NATIONAL GEODETIC SURVEY

DOCUMENTATION

OCTOBER 15, 1997

NGS FORM 292

AERONAUTICAL DATA SHEET

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THE NGS FORM 292, AERONAUTICAL DATA SHEET, IS AN OFFICIAL NATIONAL GEODETIC SURVEY (NGS) PUBLICATION THAT FURNISHES CRITICAL AERONAUTICAL DATA FOR THE OPERATION OF THE NATIONAL AIRSPACE SYSTEM. MOST OF THIS INFORMATION IS SOURCE DATA PROVIDED IN ACCORDANCE WITH A SERIES OF FEDERAL AVIATION ADMINISTRATION/NGS INTERAGENCY AGREEMENTS, AND ACQUIRED BY NGS USING FIELD SURVEY AND PHOTOGRAMMETRIC METHODS.

STANDARDS FOR THE DATA PROVIDED ON NGS FORM 292 CAN BE FOUND IN FAA NO. 405, STANDARDS FOR AERONAUTICAL SURVEYS AND RELATED PRODUCTS.

ALL DISTANCES AND ELEVATIONS ARE IN FEET.

ALL ELEVATIONS ARE ORTHOMETRIC (APPROXIMATE MEAN SEA LEVEL).

SOUTH LATITUDES AND WEST LONGITUDES ARE NEGATIVE.

MOST INFORMATION AVAILABLE ON THE NGS FORM 292, IS ALSO AVAILABLE ON THE INTERNET IN THE UNIVERSAL DATA DELIVERY FORMAT (UDDF) AT HTTP://WWW.NGS.NOAA.GOV.

THE AIRPORT LAYOUT GRAPHIC ON THE LAST PAGE MAY ALSO BE AVAILABLE AS A DIGITAL FILE.

FOR ADDITIONAL INFORMATION CONTACT: PROGRAM COORDINATOR AT 301-713-2685 EXT. 140

HEADER INFORMATION

FIELD	DESCRIPTION
ARPT IDENTIFIER	AIRPORT IDENTIFIER AS LISTED IN FAA ORDER 7350.**
ARPT NAME	AIRPORT NAME CURRENT AT DATE OF SURVEY
CITY	ASSOCIATED CITY
STATE	STATE (OR POLITICAL SOVEREIGNTY IF NOT A STATE)
ARPT ELEVATION	OFFICIAL AIRPORT ELEVATION
DISTANCE FROM RWY END	LOCATION OF AIRPORT ELEVATION IN FEET FROM THE INDICATED RUNWAY END (FOR EXAMPLE, 30 + 1500 =1500 FEET FROM THE APPROACH END OF RUNWAY 30).
AIRPORT REFERENCE POINT	
LATITUDE	AIRPORT REFERENCE POINT LATITUDE
LONGITUDE	AIRPORT REFERENCE POINT LONGITUDE
DATE GENERATED	DATE OF NGS FORM 292 GENERATION (NOT SURVEY DATE)
PROJECT NUMBER	NGS TRACKING NUMBER
SITE NUMBER	FAA SITE NUMBER
SURVEY DATE	CURRENCY DATE FOR ALL DATA. ALL DATA ON THE FORM WAS SURVEYED OR VERIFIED AS OF THIS DATE. IF DATA IS REVISED, A NEW NGS FORM 292 WILL BE ISSUED SHOWING ONLY THE REVISED DATA AND A NEW SURVEY DATE.
HORIZONTAL DATUM	HORIZONTAL GEODETIC DATUM FOR COORDINATES
VERTICAL DATUM	VERTICAL GEODETIC DATUM FOR ORTHOMETRIC (MSL) ELEVATIONS
ATCT FLOOR ELEV	AIRPORT TRAFFIC CONTROL TOWER CAB FLOOR ELEVATION
DECLINATION	MAGNETIC DECLINATION AT TIME OF SURVEY DATE. E=EAST, W=WEST

