Appendix A

Performance Data for Cessna Model 172R and Challenger 605

Short Field Takeoff Distance at 2,450 Pounds for a Cessna Model 172R

CONDITIONS:

Flaps 10°
Full Throttle Prior to Brake Release
Paved, level, dry runway
Zero Wind
Lift Off: 51 KIAS
Speed at 50 Ft: 57 KIAS

Press Alt In Feet	0°C		10°C		20°C		30°C		40°C	
	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst
S. L.	845	1510	910	1625	980	1745	1055	1875	1135	2015
1000	925	1660	1000	1790	1075	1925	1160	2070	1245	2220
2000	1015	1830	1095	1970	1185	2125	1275	2290	1365	2455
3000	1115	2020	1205	2185	1305	2360	1400	2540	1505	2730
4000	1230	2245	1330	2430	1435	2630	1545	2830	1655	3045
5000	1355	2500	1470	2715	1585	2945	1705	3175	1830	3430
6000	1500	2805	1625	3060	1750	3315	1880	3590	2020	3895
7000	1660	3170	1795	3470	1935	3770	2085	4105	2240	4485
8000	1840	3620	1995	3975	2150	4345	2315	4775	- - -	- - -

NOTES:

1. Short field technique as specified in Section 4.
2. Prior to takeoff from fields above 3000 feet elevation, the mixture should be leaned to give maximum RPM in a full throttle, static runup.
3. Decrease distances 10% for each 9 knots headwind. For operation with tail winds up to 10 knots, increase distances by 10% for each 2 knots.
4. For operation on dry, grass runway, increase distances by 15% of the "ground roll" figure.
5. Where distance value has been deleted, climb performance is minimal.

Time, Fuel, and Distance to Climb at 2,450 Pounds for a Cessna Model 172R

CONDITIONS:

Flaps Up
Full Throttle
Standard Temperature

PRESS ALT FT	TEMP °C	CLIMB SPEED KIAS	RATE OF CLIMB FPM	FROM SEA LEVEL		
				TIME IN MIN	FUEL USED GAL	DIST NM
S.L.	15	79	720	0	0.0	0
1000	13	78	670	1	0.4	2
2000	11	77	625	3	0.7	4
3000	9	76	575	5	1.2	6
4000	7	76	560	6	1.5	8
5000	5	75	515	8	1.8	11
6000	3	74	465	10	2.1	14
7000	1	73	415	13	2.5	17
8000	-1	72	365	15	3.0	21
9000	-3	72	315	18	3.4	25
10,000	-5	71	270	22	4.0	29
11,000	-7	70	220	26	4.6	35
12,000	-9	69	170	31	5.4	43

NOTES:

1. Add 1.1 gallons of fuel for engine start, taxi and takeoff allowance.
2. Mixture leaned above 3000 feet for maximum RPM.
3. Increase time, fuel and distance by 10% for each 10°C above standard temperature.
4. Distances shown are based on zero wind.

Cruise Performance for a Cessna Model 172R

CONDITIONS:
2450 Pounds
Recommended Lean Mixture At All Altitudes (Refer to Section 4, Cruise)

PRESS ALT FT	RPM	20°C BELOW STANDARD TEMP			STANDARD TEMPERATURE			20°C ABOVE STANDARD TEMP		
		% BHP	KTAS	GPH	% BHP	KTAS	GPH	% BHP	KTAS	GPH
2000	2250	---	---	---	79	115	9.0	74	114	8.5
	2200	79	112	9.1	74	112	8.5	70	111	8.0
	2100	69	107	7.9	65	106	7.5	62	105	7.1
	2000	61	101	7.0	58	99	6.6	55	97	6.4
	1900	54	94	6.2	51	91	5.9	50	89	5.8
4000	2300	--	---	---	79	117	9.1	75	117	8.6
	2250	80	115	9.2	75	114	8.6	70	114	8.1
	2200	75	112	8.6	70	111	8.1	66	110	7.6
	2100	66	106	7.6	62	105	7.1	59	103	6.8
	2000	58	100	6.7	55	98	6.4	53	95	6.2
	1900	52	92	6.0	50	90	5.8	49	87	5.6
6000	2350	--	---	---	80	120	9.2	75	119	8.6
	2300	80	117	9.2	75	117	8.6	71	116	8.1
	2250	76	115	8.7	71	114	8.1	67	113	7.7
	2200	71	112	8.1	67	111	7.7	64	109	7.3
	2100	63	105	7.2	60	104	6.9	57	101	6.6
	2000	56	98	6.4	53	96	6.2	52	93	6.0

NOTE:

1. Cruise speeds are shown for an airplane equipped with speed fairings. Without speed fairings, decrease speeds shown by 2 knots.

Short Field Landing Distance at 2,450 Pounds for a Cessna Model 172R

CONDITIONS:

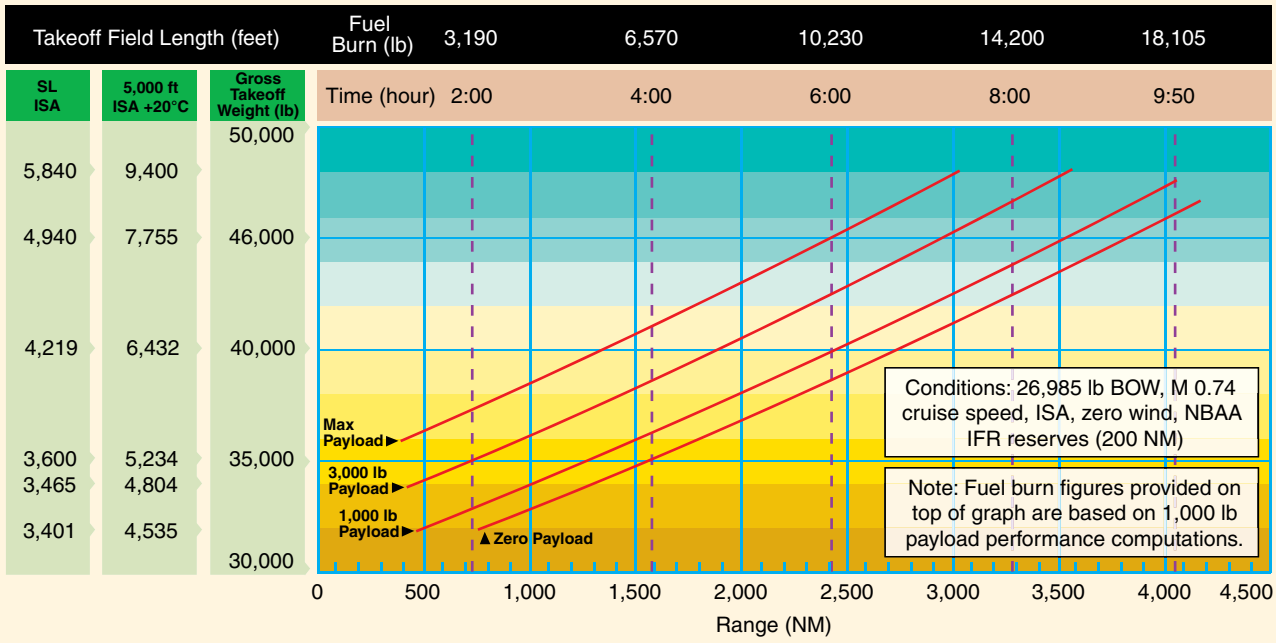
Flaps 30°
Power Off
Maximum Braking
Paved, level, dry runway
Zero Wind
Speed at 50 Ft: 62 KIAS

Press Alt In Feet	0°C		10°C		20°C		30°C		40°C	
	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst
S. L.	525	1250	540	1280	560	1310	580	1340	600	1370
1000	545	1280	560	1310	580	1345	600	1375	620	1405
2000	565	1310	585	1345	605	1375	625	1410	645	1440
3000	585	1345	605	1380	625	1415	650	1445	670	1480
4000	605	1380	630	1415	650	1450	670	1485	695	1520
5000	630	1415	650	1455	675	1490	700	1525	720	1560
6000	655	1455	675	1490	700	1530	725	1565	750	1605
7000	680	1495	705	1535	730	1570	755	1610	775	1650
8000	705	1535	730	1575	755	1615	780	1655	810	1695

