

# Plotting *Titanic's* Sheer Curve

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## Introduction

With the proliferation of various drafting programs, there has been a similar increase in the number of modelers who wish to recreate *Titanic* in digital form. A subject that frequently comes up in discussions among these digital modelers is that of *Titanic's* sheer curve. The sheer curve is the curve of the main deck (and *Titanic's* other decks) from aft to forward which is lowest in the middle of the ship and rises at both ends. The purpose of incorporating this curvature in the decks was to enhance the stability of the vessel. It also improved the vessel's seakeeping properties. This article will not discuss all the theoretical aspects of the naval architectural concept of sheer. The purpose of this article is to aid the digital modeler in developing an accurate sheer line. There are two main types of drawings where this methodology will be useful to the digital modeler. The first is a profile drawing of the ship. The second is the lines drawing of the ship. The profile drawing is the most important for the development of an accurate sheer line curve because this curve applies to all decks and is essential in locating various structures like portholes in a drawing.

The incorporation of sheer into the design of the ship was also a statutory requirement of the British Board of Trade. The rules were rather complex and will not be discussed here but there were strict requirements regarding the sheer of the ship which had to be met.

## More Than One Sheer Curve

The Primary Sheer Curve (PSC) of *Titanic* was calculated for C deck and this curve also applied to all decks above it. There was also a Secondary Sheer Curve (SSC) which was calculated for D deck and all decks below it. The SSC did not have any visual impact on the look of the ship and only applied to decks within the lower hull. The purpose of having an SSC is somewhat speculative but it appears that it was developed because of the function of D deck. This was also called the Saloon Deck because amidships was the first-class dining saloon. This was a large space where the height between D deck and C deck above it was 10 ft. 6 in. From the Wreck Commissioner's Final Report, we find this quote: **"The general height from D deck to C deck was 10 ft. 6 in., this being reduced to 9 ft. at the forward end, and 9 ft. 6 in. at the after end, the taper being obtained gradually by increasing the sheer of the D deck."** An examination of the Lines Plan reveals that this change in sheer curvature was not confined to D deck. It was applied to all decks below it. The SSC was such that it maintained the 10 ft. 6 in. height between decks in the middle of the hull between perpendiculars and rose fore and aft so that forward the height between D and C decks was 9 ft. and aft it was 9 ft. 6 in. The question might be asked why this was done? I would speculate it was for hull strength. Amidships in the area of the first-class dining saloon there was the need was for a higher

ceiling for aesthetic reasons. Forward it appears that they didn't want to have any deck separation greater than 9 ft. This would be consistent with having transverse hull frames more closely spaced in the bow area. The same applied aft although it was not as great a consideration.

Plotting the PSC is fairly straightforward. The steps used in doing so will be outlined first. Plotting the SSC is more complicated because it is not a single curve. It is actually 3 separate sheer curves which must be laid out so that they are fair. The middle part of the SSC was identical to the PSC. Both the forward and aft parts of the SSC were distinct curves.

## Landmarks

In order to draw the PSC of the ship, the landmarks that are part of that line must be identified. The end points of the line are the fore and aft perpendiculars. These are found on the Lines plan and are identified as FP and AP respectively. The PSC is developed first and most importantly for the main deck which on *Titanic* is the uppermost continuous fore and aft deck which is the Shelter Deck or C deck. On the Sheer plan of the Lines Plan, there are notations which indicate how much the PSC rises from its lowest point to its termination on the FP and AP. At the FP the PSC rises 11 feet 10 inches from its lowest point amidships. At the AP the PSC rises 4 feet from the lowest point amidships. The most challenging aspect of developing the PSC has been determining with accuracy both the vertical and horizontal location of the lowest aspect of the sheer line. This will be discussed separately.

The landmarks for the SSC are the same as the PSC as far as the location of the lowest point of the curve. At the forward end it is 18 in. higher than the PSC, and aft it is 12 in. higher than the PSC. The locations of the transition from the middle part of the SSC to the fore and aft curves will be discussed in more detail in the section where details regarding the plotting of the curve are given.

## The Lowest Point of the Primary Sheer Curve

The sheer curve of the shelter deck is a two-dimensional representation of where the deck meets the transverse hull frames. It is *not* a representation of where the sheer curve is indicated on the Sheer Plan of the Lines Plan. The sheer curve is actually a three-dimensional curve which is nearer and farther away from the longitudinal midline of the ship throughout its length. However, it is developed as a two-dimensional drawing because its primary purpose is to indicate where the outboard ends of the deck beams join with the transverse frames.

The vertical location of the lowest point of the PSC is found from the Midship Plan. Figure 1 shows that from the keel baseline to the top of the shelter deck beam is 64 ft. 6 in.

