

ANNEX F

NGS SURVEY EQUIPMENT CODES

- 000-099 - Gravity Instruments and Satellite Systems
- 100-199 - Theodolites and Transits
- 200-299 - Leveling Instruments
- 300-399 - Leveling Rods and Staffs
- 400-499 - Steel and Invar Tapes
- 500-599 - Lightwave Distance-Measuring Equipment
- 600-699 - Infrared Distance-Measuring Equipment
- 700-799 - Microwave Distance-Measuring Equipment
- 800-899 - Total Station-Measuring Equipment
- 900-999 - Other Miscellaneous Surveying Equipment

The purpose of the National Geodetic Survey (NGS) Survey Equipment Code is to provide a three-digit identifier for each item of survey equipment commonly used in connection with horizontal and vertical control surveys in the United States. The code has been devised in such a manner that the first digit of the three-digit identifier would indicate a specific category of survey equipment. Accordingly, there are ten broad survey equipment categories, the first of which (000-099) is reserved for gravity instruments and satellite systems, and the last (900-999) is reserved for miscellaneous survey equipment which does not fit into any of the specific categories. The ten survey equipment categories are listed above.

Within each category, specific items and/or classes of survey equipment have been grouped into subcategories and assigned unique three-digit code numbers. The grouping of survey equipment into subcategories is intended to reflect the level of accuracy attained in common usage of the specific items or classes of survey equipment in question and not necessarily their intrinsic or potential accuracy. In each category and subcategory, a code is provided for items of survey equipment which do not appear among the items listed or which are not specifically identified. The respective lists of survey equipment are not all-inclusive, and series of numbers have been skipped in each category and/or subcategory to allow for additions.

CODE	MANUFACTURER	INSTRUMENT MODEL OR TYPE
*****	*****	*****
<u>000-099 - GRAVITY INSTRUMENTS AND SATELLITE SYSTEMS</u>		
000	Unspecified	Unknown Instrument or System
<u>001-009 - Reserved for Absolute Gravity Devices</u>		
<u>010-029 - Gravimeters</u>		
010	Unspecified	Gravimeter
011	Frost	Frost Gravimeter
012	North American	North American Gravimeter
013	LaCoste-Romberg	Early Models
014	LaCoste-Romberg	G-Meter
015	LaCoste-Romberg	D-Meter
016	Worden	Unspecified
017	Worden	Uncompensated Model
018	Worden	Temperature-Compensated Model
019	Scintrex	CG-2
<u>030-049 - Doppler Satellite Tracking Systems</u>		
030	Unspecified	Doppler Satellite Tracking System
031	Magnavox	Geoceiver or Geoceiver II
032	JMR	JMR-1
033	ITT	ITT 5500
034	Magnavox	MX-702A
035	APL	Tranet
036	Canadian	Marconi CMA 722A
037	Canadian	Marconi CMA 722B
038	Magnavox	MX-1502
<u>050-099 - GPS Satellite Tracking Systems</u>		
050	Unspecified	GPS Satellite Tracking System
051	Western Atlas Intl.	Macrometer _R V1000
052	Western Atlas Intl.	Macrometer TM II
053	Texas Instruments, Inc.	TI-4100 (GESAR Software)
054	Texas Instruments, Inc.	TI-4100 (TI EPROM Software)
055	Trimble Navigation, Ltd.	4000 series
056	Leica-Wild-Magnavox	WM101,WM102,SR299,399,9500 series,CRS1000
057	ISTAC, Inc.	Model 2002 TM
058	EDO Canada, Ltd.	EDO JMR GeoTrak
059	Motorola, Inc.	Eagle series
060	Norstar Instruments, Ltd.	Norstar 1000
061	SERCEL Inc.- USA	TR5S, NR101, NR104
062	Western Atlas Intl.	MINI-MAC TM

CODE	MANUFACTURER	INSTRUMENT MODEL OR TYPE
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050-099 - GPS Satellite Tracking Systems - Continued