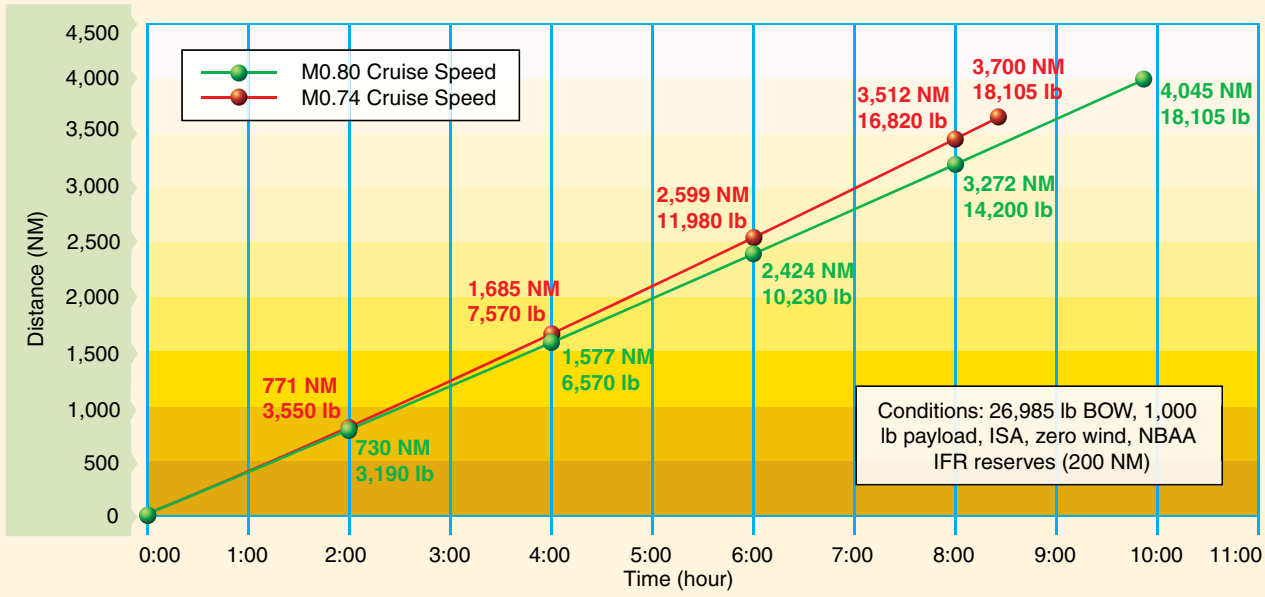
NOTES:

1. Short field technique as specified in Section 4.
2. Decrease distances 10% for each 9 knots headwind. For operation with tail winds up to 10 knots, increase distances by 10% for each 2 knots.
3. For operation on dry, grass runway, increase distances by 45% of the "ground roll" figure.
4. If landing with flaps up, increase the approach speed by 7 KIAS and allow for 35% longer distances.

Challenger 605 Range/Payload Profile



Challenger 605 Time and Fuel Versus Distance

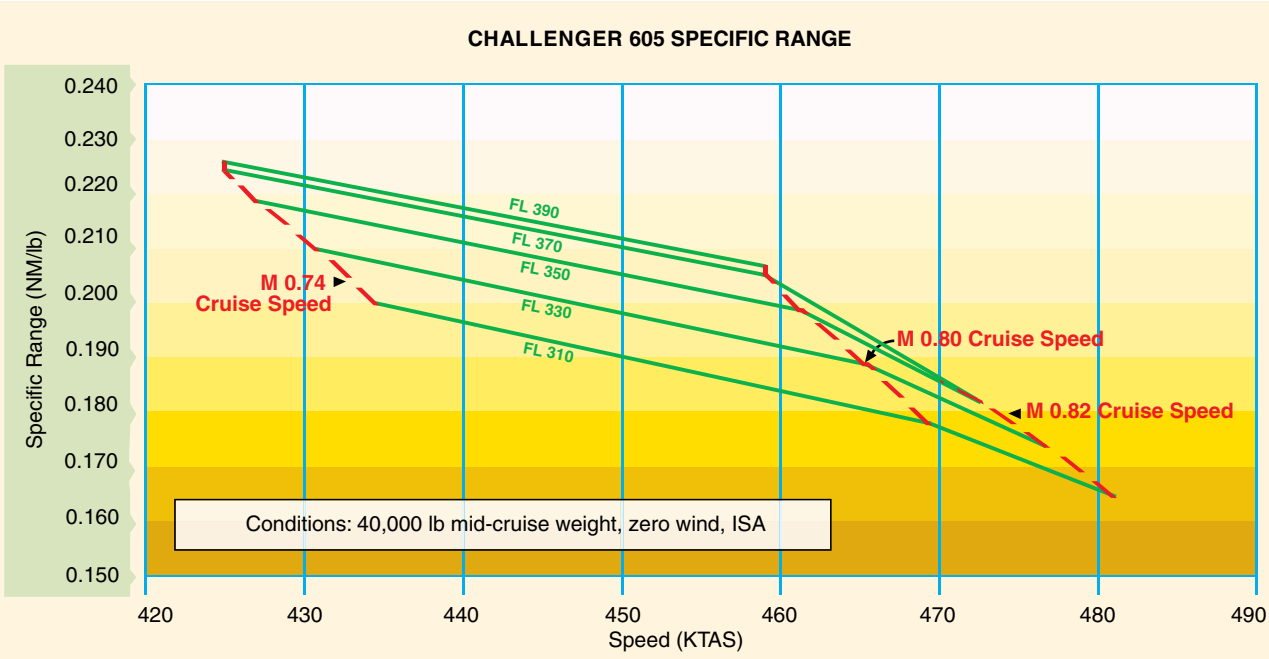


M0.80 Cruise Speed	Time	0:00	2:00	4:00	6:00	8:00	8:25
	Distance (NM)	0	771	1,685	2,599	3,512	3,701
	Fuel (lb)	0	3,550	7,570	11,980	16,820	18,105
M0.74 Cruise Speed	Time	0:00	2:00	4:00	6:00	8:00	9:50
	Distance (NM)	0	730	1,577	2,424	3,272	4,045
	Fuel (lb)	0	3,190	6,570	10,230	14,200	18,105

Conditions: 1,000 lb payload, ISA, zero wind, NBAA IFR reserves (200 NM alternate), 26,985 lb BOW

Note: All Challenger 605 performance data are for discussion purposes only. By this document, Bombardier Inc., does not intend to make, and is not making, any offer, commitment, representation or warranty of any kind whatsoever. All data are subject to change without prior notice.

Challenger 605 Time and Fuel Versus Distance



Plotting of constant FL lines

Flight Level		M0.82	M0.80	M0.74
290	Speed			
	Spc Range			
310	Speed	481	469	434
	Spc Range	0.165	0.178	0.199
330	Speed	477	465	430
	Spc Range	0.174	0.188	0.208
350	Speed	473	461	427
	Spc Range	0.181	0.197	0.216
370	Speed	470	459	424
	Spc Range	0.185	0.204	0.222
390	Speed		459	424
	Spc Range		0.205	0.223

Plotting of Long Range Cruise and High Speed Cruise lines

	FL290	FL310	FL330	FL350	FL370	FL390
M0.74 "X"		434	430	427	424	424
M0.74 "Y"		0.199	0.208	0.216	0.222	0.223
M0.80 "X"		469	465	461	459	459
M0.80 "Y"		0.178	0.188	0.197	0.204	0.205
M0.82 "X"		481	477	473	470	
M0.82 "Y"		0.165	0.174	0.181	0.185	

Note: Based on 40,000 lb mid-cruise weight, ISA Conditions, zero wind

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Appendix B

Acronyms, Abbreviations, and NOTAM Contractions

This is a list of common acronyms and abbreviations used in the aviation industry as well as NOTAM contractions. For a more complete list of contractions used in aviation, see FAA Order JO 7340.2 (as amended). Additional information regarding NOTAMs can be found at pilotweb.nas.faa.gov/PilotWeb/.