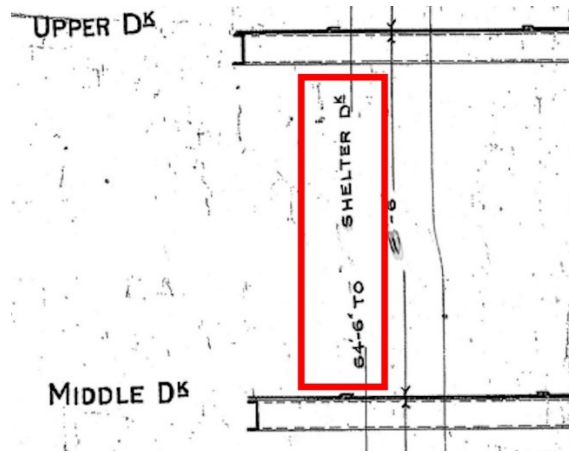


Figure 1

### Height from keel baseline to top of shelter deck beam

This 64 ft. 6 in. figure is the height of the top of the shelter deck beam at the longitudinal midline of the ship. This is known as the “depth” of the ship. For purpose of developing a sheer line the vertical location of the top of the shelter deck beam at where it meets the transverse hull frame is required. The deck beam is not flat but rather it is cambered. That means that it curves downward from its highest point at the longitudinal midline to its end where it joins the transverse hull frame. The amount of this downward curvature is specified in the Midship Plan as 3 inches in 92 feet. This notation from the Midship plan is shown in Figure 2.

**CAMBER OF ALL DECKS, 3" IN 92 FEET.**

Figure 2

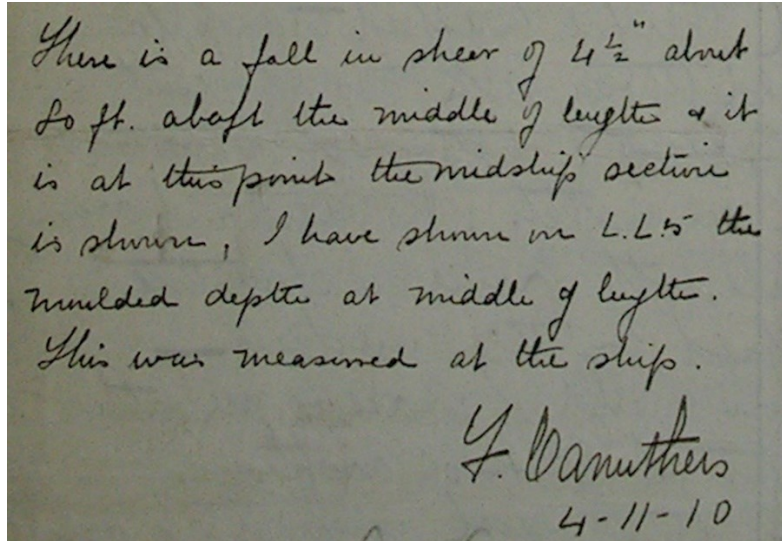
### Camber of decks

This places the height of the outboard end of the shelter deck beam 3 inches lower than at the longitudinal midline. This is also known as the “moulded depth”. This moulded depth is 64 ft. 3 in. which is where the lowest vertical location of the PSC is located.

It should be noted that the camber of the decks is 3 inches in 92 ft. The width of the shelter deck is slightly less than 92 ft. The tumblehome at the level of the shelter deck is approximately 5 in. I checked to see how much less than three inches of camber this would be at this deck width. I found that the camber would be about 2-15/16 inches so for calculation purposes the moulded depth is being kept at 64 ft. 3 in.

Now that the Y dimension or height of the midpoint of the PSC has been established it is time to determine where the lowest point of sheer is located in the fore and aft or X dimension. The slope of the line is so gradual that it is impossible to visually locate this point. Additionally, I am

unaware of any plan notation which specifies a specific fore and aft location. Fortunately, a note in a Board of Trade Surveyor's report on freeboard gives us the necessary clue to locate the fore and aft point of the lowest part of the sheer line. Figure 3 show the excerpt from the report.



There is a fall in sheer of  $4\frac{1}{2}$ " about  
80 ft. abaft the middle of length & it  
is at this point the midship section  
is shown, I have shown on L.L.5 the  
moulded depth at middle of length.  
This was measured at the ship.  
F. Caruthers  
4-11-10

Figure 3

#### Excerpt from Board of Trade document

For those who might have trouble reading the document, here is a transcription:

**"There is a fall in sheer of  $4\frac{1}{2}$ " about 80 ft. abaft the middle of length & it is at this point the midship section is shown. I have shown on L.L.5 the moulded depth at middle of length. This was measured at the ship."**

**F. Caruthers**

**4-11-10 [November 4, 1910]**

What Caruthers is saying here is that the Midship Section Plan where the moulded depth is derived is located "about" 80 ft. aft of the middle of length". The middle of length he speaks of is the middle station (station 13) of the Sheer plan part of the Lines Plan. This would place the moulded depth location of the Midship plan somewhere between frames 26A-27A. This is still an approximation. To find what I believe is the exact point we have to review the methodology for drawing a sheer line found in Thomas H. Watson's book: *Naval Architecture: A Manual of Laying-off Iron, Steel, and Composite Vessels*. In Figure 4 from Watson's book, we see part of the drawing of a sheer diagram.