063	Ashtech, Inc.	XII series, L-,M-,P-,S- & Z- series
064	Allen Osborne Assoc.,Inc.	Rogue series
065	NovAtel Commun., Ltd.	NovAtel GPSCard,Outrider,Millenium
066	Topcon America Corp.	GP series, TURBO series
067	Del Norte Technology,Inc.	1008,1012
068	Magellan	NAV5000 PRO
069	Javad Positioning Systems	LEGACY,REGENCY,ODYSSEY
070	Sokkia Corporation	GSR 2000 & 3000 series
071	Specra Precision AB	Geotracer 2000 series
072	3S Navigation	R100 series

100-199 - THEODOLITES AND TRANSITS

100	Unspecified	Theodolite or Transit
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101-119 - Instruments of Geodetic Astronomy

101	Various	Zenith Telescope
102	Various	Meridian Telescope, Transit, or Circle
103	Various	Bamberg-Type Astronomic Transit
104	Wild	T-4
105	Kern	DKM3-A
106	Gigas-Askania	TPR
107	Zeiss/Jena	Theo-Q02

120-139 - First-Order (Geodetic) Theodolites

120	Unspecified	0."1, 0."2, 0."5 Direct-Reading Theodolite
121	Various	Ramsden-Type 30, 24, 12-inch Theodolite
122	Various	USC&GS Parkhurst
123	Wild	T-3
124	Kern	DKM3
125	CTS/Vickers	Geodetic Tavistock
126	Hilger-Watts	Microptic No. 3

140-159 - Second-Order (Universal) Theodolites

140	Unspecified	1", 2", 5" Direct-Reading Theodolite
141	Various	USC&GS 7-inch Repeating Theodolite
142	Wild	T-2 or T-2E
143	Kern	DKM2 or DKM2-A
144	CTS/Vickers	V-400 Series
145	Hilger-Watts	Microptic No. 2
146	Dietzgen/Askania	A2 or A2E
147	Zeiss/Oberkochen	Th2
148	Zeiss/Jena	Theo-010 or Theo-010A
149	Nikon	NT-3 or NT-5
150	Sokkisha	TM-1A
151	Geotec	TH-01

CODE ****	MANUFACTURER *****	INSTRUMENT MODEL OR TYPE *****
<u>160-169 - Third-Order (Construction) Theodolites</u>		
160	Unspecified	Construction Theodolite or Transit
161	Various	10" Direct-Reading Theodolite or Transit
162	Various	20" Direct-Reading Theodolite or Transit
163	Various	30" Direct-Reading Theodolite or Transit
164	Various	1' Direct-Reading Theodolite or Transit
<u>170-179 - 30' or Coarser Angulation Devices</u>		
170	Unspecified	30' or Coarser Angulation Device
171	Various	30' or Coarser Theodolite or Transit
172	Various	30' or Coarser Compass Device
173	Various	30' or Coarser Protractor
<u>180-199 - Gyroscopic Theodolites</u>		
180	Unspecified	Gyro-Theodolite
<u>200-299 - LEVELING INSTRUMENTS</u>		
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200	Unspecified	Leveling Instrument
<u>210-249 - Precise (Geodetic) Levels</u>		
210	Unspecified	Precise Level
<u>211-230 - Precise Spirit (Bubble-Vial) Levels</u>		
211	Various	USC&GS Fischer
212	USC&GS	Stampfer-Type (1877-1899)
213	Buff & Berger	Van Orden or Mendenhall
214	Various	Kern-Type (US Engineers)
215	Zeiss	Ni-III or Ni-A
216	Zeiss/Jena	Ni-004
217	Wild	N-3
218	Kern	NK3-M
219	Breithaupt	NABON
220	Fennel	Precise Level
221	Hilger-Watts	Precise Level
222	CTS/Vickers	Geodetic Level
223	Sokkisha	PL-5
224	Keuffel & Esser	Precise Level