A

A/C—aircraft
A/FD—airport/facility directory
A/G—air to ground
A/HA—altitude/height
AAF—Army Air Field
AAI —arrival aircraft interval
AAP—advanced automation program
AAR—airport acceptance rate
ABDIS—Automated Data Interchange System Service B
ABN—aerodrome beacon
ABV—above
ACAIS—air carrier activity information system
ACAS—aircraft collision avoidance system
ACC—area control center; Airports Consultants Council
ACCT—accounting records
ACCUM—accumulate
ACD—Automatic Call Distributor
ACDO—Air Carrier District Office
ACF—Area Control Facility
ACFO—Aircraft Certification Field Office
ACFT—aircraft
ACID—aircraft identification
ACI-NA—Airports Council International-North America
ACIP—airport capital improvement plan
ACLS—automatic carrier landing system
ACLT—actual landing time calculated
ACO—Office of Airports Compliance and Field Operations; Aircraft Certification Office
ACR—air carrier
ACRP—Airport Cooperative Research Program
ACS—Airman Certification Standard
ACT—active, activated, or activity
ADA—air defense area
ADAP—Airport Development Aid Program
ADAS—AWOS data acquisition system
ADCCP—advanced data communications control procedure
ADDA—administrative data
ADF—automatic direction finding
ADI—automatic de-ice and inhibitor
ADIN—AUTODIN service
ADIZ—air defense identification zone
ADJ—adjacent
ADL—aeronautical data-link
ADLY—arrival delay
ADO—airline dispatch office
ADP—automated data processing
ADS—automatic dependent surveillance
ADSIM —airfield delay simulation model
ADSY—administrative equipment systems
ADTN—Administrative Data Transmission Network
ADTN2000—Administrative Data Transmission Network 2000
ADVO—administrative voice
ADZD—advised
AEG—Aircraft Evaluation Group
AERA—automated en route air traffic control
AEX—automated execution
AF—airway facilities
AFB—Air Force Base
AFIS—automated flight inspection system
AFP—area flight plan
AFRES—Air Force Reserve Station
AFS—airways facilities sector
AFSFO—AFS field office
AFSFU—AFS field unit
AFSOU—AFS field office unit (standard is AFSFOU)
AFSS—automated flight service station
AFTN—Automated Fixed Telecommunications Network
AGIS—airports geographic information system
AGL—above ground level
AID—airport information desk
AIG—Airbus Industries Group
AIM—Airman's Information Manual
AIP—airport improvement plan
AIRMET—Airmen's Meteorological Information
AIRNET—Airport Network Simulation Model
AIS—aeronautical lnformation service
AIT—automated information transfer
ALP—airport layout plan

ALS—approach light system
ALSFl—ALS with sequenced flashers I
ALSF2—ALS with sequenced flashers II
ALSIP—Approach Lighting System Improvement Plan
ALSTG—altimeter setting
ALT—altitude
ALTM—altimeter
ALTN—alternate
ALTNLY—alternately
ALTRV—altitude reservation
AMASS—airport movement area safety system
AMCC—ADF/ARTCC Maintenance Control Center
AMDT—amendment
AMGR—Airport Manager
AMOS—Automatic meteorological observing system
AMP—ARINC Message Processor; Airport Master Plan
AMVER—automated mutual assistance vessel rescue system
ANC—alternate network connectivity
ANCA—Airport Noise and Capacity Act
ANG—Air National Guard
ANGB—Air National Guard Base
ANMS—automated network monitoring system
ANSI—American National Standards Group
AOA—air operations area
AP—airport; acquisition plan
APCH—approach
APL—airport lights
APP—approach; approach control; Approach Control Office
APS—airport planning standard
AQAFO—Aeronautical Quality Assurance Field Office
ARAC—Army Radar Approach Control (AAF); Aviation Rulemaking Advisory Committee
ARCTR—FAA Aeronautical Center or Academy
ARF—airport reservation function
ARFF—aircraft rescue and fire fighting
ARINC—Aeronautical Radio, Inc.
ARLNO—Airline Office
ARO—Airport Reservation Office
ARP—airport reference point
ARR—arrive; arrival
ARRA—American Recovery and Reinvestment Act of 2009
ARSA—airport service radar area
ARSR—air route surveillance radar
ARTCC—air route traffic control center
ARTS—automated radar terminal system
ASAS—aviation safety analysis system
ASC—AUTODIN switching center
ASCP—Aviation System Capacity Plan
ASD—aircraft situation display
ASDA—accelerate-stop distance available
ASLAR—aircraft surge launch and recovery
ASM—available seat mile
ASOS—automated surface observing system
ASP—arrival sequencing program
ASPH—asphalt
ASQP—airline service quality performance
ASR—airport surveillance radar
ASTA—airport surface traffic automation
ASV—airline schedule vendor
AT—air traffic
ATA—Air Transport Association of America
ATAS—airspace and traffic advisory service
ATC—air traffic control
ATCAA—air traffic control assigned airspace
ATCBI—air traffic control beacon indicator
ATCCC—Air Traffic Control Command Center
ATCO—Air Taxi Commercial Operator
ATCRB—air traffic control radar beacon
ATCRBS—air traffic control radar beacon system
ATCSCC—Air Traffic Control System Command Center
ATCT—airport traffic control tower
ATIS—automatic terminal information service
ATISR—ATIS recorder
ATM—air traffic management; asynchronous transfer mode
ATMS—advanced traffic management system
ATN—Aeronautical Telecommunications Network
ATODN—AUTODIN terminal (FUS)
ATOMS—air traffic operations management system
ATOVN—AUOTVON (facility)
ATS—air traffic service
ATSCCP—ATS contingency command post
AUTH—authority
AUTOB—automatic weather reporting system
AUTODIN—DoD Automatic Digital Network
AUTOVON—DoD Automatic Voice Network
AVBL—available
AVN—Aviation Standards National Field Office, Oklahoma City
AVON—AUTOVON service
AWIS—airport weather information
AWOS—automatic weather; observing/reporting system
AWP—Aviation Weather Processor
AWPG—aviation weather products generator
AWS—air weather station
AWY—airway
AZM—azimuth

B

BA FAIR—braking action fair
BA NIL—braking action nil
BA POOR—braking action poor
BANS—BRITE alphanumeric system
BART—billing analysis reporting tool (GSA software tool)
BASIC—basic contract observing station
BASOP—military base operations

BC—back course
BCA—benefit/cost analysis
BCN—beacon
BCR—benefit/cost ratio
BDAT—digitized beacon data
BERM—snowbank(s) containing earth/gravel
BLW—below
BMP—best management practices
BND—bound
BOC—Bell Operating Company
bps—bits per second
BRG—bearing
BRI—basic rate interface
BRITE—bright radar indicator terminal equipment
BRL—building restriction line
BUEC—back-up emergency communications
BUECE—back-up emergency communications equipment
BYD—beyond

C

C/S/S/N—capacity/safety/security/noise
CAA—civil aviation authority; Clean Air Act
CAAS—Class A Airspace
CAB—civil aeronautics board
CARF—Central Altitude Reservation Facility
CASFO—Civil Aviation Security Office
CAT—category; clear-air turbulence
CAU—Crypto Ancillary Unit
CBAS—Class B airspace
CBI—computer based instruction
CBSA—Class B surface area
CC&O—customer cost and obligation
CCAS—Class C Airspace
CCC—Communications Command Center
CCCC—staff communications
CCCH—central computer complex host
CCLKWS—counterclockwise
CCS7-NI—Communication Channel Signal-7-Network Interconnect
CCSA—Class C surface area
CCSD—Command Communications Service Designator
CCU—Central Control Unit
CD—clearance delivery; common digitizer
CDAS—Class D Airspace
CDR—cost detail report
CDSA—Class D surface area
CDT—controlled departure time
CDTI—cockpit display of traffic information
CEAS—Class E Airspace
CENTX—central telephone exchange
CEP—capacity enhancement program
CEQ—council on environmental quality
CERAP—center radar approach control; combined center radar approach control
CESA—Class E surface area
CFC—central flow control
CFCF—Central Flow Control Facility
CFCS—central flow control service
CFR—Code of Federal Regulations
CFWP—central flow weather processor
CFWU—central flow weather unit
CGAS—Class G Airspace; Coast Guard Air Station
CHG—change
CIG—ceiling
CK—check
CL—centerline
CLC—course line computer
CLIN—contract line item
CLKWS—clockwise
CLR—clearance, clear(s), cleared to
CLSD—closed
CLT—calculated landing time
CM—commercial service airport
CMB—climb
CMSND—commissioned
CNL—cancel
CNMPS—Canadian Minimum Navigation Performance Specification Airspace
CNS—consolidated NOTAM system
CNSP—consolidated NOTAM system processor
CO—central office
COE—U.S. Army Corps of Engineers
COM—communications
COMCO—command communications outlet
CONC—concrete
CONUS—Continental United States
CORP—private corporation other than ARINC or MITRE
CPD—coupled
CPE—customer premise equipment
CPMIS—consolidated personnel management information system
CRA—conflict resolution advisory
CRDA—converging runway display aid
CRS—course
CRT—cathode ray tube
CSA—communications service authorization
CSIS—centralized storm information system
CSO—customer service office
CSR—communications service request
CSS—central site system
CTA—controlled time of arrival; control area
CTA/FIR—control area/flight information region
CTAF—common traffic advisory frequency
CTAS—center-TRACON automation system

