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THE ALIQUOT DIVISION OF UNSURVEYED RIPARIAN LAND IN PENNSYLVANIA

*Knud E. Hermansen**

Introduction: Some of Pennsylvania's most valuable land is found along Pennsylvania's lake shores, rivers, and streams. Many times the boundaries between the high water¹ and the extent or line of common law ownership are not marked and have never been included in a survey (see Figure 1).²

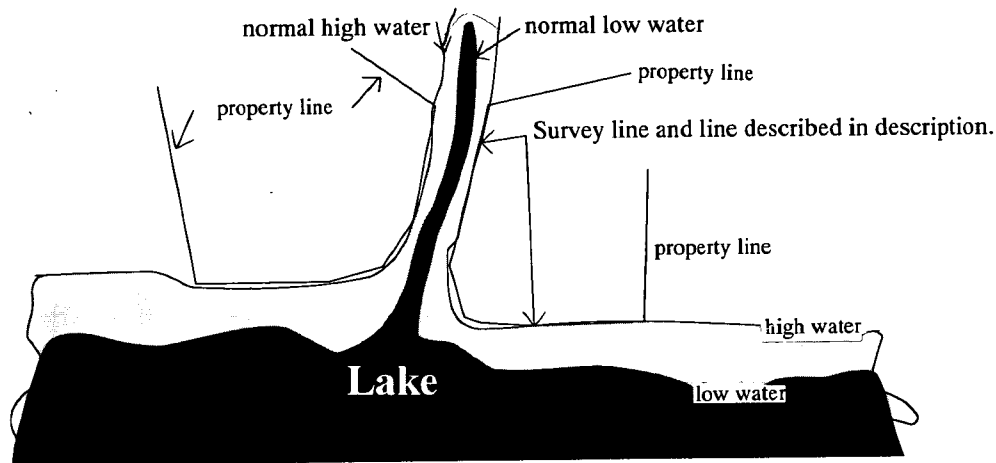


Figure 1

In Figure 1 the survey line is on or near the high water line. The location of the property line going from the survey line to the low water line of the navigable lake or middle of the non-navigable stream is not known.

There are numerous reasons for this condition. Often unaware of the complexities of title, unsure of the extent of ownership, unwilling to enter the water, or unwilling to claim what

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¹The termination of the original survey frequently stopped at the high water line or near it. In this report, the extent of the original survey is assumed to be synonymous with the normal high water line to simplify the explanation. In reality, the original survey line does not always coincide with the normal high water line. The termination fixed by the original survey line should be used.

²The intricacies involved in actually fixing the line of ownership along or in water bodies are beyond the scope of explanation in this document. To summarize, ownership generally extends to normal low water along navigable lakes and streams and the center or thread for non-navigable lakes, ponds, and streams. See *Lakeside Park Co. v. Forsmark*, 153 A.2d 486 (Pa. 1959); *Conneaut Lake Ice Co. v. Quigley*, 74 A. 648 (Pa. 1909); and *Pursell v. Stover*, 20 A. 403 (Pa. 1885).

was worthless at the time — the surveyor failed to include the land in the survey.³ Even if the surveyor included the water, the monuments must be left on the bank to survive the floods.⁴ Consequently, the survey went along or near the high water line and the description was written to follow the survey line. As a result, many of Pennsylvania's riparian lands lack a definite boundary crossing the very part of a parcel that makes the upland so valuable. The omission frequently comes to light when the attorney seeks permits to construct piers or docks, the property is appraised, or the client wishes to prevent trespass or identify encroachments.

The objective of this article is help attorneys, surveyors, and others involved with conveyances along water bodies to understand and identify proper methods to analyze and help fix the boundary crossing between the normal high water line (limit of original survey) and extent of title (common law limit of ownership).