CODE	MANUFACTURER	INSTRUMENT MODEL OR TYPE
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231-249 - Precise Compensator (Self-Aligning) Levels

231	Zeiss/Oberkochen	Nil
232	Zeiss/Oberkochen	Ni2
233	Zeiss/Jena	Ni-002
234	Zeiss/Jena	Ni-007
235	Wild	NA-2 or NAK-2
236	Salmoiraghi	5190
237	MOM	Ni-A31
238	Sokkisha	B-1
239	Kern	GK2-A
240	Topcon	AT-D2
241	Zeiss	Ni-005A
242	Leica/Wild	NA2000 or NA2002 Digital Level
243	Leica/Wild	NA3000, NA3003 or DNA03 Digital Level
244	TOPCON	DL101 Digital Level
245	TOPCON	DL102 Digital Level
246	ZEISS	DINI10, DINI11 or DINI12 Digital Level

250-289 - Engineer's (Universal) Levels

250	Unspecified	Engineer's Level
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251-270 - Engineer's Spirit (Bubble-Vial) Levels

251	Various	18-inch Dumpy-Type Level
252	Various	18-inch Wye-Type Level
253	Zeiss	Ni-II or Ni-B
254	Zeiss/Jena	Ni-030
255	Wild	N-2 or NK-2
256	Kern	NK3
257	Kern	NK2
258	Kern	GK23
259	Breithaupt	NAKRE
260	Fennel	Engineer's Level
261	Hilger-Watts	Engineer's Level
262	CTS/Vickers	Engineer's Level
263	Salmoiraghi	5160 Series
264	Nikon	S2
265	Sokkisha	TTL-5 or TTL-6
266	Geotec	L-11 or L-21

271-289 - Engineer's Compensator (Self-Aligning) Levels

271	Zeiss/Oberkochen	Ni22
272	Zeiss/Jena	Ni-025
273	Kern	GK1-A
274	Breithaupt	AUTOM or AUCIR
275	Fennel	AUING
276	Hilger-Watts	AUTOSET
277	Salmoiraghi	5173, 5175, or 5180
278	Ertel	INA
279	Nikon	AE Series
280	Sokkisha	B-2
281	Geotec	AL-2 or AL-23
282	Sokkisha	C-1

CODE	MANUFACTURER	INSTRUMENT MODEL OR TYPE
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<u>290-299 - Builder's (Construction) Levels</u>		
290	Unspecified	Builder's Level
291	Various	Builder's Dumpy-Type Spirit Level
292	Various	Builder's Tilting Spirit Level
293	Various	Builder's Compensator Level
<u>300-399 - LEVELING RODS AND STAFFS</u>		
300	Unspecified	Leveling Rod or Staff
<u>310-349 - Precise (Geodetic) Metal-Scale Rods</u>		
310	Unspecified	Precise Metal-Scale Rod
311	USC&GS	USC&GS Pre-Invar Rods
312	USC&GS	Invar (Introduced in 1916)
313	Zeiss/Oberkochen	Invar
314	Zeiss/Jena	Invar
315	Wild	Invar
316	Kern	Invar
317	Breithaupt	Invar
318	Fennel	Invar
319	Hilger-Watts	Invar
320	CTS/Vickers	Nilex
321	Salmoiraghi	Invar
322	Keuffel & Esser	Invar
323	Gurley	Invar
324	Renick	Invar (Checkerboard)
325	USGS	Invar (Metal-Frame)
340	Nedo	Invar
341	Nestler	Invar
<u>350-389 - Engineer's Wooden Rods and Staffs</u>		
350	Unspecified	Engineer's Wooden Rod or Staff
351	Various	US Engineers 12-foot Rigid Rod
352	Various	US Geological Survey 12-foot Rigid Rod
<u>390-395 - Builder's Rods and Staffs</u>		
390	Unspecified	Builder's Rod or Staff
391	Various	Philadelphia Rod
392	Various	Chicago Rod
393	Various	California Rod
394	Various	12-foot Folding Rod
395	Non-invar bar-code rod	Typically fiberglass. Provide details in comment record--manufacturer, number of sections, length, material.