CTC—contact
CTL—control
CTMA—Center Traffic Management Advisor
CUPS—consolidated uniform payroll system
CVFR—controlled visual flight rules
CVTS—compressed video transmission service
CW—continuous wave
CWSU—Central Weather Service Unit
CWY—clearway

D

DA—direct access; decision altitude/decision height; Descent Advisor
DABBS—DITCO automated bulletin board system
DAIR—direct altitude and identity readout
DALGT—daylight
DAR—Designated Agency Representative
DARC—direct access radar channel
dBA—decibels A-weighted
DBCRC—Defense Base Closure and Realignment Commission
DBE—disadvantaged business enterprise
DBMS—database management system
DBRITE—digital bright radar indicator tower equipment
DCA—Defense Communications Agency
DCAA—dual call, automatic answer device
DCCU—Data Communications Control Unit
DCE—data communications equipment
DCMSND—decommissioned
DCT—direct
DDA—dedicated digital access
DDD—direct distance dialing
DDM—difference in depth of modulation
DDS—Digital Data Service
DEA—Drug Enforcement Agency
DEDS—data entry and display system
DEGS—degrees
DEIS—Draft Environmental Impact Statement
DEP—depart/departure
DEPPROC—departure procedures
DEWIZ—distance early warning identification zone
DF—direction finder
DFAX—digital facsimile
DFI—direction finding indicator
DGPS—Differential Global Positioning Satellite (System)
DH—decision height
DID—direct inward dial
DIP—drop and insert point
DIRF—direction finding
DISABLD—disabled
DIST—distance
DITCO—Defense Information Technology Contracting Office Agency
DLA—delay or delayed
DLT—delete
DLY—daily
DME—distance measuring equipment
DME/P—precision distance measuring equipment
DMN—Data Multiplexing Network
DMSTN—demonstration
DNL—day-night equivalent sound level (also called Ldn)
DOD—direct outward dial
DoD—Department of Defense
DOI—Department of Interior
DOS—Department of State
DOT—Department of Transportation
DOTCC—Department of Transportation Computer Center
DOTS—dynamic ocean tracking system
DP—dew point temperature
DRFT—snowbank(s) caused by wind action
DSCS—digital satellite compression service
DSPLCD—displaced
DSUA—dynamic special use airspace
DTS—dedicated transmission service
DUAT—direct user access terminal
DVFR—defense visual flight rules; day visual flight rules
DVOR—doppler very high frequency omni-directional range
DYSIM—dynamic simulator

E

E—east
EA—environmental assessment
EARTS—en route automated radar tracking system
EB—eastbound
ECOM—en route communications
ECVFP—expanded charted visual flight procedures
EDCT—expedite departure path
EFC—expect further clearance
EFIS—electronic flight information systems
EIAF—expanded inward access features
EIS—environmental impact statement
ELEV—elevation
ELT—emergency locator transmitter
ELWRT—electrowriter
EMAS—engineered materials arresting system
EMPS—en route maintenance processor system
EMS—environmental management system
E-MSAW—en route automated minimum safe altitude warning
ENAV—en route navigational aids
ENG—engine
ENRT—en route
ENTR—entire
EOF—emergency Operating Facility
EPA—Environmental Protection Agency
EPS—Engineered Performance Standards

EPSS—enhanced packet switched service
ERAD—en route broadband radar
ESEC—en route broadband secondary radar
ESF—extended superframe format
ESP—en route spacing program
ESYS—en route equipment systems
ETA—estimated time of arrival
ETE—estimated time en route
ETG—enhanced target generator
ETMS—enhanced traffic management system
ETN—Electronic Telecommunications Network
EVAS—enhanced vortex advisory system
EVCS—emergency voice communications system
EXC—except

F

F&E—facility and equipment
FAA—Federal Aviation Administration
FAAAC—FAA aeronautical center
FAACIS—FAA communications information system
FAATC—FAA technical center
FAATSAT—FAA telecommunications satellite
FAC—facility/facilities
FAF—final approach fix
FAN—MKR fan marker
FAP—final approach point
FAPM—FTS2000 associate program manager
FAR—Federal Aviation Regulation
FAST—final approach spacing tool
FAX—facsimile equipment
FBO—fixed base operator
FBS—fall back switch
FCC—Federal Communications Commission
FCLT—freeze calculated landing time
FCOM—FSS radio voice communications
FCPU—Facility Central Processing Unit
FDAT—flight data entry and printout (FDEP) and flight data service
FDC—flight data center
FDE—flight data entry
FDEP—flight data entry and printout
FDIO—flight data input/output
FDIOC—flight data input/output center
FDIOR—flight data input/output remote
FDM—frequency division multiplexing
FDP—flight data processing
FED—federal
FEIS—Final Environmental Impact Statement
FEP—front end processor
FFAC—from facility
FI/P—flight inspection permanent
FI/T—flight inspection temporary
FIFO—Flight Inspection Field Office
FIG—flight inspection group
FINO—Flight Inspection National Field Office
FIPS—federal information publication standard
FIR—flight information region
FIRE—fire station
FIRMR—Federal Information Resource Management Regulation
FL—flight level
FLOWSIM—traffic flow planning simulation
FM—from
FMA—final monitor aid
FMF—facility master file
FMIS—FTS2000 management information system
FMS—flight management system
FNA—final approach
FNMS—FTS2000 network management system
FOIA—Freedom Of Information Act
FONSI—finding of no significant impact
FP—flight plan
FPM—feet per minute
FRC—request full route clearance
FREQ—frequency
FRH—fly runway heading
FRI—Friday
FRZN—frozen
FSAS—flight service automation system
FSDO—Flight Standards District Office
FSDPS—flight service data processing system
FSEP—facility/service/equipment profile
FSP—flight strip printer
FSPD—freeze speed parameter
FSS—flight service station
FSSA—flight service station automated service
FSTS—federal secure telephone service
FSYS—flight service station equipment systems
FTS—federal telecommunications system
FT—feet/foot
FTS2000—Federal Telecommunications System 2000
FUS—functional units or systems
FWCS—flight watch control station

G

GA—general aviation
GAA—general aviation activity
GAAA—general aviation activity and avionics
GADO—General Aviation District Office
GC—ground control
GCA—ground control approach
GIS—geographic information system
GNAS—general national airspace system
GNSS—global navigation satellite system
GOES—Geostationary Operational Environmental Satellite
GOESF—GOES feed point

GOEST—GOES terminal equipment
GOVT—government
GP—glide path
GPRA—Government Performance Results Act
GPS—global positioning system
GPWS—ground proximity warning system
GRADE—graphical airspace design environment
GRVL—gravel
GS—glide slope indicator
GSA—General Services Administration
GSE—ground support equipment

H

H—non-directional radio homing beacon (NDB)
HAA—height above airport
HAL—height above landing
HARS—high altitude route system
HAT—height above touchdown
HAZMAT—hazardous materials
HCAP—high capacity carriers
HDG—heading
HDME—NDB with distance measuring equipment
HDQ—FAA headquarters
HEL—helicopter
HELI—heliport
HF—high frequency
HH—NDB, 2kw or more
HI-EFAS—high altitude EFAS
HIRL—high intensity runway lights
HIWAS—Hazardous lnflight Weather Advisory Service
HLDC—high level data link control
HLDG—holding
HOL—holiday
HOV—high occupancy vehicle
HP—holding pattern
HR—hour
HSI—horizontal situation indicators
HUD—housing and urban development
HWAS—hazardous in-flight weather advisory
Hz—Hertz

