

ANNEX F

NGS SURVEY EQUIPMENT CODES

000-099 - Gravity Instruments and Satellite Systems
100-199 - Theodolites and Transits (no longer accepted)
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

The observations performed with the following equipment is no longer accepted by NGS as of January 1, 2011, per [Addendum V](#).

- Theodolites and Transits
- Total Station-Measuring Equipment
- 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 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 six broad survey equipment categories, the first of which (000-099) is reserved for gravity instruments and satellite systems, and the last (700-799) is reserved for microwave distance-measuring equipment. The survey equipment categories are listed above. As of January 1, 2011, as stated in [Addendum V](#), NGS no longer accepts classical data.

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.

With this latest publication GNSS survey equipment has been removed from this Annex. NGS maintains a complete listing of accepted antennas and the IGS maintains a complete listing of GNSS receivers.

| CODE | MANUFACTURER | INSTRUMENT MODEL OR TYPE |
|------|--------------|--------------------------|
|------|--------------|--------------------------|

001-099 - GRAVITY INSTRUMENTS AND SATELLITE SYSTEMS

001-009 - Absolute Gravity Devices

| | |
|-----------------|-----------------------------|
| JILA | "g Meter" |
| Micro-g LaCoste | FG5 |
| Micro-g LaCoste | FGL |
| Micro-g LaCoste | A10 |
| Micro-g LaCoste | FG5-X |
| muQuans | Absolute Quantum Gravimeter |

010-029 - Terrestrial Gravimeters

| | |
|-----------------|-------------------------------|
| Frost | Frost Gravimeter |
| North American | North American Gravimeter |
| LaCoste-Romberg | Early Models |
| LaCoste-Romberg | G-Meter |
| LaCoste-Romberg | D-Meter |
| Worden | Uncompensated Model |
| Worden | Temperature-Compensated Model |
| Scintrex | CG-2 |
| Scintrex | CG-3 |
| Scintrex | CG-5 |
| Scintrex | Future Instrument |
| Micro-g LaCoste | gPhoneX |
| GWR | Superconducting Gravimeter |
| GWR | iGrav |
| ZLS | Burriss Gravity Meter |

010-029 - Marine/Airborne (Dynamic) Gravimeters

| | |
|-------------------------|--------------------------------|
| LaCoste-Romberg | AirSea |
| LaCoste-Romberg | AirSea II |
| Micro-g LaCoste Turnkey | Airborne Gravity System (TAGS) |
| Micro-g LaCoste | TAGS-6 |
| DGS | Dynamic Meter |
| ZLS | Dynamic Meter (marine) |
| Sander Geophysics | AirGRAV |
| Chekan GT-1(A/M) | (airborne/marine) |
| Chekan GT-2(A/M) | (airborne/marine) |

050-099 - GPS Satellite Tracking Systems

Refer to the list of [receivers](#) provided by the IGS

Refer to the list of [antennas](#)

100-199 - THEODOLITES AND TRANSITS (no longer accepted)

| CODE | MANUFACTURER | INSTRUMENT MODEL OR TYPE |
|------|--------------|--------------------------|
|------|--------------|--------------------------|

200-299 - LEVELING INSTRUMENTS

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/Sokkia | All models |
| 239 | Kern | GK2-A |
| 240 | Topcon | AT-D2, AT-G2 |
| 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 |

| CODE | MANUFACTURER | INSTRUMENT MODEL OR TYPE |
|--|------------------|--------------------------------|
| 300-399 - LEVELING RODS AND STAFFS | | |
| <u>310-349 - Precise (Geodetic) Metal-Scale Rods</u> | | |
| 313 | Zeiss/Oberkochen | Invar |
| 314 | Zeiss/Jena | Invar |
| 316 | Kern | Invar |
| <u>396-399 - Precise (Geodetic) Metal-Scale, Bar-Code Rods</u> | | |
| 396 | Leica/Wild | Invar (Bar-Code) Rod |
| 397 | Zeiss | Invar (Bar-Code) Rod |
| 398 | Topcon | Invar (Bar-Code) Rod |
| 399 | Sokkisha/Sokkia | Invar (Bar-Code) Rod |
| 400-499 - STEEL AND INVAR TAPES | | |
| <u>420-439 - Calibrated Invar Tapes</u> | | |
| 421 | Various | 25-meter Calibrated Invar Tape |
| 422 | Various | 50-meter Calibrated Invar Tape |
| 423 | Various | 100-foot Calibrated Invar Tape |
| <u>440-459 - Calibrated Steel Tapes</u> | | |
| 441 | Various | 30-meter Calibrated Steel Tape |
| 442 | Various | 100-foot Calibrated Steel Tape |
| 443 | Various | 300-foot Calibrated Steel Tape |
| 500-599 - LIGHTWAVE DISTANCE-MEASURING EQUIPMENT (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 |
| 541 | Spectra-Physics | Geodolite 3G |
| 542 | Spectra-Physics | Transitlite LT-3 |

| CODE | MANUFACTURER | INSTRUMENT MODEL OR TYPE |
|------|--------------|--------------------------|
| 551 | Kern | ME-3000 Mekometer |

500-599 - LIGHTWAVE DISTANCE-MEASURING EQUIPMENT - CONTINUED

| | | |
|-----|-----------------|-----------------|
| 561 | Cubic Precision | Rangemaster III |
| 562 | Cubic Precision | Ranger V-A |
| 571 | Leitz | Red 2L |

600-699 - INFRARED DISTANCE-MEASURING EQUIPMENT

| | | |
|-----|------------------|-----------------------------------|
| 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 |
| 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 |

| CODE | MANUFACTURER | INSTRUMENT MODEL OR TYPE |
|------|--------------|--------------------------|
|------|--------------|--------------------------|

600-699 - INFRARED DISTANCE-MEASURING EQUIPMENT - CONTINUED

| | | |
|-----|--------|-------------------------|
| 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

| | | |
|-----|-----------|----------------------|
| 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 - (not accepted in Bluebook)

900-999 - OTHER MISCELLANEOUS SURVEYING EQUIPMENT - (not accepted in Bluebook)
