

THE COMPLEAT SURVEYOR



Illustration from *The Compleat Surveyor* by William Leybourn

An Offering of Rare Surveying Books

Proprietor:
Russell Uzes
10 Heather Way
Mill Valley, CA 94941
~~(415) 442-1168~~
Fax: (415) 389-8829

Consultant:
F.D. (Bud) Uzes
6840 Pine Cone Rd.
Loomis, CA 95650
(916) 652-5167



OUR FAVORITE BOOKS ON AMERICAN SURVEYING

ROBERT GIBSON

During the late 18th and early 19th centuries, Gibson's Surveying was the American standard against which other works were compared. The earlier editions of 1739, 1752, 1768 and 1777 were published in Dublin. The first American edition was published in 1785 in Philadelphia. Gibson describes use of the circumferentor (compass), theodolite, semicircle, and plane table. He also describes and gives examples for the taking of field notes and the calculation of areas. The folding plates in the back are always a problem because of their susceptibility to damage and loss. In the 1800's two different versions of Gibson were published, one as revised by James Ryan and the other by John D. Craig. The Craig revision wisely moved the individual diagrams into the text, thus eliminating the problem of damaged plates.

Abraham Lincoln studied surveying from texts by Gibson and Flint. According to Charles Smart (1962), quoting Dr. Louis A. Warren, Editor, *Lincoln Lore* (Indiana, 1934), Lincoln used an 1814 Gibson.

Pre-1800 American editions of Gibson are rarely encountered. I have yet to find one, in fact. The 1798 version offered below is from my dad's collection, and I acquired it in a trade.

A Treatise of Practical Surveying; Which is demonstrated From its First Principles. Wherein Every Thing that is Useful and Curious in that Art is fully considered and explained. 3rd ed., (Dublin, 1768), 319 pages, 12 folding plates though lacking plates 1, 2, 4, 5, and 6, remaining plates are in fair condition with tears and improper folding; these plates differ very slightly from those in much later editions; cover hinges cracked with tears and related damage to the binding; covers loosely attached; text complete and generally in good condition except for some damage at the upper outer corner of the preface and the first leaf of the text, which are missing a small amount of printed material; some foxing to pages.. A rare pre-American edition. **\$115**

A Treatise of Practical Surveying; Which is demonstrated From its First Principles. Wherein Every Thing that is Useful and Curious in that Art is fully considered and explained. 8th ed., (Philadelphia, 1798), 296 pages of text plus 156 pages of tables, 13 folding plates; contemporary leather binding showing wear and staining and with front cover showing leather hinge separation but fully attached; title page shows weak impression and is missing top 1/2 inch of leaf, but no words are missing; remainder of text and plates are good; inscription of prior owner named James Kilbourne; 5.1" x 8.1" A very rare pre-1800 American edition. **\$175**

The Theory and Practice of Surveying, containing All the Instructions Requisite for the Skillful Practice of this Art. Newly Arranged, Improved, and Enlarged with Useful Selections, and a New Set of Accurate Mathematical Tables, by James Ryan, Teacher of Mathematics, (New York, 1821), 360 pages of text plus 184 pages of tables, 14 folded plates, 5.4" x 8.8"; minor foxing to some pages; a tight copy not often seen in the thick Gibson's text **\$105**

JOHN LOVE

Love published his first edition of *Geodaesia* in London in 1688 after he returned from surveying in America. Love was particularly concerned about the lack of knowledge exhibited by young surveyors in Carolina. Later editions of the book appeared until the end of the century, with the 12th (1793) and 13th (1796) editions being published in New York. The work changed little over the years, even considering the later revisions of Samuel Clark. Instructions are given in use of a Gunter chain and measuring angles with the circumferentor, plane table, and semicircle. There are also directions for taking field notes and measuring and calculating the acreage for plots of land. George Washington (1732-1799) studied surveying from Love's *Geodaesia*, which was widely used in colonial America.

Geodaesia: or, The Art of Surveying and Measuring of Land Made Easy. . As also How to Lay out New Lands in America, or Elsewhere:...", 12th ed, (New York, 1793), 196 pages of text with many woodcut

figures, some full-page, 55 pages of tables, and an 8 page appendix; cloth rebinding with light foxing and minor water staining to a few pages; one leaf has a small missing segment which affects mostly the margin but also a few words in one geometrical example; identifies former owner as John Miller; 5.0" x 8.0". The FIRST EDITION published in America, which is very hard to find. **\$185**

Geodaesia: or, The Art of Surveying and Measuring of Land Made Easy. . As also How to Lay out New Lands in America, or Elsewhere:...", 13th ed, (New York, 1796), 196 pages of text with many woodcut figures, some full-page, 55 pages of tables, and an 8 page appendix; tight modern bone-colored boards; some foxing; minor tape repair to one leaf of text; identifies William Walker, Gorham University, 1808 as former owner; slightly foxed and browned throughout; 5.3" x 8.2". A very nice, readable book. **\$130**

ABEL FLINT

Editions of Flint's Survey were published for a half century beginning in 1804. It was a widely used text and reference book. A testimonial by two noted surveyors states: "The Surveyor who shall own this will not be under the necessity of purchasing Gibson which is a more expensive work." Abraham Lincoln reportedly studied from texts by Gibson and Flint.