I

I/AFSS—international AFSS
IA—indirect access
IAF—initial approach fix
IAP—instrument approach procedures
IAPA—instrument approach procedures automation
IBM—International Business Machines
IBP—international boundary point
IBR—intermediate bit rate
ICAO—International Civil Aviation Organization
ICSS—international communications switching systems
ID—identification
IDAT—interfacility data
IDENT—identify/identifier/identification
IF—intermediate fix
IFCP—interfacility communications processor
IFDS—interfacility data system
IFEA—in-flight emergency assistance
IFO—International Field Office
IFR—instrument flight rules
IFSS—international flight service station
ILS—instrument landing system
IM—inner marker
IMC—instrument meteorological conditions
IN—inch/inches
INBD—inbound
INDEFLY—indefinitely
INFO—information
INM—integrated noise model
INOP—inoperative
INS—inertial navigation system
INSTR—instrument
INT—intersection
INTL—international
INTST—intensity
IR—ice on runway(s)
IRMP—information resources management plan
ISDN—integrated services digital network
ISMLS—interim standard microwave landing system
ITI—interactive terminal interface
IVRS—interim voice response system
IW—inside wiring

K

Kbps—Kilobits per second
Khz—Kilohertz
KT—knots
KVDT—keyboard video display terminal

L

L—left
LAA—local airport advisory
LAAS—low altitude alert system
LABS—leased A B service
LABSC—LABS GS-200 computer
LABSR—LABS remote equipment
LABSW—LABS switch system
LAHSO—land and hold short operation
LAN—local area network
LAT—latitude
LATA—local access and transport area
LAWRS—limited aviation weather reporting station
LB—pound/pounds

LC—local control
LCF—local control facility
LCN—local communications network
LCTD—located
LDA—localizer-type directional aid; landing directional aid
LDG—landing
LDIN—lead-in lights
LEC—local exchange carrier
LF—low frequency
LGT—light or lighting
LGTD—lighted
LINCS—leased interfacility NAS C
LIRL—low intensity runway lights
LIS—logistics and inventory system
LLWAS—low level wind shear alert system
LLZ—localizer
LM—compass locator at ILS middle marker
LM/MS—low/medium frequency
LMM—locator middle marker
LO—compass locator at ILS outer marker
LOC—local; locally; location; localizer
LOCID—location identifier
LOI—letter of intent
LOM—compass locator at outer marker
LONG—longitude
LPV—lateral precision performance with vertical guidance
LRCO—limited remote communications outlet
LRNAV—long range navigation
LRR—long range radar
LSR—loose snow on runway(s)
LT—left turn

M

MAA—maximum authorized altitude
MAG—magnetic
MAINT—maintain, maintenance
MALS—medium intensity approach light system
MALSF—medium intensity approach light system with sequenced flashers
MALSR—medium intensity approach light system with runway alignment indicator lights
MAP—maintenance automation program; military airport program; missed approach point; modified access pricing
MAPT—missed approach point
Mbps—megabits per second
MCA—minimum crossing altitude
MCAS—Marine Corps air station
MCC—maintenance control center
MCL—middle compass locater
MCS—maintenance and control system
MDA—minimum descent altitude
MDT—maintenance data terminal
MEA—minimum en route altitude
MED—medium
METI—meteorological information
MF—middle frequency
MFJ—modified final judgment
MFT—meter fix crossing time/slot time
MHA—minimum holding altitude
Mhg—Meghertz
MIA—minimum IFR altitudes
MIDO—Manufacturing Inspection District Office
MIN—minute
MIRL—medium intensity runway lights
MIS—Meteorological Impact Statement
MISC—miscellaneous
MISO—Manufacturing Inspection Satellite Office
MIT—miles in trail
MITRE—Mitre Corporation
MLS—microwave landing system
MM—middle marker
MMAC—Mike Monroney Aeronautical Center
MMC—maintenance monitoring console
MMS—maintenance monitoring system
MNM—minimum
MNPS—minimum navigation performance specification
MNPSA—minimum navigation performance specifications airspace
MNT—monitor; monitoring; monitored
MOA—memorandum of agreement; military operations area
MOC—minimum obstruction clearance
MOCA—minimum obstruction clearance altitude
MODE C—altitude-encoded beacon reply; altitude reporting mode of secondary radar
MODE S—mode select beacon system
MON—Monday
MOU—memorandum of understanding
MPO—Metropolitan Planning Organization
MPS—maintenance processor subsystem or master plan supplement
MRA—minimum reception altitude
MRC—monthly recurring charge
MSA—minimum safe altitude; minimum sector altitude
MSAW—minimum safe altitude warning
MSG—message
MSL—mean sea level
MSN—message switching network
MTCS—modular terminal communications system
MTI—moving target indicator
MU—mu meters
MUD—mud
MUNI—municipal
MUX—multiplexor
MVA—minimum vectoring altitude
MVFR—marginal visual flight rules

N

N—north
NA—not authorized
NAAQS—national ambient air quality standards
NADA—ADIN concentrator
NADIN—National Airspace Data Interchange Network
NADSW—NADIN switches
NAILS—National Airspace Integrated Logistics Support
NAMS—NADIN IA
NAPRS—National Airspace Performance Reporting System
NAS—National Airspace System or Naval Air Station
NASDC—National Aviation Safety Data
NASP—National Airspace System Plan
NASPAC—National Airspace System Performance Analysis Capability
NATCO—National Communications Switching Center
NAV—navigation
NAVAID—navigation aid
NAVMN—navigation monitor and control
NAWAU—National Aviation Weather Advisory Unit
NAWPF—National Aviation Weather Processing Facility
NB—northbound
NCAR—National Center for Atmospheric Research, Boulder, CO
NCF—National Control Facility
NCIU—NEXRAD Communications Interface Unit
NCP—noise compatibility program
NCS—national communications system
NDB—non-directional radio beacon
NDNB—NADIN II
NE—northeast
NEM—noise exposure map
NEPA—National Environmental Policy Act
NEXRAD—next generation weather radar
NFAX—National Facsimile Service
NFDC—National Flight Data Center
NFIS—NAS Facilities Information System
NGT—night
NI—network interface
NICS—national interfacility communications system
NM—nautical mile(s)
NMAC—near mid-air collision
NMC—National Meteorological Center
NMCE—network monitoring and control equipment
NMCS—network monitoring and control system
NMR—nautical mile radius
NOAA—National Oceanic and Atmospheric Administration
NOC—notice of completion
NONSTD—nonstandard
NOPT—no procedure turn required
NOTAM—notice to airmen
NPDES—National pollutant discharge elimination system
NPE—non-primary airport entitlement
NPIAS—national plan of integrated airport systems
NR—number
NRC—non-recurring charge
NRCS—national radio communications systems
NSAP—National Service Assurance Plan
NSRCATN—National Strategy to Reduce Congestion on America's Transportation Network
NSSFC—National Severe Storms Forecast Center
NSSL—National Severe Storms Laboratory, Norman, OK
NSWRH—NWS Regional Headquarters
NTAP—Notices To Airmen Publication
NTP—National Transportation Policy
NTSB—National Transportation Safety Board
NTZ—no transgression zone
NW—northwest
NWS—National Weather Service
NWSR—NWS weather excluding NXRD
NXRD—advanced weather radar system

O

OAG—official airline guide
OALT—operational acceptable level of traffic
OAW—off-airway weather station
OBSC—obscured
OBST—obstruction
ODAL—omnidirectional approach lighting system
ODAPS—oceanic display and processing station
OEP—operational evolution plan/partnership
OFA—object free area
OFDPS—offshore flight data processing system
OFT—outer fix time
OFZ—obstacle free zone
OM—outer marker
OMB—Office Of Management and Budget
ONER—Oceanic Navigational Error Report
OPLT—operational acceptable level of traffic
OPR—operate
OPS—operation
OPSW—operational switch
OPX—off premises exchange
ORD—operational readiness demonstration
ORIG—original
OTR—oceanic transition route
OTS—out of service; organized track system
OVR—over

P

PABX—private automated branch exchange
PAD—packet assembler/disassembler
PAEW—personnel and equipment working
PAM—peripheral adapter module
PAPI—precision approach path indicator
PAR—precision approach radar; preferential arrival route