CODE	MANUFACTURER	INSTRUMENT MODEL OR TYPE
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396-399 - Precise (Geodetic) Metal-Scale, Bar-Code Rods

396	Leica/Wild	Invar (Bar-Code) Rod
397	Zeiss	Invar (Bar-Code) Rod
398	Topcon	Invar (Bar-Code) Rod

400-499 - STEEL AND INVAR TAPES

400	Unspecified	Steel or Invar Tape
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420-439 - Calibrated Invar Tapes

420	Unspecified	Calibrated Invar Tape
421	Various	25-meter Calibrated Invar Tape
422	Various	50-meter Calibrated Invar Tape
423	Various	100-foot Calibrated Invar Tape

440-459 - Calibrated Steel Tapes

440	Unspecified	Calibrated Steel Tape
441	Various	30-meter Calibrated Steel Tape
442	Various	100-foot Calibrated Steel Tape
443	Various	300-foot Calibrated Steel Tape

460-479 - Uncalibrated Steel Tapes

460	Unspecified	Uncalibrated Steel Tape or Ruler
461	Various	30-meter Uncalibrated Steel Tape
462	Various	100-foot Uncalibrated Steel Tape
463	Various	300-foot Uncalibrated Steel Tape

500-599 - LIGHTWAVE DISTANCE-MEASURING EQUIPMENT (DME)

500	Unspecified	Lightwave Electro-Optical DME
501	AGA	Geodimeter Model 1
502	AGA	Geodimeter Model 2 or 2A
503	AGA	Geodimeter Model 3
504	AGA	Geodimeter Model 4A, 4B, or 4D
505	AGA	Geodimeter Model 4L or 4L 10A
506	AGA	Geodimeter Model 6
507	AGA	Geodimeter Model 6A
508	AGA	Geodimeter Model 6B
509	AGA	Geodimeter Model 6BL
510	AGA	Geodimeter Model 7T
511	AGA	Geodimeter Model 700 or 710
512	AGA	Geodimeter Model 76 or 78
513	AGA	Geodimeter Model 8
531	Keuffel & Esser	LSE Ranger I, II, or III
532	Keuffel & Esser	LSE Ranger IV
533	Keuffel & Esser	LSE Ranger V
534	Keuffel & Esser	LSE Rangemaster
535	Keuffel & Esser	Rangemaster II
536	Keuffel & Esser	Uniranger

CODE	MANUFACTURER	INSTRUMENT MODEL OR TYPE
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500-599 - LIGHTWAVE DISTANCE-MEASURING EQUIPMENT - CONTINUED

541	Spectra-Physics	Geodolite 3G
542	Spectra-Physics	Transitlite LT-3
551	Kern	ME-3000 Mekometer
561	Cubic Precision	Rangemaster III
562	Cubic Precision	Ranger V-A
571	Leitz	Red 2L