Methods: When the conveyance has failed to define and locate the boundary, courts in Pennsylvania and other states have grappled with equitable methods to extend the boundaries of the property to the water.⁵ An example is *Waxman v. Loranger Plastics Corporation*,⁶ where the superior court had to fix a boundary between two parties owning adjoining, roughly rectangular parcels of land situated along a riverfront. As is often the case, the descriptions in the deeds caused the record boundary of each parcel to terminate at or about the original location of the top of the river bank. If the sidelines were extended to the low water, they would intersect within the expanse of land lying between the original top of the bank and the low water mark (see Figure 2). This expanse of land had been subject to occasional flooding. In recent times, changes in the river level had allowed the formerly flooded land to become high, dry and usable land. One owner had constructed a building which extended beyond the southern boundary of the original deed description of its parcel and onto the disputed area lying between the original top of the bank and the water's edge. The Pennsylvania Superior Court, in fixing a boundary, considered the methods that will be discussed.⁷

In general, the courts try to adhere to a method that is equitable, easy to understand and apply, and functional in almost all circumstances.⁸ The common methods considered

³"[A] surveyor usually cannot go into a stream to make a corner, so he makes a corner on the bank in order to identify the place where he stopped--the rule being an exception to the one which requires following the footsteps of the surveyor." *State of Texas v. Brazos River Harbor Navigation District*, 831 S.W.2d 539 (Tex. Ct. App. 1992) "A majority of the court is of opinion, that it is a common method of measurement in the country, where the boundary is a stream or way, to measure from the bank of the stream or the side of the way; and that there is a reasonable presumption that the measurements were made in this way, unless something appears affirmatively in the deed to show that they began at the centre line of the stream or way." *Smith v. Hadad*, 314 N.E.2d 435 (Mass. 1974) quoted in *Haight v. Hamor*, 83 Me. 453 (1891). See also *Wood v. Appal*, 63 Pa. 210 (1869).

⁴*C.f. Wood v. Appal*, 63 Pa. 210 (1869).

⁵See *Waxman v. Loranger Plastics Corporation*, 493 A.2d 713 (Pa. Super Ct. 1985).

⁶493 A.2d 713 (1985).

⁷In the author's opinion, the resulting decision in *Waxman* is a good example of a hard case making bad law. As a result of *Waxman* the stable and more reasonable method laid down in *Wood v. Appal* was made confusing, in part, by an incomplete analysis and a lack of complete understanding of the various methods.

⁸See *Waxman v. Loranger Plastics Corporation*, 493 A.2d 713 (Pa. Super Ct. 1985).

at one time or another may be summarized as 1) extension of the property line, 2) proportionment, and 3) perpendicular (i.e., shortest distance).⁹

Extend Boundaries — Extending the property line is frequently presumed because of its straightforward simplicity. However, this method is employed erroneously without an express intent stated in the operative conveyance. Further, this method produces inequitable if not ludicrous results in many situations.¹⁰

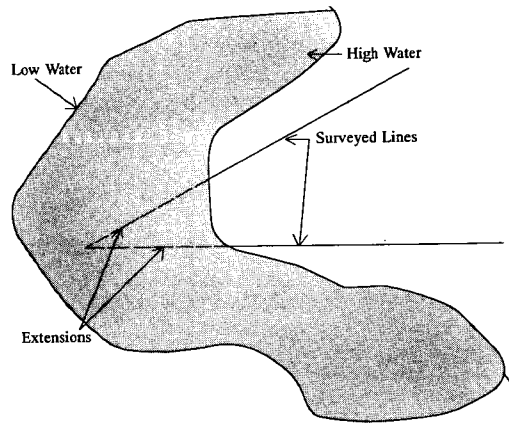


Figure 2

In the example shown by Figure 2, extending the boundaries causes them to intersect before reaching the water. This denies the owner access to the water and leaves the common boundary between the adjoining lots uncertain.

Proportionment — Proportionment requires the boundary termini along the line of ownership to be fixed proportionately to the record distances along the surveyed boundary (e.g. normal high water). Figure 3 illustrates how this method is employed.