PARL—parallel
PAT—pattern
PATWAS—Pilots Automatic Telephone Weather Answering Service
PAX—passenger
PBCT—proposed boundary crossing time
PBRF—pilot briefing
PBX—private branch exchange
PCA—positive control airspace
PCL—pilot controlled lighting
PCM—pulse code modulation
PD—Pilot Deviation
PDAR—preferential arrival and departure route
PDC—pre-departure clearance; program designator code
PDN—Public Data Network
PDR—preferential departure route
PERM—permanent/permanently
PFC—passenger facility charge
PGP—planning grant program
PIC—principal interexchange carrier
PIDP—programmable indicator data processor
PIREP—pilot weather report
PJE—parachute jumping exercise
PLA—practice low approach
PLW—plow/plowed
PMS—program management system
PNR—prior notice required
POLIC—police station
POP—point of presence
POT—point of termination
PPIMS—personal property information management system
PPR—prior permission required
PR—primary commercial service airport
PREV—previous
PRI—primary rate interface
PRM—precision runway monitor
PRN—pseudo random noise
PROC—procedure
PROP—propeller
PSDN—public switched data network
PSN—packet switched network
PSR —packed snow on runway(s)
PSS—packet switched service
PSTN—public switched telephone network
PTC—presumed-to-conform
PTCHY—patchy
PTN—procedure turn
PUB—publication
PUP—principal user processor
PVC—permanent virtual circuit
PVD—plan view display
PVT—private

R

RAIL—runway alignment indicator lights
RAMOS—remote automatic meteorological observing system
RAPCO—radar approach control (USAF)
RAPCON—radar approach control (FAA)
RATCC—Radar Air Traffic Control Center
RATCF—Radar Air Traffic Control Facility (USN)
RBC—rotating beam ceilometer
RBDPE—radar beacon data processing equipment
RBSS—Radar Bomb Scoring Squadron
RCAG—remote communications air/ground facility
RCC—Rescue Coordination Center
RCCC—Regional Communications Control Centers
RCF—Remote Communication Facility
RCIU— Remote Control Interface Unit
RCL— runway centerline; radio communications link
RCLL—runway centerline light system
RCLR—RCL repeater
RCLT—RCL terminal
RCO—remote communications outlet
RCU—remote control unit
RDAT—digitized radar data
RDP—radar data processing
RDSIM—runway delay simulation model
REC—receive/receiver
REIL—runway end identifier lights
RELCTD—relocated
REP—report
RF—radio frequency
RL—General Aviation Reliever Airport
RLLS—runway lead-in lights system
RMCC—Remote Monitor Control Center
RMCF—Remote Monitor Control Facility
RML—radio microwave link
RMLR—RML repeater
RMLT—RML terminal
RMM—remote maintenance monitoring
RMMS—remote maintenance monitoring system
RMNDR—remainder
RMS—remote monitoring subsystem
RMSC—remote monitoring subsystem concentrator
RNAV—area navigation
RNP—required navigation performance
ROD—record of decision
ROSA—report of service activity
ROT—runway occupancy time
RP—restoration priority
RPC—restoration priority code
RPG—radar processing group
RPLC—replace

RPZ—runway protection zone
RQRD—required
RRH—remote reading hygrothermometer
RRHS—remote reading hydrometer
RRL—runway remaining lights
RRWDS—remote radar weather display
RRWSS—RWDS sensor site
RSA—runway safety area
RSAT—runway safety action team
RSR—en route surveillance radar
RSS—remote speaking system
RSVN—reservation
RT—right turn; remote transmitter
RT & BTL—radar tracking and beacon tracking level
RTAD—remote tower alphanumerics display
RTCA—Radio Technical Commission for Aeronautics
RTE—route
RTP—regional transportation plan
RTR—remote transmitter/receiver
RTRD—remote tower radar display
RTS—return to service
RUF—rough
RVR—runway visual range
RVRM—runway visual range midpoint
RVRR—runway visual range rollout
RVRT—runway visual range touchdown
RW—runway
RWDS—same as RRWDS
RWP—real-time weather processor
RWY—runway

S

S—south
S/S—sector suite
SA—sand, sanded
SAC—Strategic Air Command
SAFI—semi-automatic flight inspection
SALS—short approach lighting system
SAT—Saturday
SATCOM—satellite communications
SAWR—Supplementary Aviation Weather Reporting Station
SAWRS—Supplementary Aviation Weather Reporting System
SB—southbound
SBGP—state block grant program
SCC—System Command Center
SCVTS—Switched Compressed Video Telecommunications Service
SDF—simplified directional facility; simplified direction finding; software defined network
SDIS—switched digital integrated service
SDP—service delivery point
SD-ROB—radar weather report
SDS—switched data service
SE—southeast
SEL—single event level
SELF—simplified short approach lighting system with sequenced flashing lights
SFAR-38—Special Federal Aviation Regulation 38
SFL—sequence flashing lights
SHPO—State Historic Preservation Officer
SIC—service initiation charge
SID— standard instrument departure; station identifier
SIGMET—significant meteorological information
SIMMOD—airport and airspace simulation model
SIMUL—simultaneous
SIP—state implementation plan
SIR—packed or compacted snow and ice on runway(s)
SKED—scheduled
SLR—slush on runway(s)
SM—statute miles
SMGC—surface movement guidance and control
SMPS—sector maintenance processor subsystem
SMS—safety management system; simulation modeling system
SN—snow
SNBNK—snowbank(s) caused by plowing
SNGL—single
SNR—signal-to-noise ratio, also: S/N
SOAR—system of airports reporting
SOC—service oversight center
SOIR—simultaneous operations on intersecting runways
SOIWR—simultaneous operations on intersecting wet runways
SPD—speed
SRAP—sensor receiver and processor
SSALF—simplified short approach lighting system with sequenced flashers
SSALR—simplified short approach lighting system with runway alignment indicator lights
SSALS—simplified short approach lighting system
SSB—single side band
SSR—secondary surveillance radar
STA—straight-in approach
STAR—standard terminal arrival route
STD—standard
STMUX—statistical data multiplexer
STOL—short takeoff and landing
SUN—Sunday
SURPIC—surface picture
SVC—service
SVCA—service A
SVCB—service B
SVCC—service C

SVCO—service O
SVFB—interphone service F (B)
SVFC—interphone service F (C)
SVFD—interphone service F (D)
SVFO—interphone service F (A)
SVFR—special visual flight rules
SW—southwest
SWEPT—swept or broom/broomed

T

T—temperature
T1MUX—T1 multiplexer
TAA—terminal arrival area
TAAS—terminal advance automation system
TACAN—tactical air navigation
TACR—TACAN at VOR, TACAN only
TAF—terminal area forecast
TAR—terminal area surveillance radar
TARS—terminal automated radar service
TAS—true air speed
TATCA—terminal air traffic control automation
TAVT—terminal airspace visualization tool
TCA—traffic control airport or tower control airport; terminal control area
TCACCIS—Transportation Coordinator Automated Command And Control Information System
TCAS—Traffic Alert and Collision Avoidance System
TCC—DOT Transportation Computer Center
TCCC—Tower Control Computer Complex
TCE—tone control equipment
TCLT—tentative calculated landing time
TCO—Telecommunications Certification Officer
TCOM—Terminal Communications
TCS—tower communications system
TDLS—Tower Data-Link Services
TDMUX—time division data multiplexer
TDWR—terminal doppler weather radar
TDZ—touchdown zone
TDZ LG—touchdown zone lights
TELCO—telephone company
TELMS—telecommunications management system
TEMPO—temporary
TERPS—terminal instrument procedures
TFAC—to facility
TFC—traffic
TFR—temporary flight restriction
TGL—touch-and-go landings
TH—threshold
THN—thin
THR—threshold
THRU—through
THU—Thursday
TIL—until
TIMS—telecommunications information management system
TIPS—terminal information processing system
TKOF—takeoff
TL—taxilane
TM—traffic management
TM&O—telecommunications management and operations
TMA—Traffic Management Advisor
TMC—Traffic Management Coordinator
TMC/MC—Traffic Management Coordinator/Military Coordinator
TMCC—terminal information processing system; Traffic Management Computer Complex
TMF—Traffic Management Facility
TML—television microwave link
TMLI—television microwave link indicator
TMLR—television microwave link repeater
TMLT—television microwave link terminal
TMP—Traffic Management Processor
TMPA—traffic management program alert
TMS—traffic management system
TMSPS—traffic management specialists
TMU—traffic management unit
TNAV—terminal navigational aids
TODA—takeoff distance available
TOF—time of flight
TOFMS—time of flight mass spectrometer
TOPS—Telecommunications Ordering And Pricing System (GSA software tool)
TORA—take-off run available
TR—telecommunications request
TRACAB—terminal radar approach control in tower cab
TRACON—Terminal Radar Approach Control Facility
TRAD—terminal radar service
TRB—Transportation Research Board
TRML—terminal
TRNG—training
TRSN—transition
TSA—taxiway safety area; Transportation Security Administration
TSEC—terminal secondary radar service
TSNT—transient
TSP—telecommunications service priority
TSR—telecommunications service request
TSYS—terminal equipment systems
TTMA—TRACON Traffic Management Advisor
TTY—teletype
TUE—Tuesday
TVOR—terminal VHF omnidirectional range
TW—taxiway
TWEB—transcribed weather broadcast
TWR—tower
TWY—taxiway
TY—type (FAACIS)

