 407-975-1820 |
| Southwest West Sector (Western TX, NM and AZ) | 407-975-1820 |
| Pacific Sector (WA, OR, CA, HI and AK) | 407-975-1800 |

15 CERTIFICATED AIRPORT (14 CFR PART 139)

Airports serving Department of Transportation certified carriers and certified under 14 CFR part 139 are indicated by the Class and the ARFF Index; e.g. Class I, ARFF Index A, which relates to the availability of crash, fire, rescue equipment. Class I airports can have an ARFF Index A through E, depending on the aircraft length and scheduled departures. Class II, III, and IV will always carry an Index A.

AIRPORT CLASSIFICATIONS

| Type of Air Carrier Operation | Class I | Class II | Class III | Class IV |
|---|---------|----------|-----------|----------|
| Scheduled Air Carrier Aircraft with 31 or more passenger seats | X | | | |
| Unscheduled Air Carrier Aircraft with 31 or more passengers seats | X | X | | X |
| Scheduled Air Carrier Aircraft with 10 to 30 passenger seats | X | X | X | |

INDICES AND AIRCRAFT RESCUE AND FIRE FIGHTING EQUIPMENT REQUIREMENTS

| Airport Index | Required No. Vehicles | Aircraft Length | Scheduled Departures | Agent + Water for Foam |
|---------------|-----------------------|-----------------|----------------------|---|
| A | 1 | <90' | ≥1 | 500#DC or HALON 1211 or 450#DC + 100 gal H ₂ O |
| B | 1 or 2 | ≥90', <126' | ≥5 | Index A + 1500 gal H ₂ O |
| | | ≥126', <159' | <5 | |
| C | 2 or 3 | ≥126', <159' | ≥5 | Index A + 3000 gal H ₂ O |
| | | ≥159', <200' | <5 | |
| D | 3 | ≥159', <200' | _____ | Index A + 4000 gal H ₂ O |
| | | >200' | <5 | |
| E | 3 | ≥200' | ≥5 | Index A + 6000 gal H ₂ O |

> Greater Than; < Less Than; ≥ Equal or Greater Than; ≤ Equal or Less Than; H₂O-Water; DC-Dry Chemical.

NOTE: The listing of ARFF Index does not necessarily assure coverage for non-air carrier operations or at other than prescribed times for air carrier. ARFF Index Ltd.—indicates ARFF coverage may or may not be available, for information contact airport manager prior to flight.

16 NOTAM SERVICE

All public use landing areas are provided NOTAM service. A NOTAM FILE identifier is shown for individual landing areas, e.g., "NOTAM FILE BNA". See the AIM, Basic Flight Information and ATC Procedures for a detailed description of NOTAMs. Current NOTAMs are available from flight service stations at 1-800-WX-BRIEF (992-7433) or online through the FAA PilotWeb at <https://pilotweb.nas.faa.gov>. Military NOTAMs are available using the Defense Internet NOTAM Service (DINS) at <https://www.notams.faa.gov>. Pilots flying to or from airports not available through the FAA PilotWeb or DINS can obtain assistance from Flight Service.

17 FAA INSPECTION

All airports not inspected by FAA will be identified by the note: Not insp. This indicates that the airport information has been provided by the owner or operator of the field.

18 MINIMUM OPERATIONAL NETWORK (MON) AIRPORT DESIGNATION

MON Airports have at least one VOR or ILS instrument approach procedure that can be flown without the need for GPS, WAAS, DME, NDB or RADAR. The primary purpose of the MON designation is for recovery in case of GPS outage.

19 RUNWAY DATA

Runway information is shown on two lines. That information common to the entire runway is shown on the first line while information concerning the runway ends is shown on the second or following line. Runway direction, surface, length, width, weight bearing capacity, lighting, and slope, when available are shown for each runway. Multiple runways are shown with the longest runway first. Direction, length, width, and lighting are shown for sea-lanes. The full dimensions of helipads are shown, e.g., 50X150. Runway data that requires clarification will be placed in the remarks section.

RUNWAY DESIGNATION

Runways are normally numbered in relation to their magnetic orientation rounded off to the nearest 10 degrees. Parallel runways can be designated L (left)/R (right)/C (center). Runways may be designated as Ultralight or assault strips. Assault strips are shown by magnetic bearing.

RUNWAY DIMENSIONS

Runway length and width are shown in feet. Length shown is runway end to end including displaced thresholds, but excluding those areas designed as overruns.

RUNWAY SURFACE AND SURFACE TREATMENT

Runway lengths prefixed by the letter “H” indicate that the runways are hard surfaced (concrete, asphalt, or part asphalt–concrete). If the runway length is not prefixed, the surface is sod, clay, etc. The runway surface composition is indicated in parentheses after runway length as follows:

| | | |
|---|--|------------------|
| (AFSC)—Aggregate friction seal coat | (GRVL)—Gravel, or cinders | (SAND)—Sand |
| (AM2)—Temporary metal planks coated with nonskid material | (MATS)—Pierced steel planking, landing mats, membranes | (TURF)—Turf |
| (ASPH)—Asphalt | (PEM)—Part concrete, part asphalt | (TRTD)—Treated |
| (CONC)—Concrete | (PFC)—Porous friction courses | (WC)—Wire combed |
| (DIRT)—Dirt | (PSP)—Pierced steel plank | |
| (GRVD)—Grooved | (RFSC)—Rubberized friction seal coat | |

RUNWAY WEIGHT BEARING CAPACITY

Runway strength data shown in this publication is derived from available information and is a realistic estimate of capability at an average level of activity. It is not intended as a maximum allowable weight or as an operating limitation. Many airport pavements are capable of supporting limited operations with gross weights in excess of the published figures. Permissible operating weights, insofar as runway strengths are concerned, are a matter of agreement between the owner and user. When desiring to operate into any airport at weights in excess of those published in the publication, users should contact the airport management for permission. Runway strength figures are shown in thousand of pounds, with the last three figures being omitted. Add 000 to figure following S, D, 2S, 2T, AUW, SWL, etc., for gross weight capacity. A blank space following the letter designator is used to indicate the runway can sustain aircraft with this type landing gear, although definite runway weight bearing capacity figures are not available, e.g., S, D. Applicable codes for typical gear configurations with S=Single, D=Dual, T=Triple and Q=Quadruple:

| CURRENT | NEW | NEW DESCRIPTION |
|---------|--------|--|
| S | S | Single wheel type landing gear (DC3), (C47), (F15), etc. |
| D | D | Dual wheel type landing gear (BE1900), (B737), (A319), etc. |
| T | D | Dual wheel type landing gear (P3, C9). |
| ST | 2S | Two single wheels in tandem type landing gear (C130). |
| TRT | 2T | Two triple wheels in tandem type landing gear (C17), etc. |
| DT | 2D | Two dual wheels in tandem type landing gear (B707), etc. |
| TT | 2D | Two dual wheels in tandem type landing gear (B757, KC135). |
| SBT | 2D/D1 | Two dual wheels in tandem/dual wheel body gear type landing gear (KC10). |
| None | 2D/2D1 | Two dual wheels in tandem/two dual wheels in tandem body gear type landing gear (A340–600). |
| DDT | 2D/2D2 | Two dual wheels in tandem/two dual wheels in double tandem body gear type landing gear (B747, E4). |
| TTT | 3D | Three dual wheels in tandem type landing gear (B777), etc. |
| TT | D2 | Dual wheel gear two struts per side main gear type landing gear (B52). |
| TDT | C5 | Complex dual wheel and quadruple wheel combination landing gear (C5). |

AUW—All up weight. Maximum weight bearing capacity for any aircraft irrespective of landing gear configuration.

SWL—Single Wheel Loading. (This includes information submitted in terms of Equivalent Single Wheel Loading (ESWL) and Single Isolated Wheel Loading).

PSI—Pounds per square inch. PSI is the actual figure expressing maximum pounds per square inch runway will support, e.g., (SWL 000/PSI 535).

Omission of weight bearing capacity indicates information unknown.

