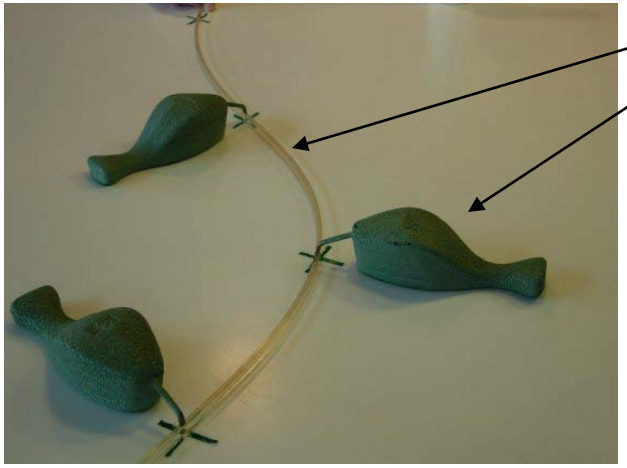
Brief History of Splines

Splines are a type of curve, originally developed for ship-building in the days before computer modeling. Naval architects needed a way to draw a smooth curve through a set of points.

The solution was to place metal weights (called *knots or ducks*) at the control points, and bend a thin metal or wooden beam (called a *spline*) through the weights.



At Boeing Aircraft

The physics of the bending spline meant that the influence of each weight was greatest at the point of contact, and decreased smoothly further along the spline. To get more control over a certain region of the spline, the draftsman simply added more weights.

This scheme had obvious problems with data exchange! People needed a mathematical way to describe the shape of the curve. *Cubic Splines* are the mathematical equivalent of the draftsman's wooden beam.

It is commonly accepted that the first mathematical reference to splines is I. J. Schoenberg's paper ("Contributions to the problem of approximation of equidistant data by analytic functions," Quart. Appl. Math., vol. 4, pp. 45-99 and 112-141), which is probably the first place that the word "spline" is used in connection with smooth, piecewise polynomial approximation. However, the ideas have their roots in the aircraft and ship-building industries.

See also http://www.netlib.org/na-digest-html/98/v98n26.html#1