A System of Geometry and Trigonometry; together with a Treatise on Surveying, 2nd ed., (Hartford, 1808), 82 pages text, 86 pages traverse and trigonometric tables, 4 folding plates with minor damage to the margins from improper folding; George Tibbits identified as former owner; 5.5" x 9.0". **\$90**

A System of Geometry and Trigonometry together with a Treatise on Surveying, 4th ed., (Hartford, 1818), 80 pages text, 88 pages traverse and trigonometric tables, 4 folding plates; some foxing, but generally in nice condition; 5.3" x 8.6". **\$80**

A System of Geometry and Trigonometry, with a Treatise on Surveying, 7th ed., (Hartford, 1833), enlarged by George Gillet, 134 pages text, 10 pages explaining logarithms, 62 pages trigonometrical tables and 100 pages traverse tables; light foxing; nice copy; 5.0" x 8.2". **\$70**

CHARLES DAVIES

Davies' Surveying was written for the Military Academy. It became the most popular school text and professional handbook during the mid-19th century. The U.S. General Land Office placed information from Davies' text directly into its 1855 Manual of Surveying Instructions. Both the U.S. Surveyor General for California and the California State Surveyor General issued instructions directing that tabled courses be submitted in the Davies' method.

Davies' Surveying was first published in 1830. We have found six versions of the book with changing titles. We believe that the different versions appeared in 1830, 1835, 1841, 1851, 1870 and 1883, with intervening reprints. The last known printing was in 1898.

Elements of Surveying: including a Description of the Instruments and the Necessary Tables, (New York & 6 other cities, 1836), 158 pages of text and 153 pages of tables, 6 folding plates; 5.2" x 8.6"; light foxing, but still a nice early copy. Hard to find pre-1840. **\$120**

Elements of Surveying, and Navigation, with Descriptions of the Instruments and the Necessary Tables, Revised Edition, (New York, 1852), 222 pages of text and 170 pages of tables, 6 folding plates; a very nice copy; 5.4" x 8.3". **\$80**

Elements of Surveying and Leveling, revised by J. Howard Van Amringe, (New York & Chicago, 1883), 374 pages of text, 29 pages of appendices, and 161 pages of tables; front cover detached and some foxing to text; 5.5" x 8.3"; this edition has expanded sections on mining surveying and solar compass operation. It bears the signature of R.M. Woolcock, Sierra City, California, July 19, 1887. **\$50**

JOHN GUMMERE

Gummere's *Surveying* first appeared in 1814, and Karpinsky (1940) reports there were editions as late as 1917. The first edition is extremely rare. The second (1817) and third (1820) are quite uncommon, as are editions printed after 1859. John Gummere was a teacher, and particularly adapted his treatise to the use of schools. The book also met certain working needs of professional surveyors. According to his 1814 preface, Gummere thought Gibson and Jess were his major competitors. Strangely, he completely ignored Flint, who likely sold many more books than Jess.

A Treatise on Surveying, Containing the Theory and Practice to Which is Prefixed a Perspicuous System of Plane Trigonometry. 3rd ed., (Philadelphia, 1820), 206 pages of text and 152 pages of tables, 8 folding plates, the plates are in fair condition from improper folding; cover hinges partly cracked but intact; some foxing as customary; difficult to find third edition. **\$80**

A Treatise on Surveying, Containing the Theory and Practice: to Which is Prefixed a Perspicuous System of Plane Trigonometry. 14th ed., (Philadelphia, 1841), 266 pages of text and 152 pages of tables, 11 folding plates; fancy marble effect boards; very minor tearing on end papers; an especially nice copy. This is the best looking pre-1850 American book offered in this catalog, and this book is nicer than any Gummere in my dad's collection. **\$95**

A Treatise on Surveying, Containing the Theory and Practice to Which is Prefixed a Perspicuous System of Plane Trigonometry. 14th ed., (Philadelphia, 1843), 266 pages of text and 152 pages of tables, 11 folding plates lacking plate 9 and part of plate 10 (modern copies of both are provided); hinges are intact although cover is worn around the edges; interior is good except for some darkening and improper folding of the plates. **\$50**

SAMUEL ALSOP (GUMMERE'S SURVEYING)

Samuel Alsop prepared a key that explains and solves the examples in Gummere's *Surveying* that were not already worked out. The key was first published in 1837. It was designed for the use of teachers, and its periodic reissue attests to the popularity of the Gummere text. If you own a Gummere's text, you should own a reasonably priced key as well.

A Complete Key to Gummere's Surveying; (Philadelphia, 1854), 84 pages, 4 folding plates, 6.0" x 9.2"; front hinge cracked, otherwise good copy. **\$35**

WILLIAM M. GILLESPIE

Gillespie was a professor at Union College. His text first appeared in 1851 as a synopsis of lecture notes, then became formally published in 1855. It was the first school text to illustrate and treat the operation of the American surveyor's transit, and in that regard was well ahead of Gummere, Davies, and Flint. Additional material was added later, and soon Gillespie's *Surveying* was published in two volumes, the first being plane surveying and direct leveling, the second being higher surveying. Cady Staley finished the portions on direct leveling and higher surveying following Gillespie's death in 1868. In the 1890's the two works were sometimes published in a single bound volume. Gillespie and Johnson (below) surveying books were the best widely-distributed texts of the 1850 to 1900 time period.