The ACN/PCN System is the ICAO standard method of reporting pavement strength for pavements with bearing strengths greater than 12,500 pounds. The Pavement Classification Number (PCN) is established by an engineering assessment of the runway. The PCN is for use in conjunction with an Aircraft Classification Number (ACN). Consult the Aircraft Flight Manual, Flight Information Handbook, or other appropriate source for ACN tables or charts. Currently, ACN data may not be available for all aircraft. If an ACN table or chart is available, the ACN can be calculated by taking into account the aircraft weight, the pavement type, and the subgrade category. For runways that have been evaluated under the ACN/PCN system, the PCN will be shown as a five-part code (e.g. PCN 80 R/B/W/T). Details of the coded format are as follows:

NOTE: ICAO adopted the ACR/PCR System as the new standard method for reporting pavement strength in July 2020. The ACR/PCR System methodology remains unchanged from the ACN/PCN system described above. The Pavement Classification Rating (PCR) remains a five-part code (e.g. PCR 460 R/B/W/T) with the number being one order of magnitude higher than PCNs. The details of the code below are not changed with PCR. ICAO has established a four year transition period during which time a PCN or a PCR may be reported. Currently Aircraft Classification Rating (ACR) data may not be available for all aircraft.

NOTE: Prior permission from the airport controlling authority is required when the ACN/ACR of the aircraft exceeds the published PCN/PCR or aircraft tire pressure exceeds the published limits.

- (1) The PCN/PCR NUMBER—The reported PCN/PCR indicates that an aircraft with an ACN/ACR equal or less than the reported PCN/PCR can operate on the pavement subject to any limitation on the tire pressure.
- (2) The type of pavement:
 - R — Rigid
 - F — Flexible
- (3) The pavement subgrade category:
 - A — High
 - B — Medium
 - C — Low
 - D — Ultra-low
- (4) The maximum tire pressure authorized for the pavement:
 - W — Unlimited, no pressure limit
 - X — High, limited to 254 psi (1.75 MPa)
 - Y — Medium, limited to 181 psi (1.25MPa)
 - Z — Low, limited to 73 psi (0.50 MPa)
- (5) Pavement evaluation method:
 - T — Technical evaluation
 - U — By experience of aircraft using the pavement

RUNWAY LIGHTING

Lights are in operation sunset to sunrise. Lighting available by prior arrangement only or operating part of the night and/or pilot controlled lighting with specific operating hours are indicated under airport or military remarks. At USN/USMC facilities lights are available only during airport hours of operation. Since obstructions are usually lighted, obstruction lighting is not included in this code. Unlighted obstructions on or surrounding an airport will be noted in airport or military remarks. Runway lights nonstandard (NSTD) are systems for which the light fixtures are not FAA approved L-800 series: color, intensity, or spacing does not meet FAA standards. Nonstandard runway lights, VASI, or any other system not listed below will be shown in airport remarks or military service. Temporary, emergency or limited runway edge lighting such as flares, smudge pots, lanterns or portable runway lights will also be shown in airport remarks or military service. Types of lighting are shown with the runway or runway end they serve.

- NSTD—Light system fails to meet FAA standards.
- LIRL—Low Intensity Runway Lights.
- MIRL—Medium Intensity Runway Lights.
- HIRL—High Intensity Runway Lights.
- RAIL—Runway Alignment Indicator Lights.
- REIL—Runway End Identifier Lights.
- CL—Centerline Lights.
- TDZL—Touchdown Zone Lights.
- ODALS—Omni Directional Approach Lighting System.
- AF OVRN—Air Force Overrun 1000' Standard Approach Lighting System.
- MALS—Medium Intensity Approach Lighting System.
- MALSF—Medium Intensity Approach Lighting System with Sequenced Flashing Lights.
- MALSR—Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights.
- RLLS—Runway Lead-in Light System.
- SALS—Short Approach Lighting System.
- SALSF—Short Approach Lighting System with Sequenced Flashing Lights.
- SSALS—Simplified Short Approach Lighting System.
- SSALF—Simplified Short Approach Lighting System with Sequenced Flashing Lights.
- SSALR—Simplified Short Approach Lighting System with Runway Alignment Indicator Lights.
- ALSAF—High Intensity Approach Lighting System with Sequenced Flashing Lights.
- ALSF1—High Intensity Approach Lighting System with Sequenced Flashing Lights, Category I, Configuration.
- ALSF2—High Intensity Approach Lighting System with Sequenced Flashing Lights, Category II, Configuration.
- SF—Sequenced Flashing Lights.
- OLS—Optical Landing System.
- WAVE—OFF.

NOTE: Civil ALSF2 may be operated as SSALR during favorable weather conditions. When runway edge lights are positioned more than 10 feet from the edge of the usable runway surface a remark will be added in the "Remarks" portion of the airport entry. This is applicable to Air Force, Air National Guard and Air Force Reserve Bases, and those joint use airfields on which they are tenants.

VISUAL GLIDESLOPE INDICATORS

- APAP—A system of panels, which may or may not be lighted, used for alignment of approach path.
 - PNIL APAP on left side of runway
 - PNIR APAP on right side of runway
- PAPI—Precision Approach Path Indicator
 - P2L 2-identical light units placed on left side of runway
 - P2R 2-identical light units placed on right side of runway
 - P4L 4-identical light units placed on left side of runway
 - P4R 4-identical light units placed on right side of runway
- PVASI—Pulsating/steady burning visual approach slope indicator, normally a single light unit projecting two colors.
 - PSIL PVASI on left side of runway
 - PSIR PVASI on right side of runway
- SAVASI—Simplified Abbreviated Visual Approach Slope Indicator
 - S2L 2-box SAVASI on left side of runway
 - S2R 2-box SAVASI on right side of runway

SAVASI—Simplified Abbreviated Visual Approach Slope Indicator

| | | | |
|-----|-------------------------------------|-----|--------------------------------------|
| S2L | 2–box SAVASI on left side of runway | S2R | 2–box SAVASI on right side of runway |
|-----|-------------------------------------|-----|--------------------------------------|

TRCV—Tri–color visual approach slope indicator, normally a single light unit projecting three colors.

| | | | |
|------|-----------------------------|------|------------------------------|
| TRIL | TRCV on left side of runway | TRIR | TRCV on right side of runway |
|------|-----------------------------|------|------------------------------|

VASI—Visual Approach Slope Indicator

| | | | |
|-----|------------------------------------|-----|-------------------------------------|
| V2L | 2–box VASI on left side of runway | V6L | 6–box VASI on left side of runway |
| V2R | 2–box VASI on right side of runway | V6R | 6–box VASI on right side of runway |
| V4L | 4–box VASI on left side of runway | V12 | 12–box VASI on both sides of runway |
| V4R | 4–box VASI on right side of runway | V16 | 16–box VASI on both sides of runway |

NOTE: Approach slope angle and threshold crossing height will be shown when available; i.e., –GA 3.5° TCH 37'.

PILOT CONTROL OF AIRPORT LIGHTING

| Key Mike | Function |
|--------------------------|---|
| 7 times within 5 seconds | Highest intensity available |
| 5 times within 5 seconds | Medium or lower intensity (Lower REIL or REIL–Off) |
| 3 times within 5 seconds | Lowest intensity available (Lower REIL or REIL–Off) |

Available systems will be indicated in the Service section, e.g., LGT ACTIVATE HIRL Rwy 07–25, MALSR Rwy 07, and VASI Rwy 07–122.8.

Where the airport is not served by an instrument approach procedure and/or has an independent type system of different specification installed by the airport sponsor, descriptions of the type lights, method of control, and operating frequency will be explained in clear text. See AIM, “Aeronautical Lighting and Other Airport Visual Aids,” for a detailed description of pilot control of airport lighting.

RUNWAY SLOPE

When available, runway slope data will be provided. Runway slope will be shown only when it is 0.3 percent or greater. On runways less than 8000 feet, the direction of the slope up will be indicated, e.g., 0.3% up NW. On runways 8000 feet or greater, the slope will be shown (up or down) on the runway end line, e.g., RWY 13: 0.3% up., RWY 31: Pole. Rgt tfc. 0.4% down.

RUNWAY END DATA

Information pertaining to the runway approach end such as approach lights, touchdown zone lights, runway end identification lights, visual glideslope indicators, displaced thresholds, controlling obstruction, and right hand traffic pattern, will be shown on the specific runway end. “Rgt tfc” —Right traffic indicates right turns should be made on landing and takeoff for specified runway end. Runway Visual Range shall be shown as “RVR” appended with “T” for touchdown, “M” for midpoint, and “R” for rollout; e.g., RVR-TMR.

20 LAND AND HOLD—SHORT OPERATIONS (LAHSO)

LAHSO is an acronym for “Land and Hold–Short Operations” These operations include landing and holding short of an intersection runway, an intersecting taxiway, or other predetermined points on the runway other than a runway or taxiway. Measured distance represents the available landing distance on the landing runway, in feet.

