



# The Challenging Future for the Land Surveyor

Presented to the Property Surveys Division at the 24th Annual Meeting  
of the American Congress on Surveying and Mapping (A Panel Discussion)

## 1964 Open Book vs Closed Book Examinations

The purpose of a closed book examination is to test a person's knowledge of common, well-known laws of science, mathematics, techniques, and other fundamental areas of knowledge that should be recalled purely from memory. If trigonometric functions or other constants are necessary in solutions, they are furnished.

Questions asked when open books are permitted are usually complex; they are designed with the thought that the answer required cannot be copied directly from a book. Such a question as "write a legal description of the property shown on the above drawing," cannot be answered by looking at or reading a book. Requiring an application of knowledge from numerous sources and requiring thinking is the key to composing open book questions.

In closed book examinations, time is not an important issue. The examinee either knows the answer to the question, or he cannot answer it. Liberal time can be allotted. But in an open book examination, time is a part of the testing tool. If a person is given sufficient time and an open book, he will eventually be able to answer any question. "How do you set the center of section 6?" can be answered by reading from *The Manual of Instructions*; but if time is cut short, the person who must open a book to find the answer will not have time to get complete credit. Open

book questions should be regulated to give the examinee sufficient time to look up an occasional function, formula, or odd fact not usually memorized, but not much more.

## Scope of Examinations

The following list has been used by various examiners as a check list for examination questions.

The first day consists of: elementary physics; mathematics exclusive of calculus; trigonometric solutions of surveying problems; solution of triangles; properties of circles; intersection of curves; intersection of a curve and straight line; vertical curves; differences in elevation and corrections for earth's curvature; use of rectangular coordinates; use of Lambert or Mercator grids; convergence and observation of the meridians; ratio and proportions; theory of probability and least squares; evaluation of errors; expansion and contraction of solids with change in temperature; Hook's law; properties of lenses; theory of measurements; measurement of distances and differences in elevation; subsurface measurements; measurement of angles and directions; traversing; latitudes and departures; location of points and lines; referencing points; note taking; stadia for distance measurement; use of coordinates; mapping; use of plane table; measurements and calculations for area; uses and adjustments of surveying instruments; hydrographic surveys; subtense bar; three-point problem; radio waves and light waves to measure distances; elementary

chemistry; elementary geology (necessary in land planning); construction surveying; magnetometric surveys.

The second day consists of: Property descriptions; writing descriptions; metes and bounds descriptions; principle of excess and deficiency; subdivision platting; planning; determination of the meridian; relative importance of conflicting elements; problems of boundary retracement; riparian rights; accretion; adverse possession; easements; harmonizing calls; meaning of wording in deeds and descriptions; dedication; liability of surveyors; State and Federal statutes; decisions of State Supreme Courts; sectionalized land system; mining claims; evidence and the law of evidence; professional practices of surveyors; authority, duties and responsibilities of surveyors; ethics; all laws and subject matter peculiar to surveyors in a particular State; State plane coordinates; electronic computers, electronic measurements, geodesy.

This area of the examination extends into inexact sciences; many of the questions are legal elements, a relative science. Often the element of judgment enters and essay questions should be freely used. ■

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Author **Michael Pallamary** has compiled the writings and lectures of the late Curtis M. Brown. These works are published in *The Curt Brown Chronicles*.