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TOPOGRAPHIC PROJECTION IN AMERICAN DESCRIPTIVE GEOMETRY WORKBOOKS

The term *topographic projection* corresponding to Polish *rzut cechowany*, Russian *проекция с числовой отметкой*, German *Kotierte Projektion*, Italian *proiezioni quotate* or French *géométrie cotée* cannot be found in American workbooks and in the internet. Formally, American authors do not introduce and distinguish the projection in question and its basic terminology. However, it is not completely true. Why?

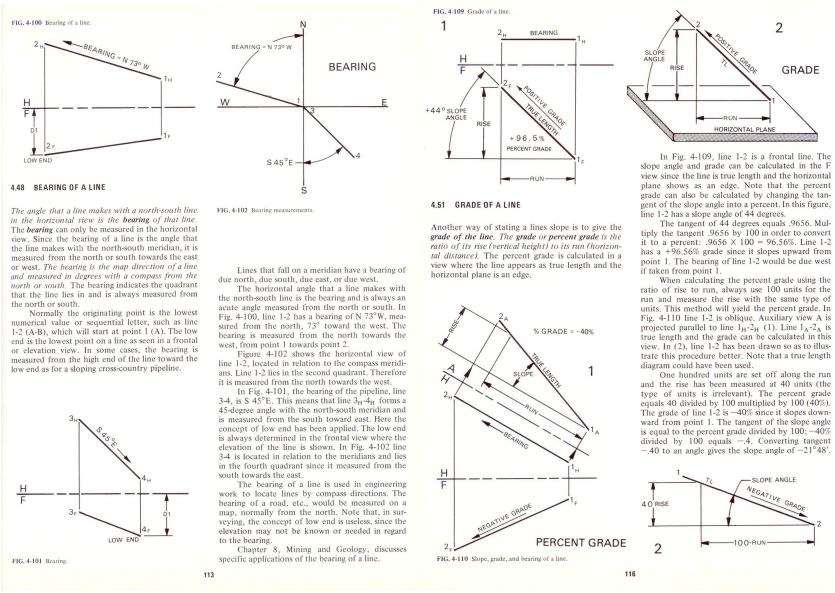

Figure 1: The azimuth bearing and slope of a line defined by the orthographic projection (two-sheet Monge method) explained on pages 113 and 114 of the Luis G. Lamit workbook [3]

The entity of topographic projection and its application in American workbooks is introduced at the beginning of the orthographic projection onto two projective planes (Monge projection). Luis G. Lamit [3] already introduces the terms *azimuth bearing of a line* and *slope of a line*

(*grade of a line*) on page 113 of his 450-page monograph. Steve M. Slaby [4] makes this reference even earlier, because these terms appear on page 29 of his 350-page workbook. Similarly, F.W. Warner and M. McNeary [5], apart from the basic types of line projection: *horizontal*, *frontal*, *profile*, use the terms: the mapping of *contour lines* of a surface and meaning of azimuth bearing of a line on page 20. of their 250-page monograph devoted to the application of Descriptive Geometry. However, the latter book is devoted to the application of Descriptive Geometry, but we do not find there the basic terminology concerning the topographic projection from the traditional European view point.

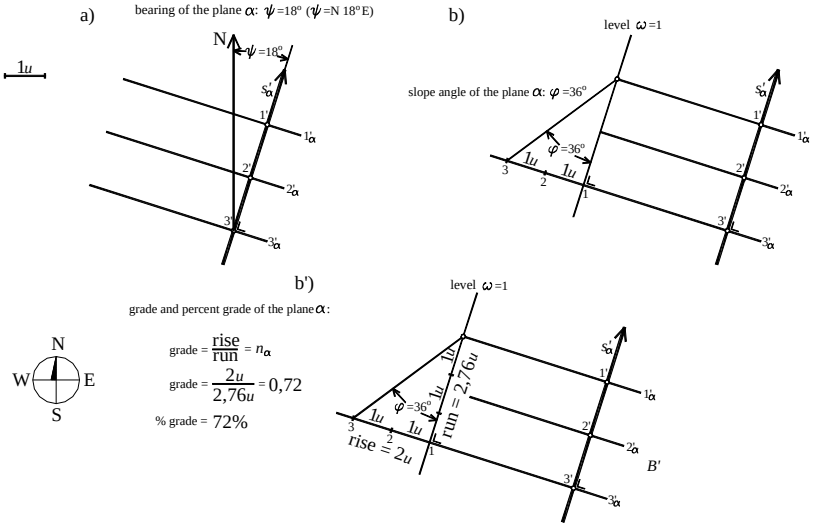

Figure 2: The description of the azimuth bearing and slope of a line defined in the author's lecture for the ERASMUS students [2]

In particular, the American authors in their workbooks do not mention the so called interval of a line and a plane. Such a term cannot be found. Searching for any equivalent of the interval we can find the term *run* (*horizontal distance*). Therefore the *grade* or *percent grade* of the line is the ratio of its *rise* (*vertical height*) to its *run*. The percent grade is calculated in a view where the line appears as true length and the horizontal plane is an edge (Fig. 1, p. 116, top, left side – third angle projection). If the line is in another position (not frontal), then the author [3] uses transformation into primary auxiliary view (Fig. 1, p. 116, bottom, left side – third angle projection).

This paper discusses the American proposition of a lecture of the theory and application of the section, which is equivalent to the topographic projection and its application.

Literatura:

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