Treatise on Leveling, Topography and Higher Surveying., edited by Cady Staley (New York, 1877), 173 pages, 6.1" x 9.5"; signature of E.E. Sweet, R.P.I, Troy. **\$45**

A Treatise on Land-Surveying, Comprising the Theory Developed from Five Elementary Principles; and the Practice with the Chain Alone, the Compass, the Transit, the Theodolite, the Plane Table, &c., (New York, 1880), 424 pages of text plus 100 pages of tables; 6.0" x 9.4". **\$45**

J.B. JOHNSON

Johnson had practical experience and was dean of the College of Mechanics and Engineering of the University of Wisconsin. His treatise was first published in 1886, with at least 17 editions continuing to about 1914. It was a very progressive book for its day and includes more material than most other texts. There are sections on instruments and

their operation, surveying methods, and many specialty areas such as topographic, railroad, city, hydrographic, geodetic, astronomic, and mining surveying. The Appendix has 9 special professional papers including such topics as the ownership of surveys, finite differences, government 1895 mineral surveying manual, etc.

The Theory and Practice of Surveying Designed for the Use of Surveyors and Engineers Generally but Especially for the use of Students in Engineering, 16th ed., (New York, 1902), 750 pages of text and 88 pages of formulas, tables, and the index, 2 folding plates, 5.6" x 8.2". **\$35**

The Theory and Practice of Surveying Designed for the Use of Surveyors and Engineers Generally but Especially for the use of Students in Engineering, 17th ed., rewritten by Leonard S. Smith, (New York, 1914), 832 pages text plus 89 pages of formulas, tables, and the index, numerous illustrations and photographs; showing moderate usage; 5.6" x 8.2"; early owner was R.D. Keene. **\$30**

CATALOGS

ZEISS, Carl, (catalog) *Astronomical Telescopes*, (Jena), 1906, 3rd ed. Catalogue Astro. 8. Signed and dated by George Davidson, Aug. 28, 06.; 64 pages, numerous plates and photographs; 9" x 11.8"; stiff printed wrappers; with original translucent velum dust jacket separately signed by Davidson. Davidson was the West Coast's premier pioneer scientist, serving with the U.S. Coast Survey for 50 years. He built an observatory at his own expense on Lafayette Square in San Francisco in 1879, and personally operated it for two decades. He was associated with the University of California for nearly 40 years, teaching geodesy, astronomy, and geography.

This is the English edition of the Zeiss catalog of astronomical instruments. It contains descriptions of mountings, Azimuthal Telescopes, Comet Seeker, Equatorial Telescopes, Refractors, Instrument for Astro-photography, Prisms, Micrometers, Spectroscopes, Sun and Moon Cameras, Stereo-Comparator, and a Wood Cupolas-Dome. **\$175**

ZEISS, Carl, (catalog) *New Equatorial Telescope Mountings, after Meyer*, (Jena) 1906. Prospectus designated "Astro. 10.", paperback, 9" x 11.8". Companion to the above Zeiss catalog and also from the personal collection of George Davidson. Handwritten ink date of Dec 8, 06 in Davidson's hand, though lacking his signature. 12 pages, numerous plates with illustrations of large telescopes in domed observatories, showing equatorial mountings. Also shows motor appliances for motion, and an electric automatic weight elevator and governor. **\$30**

Catalogs of Keuffel & Esser Company

Wilhelm Keuffel and Herman Esser were both born in Germany. They founded the company in 1867, and at first carried mostly drafting instruments. Their 1875 catalog show one dumpy level, one wye level, one transit, and one theodolite. They gained particular prominence in the 20th century by manufacturing high quality items.

Surveying Instruments Manufactured by Keuffel & Esser Co., 1901, (New York, 1901), a separately published portion of the general catalog showing only surveying instruments, paperback, 5.7" x 8.7", 98 pages plus 22 pages containing 48 professional testimonials, numerous illustrations and photographs; evidence of past moisture apparent on the lower corner portion of many of the pages, and blank rear leaf missing. **\$50**

GURLEY'S MANUALS

The firm of W. & L.E. Gurley Co. was founded in 1852, following an 1845 business of Phelps and Gurley. The Gurley firm was one of the most popular during the late 19th and early 20th centuries. Though lacking some of the fineness of some makers, it featured a solid product at a reasonable price. Gurley published both manuals and catalogs. Manuals were supplied with instrument purchases, and included directions and instructions for adjustment of all the major equipment, a complete listing of all items handled by the firm, and a price list.

A Manual of the Principal Instruments used in American Engineering and Surveying, 42nd edition, (Troy, N.Y., 1908), 470 pages including 263 pages of text and a 207 page price list; 4.7" x 6.8". **\$85**

GOVERNMENT PUBLICATIONS

U.S. Coast and Geodetic Survey

The Annual Reports of the Superintendent of the U.S. Coast Survey, later the U.S. Coast and Geodetic Survey, contain the superintendent's summary report, details of agency field and office operations, and appendices containing several individual reports. Content of the appendices varies year by year, but most volumes contain information that is technically substantive. Many reports contain charts often overprinted with triangulation schemes. Most of the volumes are ex library even though not individually stated.