RUNWAY INFORMATION

FIELD	DESCRIPTION
RUNWAY	RUNWAY NUMBER
LENGTH	RUNWAY LENGTH
WIDTH	RUNWAY WIDTH
SURFACE TYPE	RUNWAY SURFACE TYPE, LIMITED TO THE FOLLOWING: - SPECIALLY PREPARED HARD SURFACE - PAVED - SPECIALLY PREPARED HARD SURFACE - UNPAVED - NOT A SPECIALLY PREPARED HARD SURFACE
RUNWAY END DATA	
RWY	RUNWAY NUMBER
LATITUDE	RUNWAY END LATITUDE
LONGITUDE	RUNWAY END LONGITUDE
ELEV	RUNWAY END ELEVATION
GEODETIC AZ (N)	RUNWAY GEODETIC AZIMUTH FROM NORTH
TDZE	TOUCHDOWN ZONE ELEVATION
DISPLACED THRESHOLD DATA	
LENGTH	DISPLACED THRESHOLD LENGTH
LATITUDE	DISPLACED THRESHOLD LATITUDE
LONGITUDE	DISPLACED THRESHOLD LONGITUDE
ELEV	DISPLACED THRESHOLD ELEVATION

PROFILE DATA

DISTANCE	PROFILE POINT DISTANCE FROM INDICATED RUNWAY APPROACH END. RUNWAY APPROACH END IS INDICATED BY 0 FEET.
ELEV	ELEVATION OF PROFILE POINT AT INDICATED DISTANCE FROM INDICATED RUNWAY APPROACH END. NOTE: IF A PROFILE POINT DISTANCE IS GREATER THAN THE RUNWAY LENGTH, THE POINT IS ON A STOPWAY. TOTAL STOPWAY LENGTH IS EQUAL TO THE GREATEST PROFILE POINT DISTANCE SHOWN MINUS THE RUNWAY LENGTH.

NAVIGATIONAL AID INFORMATION

FIELD	DESCRIPTION
ELECTRONIC	ELECTRONIC NAVAIDS ARE LISTED IN ALPHABETIC ORDER BY TYPE. THE RUNWAY SERVED BY ILS COMPONENTS ARE IDENTIFIED IN PARENTHESIS. THE IDENTIFIER FOR NON-ILS NAVAIDS ARE ALSO SHOWN IN PARENTHESIS. "PP" (PERPENDICULAR POINT) REFERS TO THE POINT ON THE RUNWAY CENTERLINE OR CENTERLINE EXTENDED NEAREST TO THE INDICATED NAVAID.
LATITUDE	LATITUDE OF INDICATED NAVAID OR PP
LONGITUDE	LONGITUDE OF INDICATED NAVAID OR PP.
ELEV	ELEVATION OF INDICATED NAVAID OR PP.
OFFSET DISTANCE	DISTANCE BETWEEN A NAVAID AND ITS ASSOCIATED PP. OFFSET DISTANCES ARE LISTED ONLY FOR: - ILS GLIDE SLOPE AND LOCALIZER ANTENNAS - MLS ELEVATION AND AZIMUTH GUIDANCE ANTENNAS - LOCALIZER TYPE DIRECTIONAL AID ANTENNAS - SIMPLIFIED DIRECTIONAL FACILITY ANTENNAS OFFSET DISTANCES ARE PROVIDED ONLY IF THE NAVAID IS MORE THAN 10 FEET OFF THE RUNWAY CENTERLINE OR CENTERLINE EXTENDED.
ALONG CNTRLN DISTANCE	DISTANCE BETWEEN NAVAID PP AND THE RUNWAY APPROACH OR STOP END, DEPENDING ON NAVAID. DISTANCE BETWEEN NAVAID PP AND RUNWAY APPROACH END IS PROVIDED FOR THE FOLLOWING NAVAIDS. A NEGATIVE DISTANCE FOR THESE NAVAIDS INDICATES THAT THE PP IS ON THE APPROACH SIDE OF THE RUNWAY APPROACH END. - ILS GLIDE SLOPE ANTENNAS - MLS ELEVATION GUIDANCE ANTENNAS - LOCALIZER ANTENNAS - LOCALIZER TYPE DIRECTIONAL AID ANTENNAS - MLS AZIMUTH GUIDANCE ANTENNAS - SIMPLIFIED DIRECTIONAL FACILITY ANTENNAS