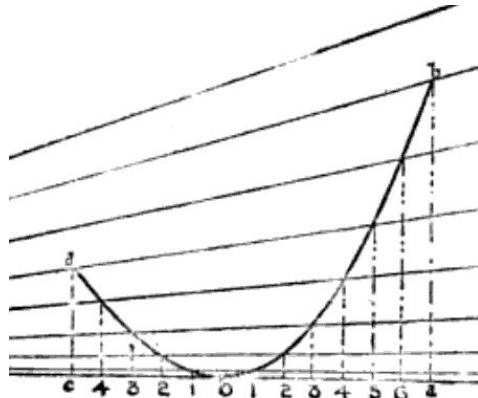


Figure 4

### Part of sheer diagram from Watson's reference book

Along the bottom of the diagram are numbers indicating station numbers from a Lines plan. The lowest point of the curve is located at a discrete point with the station numbers being equidistant from each other. When we consider Titanic's lines plan, the lowest point of sheer on the Midship plan which Caruthers located "about" 80 ft. aft of Sheer Plan station 13 is not located on one of the Sheer Plan stations. It is located between stations 10-11 but closer to station 11. It looks to be about  $\frac{3}{4}$  the distance between stations 10 and 11. If we divide the distance between all stations by four, we would get 96 total sections between perpendiculars. If we then see which station is closest to 80 ft. aft of station 13, we find that station 39 of 96 stations is located 79 ft. 8-1/8 in. aft of the mid-length station 13. This figure would be the closest discrete division which would be "about" 80 ft. aft of the mid-length station 13. Since a station 39 of 96 could be reduced to 13 of 32, it will simplify future calculations to divide the length between perpendiculars in to 32 sections rather than doing calculations to find points for 96 sections.

**From this we can now say that the lowest point of the Primary Sheer Curve is located 79 ft. 8-1/8 in. aft of the mid-length station 13 of the Sheer Plan of the Lines Plan which is the X coordinate. The Y coordinate is 64 ft. 3 in. above the keel baseline.**

### Drawing a Sheer Diagram for *Titanic's* PSC

Now that we have the X and Y coordinates for the ends and the lowest point of the PSC of the shelter deck, we can draw a sheer diagram as described in Watson's book so that we can determine the Y values at the station lines between the perpendiculars. Watson's explanations of his methods are somewhat difficult to understand. I will proceed with a step-by-step explanation of how to draw a sheer diagram. Since this diagram would be drawn most easily today in a drafting program, I will give instructions found in an AutoCad program. Actually, my

drawing was produced in Progecad which is nearly identical to AutoCad. This drawing will produce a horizontally contracted sheer line but that's ok because we are really only interested in determining the height of the curve above each station between perpendiculars.

Step 1. – Draw a horizontal baseline roughly 900 inches long.

Step 2. – At the right end of the horizontal line, draw a vertical line roughly 300 inches in length.

Step 3. – Set the ORTHO LOCK and the SNAP LOCK. Draw a circle using CENTER, RADIUS with the center at the top of the vertical line to the bottom of the vertical line.

Step 4. – Trim away  $\frac{3}{4}$  of the circle leaving a circle quadrant to the right side of the vertical line.

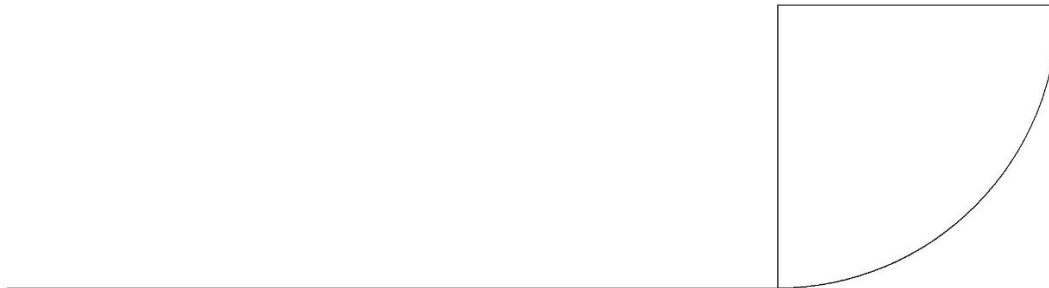


Figure 5

Steps 1-4

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Step 5 – In the FORMAT menu, set POINT STYLE to a circle with a horizontal and vertical line through it. From the DRAW menu select POINT. In the POINT sub-menu select DIVIDE. Select the circle quadrant and enter 20. There will now be 19 points formed on the circle quadrant.

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Figure 6

Step 5

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Step 6. – Draw horizontal lines from each of the points on the perimeter of the circle quadrant to the vertical line.

Step 7. – Where each of the horizontal lines meets the vertical line number each from 1-19 starting from the lowest line to the top.