Please call for latest listing - These go pretty fast.

U.S. GENERAL LAND OFFICE

Congress passed the Land Ordinance of 1785 that opened up the Northwest Territory to subdivision and sale. The ordinance set forth instructions for the method of survey of the public lands. These instructions were later modified from time to time as necessary. These historic surveying manuals are indispensable in current public-land surveying practice. While the government's 1982 compilation includes a considerable amount of valuable historical information, it excludes some pertinent original text.

Manual of Surveying Instructions for the Survey of the Public Lands of the United States and Private Land Claims, (Washington, 1908); reprint of 1902; 203 pages, including 145 pages of instructions, 40 pages of specimen field notes, plus appendices and 8 folded plates, 6.2" x 9.4". **\$65**

EARLY RESULTS OF U.S. GEOLOGICAL SURVEY SPIRIT LEVELING

In the western United States, the U.S. Geological Survey was the primary governmental agency active in early-day control leveling. In about the 1920's or 1930's the U.S. Coast & Geodetic Survey assumed control as the new lead agency. The elevations in these publications predate the 1929 USC&GS datum adjustment, but when reductions are made they are nonetheless valuable in conducting subsidence studies. They have also found application in analyzing historic tideland and swampland surveys in California and possibly elsewhere. All are ex library in good condition, paperback, although some minor cover minor chips or a few slight tears, all are 5.8" x 9.2". We have these for California, Nevada, Utah, Arizona, Idaho and Colorado. Please call for details.

MISCELLANEOUS

MAHAN, D.H., *An Elementary Course of Civil Engineering for the Use of the Cadets of the United States Military Academy*, 1st edition, (New York, 1837), 310 pages of text plus 14 folding plates; contents include materials of construction, carpentry, roads, railroads, bridges, canals, and sea coast improvements; some light foxing but generally text is good and clear, cover hinges broken and loosely attached; the rare first edition of an important civil engineering treatise. **\$100**

SIMMS, Frederick W., *A Treatise on the Principles and Practice of Levelling, Showing its Application to Purposes of Civil Engineering Particularly in the Construction of Roads, with Mr. Telford's Rules for the Same; With an Appendix, Containing a Description of Mr. MacNeill's Dynamometer, - - To which have been added Tables for Calculating Earth-Work, and Notes by J.H. Alexander*, 1st American ed., (Baltimore, 1837); 121 pages of text plus 34 pages of tables, with 4 plates lacking plate 3 (a modern copy print of plate 3 is furnished); attractive dark cover embossed with gold lettering; some interior faint water staining; 5.7" x 8.9". Frederick Simms (1803-1865) worked as a surveyor and engineer. His older brother, William, was one of the founders of the London instrument firm of Troughton and Simms. This book is rarely offered for under \$100. **\$60**

McDERMOTT, Michael, *The Civil-Engineer & Surveyor's Manual: comprising Surveying, Engineering, Practical Astronomy, Geodetical Jurisprudence, Analyses of Minerals, Soils, Grains, Vegetables, Valuation of Lands, Buildings, Permanent Structures, Etc.*, (Chicago, 1879), 524 pages, 5" x 8.9". This is an interesting text. It covers both field practice and boundary principles. The legal decisions cover many aspects of property surveying, including

accretion and other elements of riparian boundaries. Particularly significant is a piece on United States Surveying, prefaced by the following statement: "The following sections are from the Manual of Instructions published by the United States Government in 1858, which are called New Instructions, to distinguish them from those issued between 1796 and 1855, which are called the Old Instructions." There are differences between the old and new, including the allowable limits of closure. The New Instructions are not specifically identified. **\$65**

CARHART, Daniel, *A Treatise on Plane Surveying*, (Boston, New York, Chicago, London, 1887), 1st ed., 411 pages of text plus 79 pages of tables, 6.1" x 9.3". This was another of the competent surveying texts published in the second half of the 19th century. The author was Professor of Civil Engineering in the Western University of Pennsylvania. **\$50**

RAYMOND, William G., *A Text-Book of Plane Surveying*, 1st ed., (New York, Cincinnati & Boston, 1896), 360 pages of text plus 125 pages of tables and the index, 6.0" x 8.9". Raymond was a professor at the prestigious Rensselaer Polytechnic Institute. The text is generally well regarded except for an incorrect method of locating the center of a government section, at least incorrect by present federal standards. On page 228 it states that the center quarter corner is located by connecting the opposite north and south quarter corners by a straight line, and placing the center corner at the middle of this line. The cover on this volume is olive green cloth. The gold impressed transit on the front cover is particularly striking. **\$50**

TRUMBULL, Loyal Wingate, *A Manual of Underground Surveying*, (New York, 1910), 1st ed., (first printing 1908), 251 pages, numerous diagrams, illustrations and photographs, 14 mining diagrams on translucent paper, 6.5" x 9.4"; a very comprehensive treatise with information on conventional, mining, and solar instruments, underground practice, field notes, mapping, techniques of various professional engineers, and a mineral surveyor's examination. **\$40**

