

Nomogram for Sea-Water Wave Lengths

DURING AN EXPERIMENT to determine the depth of sea water, it was necessary to obtain wave lengths λ for substitution in the formula¹

$$T^2 = (2\pi\lambda/g) \coth (2\pi d/\lambda)$$

where

T is the wave period,
 d is the water depth, and
 g is the gravity constant.

It was found advantageous to use aerial photographs for finding λ through the use of a

¹Williams, W. W. *Coastal Changes*, London, Routledge & Kegan Paul, 1960.

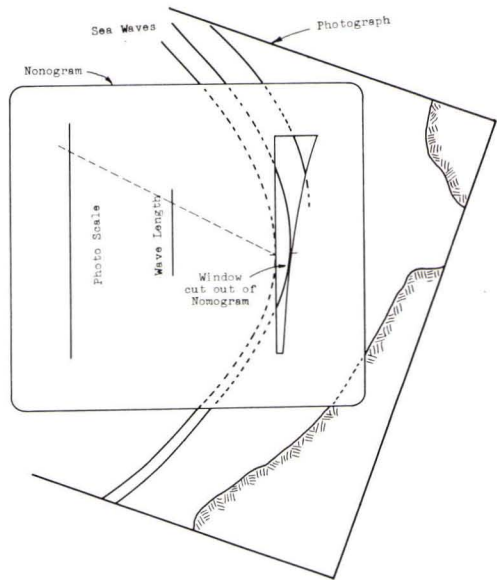


FIG. 1. Sketch showing the nomogram in operating position on an aerial photograph.

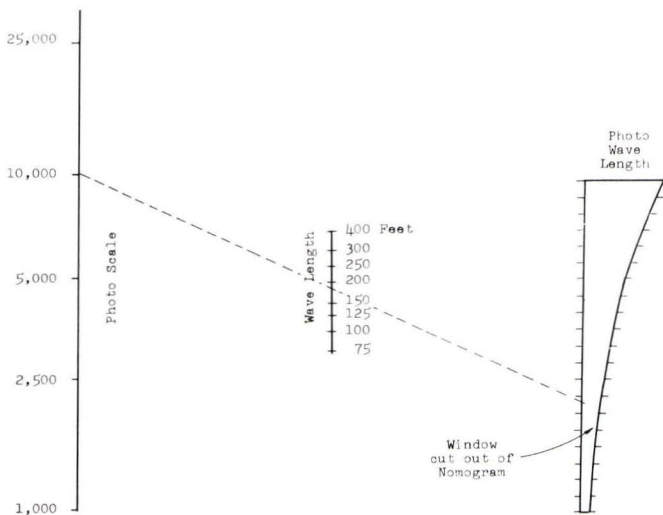


FIG. 2. A more detailed view of the nomogram itself. The graduations of the scales and the width of the slot are logarithmic functions.

The 1968 Semi-Annual Convention
will be held at the

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The Eleventh Congress of ISP

ONCE EVERY FOUR YEARS the International Society for Photogrammetry (ISP) meets for two full weeks of papers and exhibits at its Congress. This year, July 8 to 20, it convenes at Lausanne, on Lake Geneva, in Switzerland. The purpose of each Congress is to report, review and discuss the new applications of photogrammetry that have occurred since the previous meeting. Between congresses each of the seven technical commissions often holds a symposium where its subject is treated in a depth and candor which may be difficult to accomplish otherwise.

The founding of ISP in 1907 is credited to Prof. Dr. Dolezal of Austria. ISP is an association of national societies of photogrammetry—46 of them to date. The organization

of ISP consists of a Council of seven members supported by the technical commissions. ISP is financed through a levy on the national societies of one Swiss franc per year for each of their individual members.

At the close of each Congress, the delegates (one per member country) select the site of the next Congress and the new members to the Council. Also the seven commissions are redistributed among the member nations; each host nation appoints the president and secretary of its commission. The president and secretary are responsible for the technical program in their field during the following four years and at the next Congress. The proceedings of each Congress is published under the title *Archives* which is released during the following year.

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nomogram which is applicable to all scales of photography. The nomogram is used directly on the photographic print on which one can also draw pencil lines orthogonal to the wave fronts to aid in orienting the nomogram (Figure 1).

The left-hand scale of the nomogram (Figure 2) represents H/f which is the inverse of the conventional photo scale fraction. The center scale is $\log \lambda$ expressed in units of feet; this is the scale on which one reads the answer. The right hand scale consists of a slot cut out of the transparent nomogram where the opening of the slot is the actual orthogonal distance λ between the photo images of two successive sea waves on the photographs. As

with most nomographs, the two scales and the slot width are logarithmic.

The nomogram is moved about until a wave length image, orthogonal to the wave front, just fits into the slot. A straight-edge connecting this point on the slot with the appropriate point on the H/f -scale gives the actual wave length in feet on the middle scale. The value can be recorded directly on the photograph.

The nomogram is only useful for measuring waves which are very clearly defined; where this is not true one would need to resort to alternative more sophisticated methods for finding λ , such as microdensitometer traces.