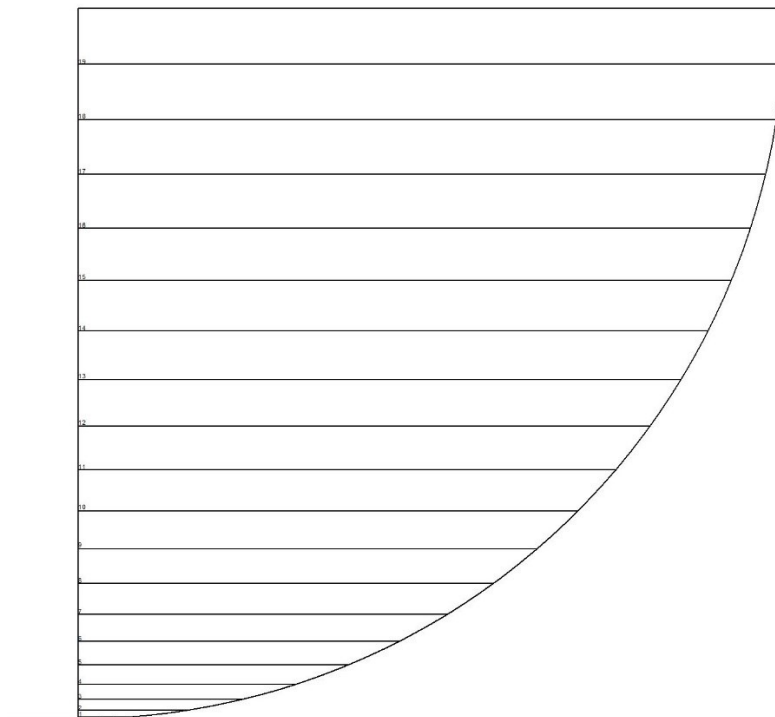


Figure 7

Steps 6 & 7

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Step 8. – From the very top of the vertical line, draw a line to the left at an angle of 20 degrees downward from horizontal until it intersects the horizontal baseline. This can be done by drawing a horizontal line from the top of the vertical line to the left until it is beyond the left end of the horizontal baseline. Then from the MODIFY menu, select ROTATE. Snap to the end of horizontal line at the top of the vertical line. Enter 20 and press ENTER. The horizontal line will now be rotated toward the baseline at an angle of 20 degrees. Trim any part of the line which passes below the baseline.

Step 9. – From each of the numbered marks on the vertical line draw a line to the point where the line in Step 8 intersects the baseline.

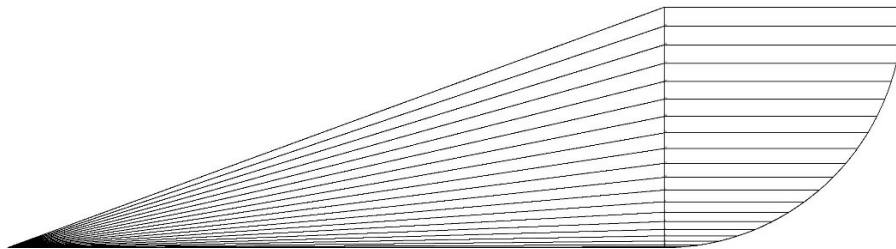


Figure 8

Steps 8 and 9

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Step 10. – Create an offset horizontal line vertically from the baseline by 142 inches. To do this go to the MODIFY menu and select OFFSET. Enter 142 and press ENTER. Select the baseline and click above it. The second horizontal line will appear 142 inches above it. This operation is being done to select the place where the offset line intersects the angled line from vertical number 19 on the vertical line.

Step 11. – Draw a vertical line from the 142 in. offset line where it intersects horizontal line 19 to the baseline. This will be labeled 19 and will represent the station line for the forward perpendicular.

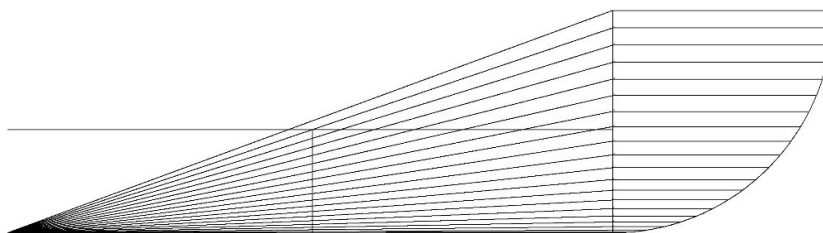


Figure 9

Steps 10 & 11

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Step 12. – Create a horizontal line offset vertically from the baseline by 48 in. Use the same method used in Step 10.

Step 13. – Draw a vertical line where this offset 48 in. line intersects the angled line which originates at 13 on the vertical line. This line is drawn from the intersection to the baseline. This vertical line represents the aft perpendicular station. Label this line 13.