Specific questions regarding these distances should be referred to the air traffic manager of the facility concerned. The Aeronautical Information Manual contains specific details on hold–short operations and markings.

21 RUNWAY DECLARED DISTANCE INFORMATION

TORA—Take–off Run Available. The length of runway declared available and suitable for the ground run of an aeroplane take–off.

TODA—Take–off Distance Available. The length of the take–off run available plus the length of the clearway, if provided.

ASDA—Accelerate–Stop Distance Available. The length of the take–off run available plus the length of the stopway, if provided.

LDA—Landing Distance Available. The length of runway which is declared available and suitable for the ground run of an aeroplane landing.

22 ARRESTING GEAR/SYSTEMS

Arresting gear is shown as it is located on the runway. The a–gear distance from the end of the appropriate runway (or into the overrun) is indicated in parentheses. A–Gear which has a bi–direction capability and can be utilized for emergency approach end engagement is indicated by a (B). Up to 15 minutes advance notice may be required for rigging A–Gear for approach and engagement. Airport listing may show availability of other than US Systems. This information is provided for emergency requirements only. Refer to current aircraft operating manuals for specific engagement weight and speed criteria based on aircraft structural restrictions and arresting system limitations.

Following is a list of current systems referenced in this publication identified by both Air Force and Navy terminology:

BI–DIRECTIONAL CABLE (B)

| TYPE | DESCRIPTION |
|---------|---|
| BAK–9 | Rotary friction brake. |
| BAK–12A | Standard BAK–12 with 950 foot run out, 1–inch cable and 40,000 pound weight setting. Rotary friction brake. |
| BAK–12B | Extended BAK–12 with 1200 foot run, 1½ inch Cable and 50,000 pounds weight setting. Rotary friction brake. |
| E28 | Rotary Hydraulic (Water Brake). |
| M21 | Rotary Hydraulic (Water Brake) Mobile. |

The following device is used in conjunction with some aircraft arresting systems:

- BAK-14 A device that raises a hook cable out of a slot in the runway surface and is remotely positioned for engagement by the tower on request. (In addition to personnel reaction time, the system requires up to five seconds to fully raise the cable.)
- H A device that raises a hook cable out of a slot in the runway surface and is remotely positioned for engagement by the tower on request. (In addition to personnel reaction time, the system requires up to one and one-half seconds to fully raise the cable.)

UNI-DIRECTIONAL CABLE

| <u>TYPE</u> | <u>DESCRIPTION</u> |
|--------------|--|
| MB60 | Textile brake—an emergency one-time use, modular braking system employing the tearing of specially woven textile straps to absorb the kinetic energy. |
| E5/E5-1/E5-3 | Chain Type. At USN/USMC stations E-5 A-GEAR systems are rated, e.g., E-5 RATING-13R-1100 HW (DRY), 31L/R-1200 STD (WET). This rating is a function of the A-GEAR chain weight and length and is used to determine the maximum aircraft engaging speed. A dry rating applies to a stabilized surface (dry or wet) while a wet rating takes into account the amount (if any) of wet overrun that is not capable of withstanding the aircraft weight. These ratings are published under Service/Military/A-Gear in the entry. |

FOREIGN CABLE

| <u>TYPE</u> | <u>DESCRIPTION</u> | <u>US EQUIVALENT</u> |
|-------------|--------------------------------|----------------------|
| 44B-3H | Rotary Hydraulic (Water Brake) | |
| CHAG | Chain | E-5 |

UNI-DIRECTIONAL BARRIER

| <u>TYPE</u> | <u>DESCRIPTION</u> |
|-------------|---|
| MA-1A | Web barrier between stanchions attached to a chain energy absorber. |
| BAK-15 | Web barrier between stanchions attached to an energy absorber (water squeezer, rotary friction, chain). Designed for wing engagement. |

NOTE: Landing short of the runway threshold on a runway with a BAK-15 in the underrun is a significant hazard. The barrier in the down position still protrudes several inches above the underrun. Aircraft contact with the barrier short of the runway threshold can cause damage to the barrier and substantial damage to the aircraft.

OTHER

| <u>TYPE</u> | <u>DESCRIPTION</u> |
|-------------|---|
| EMAS | Engineered Material Arresting System, located beyond the departure end of the runway, consisting of high energy absorbing materials which will crush under the weight of an aircraft. |

23 SERVICE

SERVICING—CIVIL

- | | |
|--|--|
| S1: Minor airframe repairs. | S5: Major airframe repairs. |
| S2: Minor airframe and minor powerplant repairs. | S6: Minor airframe and major powerplant repairs. |
| S3: Major airframe and minor powerplant repairs. | S7: Major powerplant repairs. |
| S4: Major airframe and major powerplant repairs. | S8: Minor powerplant repairs. |

FUEL

| <u>CODE</u> | <u>FUEL</u> | <u>CODE</u> | <u>FUEL</u> |
|-------------|--|-------------|---|
| 100 | Grade 100 gasoline (Green) | J5 (JP5) | (JP-5 military specification) Kerosene with FS-II, FP** minus 46°C. |
| 100LL | 100LL gasoline (low lead) (Blue) | J8 (JP8) | (JP-8 military specification) Jet A-1, Kerosene with FS-II*, CI/LI#, SDA##, FP** minus 47°C. |
| A | Jet A, Kerosene, without FS-II*, FP** minus 40° C. | J8+100 | (JP-8 military specification) Jet A-1, Kerosene with FS-II*, CI/LI#, SDA##, FP** minus 47°C, with +100 fuel additive that improves thermal stability characteristics of kerosene jet fuels. |
| A+ | Jet A, Kerosene, with FS-II*, FP** minus 40°C. | J | (Jet Fuel Type Unknown) |
| A++ | Jet A, Kerosene, with FS-II*, CI/LI#, SDA##, FP** minus 40°C. | MOGAS | Automobile gasoline which is to be used as aircraft fuel. |
| A++100 | Jet A, Kerosene, with FS-II*, CI/LI#, SDA##, FP** minus 40°C, with +100 fuel additive that improves thermal stability characteristics of kerosene jet fuels. | UL91 | Unleaded Grade 91 gasoline |
| A1 | Jet A-1, Kerosene, without FS-II*, FP** minus 47°C. | UL94 | Unleaded Grade 94 gasoline |
| A1+ | Jet A-1, Kerosene with FS-II*, FP** minus 47° C. | UL100 | Unleaded Grade 100 gasoline |

*(Fuel System Icing Inhibitor) ** (Freeze Point) # (Corrosion Inhibitors/Lubricity Improvers) ## (Static Dissipator Additive)

NOTE: Certain automobile gasoline may be used in specific aircraft engines if a FAA supplemental type certificate has been obtained. Automobile gasoline, which is to be used in aircraft engines, will be identified as "MOGAS", however, the grade/type and other octane rating will not be published.

Data shown on fuel availability represents the most recent information the publisher has been able to acquire. Because of a variety of factors, the fuel listed may not always be obtainable by transient civil pilots. Confirmation of availability of fuel should be made directly with fuel suppliers at locations where refueling is planned.

OXYGEN—CIVIL

- | | |
|--------------------|--|
| OX 1 High Pressure | OX 3 High Pressure—Replacement Bottles |
| OX 2 Low Pressure | OX 4 Low Pressure—Replacement Bottles |

SERVICE—MILITARY

Specific military services available at the airport are listed under this general heading. Remarks applicable to any military service are shown in the individual service listing.

JET AIRCRAFT STARTING UNITS (JASU)—MILITARY

The numeral preceding the type of unit indicates the number of units available. The absence of the numeral indicates ten or more units available. If the number of units is unknown, the number one will be shown. Absence of JASU designation indicates non-availability. The following is a list of current JASU systems referenced in this publication:

USAF JASU (For variations in technical data, refer to T.O. 35-1-7.)