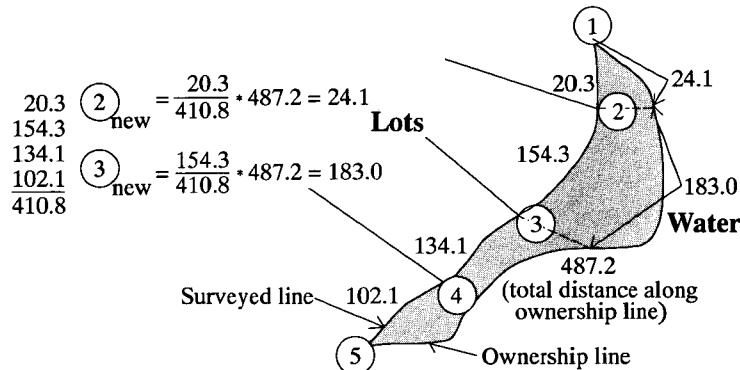


Figure 3

Example: In Figure 3, the original record distances for the lots sum to equal 410.8 feet. The distance along the line of actual ownership (new boundary) sums to 487.2 feet. The ownership of the various lots are fixed according to a proportion of the record distance and actual distance.

⁹In Maine, another method, the "Colonial Method" is preferred for tidal water. *See e.g., Proctor v. Hinkley*, 462 A.2d 465 (Me. 1983) (A recent article prepared in part by the author covering the subject under Maine common law is scheduled for publication in the *Maine Law Review* in early 1995.)

¹⁰*See Waxman v. Loranger Plastics Corporation*, 493 A.2d 713 (Pa. Super Ct. 1985)

This method suffers from several weaknesses. The method requires that the line of ownership (new boundary) join the original surveyed boundary at two points along the water's edge one along a lake or pond without a surface inlet or outlet. Coincidence at two points is necessary to provide a beginning and ending point for the comparative measurements. Consequently, if the ownership line does not touch the high water line or line of actual survey, at two points, this method cannot be employed. This is a common situation along some streams, ponds, lakes or islands, or where title extends to the center of the stream for non-navigable waters.

In other cases, the points of intersection are ambiguous or some distance away and require considerable research and survey efforts, which make this method very costly to employ. In these cases, the surveyor must extend their survey along several miles of water frontage to locate a comparably small water-front distance for the client (see Figure 4).

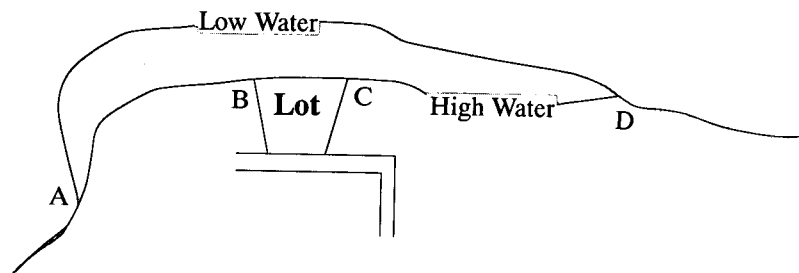


Figure 4

Example: Using the proportionment method, the surveyor must extend the survey beyond the immediate boundary of the client's lot (B-C) and survey along the water between A-D.

Another drawback is that the locations of intermediate boundaries depend on conditions along other riparian lots. In other words, even though the frontage may remain constant in front of the lot in question, changes upstream or downstream have the potential to affect the lot in question because the entire frontage distance varies over time and with changing site conditions (see Figure 5).