FIELD	DESCRIPTION
	DISTANCE BETWEEN NAVAID AND RUNWAY APPROACH END IS PROVIDED FOR THE FOLLOWING NAVAIDS. NOTE - FOR THESE NAVAIDS THE PROVIDED DISTANCE IS FROM THE NAVAID, NOT THE PP, TO THE RUNWAY END. - BACK COURSE MARKER ANTENNAS - ILS MARKER BEACON ANTENNAS
VISUAL	VISUAL NAVAIDS ARE LISTED IN ALPHABETIC ORDER BY TYPE. THE RUNWAY SERVED BY THE NAVAID IS IDENTIFIED IN PARENTHESIS. THE AIRPORT BEACON (APBN) IS THE ONLY VISUAL NAVAID CARRYING A POSITION.
LATITUDE	LATITUDE OF INDICATED NAVAID (APBN ONLY)
LONGITUDE	LONGITUDE OF INDICATED NAVAID (APBN ONLY)

OBSTRUCTION INFORMATION

OBSTRUCTION INFORMATION IS ORGANIZED INTO OBSTRUCTION BLOCKS. EACH BLOCK IS IDENTIFIED IN THE UPPER LEFT CORNER WITH A REFERENCE IDENTIFIER AND THE OBSTRUCTION IDENTIFICATION SURFACES (OIS) FOR WHICH THE SURVEY WAS ACCOMPLISHED.
FOR EXAMPLE, "4 AV" AT THE UPPER LEFT OF A BLOCK INDICATES THAT THE DATA IN THIS BLOCK PERTAINS TO RUNWAY 4 AND THAT THE OBSTRUCTION SURVEY WAS ACCOMPLISHED TO FAR77 VISUAL UTILITY RUNWAY OIS SPECIFICATIONS (SEE OIS CODING BELOW).

OBJECTS LOCATED WITHIN A FAR77 APPROACH OR PRIMARY AREA ARE LISTED IN AN OBSTRUCTION BLOCK WITH A RUNWAY NUMBER AS THE REFERENCE IDENTIFIER AND AN FAR77 OIS CODE.

OBJECTS LOCATED WITHIN AN AREA NAVIGATION APPROACH (ANA) CONVENTIONAL LANDING APPROACH, PRIMARY, TRANSITION, OR MISSED APPROACH AREA ARE LISTED IN AN OBSTRUCTION BLOCK WITH A RUNWAY NUMBER AS THE REFERENCE IDENTIFIER AND AN ANA OIS CODE.

IF BOTH A FAR77 AND ANA SURVEY WERE ACCOMPLISHED FOR THE SAME APPROACH, THE DATA WILL BE CARRIED IN TWO OBSTRUCTION BLOCKS, EACH SHOWING THE SAME RUNWAY NUMBER AS THE REFERENCE IDENTIFIER BUT DIFFERENT OIS CODING.

OBJECTS LOCATED WITHIN A FAR77 HORIZONTAL, CONICAL, OR TRANSITION AREA ARE LISTED IN AN OBSTRUCTION BLOCK WITH THE AIRPORT REFERENCE POINT (ARP) AS THE REFERENCE IDENTIFIER AND "HCT" AS THE OIS CODE..

OBJECTS LOCATED WITHIN ANY HELIPORT OIS ARE LISTED IN AN OBSTRUCTION BLOCK WITH THE HELIPORT REFERENCE POINT (HRP) AS THE REFERENCE IDENTIFIER AND AN ANA VERTICAL LANDING OIS CODE.

OIS CODING FOLLOWS:

ANAC - AREA NAVIGATION APPROACH/ NONPRECISION, CONVENTIONAL LANDING.
(STANDARDS TO BE DEVELOPED)

ANAV - AREA NAVIGATION APPROACH/ NONPRECISION, VERTICAL LANDING.
(STANDARDS TO BE DEVELOPED)

ANAPC - AREA NAVIGATION APPROACH/ PRECISION, CONVENTIONAL LANDING.
INCLUDES APPROACH, PRIMARY, TRANSITION, AND MISSED APPROACH SURFACES.

ANAPV - AREA NAVIGATION APPROACH/ PRECISION VERTICAL LANDING
(STANDARDS TO BE DEVELOPED)

AV - FAR77 VISUAL APPROACH/ UTILITY RUNWAY.
INCLUDES APPROACH AND PRIMARY SURFACES ONLY.

ANP - FAR77 NONPRECISION APPROACH/ UTILITY RUNWAY. INCLUDES APPROACH AND PRIMARY SURFACES ONLY.

BV - FAR77 VISUAL APPROACH INCLUDES APPROACH AND PRIMARY SURFACES ONLY.