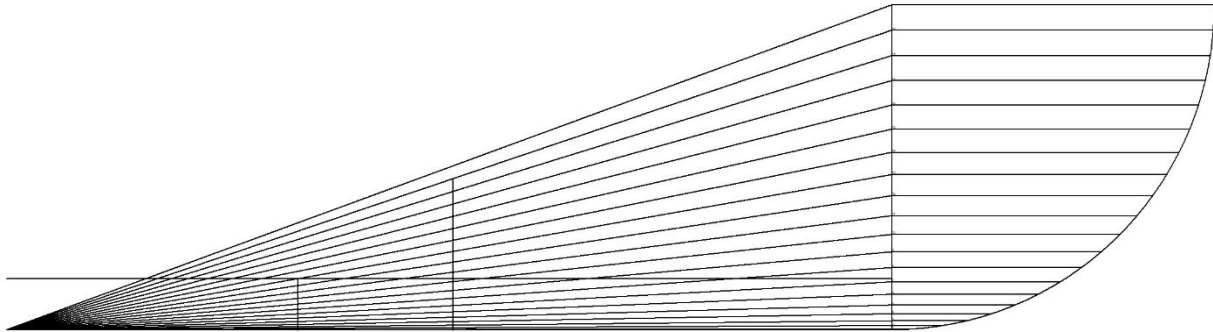


Figure 10

Steps 12 & 13

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Step 14. – Draw a line along the baseline from where the shorter vertical line 13 intersects the baseline to where the longer vertical line 19 intersects the baseline. Divide this line into 32 segments using the same method used in Step 5.

Step 15. – Draw a vertical line to the left of the longer vertical line 19 from the first division of the baseline left of 19 to where it intersects the angled line 18. Label this vertical line 18. Repeat this process moving left until you have reached the division on the baseline which will be numbered 0.

Step 16. – Draw a vertical line from the first baseline division to the right of the extreme left vertical line 13 to where it intersects angled line 12. Label this line 12. Repeat this process counting downward until you complete the last vertical line 1 to the left of the 0 station of the baseline.

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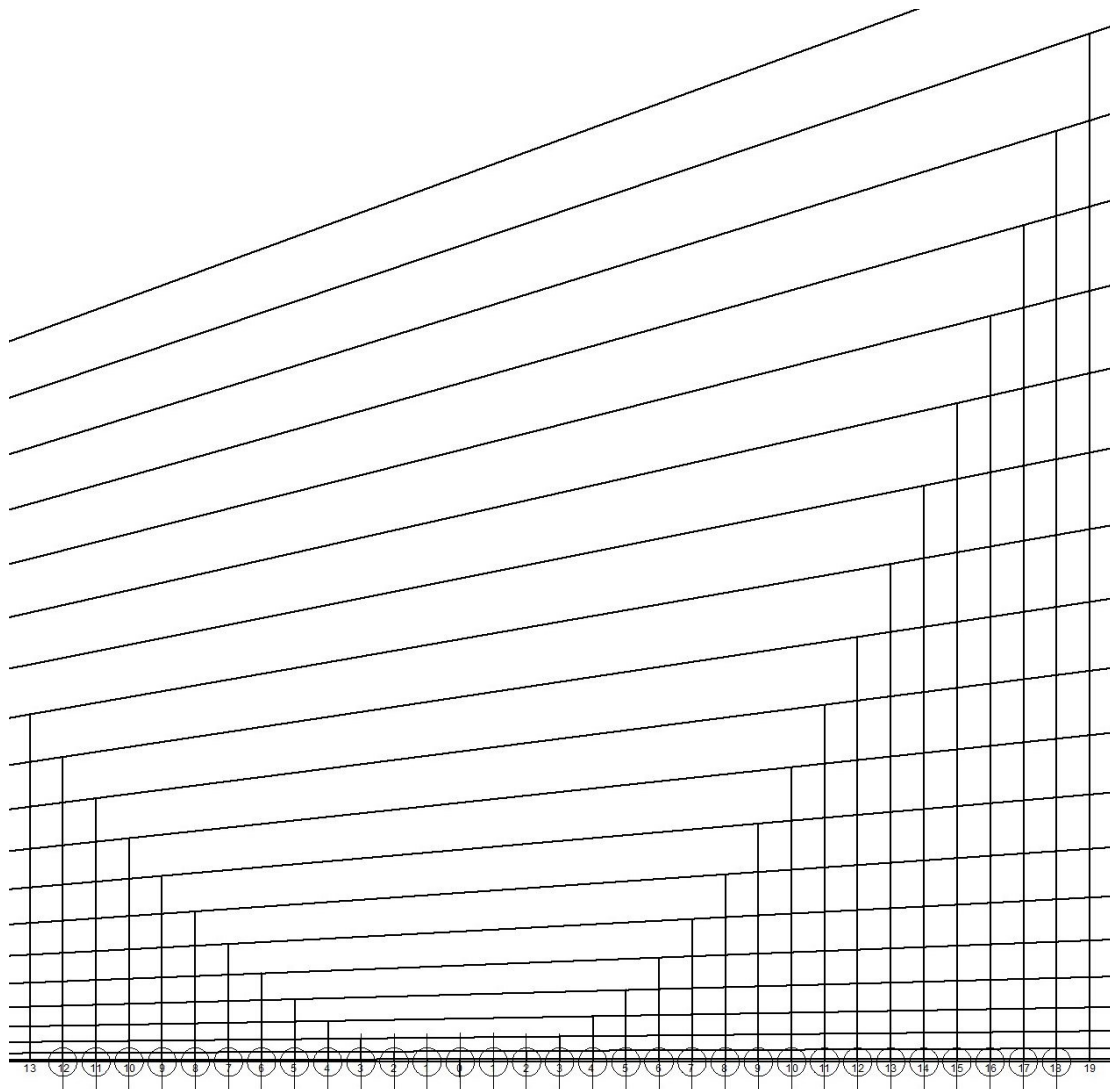