MITCHELL, Hugh C., *First and Second Order Triangulation in California, 1927 Datum*, USC&GS Special Publication No. 202, (Washington, 1936), 548 pages and 45 figures, paperback, 5.8" x 9.2". This book, now seldom seen, contains the plane coordinates, geographic positions, and site descriptions for first and second order triangulation stations executed by the U.S. Coast & Geodetic Survey and certain other agencies up to 1934. **\$65**

FLYNN, P.J., *Irrigation Canals and other Irrigation Works, Including the Flow of Water in Irrigation Canals and Open and Closed Channels Generally, with Tables Simplifying and Facilitating the Application of the Formula of Kutter, D'Arcy and Bazin*, 1st ed., (San Francisco, 1892); two volumes bound together with 398 pages of text on Irrigation Canals, 56 pages on Water Flow, and 227 pages of tables, including 23 separate tables and 206 illustrations; hardbound with cloth cover, somewhat warped; some moisture damage to text and covers loose but well attached; 2 interior pages have old tape repair; formerly owned by Legrand Friel, a Los Angeles surveyor and engineer; a very rare treatise on engineering hydraulics and hydrology; 7.3" x 10.0". The Preface states that 90% of the matter on flow of water is original. Flynn was a civil and hydraulic engineer in Los Angeles. He was a regular contributor to technical publications on the west coast, and once worked in Punjab, India. **\$75**

WEGMANN, Edward, *The Design and Construction of Dams including Masonry, Earth, Rock-Fill, Timber, and Steel Structures and the Principal Types of Movable Dams*, 5th ed., (New York, 1908), 421 pages plus 100 engineering plates and 33 photographic plates; fine condition; hardbound; the red cloth cover with gold impressed illustration of a dam on the front gives it an ornate appearance; this is an excellent copy of the leading work on dam construction, first published in 1888; discussions of foreign dams are included; 9.5" x 12". **\$70**

TRAUTWINE, John C., *The Civil Engineers Pocket-Book*, 17th ed., (New York, 1900), 866 pages with numerous diagrams; text covers many elements of civil engineering including surveying; soft leather cover with flap; gilt-edged pages. Trautwine is considered one of the leading engineering reference works of the period. **\$30**

HANCOCK, H. Irving, *The Young Engineers in Nevada*, (Akron & New York, 1913), 250 pages, with an attractive cover showing one young man operating a transit, and a second reading a map. This is one of the five volume set that included Arizona, Colorado, Mexico, and the Gulf, 5.1" x 7.6". The Young Engineers Series

detail the fictional exploits of young surveying adventurers. The stories provide insight into the rugged life faced by real surveyors and engineers of the period. **\$20**

HOSMER, George L., *Geodesy, including Astronomical Observations, Gravity Measurements, and Method of Least Squares*, 2nd ed., (New York, 1930) 461 pages; some pencil & ink markings; with diagrams and photographs showing precise instruments of the period; by one of the authors of the widely-used Breed & Hosmer text. Hosmer was Late Professor of Geodesy at M.I.T.; 6.0" x 9.2". **\$25**

BROWN, Curtis M., *Boundary Control for Surveyors in California*, (San Diego, 1954), 148 pages, paperback, 5.1" x 8.5". The late Mr. Brown was the foremost author of his day with regard to the legal elements of boundary surveying. This was his first published work. Mr. Brown was the principal author on two other books about boundary surveying, plus one about historical surveys in San Diego County. **\$50**

A.C.S.M. SURVEYING AND MAPPING JOURNALS

The *Surveying and Mapping Journals* of the American Congress on Surveying and Mapping were published from 1941 through 1989. The Congress published its first issue in June 1941. The subsequent editions up to July, 1944 were called Bulletins. Prior to 1946 they were smaller in both size and content. Various copies are available for 1941, 1943-47, 1949, 1956, 1965-69, and 1975-86. All ACSM Reports, Bulletins, and Journals are priced at **\$6.00** each, including postage for U.S. Mail. An ACSM published index for 1941-1945 is available for \$3.00.

A complete 23 copy set of the first 11 years of *The American Cartographer*, Vol. 1 (1974) through Vol. 11, (1984), is available for **\$75.00** including shipping. Single copies are **\$6.00**.

Note: There is also available an incomplete set of 16 different copies of the periodicals *National Surveyor* and *American Surveyor and Photogrammetrist*, from the period 1962 to 1965. The title changed in 1965. They are \$5.00 each including U.S. Mail delivery, or \$50.00 for the lot. Please check for details.

Military Map of the Western United States

Map of the Territory of the United States, West of the Mississippi River, Prepared by authority of The Hon. The Secretary of War, in the Office of the Chief of Engineers, under the direction of Brig. Gen. A.A. Humphreys, Chief of Engrs, Bvt. Major General, U.S.A., by Edward Freyhold, 1879, Scale 1:2,000,000. In six sheets, with two sheets each having printed border dimensions of 26.5" x 30.8", 28.0" x 30.8", and 24.5" x 30.8".