C - FAR77 NONPRECISION APPROACH/ VISIBILITY MINIMUMS GREATER THAN 3/4 MILE.
INCLUDES APPROACH AND PRIMARY SURFACES ONLY.

D - FAR77 NONPRECISION APPROACH/ VISIBILITY MINIMUMS AS LOW AS 3/4 MILE.
INCLUDES APPROACH AND PRIMARY SURFACES ONLY.

PIR - FAR77 PRECISION INSTRUMENT APPROACH.
INCLUDES APPROACH AND PRIMARY SURFACES ONLY.

SUPLC - C OIS UNDERLYING A BV OIS.
INCLUDES APPROACH AND PRIMARY SURFACES ONLY.

HCT - FAR77 HORIZONTAL, CONICAL, AND TRANSITION
INCLUDES FAR77 HORIZONTAL, CONICAL, AND TRANSITION SURFACES ONLY. .

NUL - OIS NOT APPLICABLE

NOTE: SPECIAL CONSIDERATIONS FOR MOBILE OBJECTS AND VESSELS ARE DISCUSSED BELOW.

MOBILE OBJECTS:

AN ESTIMATED MAXIMUM ELEVATION (EME) POINT IS PROVIDED FOR FAR77 SURVEYS AT: (1) THE POINT NEAREST TO THE RUNWAY APPROACH CENTERLINE END FOR PRIMARY SURFACE PENETRATIONS, (2) THE MOST PENETRATING POINT FOR APPROACH SURFACE PENETRATIONS, AND (3) AS APPROPRIATE TO REPRESENT EACH MOBILE OBJECT AREA.

AN ESTIMATED MAXIMUM ELEVATION (EME) POINT IS PROVIDED FOR ANA SURVEYS AT: (1) THE POINT NEAREST TO THE RUNWAY CENTERLINE AT THE THRESHOLD FOR PRIMARY SURFACE PENETRATIONS, (2) AND MOST PENETRATING POINT FOR APPROACH SURFACE PENETRATIONS, AND (3) AS APPROPRIATE TO REPRESENT EACH MOBILE OBJECT AREA.

VESSELS:

VESSEL POSITIONS AND ELEVATIONS ARE NOT PROVIDED BECAUSE OF UNCERTAINTIES IN DETERMINING MAXIMUM VESSEL HEIGHTS, TRAVEL LIMITS, AND FREQUENCY OF PASSAGE.

IF A POSSIBLE VESSEL OBSTRUCTION EXISTS, THE NAME “VESSEL” WILL BE ENTERED IN THE OBSTRUCTION BLOCK IN THE OBJECT NAME FIELD. FOR FAR77 STUDIES, THE GENERAL AREA OF POSSIBLE OBSTRUCTION WILL ALSO BE ENTERED IN PARENTHESIS WITH THE OBJECT NAME.

FOR VESSELS POSSIBLY OBSTRUCTING AN FAR77 APPROACH OR PRIMARY OIS, AN “A” FOLLOWED BY THE APPROPRIATE RUNWAY NUMBER WILL ALSO BE ENTERED IN THE OBJECT NAME FIELD.

FOR VESSELS POSSIBLY OBSTRUCTING AN FAR77 HORIZONTAL, CONICAL, OR TRANSITION OIS, AN “HCT” WILL ALSO BE ENTERED THE OBJECT NAME FIELD.

FOR VESSELS POSSIBLY OBSTRUCTING AN ANA OIS, ONLY THE NAME “VESSEL” WILL BE ENTERED IN THE OBJECT NAME FIELD.

EXAMPLES:

FOR FAR77 OIS:

VESSEL(A32) - VESSELS MAY OBSTRUCT THE RUNWAY 32 FAR77 APPROACH OR PRIMARY OIS.

VESSEL(HCT) - VESSELS MAY OBSTRUCT AN FAR77 HORIZONTAL, CONICAL, OR TRANSITION OIS.

FOR ANA OIS:

VESSEL - VESSELS MAY OBSTRUCT THE RUNWAY 32 APPROACH, PRIMARY, TRANSITION, OR MISSED APPROACH OIS.

IF POSSIBLE VESSEL OBSTRUCTION IS INDICATED, USERS ARE ADVISED TO CONTACT LOCAL AUTHORITIES FOR MAXIMUM VESSEL HEIGHT, FREQUENCY OF PASSAGE, TRAVEL LIMITS, AND OTHER PERTINENT INFORMATION.