U

UAS—unmanned aircraft systems
UFN—until further notice
UHF—ultra high frequency
UNAVBL—unavailable
UNLGTD—unlighted
UNMKD—unmarked
UNMNT—unmonitored
UNREL—unreliable
UNUSBL—unusable
URA—Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970
USAF—United States Air Force
USC—United States Code
USOC—Uniform Service Order Code

V

V/PD—Vehicle/pedestrian deviation
VALE—voluntary airport low emission
VASI—visual approach slope indicator
VDME—VOR with distance measuring equipment
VDP—visual descent point
VF—voice frequency
VFR—visual flight rules
VGSI—visual glide slope indicator
VHF—very high frequency
VIA—by way of
VICE—instead/versus
VIS—visibility
VLF—very low frequency
VMC—visual meteorological conditions
VNAV—visual navigational aids
VNTSC—Volpe National Transportation System Center
VOL—volume
VON—virtual on-net
VOR—VHF omnidirectional range
VOR/DME—VHF omnidirectional range/distance measuring equipment
VORTAC—VOR and TACAN (collocated)
VOT—VOR Test Facility
VP/D—vehicle/pedestrian deviation
VRS—voice recording system
VSCS—voice switching and control system
VTA—vertex time of arrival
VTAC—VOR and TACAN (collocated)
VTOL—vertical takeoff and landing
VTS—voice telecommunications system

W

W—west
WAAS—Wide Area Augmentation System
WAN—wide area network
WB—westbound
WC—work center
WCP—Weather Communications Processor
WECO—Western Electric Company
WED—Wednesday
WEF—with effect from; effective from
WESCOM—Western Electric Satellite Communications
WI—within
WIE—with immediate effect, or effective immediately
WKDAYS—Monday through Friday
WKEND—Saturday and Sunday
WMSC—Weather Message Switching Center
WMSCR—Weather Message Switching Center Replacement
WND—wind
WPT—waypoint
WSCMO—Weather Service Contract Meteorological Observatory
WSFO—Weather Service Forecast Office
WSMO—Weather Service Meteorological Observatory
WSO—Weather Service Office
WSR—wet snow on runway(s)
WTHR—weather
WTR—water on runway(s)
WX—weather

Appendix C

Airport Signs and Markings

Airport Signs			
Type of Sign	**Action or Purpose**	**Type of Sign**	**Action or Purpose**
	**Taxiway/Runway Hold Position:** Holding position for RWY 4-22 on TWY A.		**Runway Safety Area Boundary:** Identifies exit boundary of runway safety area.
	**Runway/Runway Intersection:** Identifies intersecting runways or holding position for LAHSO operations.		**ILS Critical Area Boundary:** Identifies exit boundary of ILS critical area.
	**Runway Approach Hold Position:** Runway approach holding position for RWY 8 on TWY B.		**Taxiway Direction:** Defines direction and designation of intersecting taxiway(s).
	**ILS Critical Area Hold Position:** Holding position for the ILS critical area on TWY C.		**Runway Exit:** Defines direction and designation of exit taxiway from runway.
	**No Entry:** Identifies paved areas where aircraft entry is prohibited.		**Outbound Destination:** Defines directions to takeoff runway(s).
	**Taxiway Location:** Identifies taxiway on which aircraft is located.		**Inbound Destination:** Defines directions to destination for arriving aircraft.
	**Runway Location:** Identifies runway on which aircraft is located.		**Taxiway Ending Marker:** Indicates taxiway does not continue.
	**Runway Distance Remaining:** Provides remaining runway length in 1,000-foot increments.		**Direction Sign Array:** Identifies location in conjunction with multiple intersecting taxiways.

Figure C-1. *Samples and explanations of standard airport signs.*

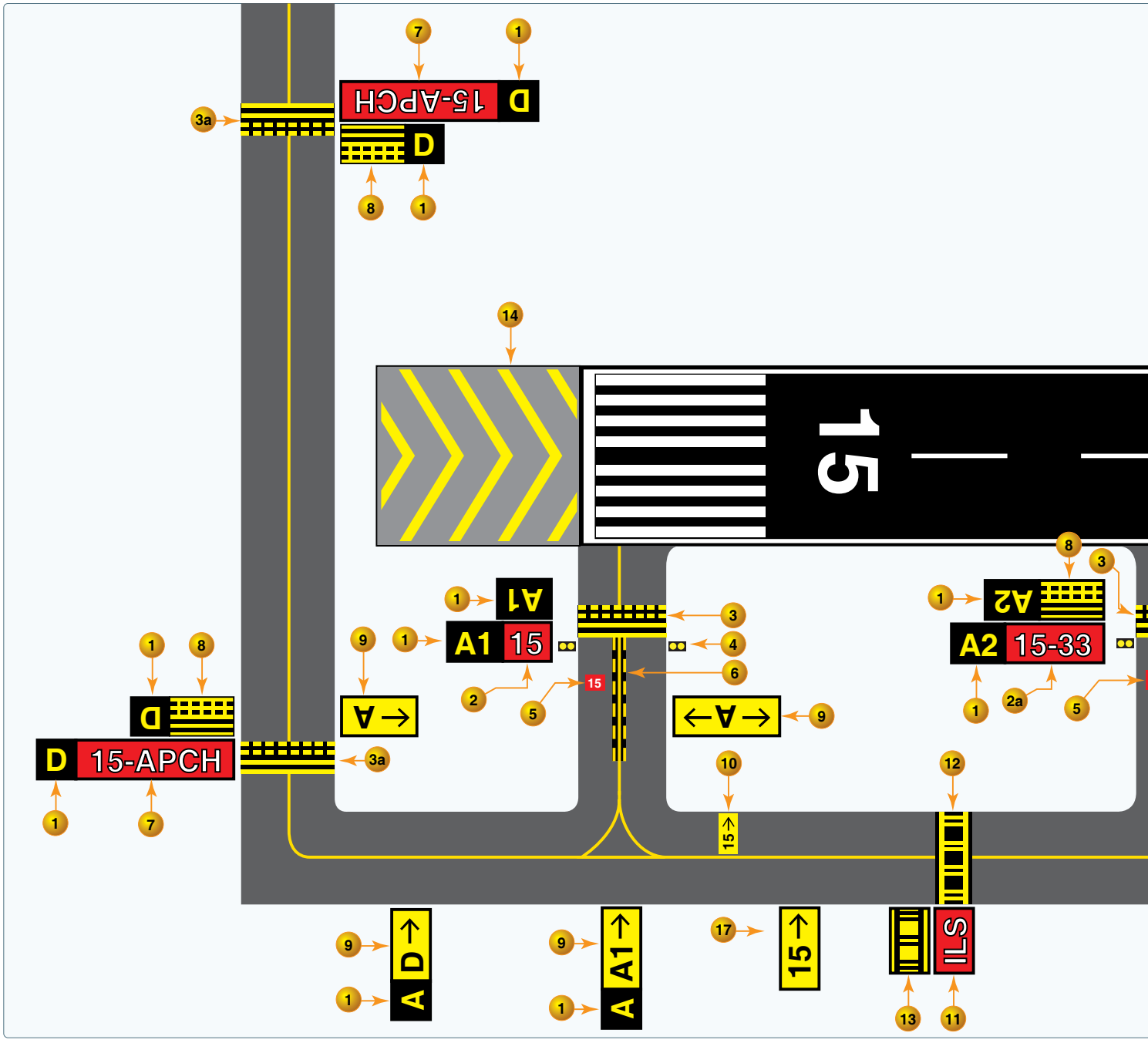
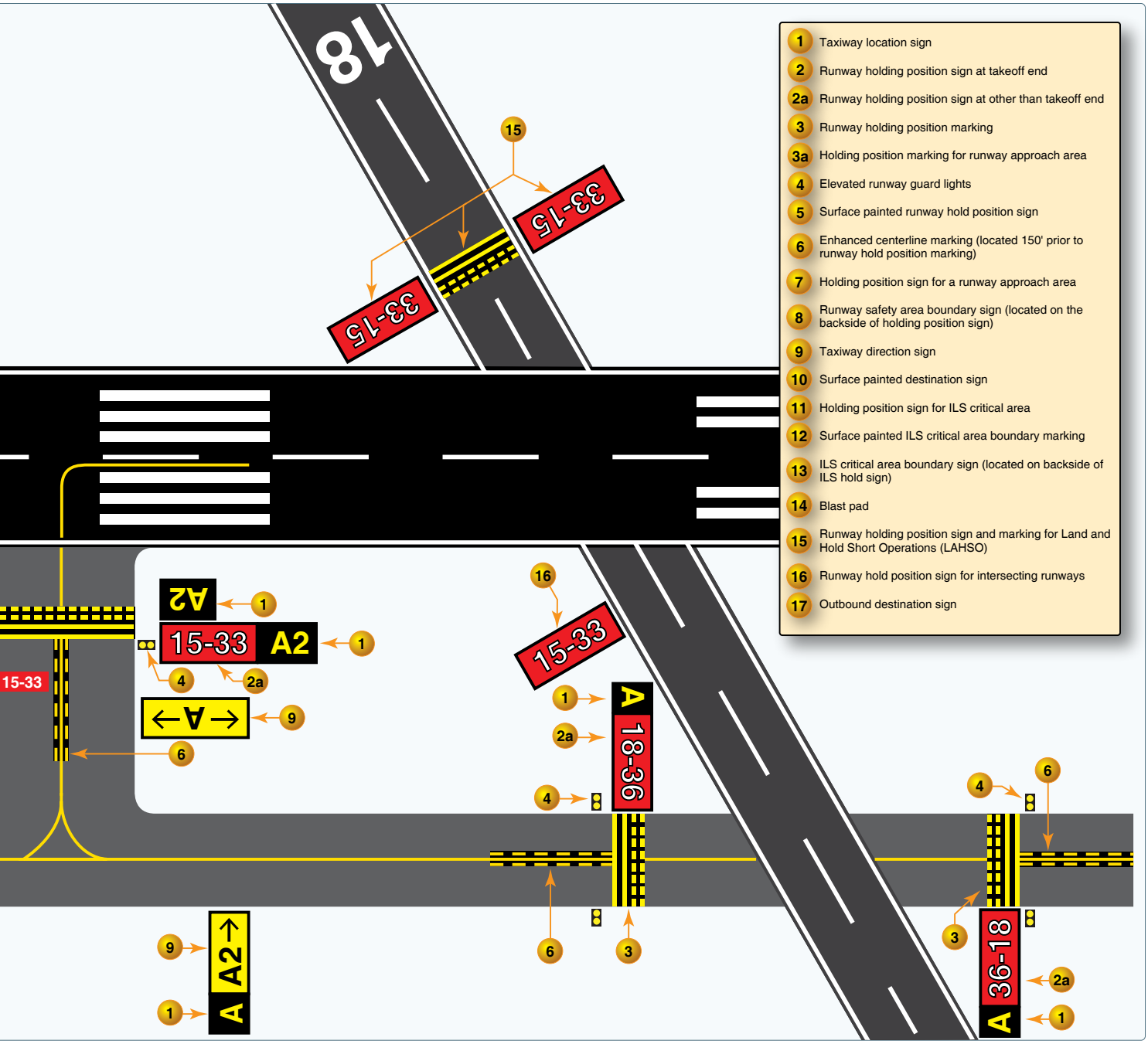