600-699 - INFRARED DISTANCE-MEASURING EQUIPMENT

600	Unspecified	Infrared Electro-Optical DME
601	AGA	Geodimeter Model 12 or 12A
602	AGA	Geodimeter Model 78,110,114,116
603	AGA	Geodimeter Model 210 or 220
604	AGA	Geodimeter Model 120 or 216
605	AGA	Geodimeter Model 6000
606	AGA	Geodimeter Model 14 or 14A
607	AGA	Geodimeter Model 112 or 122
611	Plessey	Tellurometer CD-6
612	Plessey	Tellurometer MA-100
613	Plessey	Tellurometer MA-200
616	Lietz	Red Mini 2
617	Lietz	Red 2A
621	Wild	Distomat DI-3 Series
622	Wild	Distomat DI-10 Series
623	Wild	Distomat DI-4L
624	Wild	Distomat DI-5 or DI-5S
625	Wild	DI 1000 or 1000L
626	Wild	DI 2000
627	Wild	DI 3000 (time-pulse)
628	Leica/Wild	DI 2002
629	Leica/Wild	DI 1600
631	Kern	DM-500
632	Kern	DM-1000 or DM-2000
633	Kern	DM 104 or DM 150
634	Kern	DM 503 or DM 550
635	Kern	DM 504
641	Zeiss/Oberkochen	SM 11 or RegElta 14
642	Zeiss/Oberkochen	Eldi Series
643	Zeiss/Oberkochen	SM 4
651	Keuffel & Esser	LSE Microranger or Microranger II
652	Keuffel & Esser	LSE Autoranger
661	Hewlett-Packard	3800A or 3800B
662	Hewlett-Packard	3805 or 3810
663	Hewlett-Packard	3808A
667	Pentax	MD-14 or MD-20
671	Cubic Precision	Cubitape DM-60
672	Cubic Precision	HDM-70

CODE	MANUFACTURER	INSTRUMENT MODEL OR TYPE
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600-699 - INFRARED DISTANCE-MEASURING EQUIPMENT - CONTINUED

673	Cubic Precision	DM-80 or DM-81
674	Cubic Precision	AutoRanger II
675	Cubic Precision	Beetle 500 or 500S
676	Cubic Precision	Beetle 1000 or 1000S
681	Carrol & Reed	Akkuranger Mark I
685	Topcon	DM-C2
686	Topcon	DM-A2 or DM-A3
687	Topcon	DM-S2 or DM-S3
688	Topcon	GTS-2R
693	Nikon	ND 20 or ND 21 or ND 26
694	Nikon	ND 30 or ND 31

700-799 - MICROWAVE DISTANCE-MEASURING EQUIPMENT

700	Unspecified	Microwave Electro-Magnetic DME
701	Plessey	Tellurometer MRA-1
702	Plessey	Tellurometer MRA-2
703	Plessey	Tellurometer MRA-3
704	Plessey	Tellurometer MRA-4
705	Plessey	Tellurometer MRA-5
709	Plessey	Tellurometer CA-1000
731	Wild	Distomat DI-50
732	Wild	Distomat DI-60
741	Cubic	Electrotape DM-20
751	Fairchild	Microchain

800-899 - TOTAL STATION-MEASURING EQUIPMENT

800	Unspecified	Total Station
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801-860 - Self Contained Instruments

801	Leitz	SDM3F or SDM3FR
802	Leitz	SET 2
803	Leitz	SET 3
804	Leitz	SET 4
810	Nikon	NTD-4
811	Nikon	NTD-2S
812	Nikon	DTM1
813	Nikon	DTM5
816	Geotronics AB	Geodimeter 142
817	AGA	Geodimeter 140
821	Pentax	PX20D
822	Pentax	PX10D
823	Pentax	PX06D
824	Pentax	PTS-10

CODE	MANUFACTURER	INSTRUMENT MODEL OR TYPE
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801-860 - Self Contained Instruments - Continued

825	Pentax	PTS-1110
826	Pentax	PTS-1105
830	Topcon	GTS or GTS-2R
831	Topcon	GTS-3B or GTS-3C
832	Topcon	ET-1 or ET-2
833	Topcon	GTS-4A or GTS-4B
840	Wild	TC1600
841	Wild	TC2000
842	Leica/Wild	TC2002
850	Zeiss	ELTA 3
851	Zeiss	ELTA 4
856	Hewlett-Packard	3820A

861-899 - Modular Instruments

861	Kern	E1/DM504
862	Kern	E2/DM504
871	Leitz	DT2/Red Mini 2
872	Leitz	DT2/Red 2A or Red 2L
881	Wild	T1000
882	Wild	T1600
883	Wild	T2000 or T2000S
884	Wild	T2002
885	Leica/Wild	T3000

900-999 - OTHER MISCELLANEOUS SURVEYING EQUIPMENT

900	Unspecified	Miscellaneous Surveying Equipment
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