DESCRIPTIONS OF THE OBSTRUCTION BLOCK FIELDS FOLLOW.

FIELD	DESCRIPTION

FOR OBSTRUCTION BLOCKS WITH
RUNWAY NUMBER AS REFERENCE IDENTIFIER

OBJECT OBJECT NAME

LATITUDE OBJECT LATITUDE

LONGITUDE OBJECT LONGITUDE

A ACCURACY (CODED)

HORIZONTAL (FT)	VERTICAL (FT)
1 = 20	A = 3
2 = 50	C = 20
3 = 100	D = 50
	M = EST MAX ELEV*

*AN ESTIMATED MAXIMUM ELEVATION IS PROVIDED WHEN THE ELEVATION CANNOT BE ACCURATELY DETERMINED, AS WITH MOBILE OBJECTS.

ELEV ELEVATION OF THE TOP OF THE OBJECT

AGL ABOVE GROUND ELEVATION. AGL VALUES ARE NORMALLY PROVIDED ONLY FOR THOSE REPRESENTATIVE OBSTRUCTIONS THAT ARE MANMADE AND EQUAL TO OR GREATER THAN 200 FEET AGL.

HAR HEIGHT ABOVE RUNWAY PHYSICAL END

HAT HEIGHT ABOVE TOUCHDOWN ZONE ELEVATION

HAA HEIGHT ABOVE AIRPORT

DEND DISTANCE MEASURED ALONG THE RUNWAY CENTERLINE OR CENTERLINE EXTENDED FROM THE RUNWAY PHYSICAL END TO A POINT ABEAM THE OBJECT. A NEGATIVE DISTANCE INDICATES THAT THE OBJECT IS ON TOUCHDOWN SIDE OF RUNWAY APPROACH END.

DTHR DISTANCE MEASURED ALONG THE RUNWAY CENTERLINE OR CENTERLINE EXTENDED FROM A DISPLACED THRESHOLD TO A POINT ABEAM THE OBJECT. A NEGATIVE DISTANCE INDICATES THAT THE OBJECT IS ON THE TOUCHDOWN SIDE OF THE THRESHOLD.

FIELD	DESCRIPTION
DCLN	SHORTEST DISTANCE FROM THE RUNWAY CENTERLINE OR CENTERLINE EXTENDED TO THE OBJECT. “L” (LEFT) OR “R” (RIGHT) IS RELATIVE TO AN OBSERVER FACING FORWARD IN A LANDING AIRCRAFT. AN ASTERISK (*) INDICATES THAT THE OBJECT IS OUTSIDE, BUT WITHIN 50 FEET OF, THE INDICATED OIS.
PNTR	PENETRATION OF THE INDICATED OIS.

FIELD	DESCRIPTION
	FOR OBSTRUCTION BLOCKS WITH ARP AS REFERENCE IDENTIFIER
OBJECT	OBJECT NAME
LATITUDE	OBJECT LATITUDE
LONGITUDE	OBJECT LONGITUDE
ELEV	ELEVATION AT THE TOP OF THE OBJECT
A	ACCURACY (CODED) HORIZONTAL (FT) VERTICAL (FT) 1 = 20 A = 3 2 = 50 C = 20 3 = 100 D = 50 M = EST MAX ELEV* *AN ESTIMATED MAXIMUM ELEVATION IS PROVIDED WHEN THE ELEVATION CANNOT BE ACCURATELY DETERMINED, AS WITH MOBILE OBJECTS.
AGL	ABOVE GROUND ELEVATION. AGL VALUES ARE NORMALLY PROVIDED ONLY FOR THOSE REPRESENTATIVE OBSTRUCTIONS THAT ARE MANMADE AND EQUAL TO OR GREATER THAN 200 FEET AGL.
HAA	HEIGHT ABOVE AIRPORT
MAG BEARING	MAGNETIC BEARING FROM ARP TO OBJECT
DISTANCE	DISTANCE FROM ARP TO OBJECT
PNTR	PENETRATION OF HORIZONTAL, CONICAL, OR TRANSITION OIS.

FIELD	DESCRIPTION

FOR OBSTRUCTION BLOCKS WITH HRP AS REFERENCE IDENTIFIER

REQUIRED DATA, DELIVERY FORMATS, AND OTHER ITEMS FOR HELIPORT SURVEYS HAVE NOT BEEN DEVELOPED.