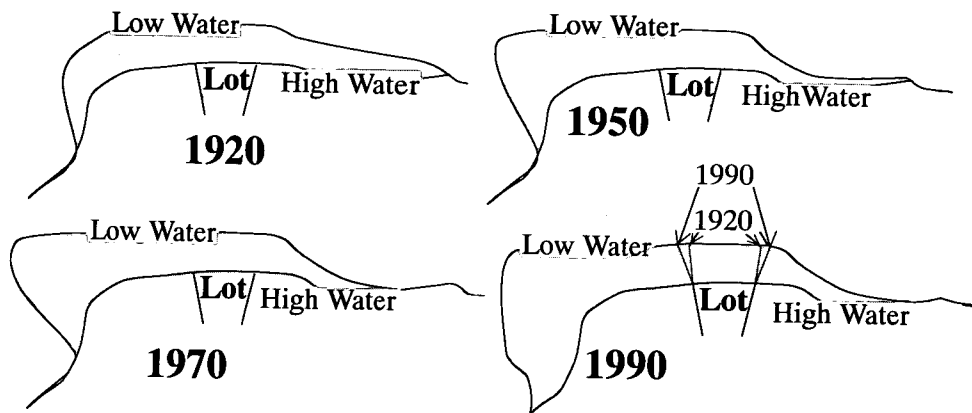


Figure 5

Example: Figure 5 demonstrates that the accretion or erosion of land along the water body upstream or downstream from the lot will effect the location of the lot lines even though there has been no accretion or erosion in front of the lot in question.

Finally, the dependency of each lot corner to other lot corners frequently requires that all lot owners be joined as necessary parties even though they may not actually border the lot where the common boundary is in question.¹¹ An example is *Reitz v. Knight*,¹² a case involving two waterfront lots on a lake. In *Reitz*, the court stated that any excess or deficiency from the recorded measurements necessarily involves apportionment of all lots along the riparian frontage since this procedure has the potential to affect the boundary location of all the lots. Consequently, all must be joined to properly and permanently fix the boundary in question.¹³

Proportioning may be the best and only method to fix the termini at the ownership boundary where: 1) the lot was created as part of a plan of lots and refers to the plan in the deed, 2) the plan shows the corners terminating at the lake, low water line, or thread of the river, 3) one or more monuments were not set or their position can no longer be recovered, and 4) because of imperceptible changing frontage distances there is excess or deficiency in the total frontage.¹⁴

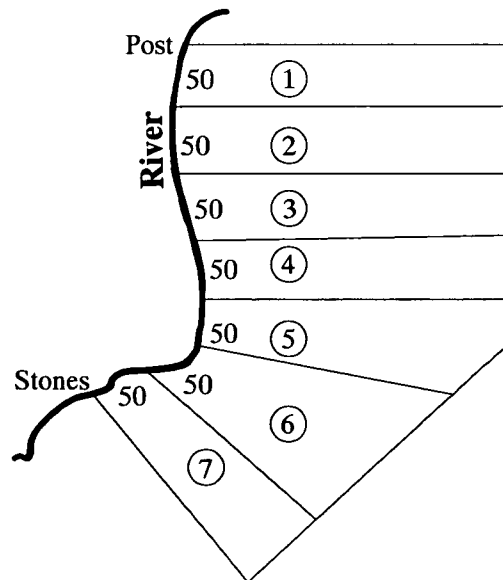


Figure 6

As seen in Figure 6, the plan extends the boundary to the water giving no indication that the survey or description stops the boundary short of the absolute limit of title. Typical in the case of ancient plans and measurements when retraced with modern equipment, the record measurements do not match the retracement measurements. This situation may require proportioning the frontage to establish the side boundaries.

Perpendicular Method — The perpendicular method fixes the boundary to be the shortest distance between the ownership line and high water line (surveyed corner). The line fixed at the shortest distance will always be perpendicular to the line of ownership.

¹¹See, e.g., *Reitz v. Knight*, 814 P.2d 1212 (Wash. Ct. App. 1991).

¹²*Reitz v. Knight*, 814 P.2d 1212 (Wash. Ct. App. 1991).

¹³"One exception ... is that when property lines are uncertain for all owners of shoreline property situated on an irregular cove, all owners are necessary parties to a boundary line dispute." *Id.* at 1218.

¹⁴*C.f.* *Wood v. Appal*, 63 Pa. 210 (1869) (quoting *Ball v. Slack*, 2 Whart. 508 (Pa. 1837)).