ELECTRICAL STARTING UNITS:

- | | |
|----------|---|
| AM32A-86 | AC: 115/200v, 3 phase, 90 kva, 0.8 pf, 4 wire DC: 28v, 1500 amp, 72 kw (with TR pack) |
| MC-1A | AC: 115/208v, 400 cycle, 3 phase, 37.5 kva, 0.8 pf, 108 amp, 4 wire DC: 28v, 500 amp, 14 kw |
| MD-3 | AC: 115/208v, 400 cycle, 3 phase, 60 kva, 0.75 pf, 4 wire DC: 28v, 1500 amp, 45 kw, split bus |
| MD-3A | AC: 115/208v, 400 cycle, 3 phase, 60 kva, 0.75 pf, 4 wire DC: 28v, 1500 amp, 45 kw, split bus |
| MD-3M | AC: 115/208v, 400 cycle, 3 phase, 60 kva, 0.75 pf, 4 wire DC: 28v, 500 amp, 15 kw |
| MD-4 | AC: 120/208v, 400 cycle, 3 phase, 62.5 kva, 0.8 pf, 175 amp, "WYE" neutral ground, 4 wire, 120v, 400 cycle, 3 phase, 62.5 kva, 0.8 pf, 303 amp, "DELTA" 3 wire, 120v, 400 cycle, 1 phase, 62.5 kva, 0.8 pf, 520 amp, 2 wire |

AIR STARTING UNITS

- | | |
|----------|---|
| AM32-95 | 150 +/- 5 lb/min (2055 +/- 68 cfm) at 51 +/- 2 psia |
| AM32A-95 | 150 +/- 5 lb/min @ 49 +/- 2 psia (35 +/- 2 psig) |
| LASS | 150 +/- 5 lb/min @ 49 +/- 2 psia |
| MA-1A | 82 lb/min (1123 cfm) at 130° air inlet temp, 45 psia (min) air outlet press |
| MC-1 | 15 cfm, 3500 psia |
| MC-1A | 15 cfm, 3500 psia |
| MC-2A | 15 cfm, 200 psia |
| MC-11 | 8,000 cu in cap, 4000 psig, 15 cfm |

COMBINED AIR AND ELECTRICAL STARTING UNITS:

- | | |
|------------|---|
| AGPU | AC: 115/200v, 400 cycle, 3 phase, 30 kw gen DC: 28v, 700 amp AIR: 60 lb/min @ 40 psig @ sea level |
| AM32A-60* | AIR: 120 +/- 4 lb/min (1644 +/- 55 cfm) at 49 +/- 2 psia AC: 120/208v, 400 cycle, 3 phase, 75 kva, 0.75 pf, 4 wire, 120v, 1 phase, 25 kva DC: 28v, 500 amp, 15 kw |
| AM32A-60A | AIR: 150 +/- 5 lb/min (2055 +/- 68 cfm) at 51 +/- 2 psia AC: 120/208v, 400 cycle, 3 phase, 75 kva, 0.75 pf, 4 wire DC: 28v, 200 amp, 5.6 kw |
| AM32A-60B* | AIR: 130 lb/min, 50 psia AC: 120/208v, 400 cycle, 3 phase, 75 kva, 0.75 pf, 4 wire DC: 28v, 200 amp, 5.6 kw |

*NOTE: During combined air and electrical loads, the pneumatic circuitry takes preference and will limit the amount of electrical power available.

USN JASU**ELECTRICAL STARTING UNITS:**

| | |
|---------------|--|
| NC-8A/A1 | DC: 500 amp constant, 750 amp intermittent, 28v; AC: 60 kva @ .8 pf, 115/200v, 3 phase, 400 Hz. |
| NC-10A/A1/B/C | DC: 750 amp constant, 1000 amp intermittent, 28v; AC: 90 kva, 115/200v, 3 phase, 400 Hz. |

AIR STARTING UNITS:

| | |
|------------------------|---|
| GTC-85/GTE-85 | 120 lbs/min @ 45 psi. |
| MSU-200NAV/A/U47A-5 | 204 lbs/min @ 56 psia. |
| WELLS AIR START SYSTEM | 180 lbs/min @ 75 psi or 120 lbs/min @ 45 psi. Simultaneous multiple start capability. |

COMBINED AIR AND ELECTRICAL STARTING UNITS:

| | |
|---------------|---|
| NCPP-105/RCPT | 180 lbs/min @ 75 psi or 120 lbs/min @ 45 psi. 700 amp, 28v DC. 120/208v, 400 Hz AC, 30 kva. |
|---------------|---|

ARMY JASU

| | |
|---------|-----------------------|
| 59B2-1B | 28v, 7.5 kw, 280 amp. |
|---------|-----------------------|

OTHER JASU**ELECTRICAL STARTING UNITS (DND):**

| | |
|------|--|
| CE12 | AC 115/200v, 140 kva, 400 Hz, 3 phase |
| CE13 | AC 115/200v, 60 kva, 400 Hz, 3 phase |
| CE14 | AC/DC 115/200v, 140 kva, 400 Hz, 3 phase, 28vDC, 1500 amp |
| CE15 | DC 22-35v, 500 amp continuous 1100 amp intermittent |
| CE16 | DC 22-35v, 500 amp continuous 1100 amp intermittent soft start |

AIR STARTING UNITS (DND):

| | |
|-----|-----------------------------|
| CA2 | ASA 45.5 psig, 116.4 lb/min |
|-----|-----------------------------|

COMBINED AIR AND ELECTRICAL STARTING UNITS (DND)

| | |
|------|--|
| CEA1 | AC 120/208v, 60 kva, 400 Hz, 3 phase DC 28v, 75 amp AIR 112.5 lb/min, 47 psig |
|------|--|

ELECTRICAL STARTING UNITS (OTHER)

| | |
|----------------|--|
| C-26 | 28v 45kw 115-200v 15kw 380-800 Hz 1 phase 2 wire |
| C-26-B, C-26-C | 28v 45kw: Split Bus: 115-200v 15kw 380-800 Hz 1 phase 2 wire |
| E3 | DC 28v/10kw |

AIR STARTING UNITS (OTHER):

| | |
|------|--|
| A4 | 40 psi/2 lb/sec (LPAS Mk12, Mk12L, Mk12A, Mk1, Mk2B) |
| MA-1 | 150 Air HP, 115 lb/min 50 psia |
| MA-2 | 250 Air HP, 150 lb/min 75 psia |

CARTRIDGE:

| | |
|--------|------|
| MXU-4A | USAF |
|--------|------|

FUEL—MILITARY

Fuel available through US Military Base supply, DESC Into-Plane Contracts and/or reciprocal agreement is listed first and is followed by (Mil). At commercial airports where Into-Plane contracts are in place, the name of the refueling agent is shown. Military fuel should be used first if it is available. When military fuel cannot be obtained but Into-Plane contract fuel is available, Government aircraft must refuel with the contract fuel and applicable refueling agent to avoid any breach in contract terms and conditions. Fuel not available through the above is shown preceded by NC (no contract). When fuel is obtained from NC sources, local purchase procedures must be followed. The US Military Aircraft Identaplates DD Form 1896 (Jet Fuel), DD Form 1897 (Avgas) and AF Form 1245 (Avgas) are used at military installations only. The US Government Aviation Into-Plane Reimbursement (AIR) Card (currently issued by AVCARD) is the instrument to be used to obtain fuel under a DESC Into-Plane Contract and for NC purchases if the refueling agent at the commercial airport accepts the AVCARD. A current list of contract fuel locations is available online at https://cis.energy.dla.mil/fp_cis/. See legend item 14 for fuel code and description.

SUPPORTING FLUIDS AND SYSTEMS—MILITARY**CODE**

| | |
|---------|---|
| ADI | Anti-Defonation Injection Fluid—Reciprocating Engine Aircraft. |
| W | Water Thrust Augmentation—Jet Aircraft. |
| WAI | Water-Alcohol Injection Type, Thrust Augmentation—Jet Aircraft. |
| SP | Single Point Refueling. |
| PRESAIR | Air Compressors rated 3,000 PSI or more. |
| De-Ice | Anti-icing/De-icing/Defrosting Fluid (MIL-A-8243). |

OXYGEN:

- LPOX Low pressure oxygen servicing.
- HPOX High pressure oxygen servicing.
- LHOX Low and high pressure oxygen servicing.
- LOX Liquid oxygen servicing.
- OXRB Oxygen replacement bottles. (Maintained primarily at Naval stations for use in acft where oxygen can be replenished only by replacement of cylinders.)

OX Indicates oxygen servicing when type of servicing is unknown.
 NOTE: Combinations of above items is used to indicate complete oxygen servicing available;

- LHOXRB Low and high pressure oxygen servicing and replacement bottles;
- LPOXRB Low pressure oxygen replacement bottles only, etc.

NOTE: Aircraft will be serviced with oxygen procured under military specifications only. Aircraft will not be serviced with medical oxygen.

NITROGEN:

- LPNIT — Low pressure nitrogen servicing.
- HPNIT — High pressure nitrogen servicing.
- LHNIT — Low and high pressure nitrogen servicing.