Figure 11

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### Steps 14, 15, & 16

Step 17. – Turn on the SNAP LOCK. Turn off the ORTHO LOCK. Erase all of the division point on the baseline which were created earlier **except 0** because there is no vertical line to mark this point on the baseline. From the DRAW menu select SPLINE. Start at where the furthest right vertical line 19 meets the angled line 19 and click at this point then keep moving leftward and click on the vertical end of each successive vertical line except 0 where you will click on where the division point you left intersects the baseline. Keep clicking left until you end on the furthest vertical line to the left which is 13. After clicking on the end at the top of this line click **three times** to complete the spline. Label each vertical line where it meets the baseline.

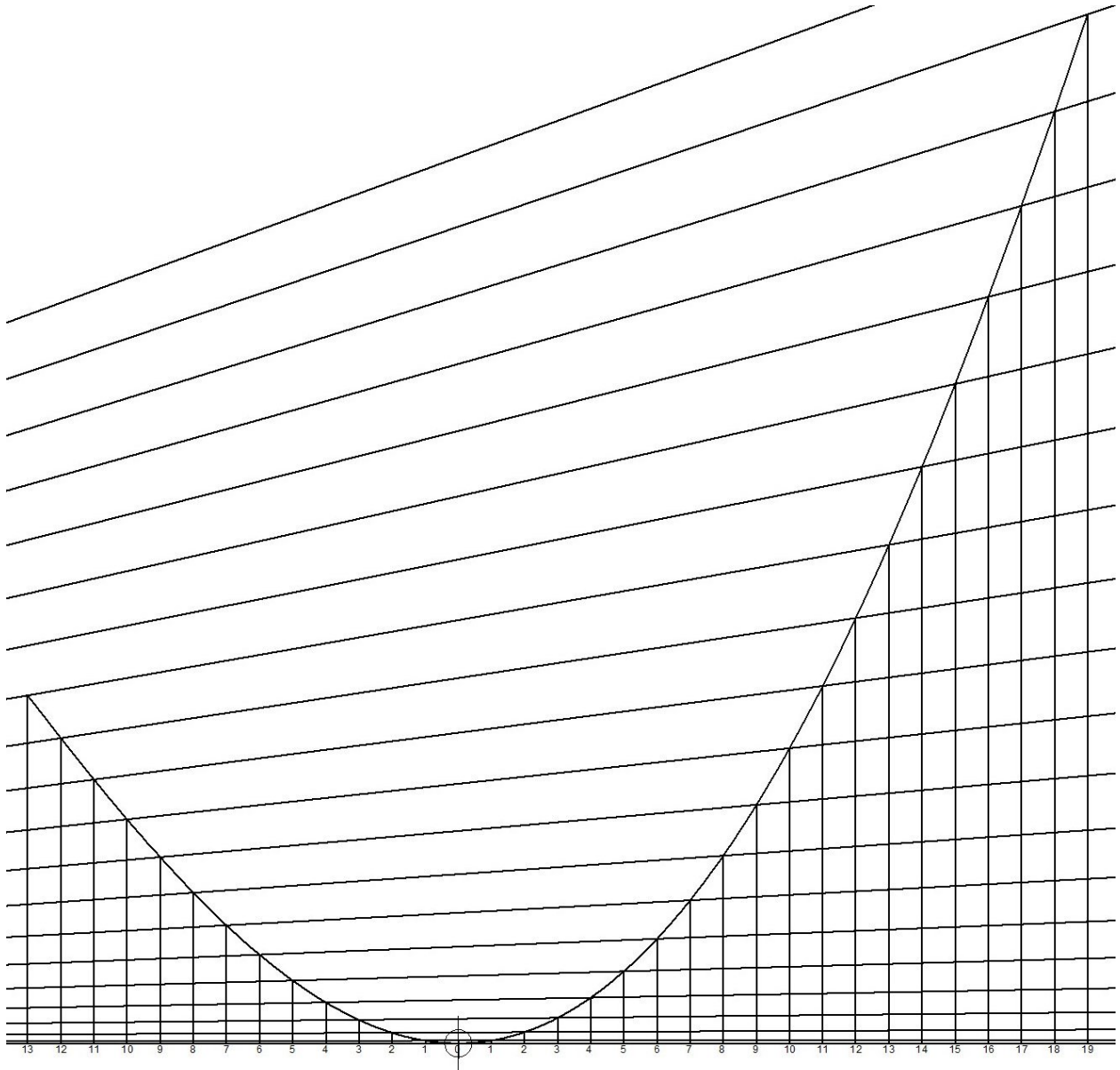


Figure 12

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Step 17

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This completes the Sheer diagram which is shown in Figure 13.