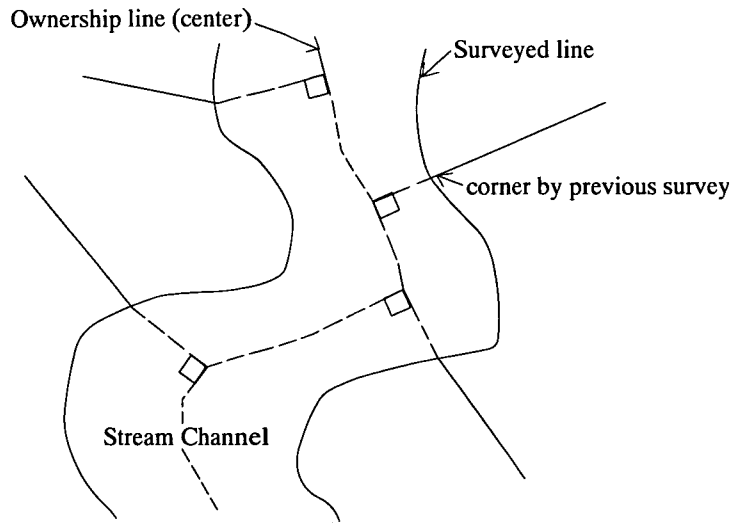


Figure 7

Figure 7 shows that using lines perpendicular to the line of ownership (in this case the center of a non-navigable stream) will be the shortest distance from the line of ownership to the boundary located by the original survey.

This method will always provide for frontage along the ownership line, is easy to apply, and does not require costly research and field survey beyond the parcel in question.¹⁵

The perpendicular method suffers from one possible but very unlikely shortcoming. As previously stated, the line is fixed by finding the shortest distance from the high water line to the line of ownership. Theoretically, there may be two or more such possibilities. Practically speaking there will always be some difference allowing a choice — though the difference may be small.

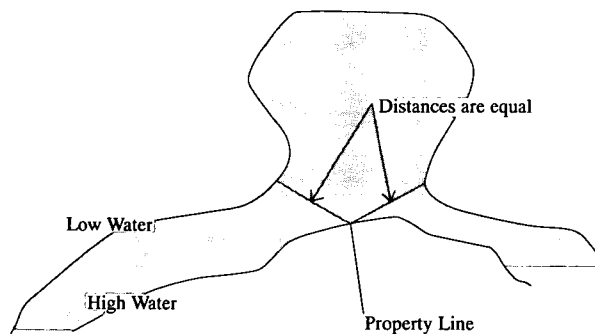


Figure 8

Figure 8 shows a situation where there may be two possible solutions to the perpendicular line (shortest distance) method. The chance of exactly equal lines is remote.

¹⁵The court in *Waxman v. Loranger Plastics Corporation* seems to suggest that where the high water and line of ownership are not parallel that this method would produce inequitable results because the frontage is not proportionate. If equity is based solely on a proportionate share that is true but if equity is based on certainty of title and assurance of water frontage regardless of the frontage conditions anywhere along the water body itself, the perpendicular method should always be preferred over proportionate allotment. With the perpendicular method, a buyer with a tape or string can determine where the boundary will intersect. With the proportionate share, a costly and extensive title search and survey along an extended portion of the water body is always required.

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Summary: In summary, as the value of waterfront property increases, the practitioner should take the time and effort to be sure the boundary extending from the upland to the line of ownership is clearly marked and described. A great deal of confusion and litigation has involved the location of these boundaries. Until *Waxman v. Loranger Plastics Corporation*, the perpendicular method as described in *Wood v. Appal* has been generally applied. The perpendicular method is simple, expedient, easily applied by layperson and surveyor alike, equitable, and will always insure water frontage. Contrary to the court's opinion in *Waxman*, the method can be applied in all situations with equitable results, not just those situations where the line of ownership and survey line are approximately parallel. Unfortunately, the appellate court in *Waxman* has read *Wood v. Appal* as favoring a case by case determination — no doubt encouraging needless uncertainty, confusion, litigation, and expense in the years to come.