The six sheets are mounted on cloth and are somewhat darkened from age. They are individually mounted in inexpensive black frames. All have one or two inches of margin surrounding and outside the printed map border. The blank margin has been folded for framing, and in a few areas the margin has a deteriorated surface or minor damage, although the map within the borders is in good condition. In 1879, Congress transferred the army's program of geographical surveying of the western United States to the U.S. Geological Survey. This map is the final result of the army's domestic geographical mapping program. The price includes shipping. **\$350**

THE GREAT WORKS OF SURVEYING

Like Astronomy and Navigation, Surveying has a rich literary history. European authors started writing about surveying early in the 16th century. The development of mathematics in the 16th, 17th and 18th centuries, especially geometry and trigonometry, encouraged surveyors to develop new techniques and instruments. Some surveyors and mathematical practioners wrote books to promote these new techniques and instruments. These authors left behind a legacy that allows us to examine, understand and appreciate the art and history of surveying.

AARON RATHBORNE

AARON RATHBORNE, *The Surveyor in Foure Bookes*, FIRST and only edition, (London, 1616), vellum binding; 8.0" x 11.8"; 228 pages of text; 5 missing leaves professionally replaced with copies on matching paper, including the portrait of Prince Charles; the four books treat geometry, the use and operation of theorems, instruments, and the legal elements of a survey. The instruments include the Rathborne decimal chain that divided 4 poles into 400 parts, an early non-telescopic theodolite, playne table, peractor, and circumferentor, noting the peractor is a form of theodolite with different divisions of the circle.

First and only edition, and very scarce. Taylor describes the work as the "first full-scale practical treatise on geometrical surveying." Rathborne was the first English author to discuss the field book in detail, and he either improved upon or invented a number of instruments, all of which are described in this book. The Surveyor is considered a major contribution to surveying during the 17th century, and authors would follow its format for 200 years. A copy of this book (with all of its pages intact) is currently being offered for sell by a U.S. book dealer for \$5000. **\$1900**

VINCENT WING #1

VINCENT WING, *Geodetes Practicus: Or the Art of Surveying*, FIRST edition. (London, 1664), contemporary calf, neatly repaired. 325 pages, small 8vo., 2 engraved plates (1 folding), many woodcut diagrams and tables. A very nice copy of the verh scarce first edition.

Vincent Wing was a very famous practioner of the mathematical arts. He and his very close friend William Leybourn coauthored the first real astronomy book written in English. Vincent Wing also invented the Wing chain, which he claimed was an easy to use chain that made calculating area much simpler that the standard Gunter chain. His chain contained 20 links per 16.5 feet (with each link 9.9 inches long). He described this chain in his book. Richeson states that this book is "of considerable interest, for it is probably the first work on surveying to be written for use as a handbook." This is a very scarce book, there being only 9 copies accounted for according to Wing (the authoritative source for tracking books in the 1641-1700 time period, which has no relationship to Vincent Wing). **\$1800**

VINCENT WING #2

VINCENT WING, *Geodaetes Practicus: Or the Art of Surveying*, 2nd ed. (1666), small 8vo, 358 pages of text, 2 engraved plates (1 folding) many woodut diagrams, tables, occasional headlined shaved, a few stains, handsomely rebound in full panelled antique calf. Wing 2991A lists only two other copies known. The title page indicates that the book includes a treatise entitled *Examen Astronomia Carolina*. This treatise is not included in this book, and was apparently not originally included in the other two copies identified in Wing (one owner has acquired a copy of the *Examen* and recently bound it with the surveying text).

This book is VERY RARE. William Leybourn, the printer of this book (and the author of *The Compleat Surveyor*), states that the 1666 edition of Wing "was wholly lost, in a manner, by the fatal Fire that year, there

being but very few copies saved for sale..." Leybourn, *The Compleat Surveyor*, 3rd ed. at p. __ (1674). Taylor states that "practically all copies were destroyed in the Great Fire." Taylor at p. 375.

The Second edition differs from the first mainly with respect to the discussion of Dr. Wybards plotting scale. The second edition has a rather exhaustive description of the plotting scale, while the first edition gives a more cursory treatment. Given the destruction of the second edition in the fire, Leybourn would later populize the scale in his own surveying text. An extremely rare and important book. **\$2600**

JEAN PICARD

JEAN PICARD, *Triate du nivellment...*(Paris, 1684), 248 pages and two engraved plates, with the third and final plate missing. Modern rebinding, with some minor water staining. FIRST Edition. From the Honeyman collection. Contemporary signature of Will Molyneux. Picard's important surveying treatise (focusing on leveling), where Picard illustrates instruments with telescopic sights, one of the most important advances in the 17th century. Picard's level consisted of a telescope equipped with cross hairs and was attached to a brass rule 3 feet long and 2 inches wide. The two plates in this book reflect the instruments featured at Kiely, page 142, figure 73. NUC list only 5 known copies of the rare first edition. Mollyneux lived in Dublin, where he was a member of the Irish Parliament and practiced in the mathematical arts. He wrote a book on dialling in 1686, a book on telescopes and microscopes in 1692, and a book on the variations of the magnetic needle (in comparing surveys taken at long intervals) in 1697. Another copy of the first edition that has the third plate is currently offered for sale in England at approxiamately \$2000. **\$400**