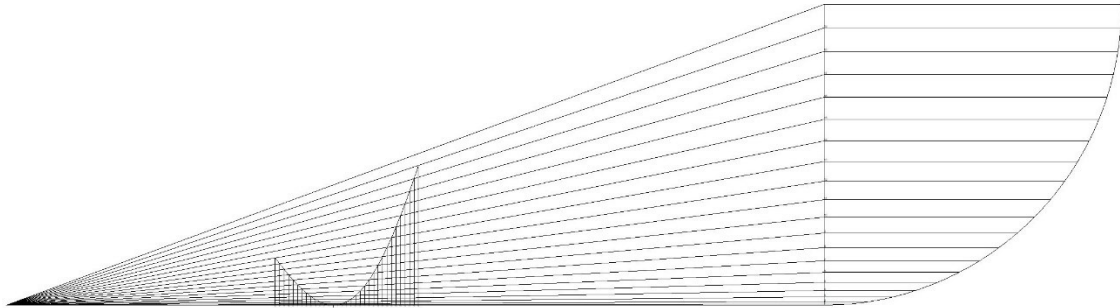


Figure 13

### Completed Sheer diagram for *Titanic*

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### Conversion to Full Size PSC

Now that the Sheer diagram has been completed the steps to convert it to a full-size sheer line will be outlined. I will continue with the step-by-step method for clarity.

Step 1. – Draw a horizontal line exactly 850 ft. long

Step 2. – Using directions in Step 5 of the Sheer diagram instructions, divide the horizontal line in Step 1 into 32 segments.

Step 3. – Starting with the number 1 for the left end of the line which is the aft perpendicular, number each dividing line proceeding to the far right of the horizontal line which is numbered 33 and which is the fore perpendicular.

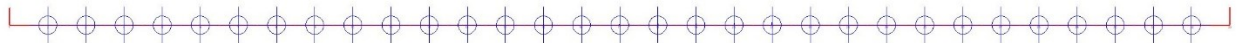


Figure 14

### Steps 1, 2, & 3

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Step 4. – From the previously drawn Sheer diagram, copy each vertical station line starting at the far left which is the aft perpendicular and paste them at each successive station mark on the horizontal line.



Figure 15

Step 4

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Step 5. – To draw the sheer line, follow the instructions in Step 17 of the Sheer diagram instructions and draw a spline connecting the top of each vertical line on the baseline.

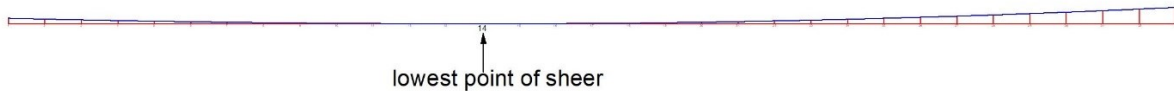


Figure 16

Step 5

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The full-size PSC is now complete. The problem is that the 32 station lines don't correspond to the 24-line stations of the lines plan or the hull frame locations. The procedure is fairly straightforward. I will not provide detailed instructions how to locate all the frame locations.

Step 6. – Draw a full-size baseline with frame locations which are labeled.

Step 7. – Draw a line from the aft to forward perpendicular.

Step 8. – Divide this line between perpendiculars into 24 parts. Label the lines stations starting at 1 for the aft perpendicular and ending at 25 for the forward perpendicular.



Figure 17

Steps 6, 7, & 8

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## Titanic PSC Table of Offsets

for two parabolas with their vertices at the lowest point of sheer (MB). LBP divided into 32 sections.

Station Number	X (inches)	Y (inches)
1 (AP)	0	48
2	318 – 3/4	42 – 1/8
3	637 – 1/2	36 – 7/16
4	956 – 1/4	30 – 15/16
5	1275	25 – 11/16
6	1593 – 3/4	20 – 13/16
7	1912 – 1/2	16 – 5/16
8	2231 – 1/4	12 – 1/4
9	2250	8 – 11/16
10	2868 – 3/4	5 – 11/16
11	3187 – 1/2	3 – 1/4
12	3505 – 1/4	1 – 7/16
13	3825	3/8
14 (MB)	4143 – 3/4	0
15	4462 – 1/2	3/8
16	4781 – 1/4	1 – 9/16
17	5100	3 – 1/2
18	5418 – 3/4	6 – 5/16
19	5737 – 1/2	9 – 15/16
20	6056 – 1/4	14 – 7/16
21	6375	19 – 3/4
22	6693 – 3/4	25 – 15/16
23	7012 – 1/2	32 – 15/16
24	7331 – 1/4	40 – 3/4
25	7650	49 – 5/16
26	7968 – 3/4	58 – 11/16
27	8287 – 1/2	68 – 13/16
28	8606 – 1/4	79 – 9/16
29	8925	91
30	9243 – 3/4	103
31	9562 – 1/2	115 – 9/16
32	9881 – 1/4	128 – 9/16
33 (FP)	10,200	142

## Titanic PSC Table of Offsets

for two parabolas with their vertices at the lowest point of sheer (MB). LBP divided into 24 sections.