Figure C-2. *A sample runway with various possible markings and signs.*


18
15
33-15
33-15
A2
15-33
A2
15-33
A
18-36
A2
A
A
36-18
1 Taxiway location sign
2 Runway holding position sign at takeoff end
2a Runway holding position sign at other than takeoff end
3 Runway holding position marking
3a Holding position marking for runway approach area
4 Elevated runway guard lights
5 Surface painted runway hold position sign
6 Enhanced centerline marking (located 150' prior to runway hold position marking)
7 Holding position sign for a runway approach area
8 Runway safety area boundary sign (located on the backside of holding position sign)
9 Taxiway direction sign
10 Surface painted destination sign
11 Holding position sign for ILS critical area
12 Surface painted ILS critical area boundary marking
13 ILS critical area boundary sign (located on backside of ILS hold sign)
14 Blast pad
15 Runway holding position sign and marking for Land and Hold Short Operations (LAHSO)
16 Runway hold position sign for intersecting runways
17 Outbound destination sign

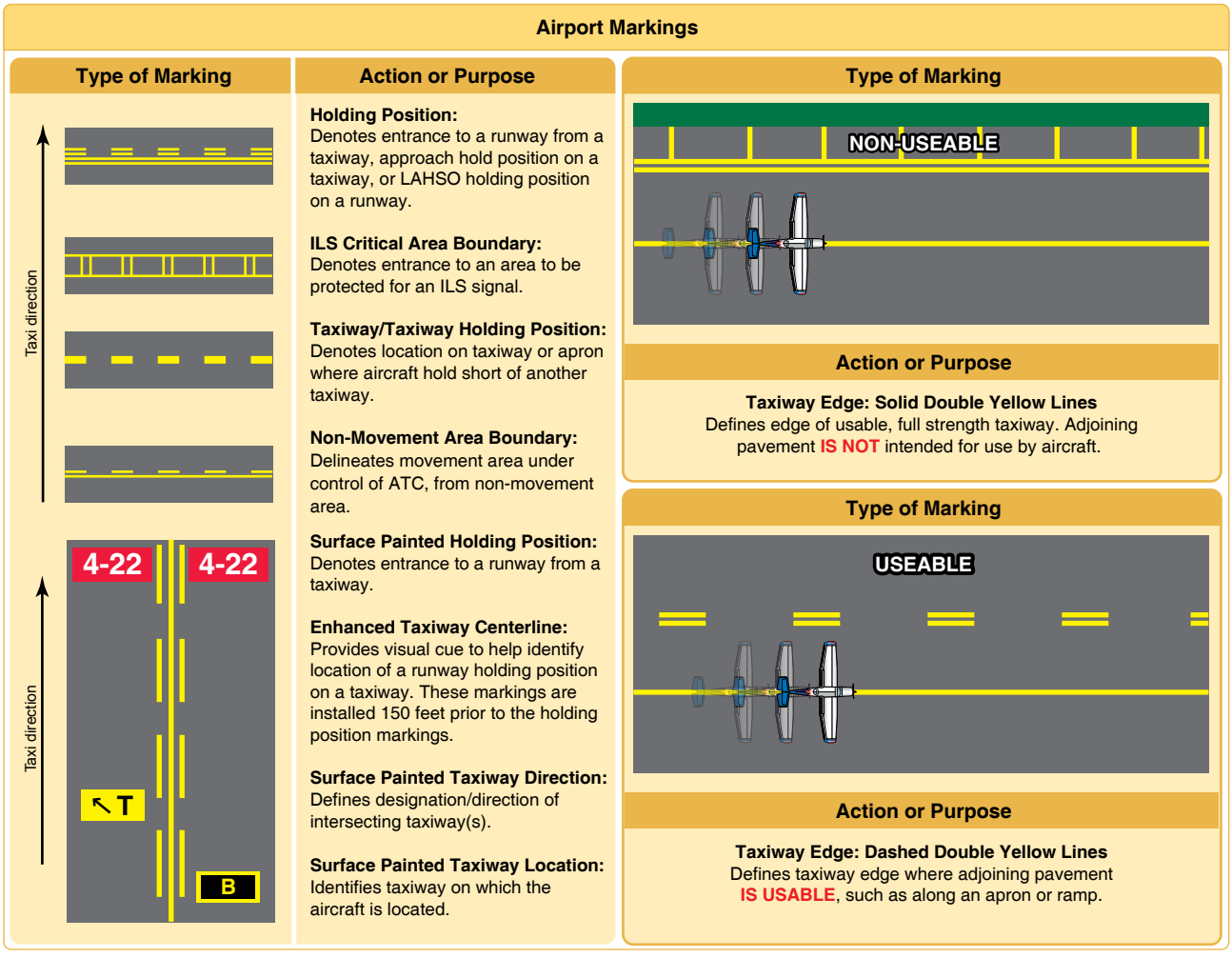


Figure C-3. *Samples and explanations of standard airport markings.*