OIL—MILITARY

US AVIATION OILS (MIL SPECS):

| CODE | GRADE, TYPE |
|-----------|--|
| O-113 | 1065, Reciprocating Engine Oil (MIL-L-6082) |
| O-117 | 1100, Reciprocating Engine Oil (MIL-L-6082) |
| O-117+ | 1100, O-117 plus cyclohexanone (MIL-L-6082) |
| O-123 | 1065, (Dispersant), Reciprocating Engine Oil (MIL-L-22851 Type III) |
| O-128 | 1100, (Dispersant), Reciprocating Engine Oil (MIL-L-22851 Type II) |
| O-132 | 1005, Jet Engine Oil (MIL-L-6081) |
| O-133 | 1010, Jet Engine Oil (MIL-L-6081) |
| O-147 | None, MIL-L-6085A Lubricating Oil, Instrument, Synthetic |
| O-148 | None, MIL-L-7808 (Synthetic Base) Turbine Engine Oil |
| O-149 | None, Aircraft Turbine Engine Synthetic, 7.5c St |
| O-155 | None, MIL-L-6086C, Aircraft, Medium Grade |
| O-156 | None, MIL-L-23699 (Synthetic Base), Turboprop and Turboshaft Engines |
| JOAP/SOAP | Joint Oil Analysis Program. JOAP support is furnished during normal duty hours, other times on request. (JOAP and SOAP programs provide essentially the same service, JOAP is now the standard joint service supported program.) |

TRANSIENT ALERT (TRAN ALERT)—MILITARY

Tran Alert service is considered to include all services required for normal aircraft turn-around, e.g., servicing (fuel, oil, oxygen, etc.), debriefing to determine requirements for maintenance, minor maintenance, inspection and parking assistance of transient aircraft. Drag chute repack, specialized maintenance, or extensive repairs will be provided within the capabilities and priorities of the base. Delays can be anticipated after normal duty hours/holidays/weekends regardless of the hours of transient maintenance operation. Pilots should not expect aircraft to be serviced for TURN-AROUNDS during time periods when servicing or maintenance manpower is not available. In the case of airports not operated exclusively by US military, the servicing indicated by the remarks will not always be available for US military aircraft. When transient alert services are not shown, facilities are unknown. NO PRIORITY BASIS—means that transient alert services will be provided only after all the requirements for mission/tactical assigned aircraft have been accomplished.

24 NOISE

Remarks that indicate noise information and/or abatement measures that exist in the vicinity of the airport.

25 AIRPORT REMARKS

The Attendance Schedule is the months, days and hours the airport is actually attended. Airport attendance does not mean watchman duties or telephone accessibility, but rather an attendant or operator on duty to provide at least minimum services (e.g., repairs, fuel, transportation).

Airport Remarks have been grouped in order of applicability. Airport remarks are limited to those items of information that are determined essential for operational use, i.e., conditions of a permanent or indefinite nature and conditions that will remain in effect for more than 30 days concerning aeronautical facilities, services, maintenance available, procedures or hazards, knowledge of which is essential for safe and efficient operation of aircraft. Information concerning permanent closing of a runway or taxiway will not be shown. A note "See Special Notices" shall be applied within this remarks section when a special notice applicable to the entry is contained in the Special Notices section of this publication.

Parachute Jumping indicates parachute jumping areas associated with the airport. See Parachute Jumping Area section of this publication for additional Information.

Landing Fee indicates landing charges for private or non-revenue producing aircraft. In addition, fees may be charged for planes that remain over a couple of hours and buy no services, or at major airline terminals for all aircraft.

Note: Unless otherwise stated, remarks including runway ends refer to the runway's approach end.

26 MILITARY REMARKS

Joint Civil/Military airports contain both Airport Remarks and Military Remarks. Military Remarks published for these airports are applicable only to the military. Military and joint Military/Civil airports contain only Military Remarks. Remarks contained in this section may not be applicable to civil users. When both sets of remarks exist, the first set is applicable to the primary operator of the airport. Remarks applicable to a tenant on the airport are shown preceded by the tenant organization, i.e., (A) (AF) (N) (ANG), etc. Military airports operate 24 hours unless otherwise specified. Airport operating hours are listed first (airport operating hours will only be listed if they are different than the airport attended hours or if the attended hours are unavailable) followed by pertinent remarks in order of applicability. Remarks will include information on restrictions, hazards, traffic pattern, noise abatement, customs/agriculture/immigration, and miscellaneous information applicable to the Military.

Type of restrictions:

CLOSED: When designated closed, the airport is restricted from use by all aircraft unless stated otherwise. Any closure applying to specific type of aircraft or operation will be so stated. USN/USMC/USAF airports are considered closed during non-operating hours. Closed airports may be utilized during an emergency provided there is a safe landing area.

OFFICIAL BUSINESS ONLY: The airfield is closed to all transient military aircraft for obtaining routine services such as fueling, passenger drop off or pickup, practice approaches, parking, etc. The airfield may be used by aircrews and aircraft if official government business (including civilian) must be conducted on or near the airfield and prior permission is received from the airfield manager.

AF OFFICIAL BUSINESS ONLY OR NAVY OFFICIAL BUSINESS ONLY: Indicates that the restriction applies only to service indicated.

PRIOR PERMISSION REQUIRED (PPR): Airport is closed to transient aircraft unless approval for operation is obtained from the appropriate commander through Chief, Airfield Management or Airfield Operations Officer. Official Business or PPR does not preclude the use of US Military airports as an alternate for IFR flights. If a non-US military airport is used as a weather alternate and requires a PPR, the PPR must be requested and confirmed before the flight departs. The purpose of PPR is to control volume and flow of traffic rather than to prohibit it. Prior permission is required for all aircraft requiring transient alert service outside the published transient alert duty hours. All aircraft carrying hazardous materials must obtain prior permission as outlined in AFJI 11-204, AR 95-27, OPNAVINST 3710.7.

Note: OFFICIAL BUSINESS ONLY AND PPR restrictions are not applicable to Special Air Mission (SAM) or Special Air Resource (SPAR) aircraft providing person or persons on board are designated Code 6 or higher as explained in AFJMAN 11-213, AR 95-11, OPNAVINST 3722-8J. Official Business Only or PPR do not preclude the use of the airport as an alternate for IFR flights.

27 AIRPORT MANAGER

The phone number of the airport manager.

28 WEATHER DATA SOURCES

Weather data sources will be listed alphabetically followed by their assigned frequencies and/or telephone number and hours of operation.

ASOS—Automated Surface Observing System. Reports the same as an AWOS-3 plus precipitation identification and intensity, and freezing rain occurrence;

AWOS—Automated Weather Observing System

AWOS-A—reports altimeter setting (all other information is advisory only).

AWOS-AV—reports altimeter and visibility.

AWOS-1—reports altimeter setting, wind data and usually temperature, dew point and density altitude.

AWOS-2—reports the same as AWOS-1 plus visibility.

AWOS-3—reports the same as AWOS-1 plus visibility and cloud/ceiling data.

AWOS-3P reports the same as the AWOS-3 system, plus a precipitation identification sensor.

AWOS-3PT reports the same as the AWOS-3 system, plus precipitation identification sensor and a thunderstorm/lightning reporting capability.

AWOS-3T reports the same as AWOS-3 system and includes a thunderstorm/lightning reporting capability.

See AIM, Basic Flight Information and ATC Procedures for detailed description of Weather Data Sources.

AWOS-4—reports same as AWOS-3 system, plus precipitation occurrence, type and accumulation, freezing rain, thunderstorm and runway surface sensors.

LAWRS—Limited Aviation Weather Reporting Station where observers report cloud height, weather, obstructions to vision, temperature and dewpoint (in most cases), surface wind, altimeter and pertinent remarks.

LLWAS—indicates a Low Level Wind Shear Alert System consisting of a center field and several field perimeter anemometers.

SAWRS—identifies airports that have a Supplemental Aviation Weather Reporting Station available to pilots for current weather information.

SWSL—Supplemental Weather Service Location providing current local weather information via radio and telephone.

TDWR—indicates airports that have Terminal Doppler Weather Radar.

WSP—indicates airports that have Weather System Processor.

When the automated weather source is broadcast over an associated airport NAVAID frequency (see NAVAID line), it shall be indicated by a bold ASOS or AWOS followed by the frequency, identifier and phone number, if available.