ADAM MARTINDALE

MARTINDALE, ADAM, *The Country-Survey-Book; or, Land-Meters Vade-Mecum*. Wherein the Principles and Practical Rules for Surveying of Land, are so plainly (though briefly) delivered, that any one of ordinary parts (understanding how to add, subtract, multiply and divide,) may by the help of this small Treatise alone, and a few cheap Instruments easy to be procured, Measure a parcel of Land, and with judgement and expedition Plot it, and give up the Content thereof, With an Appendix (London, 1702), first printed in 1682; leather bound, 3.7" x 5.9"; 234 pages of text with 3 copper plates with 39 figures; contains descriptions of instruments with particular favor expressed for the plain table; this is a pocket book intended for youths who prefer a smaller and less expensive work.

According to Taylor, Martindale was a nonconformist preacher who eeked out a living as a mathematical practioner. Martindale's small and simple text was apparently quite popular, as it reprinted a number of times. Martindale relied primarily on surveying by the chain. He provided general instructions for the surveyor in his book, which were later passed on in modified form by the land office in the manuals for surveyors. Richeson states that Martindale's book evidences the poor level of instructions given to young surveyors during the last of half of the 17th century. **\$600**

HENRY WILSON #1

HENRY WILSON, *Surveying Improved: or, the Whole Art, both in Theory and Practice, Fully Demonstrated, in Four Parts*. FIRST edition. With an appendix concerning levelling. (London, 1726); 5.2" x 7.9"; leather binding cracking at the hinges; 319 pages of text with several tables and diagrams; many foldout plates; title page inartfully relaid.

Wilson was a teacher of mathematics and first published this work in 1726; this is a very comprehensive text, and describes use of chains, surveying wheel, theodolite, circumferentor, semicircle, plain table, and scales. The technology of this book easily exceeds that which would be published in America until 1830 or so. The 1726 edition seems to be very rare, as most of the authorities (like Taylor and Keily) are not showing the 1726 first edition. In fact, Taylor incorrectly indicates that the 1731 copy was the first edition. **\$425**

HENRY WILSON #2

HENRY WILSON, *Surveying Improved: or, the Whole Art, both in Theory and Practice, Fully Demonstrated, in Four Parts, 5th ed., with additions, to which is now added Geodesia Accurata: or, Surveying Made Easy by the Chain only...also, A new Essay upon Solids, by William Hume, (London, 1762); 5.2" x 7.9"; leather binding cracking at the hinges; 555 pages of text with several tables and diagrams; 10 foldout plates with 93 figures; title page printed at an angle, thereby cutting off the date from that page.* **\$250**

EDWARD LAURENCE

LAURENCE, EDWARD, *The Surveyor's Guide: or, a New Introduction to the Whole Art of Surveying Land, Both by the Chain and all Instruments now in Use, 3rd ed., (London, 1736), 4.0" x 6.5", leather binding with some tearing at hinges, 231 pages of text and 144 pages of tables; 6 folding engraved plates with 116 figures.*

Laurence first published this work in 1716 with the title beginning *The Young Surveyor's Guide*. Laurence's book was the first new English publication in the 18th century relating to surveying; Laurence was a land surveyor, and he discusses the use of the chain, theodolite, semicircle, and plain table, but he does not address surveying by the magnetic needle. **\$400**

JOHN NORDEN

[NORDEN, JOHN], *The Surveiors Dialogue, Very profitable for all Men to peruse, especially Lords of Mannors, Stewards of Mannor-Courts, Tenants, Farmers and Husbandmen, Diveded into Three Books, carefully Revised and Corrected; together with an Exact Index, 4th ed., (London, 1738), 5.1" x 8.1"; 213 pages of text; board covers with slightly cracked leather- covered spine.*

Norden first published this work in 1607, and wrote the book in dialogue form - it consists of discussions between the surveyor and others interested in the subject, but does not instruct in the use of instruments. Instead, the focus of this book is on the relationships that existed between surveyor and landowner and surveyor and tenant. **\$300**

SAMUEL WYLD

WYLD, Samuel, *The Practical Surveyor, or the Art of Land-Measuring Made Easy. Shewing by plain and familiar Rules, how to Survey any Piece of Land Whatsoever, by the Plain-Table, Theodolite, or Circumferentor: or, by the Chain only. 4th ed., (London, 1760), 191 pages text plus 4 pages of tables and 7 folding copper plates including a particularly nice frontpiece that shows views of an early Sisson theodolite and a Sisson spirit level; 5.3" x 8.2"; professionally repaired leather binding.*

Wyld's book is an easy to comprehend text that covers the important elements of land surveying, and contains both technical guidelines and practical suggestions. It was first published in 1725, and was very advanced for its day. **\$350**

THOMAS BREAKS

THOMAS BREAKS, *A Complete System of Surveying. 593 pages. Small quarto. Newcastle-upon-Tyne 1771. FIRST and only edition. Contemporary full calf with 17 folding plates (one repaired and relaid). Breaks gives a detailed description of his equipment, which included an improved theodolite, furnished with telescope, spirit level and nonius, a plane table with removable frame, a sector, a 4 pole chain and a 1/2 pole perambulator.*

This book is one of the most comprehensive textbooks written prior to 1850. It is comprised of 11 sub-books. A wonderfully detailed account of the state of the art in the second half of the 18th century. **\$500**

BENJAMIN NOBLE

BENJAMIN NOBLE, *Geodaesia Hibernice, or an essay on Practical Surveying*. Printed in Dublin for the author, 1768. FIRST and only edition. 108 pages plus tables. With errata sheet at the end. Two folding plates. Contemporary calf, with some marginal restoration and strengthening due to damp. A very nice copy of a scarce book.