29 COMMUNICATIONS

Airport terminal control facilities and radio communications associated with the airport shall be shown. When the call sign is not the same as the airport name the call sign will be shown. Frequencies shall normally be shown in ascending order with the primary frequency listed first. Frequencies will be listed, together with sectorization indicated by outbound radials, and hours of operation. Communications will be listed in sequence as follows:

Single Frequency Approach (SFA), Common Traffic Advisory Frequency (CTAF), Aeronautical Advisory Stations (UNICOM) or (AUNICOM), and Automatic Terminal Information Service (ATIS) along with their frequency is shown, where available, on the line following the heading "COMMUNICATIONS." When the CTAF and UNICOM frequencies are the same, the frequency will be shown as CTAF/UNICOM 122.8.

The FSS telephone nationwide is toll free 1-800-WX-BRIEF (1-800-992-7433). When the FSS is located on the field it will be indicated as "on aprt". Frequencies available at the FSS will follow in descending order. Remote Communications Outlet (RCO) providing service to the airport followed by the frequency and FSS RADIO name will be shown when available. FSS's provide information on airport conditions, radio aids and other facilities, and process flight plans. Airport Advisory Service (AAS) is provided on the CTAF by FSS's for select non-tower airports or airports where the tower is not in operation.

(See AIM, Para 4-1-9 Traffic Advisory Practices at Airports Without Operating Control Towers or AC 90-42C.)

Aviation weather briefing service is provided by FSS specialists. Flight and weather briefing services are also available by calling the telephone numbers listed.

Remote Communications Outlet (RCO)—An unmanned air/ground communications facility that is remotely controlled and provides UHF or VHF communications capability to extend the service range of an FSS.

Civil Communications Frequencies—Civil communications frequencies used in the FSS air/ground system are operated on 122.0, 122.2, 123.6; emergency 121.5; plus receive-only on 122.1.

- a. 122.2 is assigned as a common enroute frequency.
- b. 123.6 is assigned as the airport advisory frequency at select non-tower locations. At airports with a tower, FSS may provide airport advisories on the tower frequency when tower is closed.
- c. 122.1 is the primary receive-only frequency at VOR's.
- d. Some FSS's are assigned 50 kHz frequencies in the 122-126 MHz band (eg. 122.45). Pilots using the FSS A/G system should refer to this directory or appropriate charts to determine frequencies available at the FSS or remoted facility through which they wish to communicate.

Emergency frequency 121.5 and 243.0 are available at all Flight Service Stations, most Towers, Approach Control and RADAR facilities. Frequencies published followed by the letter "T" or "R", indicate that the facility will only transmit or receive respectively on that frequency. All radio aids to navigation (NAVAID) frequencies are transmit only. In cases where communications frequencies are annotated with (R) or (E), (R) indicates Radar Capability and (E) indicates Emergency Frequency.

TERMINAL SERVICES

SFA—Single Frequency Approach.

CTAF—A program designed to get all vehicles and aircraft at airports without an operating control tower on a common frequency.

ATIS—A continuous broadcast of recorded non-control information in selected terminal areas.

D-ATIS—Digital ATIS provides ATIS information in text form outside the standard reception range of conventional ATIS via headline & data link communications and voice message within range of existing transmitters.

AUNICOM—Automated UNICOM is a computerized, command response system that provides automated weather, radio check capability and airport advisory information selected from an automated menu by microphone clicks.

UNICOM—A non-government air/ground radio communications facility which may provide airport information.

PTD—Pilot to Dispatcher.

APP CON—Approach Control. The symbol **Ⓡ** indicates radar approach control.

TOWER—Control tower.

GCA—Ground Control Approach System.

GND CON—Ground Control.

GCO—Ground Communication Outlet—An unstaffed, remotely controlled, ground/ground communications facility. Pilots at uncontrolled airports may contact ATC and FSS via VHF to a telephone connection to obtain an instrument clearance or close a VFR or IFR flight plan. They may also get an updated weather briefing prior to takeoff. Pilots will use four "key clicks" on the VHF radio to contact the appropriate ATC facility or six "key clicks" to contact the FSS. The GCO system is intended to be used only on the ground.

DEP CON—Departure Control. The symbol **Ⓡ** indicates radar departure control.

CLNC DEL—Clearance Delivery.

CPDLC—Controller Pilot Data Link Communication. FANS ATC data communication capability from the aircraft to the ATC Data Link system.

PDC—Pre-Departure Clearance. ACARS-based clearance delivery capability from tower to gate printer or aircraft.

PRE TAXI CLNC—Pre taxi clearance.

VFR ADVSY SVC—VFR Advisory Service. Service provided by Non-Radar Approach Control.

Advisory Service for VFR aircraft (upon a workload basis) ctc APP CON.

COMD POST—Command Post followed by the operator call sign in parenthesis.

PMSV—Pilot-to-Metro Service call sign, frequency and hours of operation, when full service is other than continuous. PMSV installations at which weather observation service is available shall be indicated, following the frequency and/or hours of operation as "Wx obsn svc 1900-0000Z±" or "other times" may be used when no specific time is given. PMSV facilities manned by forecasters are considered "Full Service". PMSV facilities manned by weather observers are listed as "Limited Service".

OPS—Operations followed by the operator call sign in parenthesis.

CON

RANGE

FLT FLW—Flight Following

MEDIVAC

NOTE: Communication frequencies followed by the letter "X" indicate frequency available on request.

30 AIRSPACE

Information concerning Class B, C, and part-time D and E surface area airspace shall be published with effective times, if available.

CLASS B—Radar Sequencing and Separation Service for all aircraft in CLASS B airspace.

CLASS C—Separation between IFR and VFR aircraft and sequencing of VFR arrivals to the primary airport.

TRSA—Radar Sequencing and Separation Service for participating VFR Aircraft within a Terminal Radar Service Area.

Class C, D, and E airspace described in this publication is that airspace usually consisting of a 5 NM radius core surface area that begins at the surface and extends upward to an altitude above the airport elevation (charted in MSL for Class C and Class D).

Class E surface airspace normally extends from the surface up to but not including the overlying controlled airspace.

When part-time Class C or Class D airspace defaults to Class E, the core surface area becomes Class E. This will be formatted as:

AIRSPACE: CLASS C svc "times" ctc **APP CON** other times CLASS E:

or

AIRSPACE: CLASS D svc "times" other times CLASS E.

When a part-time Class C, Class D or Class E surface area defaults to Class G, the core surface area becomes Class G up to, but not including, the overlying controlled airspace. Normally, the overlying controlled airspace is Class E airspace beginning at either 700' or 1200' AGL and may be determined by consulting the relevant VFR Sectional or Terminal Area Charts. This will be formatted as:

AIRSPACE: CLASS C svc "times" ctc **APP CON** other times CLASS G

or

AIRSPACE: CLASS D svc "times" other times CLASS G

or

AIRSPACE: CLASS E svc "times" other times CLASS G

NOTE: AIRSPACE SVC "TIMES" INCLUDE ALL ASSOCIATED ARRIVAL EXTENSIONS. Surface area arrival extensions for instrument approach procedures become part of the primary core surface area. These extensions may be either Class D or Class E airspace and are effective concurrent with the times of the primary core surface area. For example, when a part-time Class C, Class D or Class E surface area defaults to Class G, the associated arrival extensions will default to Class G at the same time. When a part-time Class C or Class D surface area defaults to Class E, the arrival extensions will remain in effect as Class E airspace.

NOTE: CLASS E AIRSPACE EXTENDING UPWARD FROM 700 FEET OR MORE ABOVE THE SURFACE, DESIGNATED IN CONJUNCTION WITH AN AIRPORT WITH AN APPROVED INSTRUMENT PROCEDURE.

Class E 700' AGL (shown as magenta vignette on sectional charts) and 1200' AGL (blue vignette) areas are designated when necessary to provide controlled airspace for transitioning to/from the terminal and enroute environments. Unless otherwise specified, these 700'/1200' AGL Class E airspace areas remain in effect continuously, regardless of airport operating hours or surface area status. These transition areas should not be confused with surface areas or arrival extensions.

(See Chapter 3, AIRSPACE, in the Aeronautical Information Manual for further details)

31 VOR TEST FACILITY (VOT)

The VOT transmits a signal which provided users a convenient means to determine the operational status and accuracy of an aircraft VOR receiver while on the ground. Ground based VOTs and the associated frequency shall be shown when available. VOTs are also shown with identifier, frequency and referenced remarks in the VOR Receiver Check section in the back of this publication.

32 RADIO AIDS TO NAVIGATION

The Airport/Facility Directory section of the Chart Supplement lists, by facility name, all Radio Aids to Navigation that appear on FAA, Aeronautical Information Services Visual or IFR Aeronautical Charts and those upon which the FAA has approved an Instrument Approach Procedure, with exception of selected TACANs. All VOR, VORTAC, TACAN and ILS equipment in the National Airspace System has an automatic monitoring and shutdown feature in the event of malfunction. Unmonitored, as used in this publication, for any navigational aid, means that monitoring personnel cannot observe the malfunction or shutdown signal. The NAVAID NOTAM file identifier will be shown as "NOTAM FILE IAD" and will be listed on the Radio Aids to Navigation line. When two or more NAVAIDS are listed and the NOTAM file identifier is different from that shown on the Radio Aids to Navigation line, it will be shown with the NAVAID listing. NOTAM file identifiers for ILSs and its components (e.g., NDB (LOM) are the same as the associated airports and are not repeated. Automated Surface Observing System (ASOS) and Automated Weather Observing System (AWOS) will be shown when this service is broadcast over selected NAVAIDs.

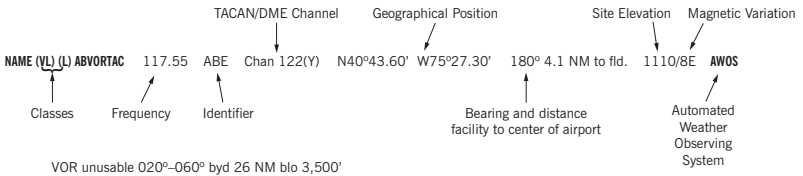
NAVAID information is tabulated as indicated in the following sample:

NAVAIDs with Single SSV (VOR, DME, TACAN, NDB, NDB/DME)



NAVAIDs with Two SSVs (VOR/DME, VORTAC)

SSV for each component shown in paired parentheses with the VOR SSV shown first followed by the DME or TACAN SSV.



VOR unusable 020°-060° byd 26 NM blo 3,500'

Restriction within the normal altitude/range of the navigational aid
(See primary alphabetical listing for restrictions on VORTAC and VOR/DME).

Note: Those DME channel numbers with a (Y) suffix require TACAN to be placed in the "Y" mode to receive distance information.

ASR/PAR—Indicates that Surveillance (ASR) or Precision (PAR) radar instrument approach minimums are published in the U.S. Terminal Procedures. Only part-time hours of operation will be shown.

RADIO CLASS DESIGNATIONS

VOR/DME/TACAN Standard Service Volume (SSV) Classifications

| SSV Class | Altitudes | Distance (NM) |
|-------------------------------|--------------------|----------------------|
| (T) Terminal | 1000´ to 12,000´ | 25 |
| (L) Low Altitude | 1000´ to 18,000´ | 40 |
| (H) High Altitude | 1000´ to 14,500´ | 40 |
| | 14,500´ to 18,000´ | 100 |
| | 18,000´ to 45,000´ | 130 |
| | 45,000´ to 60,000´ | 100 |
| (VL) VOR Low | 1000´ to 5,000´ | 40 |
| | 5,000´ to 18,000´ | 70 |
| (VH) VOR High | 1000´ to 5,000´ | 40 |
| | 5,000´ to 14,500´ | 70 |
| | 14,500´ to 18,000´ | 100 |
| | 18,000´ to 45,000´ | 130 |
| | 45,000´ to 60,000´ | 100 |
| (DL) DME Low & (DH) DME High* | 1000´ to 12,900´ | 40 increasing to 130 |
| (DL) DME Low | 12,900´ to 18,000´ | 130 |
| (DH) DME High | 12,900´ to 45,000´ | 130 |
| | 45,000´ to 60,000´ | 100 |

*Between 1000´ to 12,900´, DME service volume follows a parabolic curve used by flight management computers.

NOTES: Additionally, High Altitude facilities provide Low Altitude and Terminal service volume and Low Altitude facilities provide Terminal service volume. Altitudes are with respect to the station's site elevation. Coverage is not available in a cone of airspace directly above the facility. In some cases local conditions (terrain, buildings, trees, etc.) may require that the service volume be restricted. The public shall be informed of any such restriction by a remark in the NAVAID entry in this publication or by a Notice to Airmen (NOTAM).

The term VOR is, operationally, a general term covering the VHF omnidirectional bearing type of facility without regard to the fact that the power, the frequency protected service volume, the equipment configuration, and operational requirements may vary between facilities at different locations.

| | |
|---------------|--|
| AB _____ | Automatic Weather Broadcast. |
| DF _____ | Direction Finding Service. |
| DME _____ | UHF standard (TACAN compatible) distance measuring equipment. |
| DME(Y) _____ | UHF standard (TACAN compatible) distance measuring equipment that require TACAN to be placed in the "Y" mode to receive DME. |
| GS _____ | Glide slope. |
| H _____ | Non-directional radio beacon (homing), power 50 watts to less than 2,000 watts (50 NM at all altitudes). |
| HH _____ | Non-directional radio beacon (homing), power 2,000 watts or more (75 NM at all altitudes). |
| H-SAB _____ | Non-directional radio beacons providing automatic transcribed weather service. |
| ILS _____ | Instrument Landing System (voice, where available, on localizer channel). |
| IM _____ | Inner marker. |
| LDA _____ | Localizer Directional Aid. |
| LMM _____ | Compass locator station when installed at middle marker site (15 NM at all altitudes). |
| LOM _____ | Compass locator station when installed at outer marker site (15 NM at all altitudes). |
| MH _____ | Non-directional radio beacon (homing) power less than 50 watts (25 NM at all altitudes). |
| MM _____ | Middle marker. |
| OM _____ | Outer marker. |
| S _____ | Simultaneous range homing signal and/or voice. |
| SABH _____ | Non-directional radio beacon not authorized for IFR or ATC. Provides automatic weather broadcasts. |
| SDF _____ | Simplified Direction Facility. |
| TACAN _____ | UHF navigational facility—omnidirectional course and distance information. |
| VOR _____ | VHF navigational facility—omnidirectional course only. |
| VOR/DME _____ | Collocated VOR navigational facility and UHF standard distance measuring equipment. |
| VORTAC _____ | Collocated VOR and TACAN navigational facilities. |
| W _____ | Without voice on radio facility frequency. |
| Z _____ | VHF station location marker at a LF radio facility. |

ILS FACILITY PERFORMANCE CLASSIFICATION CODES

Codes define the ability of an ILS to support autoland operations. The two portions of the code represent Official Category and farthest point along a Category I, II, or III approach that the Localizer meets Category III structure tolerances.

Official Category: I, II, or III; the lowest minima on published or unpublished procedures supported by the ILS.

Farthest point of satisfactory Category III Localizer performance for Category I, II, or III approaches: A – 4 NM prior to runway threshold, B – 3500 ft prior to runway threshold, C – glide angle dependent but generally 750–1000 ft prior to threshold, T – runway threshold, D – 3000 ft after runway threshold, and E – 2000 ft prior to stop end of runway.

ILS information is tabulated as indicated in the following sample:

ILS/DME 108.5 I-ORL Chan 22 Rwy 18. Class IIE. LOM HERNY NDB.