This is an interesting book. Noble proposes his own method of closure. Please ask my dad for details. The book is less detailed than a Gibson or Breaks, but still better than what was published in America by Flint 50 years later. **\$450**

SILVIO BELLI

BELLI, Silvio, Vicentino, *Quattro Libri Geometrici, Il Primo del Misurare Con la Vista*, (Venetia, 1595), 132 pages of text with 54 woodcut illustrations, limp vellum binding, 6.1" x 8.1". This work is a combination of Belli's *Libro del misurar con la vista* (first published in 1565) and his *Della Proportione, et Proportalita Communi Passioni del Quanto* (first published in 1573) under a new collective title. Most of the woodcut illustrations are 3.0" x 4.5" and show some form of triangular surveying, either vertical or horizontal. They add substantially to the enjoyment of the Spanish-language treatise. This book is in very nice and crisp condition. Good price for a rare book. **\$900**

ABEL FOULLONE

FOULLONE, Abel, *Descrittione et Vso Dell' Holometro*. (Venetia, 1564), 60 pages of text with 16 copper engravings (some full page), large decorated woodcut initials, title page skillfully strengthened, professionally cleaned throughout, original vellum covers stretched over new boards; 6.2" x 8.5"; this is the first edition of the Italian translation of the French work. The original French edition was published in 1555; copies in either language are now of considerable rarity. "...during the latter half of the sixteenth century while many variations of the three-sided triangulation instruments were making their appearance, another type which was destined to outlast the first and become the most popular triangulation instrument on the Continent was in the process of development. In its final form it was known as the plane table... The earliest description of such an instrument is by Foullone, but his *holometre* is such a complete instrument that it is safe to assume that it must have been preceded by other of cruder design..." - Kiely: *Surveying Instruments* pp. 227-8, who reproduces Foullone's description of the instrument and a full-page engraving of it. Richeson contains similar information at pp. 11-13. This is a very nice, crisp book of considerable historical significance. The price looks right too. **\$800**

OTHER SIGNIFICANT WORKS

WILLIAMSON, CAPT. THOMAS, *Mathematics Simplified, and Practically Illustrated, by the Adaptation of the Principal Problems to the Ordinary Purposes of Life, and by a Progressive Arrangement, applied to the most familiar objects, in the plainest terms: together with A Complete Essay on the Art of Surveying Lands, & c. by such simple inventions as may for ever banish the necessity of costly and complex instruments*, 1st ed., (London, 1808), 224 pages of text with 23 hand-drawn plates, noting the plates are not bound in correct sequence; the author interestingly deplores the Gunter chain, saying it ought to be exploded, and preferring even a knotted yarn line. Williamson contends the best device for linear measure is a 100 foot chain with one-foot links. **\$135**

DIX, THOMAS, A Treatise on Land-Surveying, in Seven Parts, 3rd ed. with great additions and improvements by the author, (London, 1808); 5.5" x 8.6"; 180 pages of text, with 200 diagrams and 12 copper plates; leather binding showing hinge cracking and chipped corners; Dix wrote this rudimentary text for use by young people, it focuses on measuring with the chain and surveyor's cross, and describes use of the pocket sextant; notable for this date are the fine illustrations of the instruments, and a sales list of instruments made by R. Banks.

According to an article in the Engineering News and American Contract Journal dated Nov. 4, 1882 (at page 382), "Dix, Love and Gibson appeared to have been the authors most read" by colonial surveyors prior to the advent of American authors who published surveying texts. I would not put Dix in the same category as Love and Gibson, but it is hard to argue with an article written much closer in time than we are today. **\$170**

I HAVE MANY MORE BOOKS THAN LISTED HERE - PLEASE CALL !!

Geodætes Practicus:

Or the Art of

SURVEYING.

Surveyed and laid out in a more
Accurate, Plain and Expeditious Plat,
then hath hitherto been performed.

Being a *W O R K E* very usefull for

Surveyors, } Masons, } } Brick-layers;
Architects, } } Carpenters, } } Glasiers,
Engineers, } } Joyners, } } Painters, &c.

And generally for all them that are
ingeniously affected with such
kinde of Learning.

The Second Edition Corrected and Enlarged:
With the addition of a Treatise, entituled, *Examens*
Astronomiæ Carolinae, being an Answer to
Mr. Tho. Streets Treatise of *Astronomy*.

By *VINCENT WING.*

pro captu Lectoris habent sua fata Libelli.

L O N D O N;

Printed by *Wil. Leybourn*, for *George*
Sambridge, at the Signe of the Bible
upon *Ludgate-hill*, 1666.