ILS Facility Performance
Classification Code ↗

FREQUENCY PAIRING TABLE

| VHF FREQUENCY | TACAN CHANNEL | VHF FREQUENCY | TACAN CHANNEL | VHF FREQUENCY | TACAN CHANNEL | VHF FREQUENCY | TACAN CHANNEL |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 108.10 | 18X | 108.55 | 22Y | 111.05 | 47Y | 114.85 | 95Y |
| 108.30 | 20X | 108.65 | 23Y | 111.15 | 48Y | 114.95 | 96Y |
| 108.50 | 22X | 108.75 | 24Y | 111.25 | 49Y | 115.05 | 97Y |
| 108.70 | 24X | 108.85 | 25Y | 111.35 | 50Y | 115.15 | 98Y |
| 108.90 | 26X | 108.95 | 26Y | 111.45 | 51Y | 115.25 | 99Y |
| 109.10 | 28X | 109.05 | 27Y | 111.55 | 52Y | 115.35 | 100Y |
| 109.30 | 30X | 109.15 | 28Y | 111.65 | 53Y | 115.45 | 101Y |
| 109.50 | 32X | 109.25 | 29Y | 111.75 | 54Y | 115.55 | 102Y |
| 109.70 | 34X | 109.35 | 30Y | 111.85 | 55Y | 115.65 | 103Y |
| 109.90 | 36X | 109.45 | 31Y | 111.95 | 56Y | 115.75 | 104Y |
| 110.10 | 38X | 109.55 | 32Y | 113.35 | 80Y | 115.85 | 105Y |
| 110.30 | 40X | 109.65 | 33Y | 113.45 | 81Y | 115.95 | 106Y |
| 110.50 | 42X | 109.75 | 34Y | 113.55 | 82Y | 116.05 | 107Y |
| 110.70 | 44X | 109.85 | 35Y | 113.65 | 83Y | 116.15 | 108Y |
| 110.90 | 46X | 109.95 | 36Y | 113.75 | 84Y | 116.25 | 109Y |
| 111.10 | 48X | 110.05 | 37Y | 113.85 | 85Y | 116.35 | 110Y |
| 111.30 | 50X | 110.15 | 38Y | 113.95 | 86Y | 116.45 | 111Y |
| 111.50 | 52X | 110.25 | 39Y | 114.05 | 87Y | 116.55 | 112Y |
| 111.70 | 54X | 110.35 | 40Y | 114.15 | 88Y | 116.65 | 113Y |
| 111.90 | 56X | 110.45 | 41Y | 114.25 | 89Y | 116.75 | 114Y |
| 108.05 | 17Y | 110.55 | 42Y | 114.35 | 90Y | 116.85 | 115Y |
| 108.15 | 18Y | 110.65 | 43Y | 114.45 | 91Y | 116.95 | 116Y |
| 108.25 | 19Y | 110.75 | 44Y | 114.55 | 92Y | 117.05 | 117Y |
| 108.35 | 20Y | 110.85 | 45Y | 114.65 | 93Y | 117.15 | 118Y |
| 108.45 | 21Y | 110.95 | 46Y | 114.75 | 94Y | 117.25 | 119Y |

AIRPORT/FACILITY DIRECTORY LEGEND

FREQUENCY PAIRING TABLE

The following is a list of paired VOR/LS VHF frequencies with TACAN channels.

| TACAN CHANNEL | VHF FREQUENCY | TACAN CHANNEL | VHF FREQUENCY | TACAN CHANNEL | VHF FREQUENCY | TACAN CHANNEL | VHF FREQUENCY |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 2X | 134.50 | 43X | 110.60 | 72X | 112.50 | 101X | 115.40 |
| 2Y | 134.55 | 43Y | 110.65 | 72Y | 112.55 | 101Y | 115.45 |
| 11X | 135.40 | 44X | 110.70 | 73X | 112.60 | 102X | 115.50 |
| 11Y | 135.45 | 44Y | 110.75 | 73Y | 112.65 | 102Y | 115.55 |
| 12X | 135.50 | 45X | 110.80 | 74X | 112.70 | 103X | 115.60 |
| 12Y | 135.55 | 45Y | 110.85 | 74Y | 112.75 | 103Y | 115.65 |
| 17X | 108.00 | 46X | 110.90 | 75X | 112.80 | 104X | 115.70 |
| 17Y | 108.05 | 46Y | 110.95 | 75Y | 112.85 | 104Y | 115.75 |
| 18X | 108.10 | 47X | 111.00 | 76X | 112.90 | 105X | 115.80 |
| 18Y | 108.15 | 47Y | 111.05 | 76Y | 112.95 | 105Y | 115.85 |
| 19X | 108.20 | 48X | 111.10 | 77X | 113.00 | 106X | 115.90 |
| 19Y | 108.25 | 48Y | 111.15 | 77Y | 113.05 | 106Y | 115.95 |
| 20X | 108.30 | 49X | 111.20 | 78X | 113.10 | 107X | 116.00 |
| 20Y | 108.35 | 49Y | 111.25 | 78Y | 113.15 | 107Y | 116.05 |
| 21X | 108.40 | 50X | 111.30 | 79X | 113.20 | 108X | 116.10 |
| 21Y | 108.45 | 50Y | 111.35 | 79Y | 113.25 | 108Y | 116.15 |
| 22X | 108.50 | 51X | 111.40 | 80X | 113.30 | 109X | 116.20 |
| 22Y | 108.55 | 51Y | 111.45 | 80Y | 113.35 | 109Y | 116.25 |
| 23X | 108.60 | 52X | 111.50 | 81X | 113.40 | 110X | 116.30 |
| 23Y | 108.65 | 52Y | 111.55 | 81Y | 113.45 | 110Y | 116.35 |
| 24X | 108.70 | 53X | 111.60 | 82X | 113.50 | 111X | 116.40 |
| 24Y | 108.75 | 53Y | 111.65 | 82Y | 113.55 | 111Y | 116.45 |
| 25X | 108.80 | 54X | 111.70 | 83X | 113.60 | 112X | 116.50 |
| 25Y | 108.85 | 54Y | 111.75 | 83Y | 113.65 | 112Y | 116.55 |
| 26X | 108.90 | 55X | 111.80 | 84X | 113.70 | 113X | 116.60 |
| 26Y | 108.95 | 55Y | 111.85 | 84Y | 113.75 | 113Y | 116.65 |
| 27X | 109.00 | 56X | 111.90 | 85X | 113.80 | 114X | 116.70 |
| 27Y | 109.05 | 56Y | 111.95 | 85Y | 113.85 | 114Y | 116.75 |
| 28X | 109.10 | 57X | 112.00 | 86X | 113.90 | 115X | 116.80 |
| 28Y | 109.15 | 57Y | 112.05 | 86Y | 113.95 | 115Y | 116.85 |
| 29X | 109.20 | 58X | 112.10 | 87X | 114.00 | 116X | 116.90 |
| 29Y | 109.25 | 58Y | 112.15 | 87Y | 114.05 | 116Y | 116.95 |
| 30X | 109.30 | 59X | 112.20 | 88X | 114.10 | 117X | 117.00 |
| 30Y | 109.35 | 59Y | 112.25 | 88Y | 114.15 | 117Y | 117.05 |
| 31X | 109.40 | 60X | 133.30 | 89X | 114.20 | 118X | 117.10 |
| 31Y | 109.45 | 60Y | 133.35 | 89Y | 114.25 | 118Y | 117.15 |
| 32X | 109.50 | 61X | 133.40 | 90X | 114.30 | 119X | 117.20 |
| 32Y | 109.55 | 61Y | 133.45 | 90Y | 114.35 | 119Y | 117.25 |
| 33X | 109.60 | 62X | 133.50 | 91X | 114.40 | 120X | 117.30 |
| 33Y | 109.65 | 62Y | 133.55 | 91Y | 114.45 | 120Y | 117.35 |
| 34X | 109.70 | 63X | 133.60 | 92X | 114.50 | 121X | 117.40 |
| 34Y | 109.75 | 63Y | 133.65 | 92Y | 114.55 | 121Y | 117.45 |
| 35X | 109.80 | 64X | 133.70 | 93X | 114.60 | 122X | 117.50 |
| 35Y | 109.85 | 64Y | 133.75 | 93Y | 114.65 | 122Y | 117.55 |
| 36X | 109.90 | 65X | 133.80 | 94X | 114.70 | 123X | 117.60 |
| 36Y | 109.95 | 65Y | 133.85 | 94Y | 114.75 | 123Y | 117.65 |
| 37X | 110.00 | 66X | 133.90 | 95X | 114.80 | 124X | 117.70 |
| 37Y | 110.05 | 66Y | 133.95 | 95Y | 114.85 | 124Y | 117.75 |
| 38X | 110.10 | 67X | 134.00 | 96X | 114.90 | 125X | 117.80 |
| 38Y | 110.15 | 67Y | 134.05 | 96Y | 114.95 | 125Y | 117.85 |
| 39X | 110.20 | 68X | 134.10 | 97X | 115.00 | 126X | 117.90 |
| 39Y | 110.25 | 68Y | 134.15 | 97Y | 115.05 | 126Y | 117.95 |
| 40X | 110.30 | 69X | 134.20 | 98X | 115.10 | | |
| 40Y | 110.35 | 69Y | 134.25 | 98Y | 115.15 | | |
| 41X | 110.40 | 70X | 112.30 | 99X | 115.20 | | |
| 41Y | 110.45 | 70Y | 112.35 | 99Y | 115.25 | | |
| 42X | 110.50 | 71X | 112.40 | 100X | 115.30 | | |
| 42Y | 110.55 | 71Y | 112.45 | 100Y | 115.35 | | |

33 COMM/NAV/WEATHER REMARKS: These remarks consist of pertinent information affecting the current status of communications, NAVAIDs, weather, and in the absence of air-ground radio outlets identified in the Communications section some approach control facilities will have a clearance delivery phone number listed here.

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