Station	X (inches)	Y (inches)
1 (AP)	0	48
2	425	40 – 13/16
3	850	32 – 3/4
4	1275	25 – 11/16
5	1700	19 – 1/4
6	2125	13 – 9/16
7	2550	8 – 11/16
8	2975	4 – 13/16
9	3400	1 – 15/16
10	3825	3/8
MB	4143 – 3/4	0
11	4250	1/16
12	4675	1 – 1/16
13	5100	3 – 1/2
14	5525	7 – 7/16
15	5950	12 – 7/8
16	6375	19 – 3/4
17	6800	28 – 13/16
18	7225	38 – 1/16
19	7650	49 – 5/16
20	8075	62
21	8500	75 – 7/8
22	8925	91
23	9350	107 – 1/8
24	9775	124 – 3/16
25 (FP)	10,200	142

## Verification

There are no surviving records which show how the sheer of *Titanic's* decks were developed. Research uncovered methodology explained by Thomas H. Watson in his book previously mentioned. All of the methods he used in his book are fairly similar. What he is doing with his diagrams is drawing segments of parabolas. For *Titanic's* sheer line, two parabola segments are drawn. Both have their vertices at the lowest point of sheer which is the moulded depth of the shelter deck. The methods employed by Watson represent common naval architecture practice in the early 20<sup>th</sup> century. There are no surviving tables of offsets to which the sheer line developed using Watson's method can be compared. One can try to measure either the 400-01 Sheer plan of the Lines plan or the Rigging plan. The problem is that existing copies of these

plans have distortions and the measuring process itself is subject to error. When Watson's method was used to develop the PSC as previously described in this article, it was compared to the PSC of the shelter deck on the 400-01 PSC of the Lines plan. The two lines were quite close but were not exact. This was done some months ago. When the two lines were found to be different, I believed I may have done something wrong in recreating *Titanic's* sheer line. I put the project away for a while so I could think about why the two lines would be different. Finally, I realized that they *had* to be different. The PSC that I had developed using Watson's method is a two-dimensional (x,y) drawing of a line which exists in three dimensions. Since the PSC is formed where the decks meet the transverse frames, the line points not only change horizontally and vertically but they change in the Z plane as the hull gets narrower at the ends. The PSC from the Sheer plan of the Lines plan travels in only two dimensions (x,y). The Sheer plan is a flat-plane section of the hull taken at the longitudinal midline. Therefore, due to deck camber, the two lines will be separated by three inches at the lowest point of sheer.

Now, knowing that the PSC developed using Watson's methods was *not* in error, I decided to proceed with this article. To illustrate the slight difference in the Sheer line calculated using Watson's method vs. the Sheer line from the Sheer plan of the Lines plan, I have drawn both which shows their relative positions. Figure 18 shows the comparison.



Figure 18

[Link to higher resolution image](#)

## Secondary Sheer Curve (SSC)

The SSC which applied to decks D and below was generally described previously in this article. Now we turn to the practical steps to plot this curve. The method uses the same principles as for the PSC so instructions will not be as detailed and will be more general. As was mentioned, this SSC was composed of three separate sheer curves which were made fair by the methodology outlined in Watson's book and used previously in plotting of the PSC. Since this SSC has three distinct parts, the boundaries between them and the landmarks at the aft and forward perpendiculars must be determined.

The first task is to determine the forward and aft extent of the middle section of the SSC which is derived from the PSC. Observation of the Lines plan reveals that the SSC and PSC were identical roughly from about frame 98A to 45F. Since the PSC was based on a division of the distance between perpendiculars into 32 sections, we will use these divisions to determine which divisions most closely mark the forward and aft extent of the PSC which the SSC shared. I



believe that the aft extent of this shared middle section of the sheer curves had its aft boundary 8 of the 32 divisions aft of the lowest point of sheer. Likewise, the forward extent was 8 of the 32 divisions forward of the lowest point of sheer. This places the aft extent between frames 97A-98A. The forward extent would be between frames 45F-46F.

The height of the SSC at the AP is 12 inches higher than that of the PSC. So, the height is 60 inches above the lowest point of the SSC rather than the 48 inches of the PSC. The height of the SSC at the FP is 18 higher than that of the PSC. So, the height is 160 inches above the lowest point of the SSC rather than the 142 in. height of the PSC at the FP.

In Summary, the PSC and the SSC share a lowest point and are identical for 8 of the 32 divisions between perpendiculars both forward and aft of the lowest point. The forward section of the SSC starts where the PSC sections ends at 8 of 32 sections forward of the lowest point of the middle section and terminates at the FP 160 in. above the lowest point of the middle section. The aft section of the SSC starts where the PSC ends at 8 of 32 sections aft of the lowest point and terminates at the AP 60 inches above the lowest point of the middle section.

### Drawing a Sheer Diagram for *Titanic's* SSC

Step 1. Set line color to RED.

Step 2. Use a copy of the Sheer Diagram of the PSC and remove the curve forward of Station 8 forward of the lowest point and aft of Station 8 aft of the lowest point at Station 0.

Step 3. Delete the vertical lines which were used to determine the height of the deleted curve sections.

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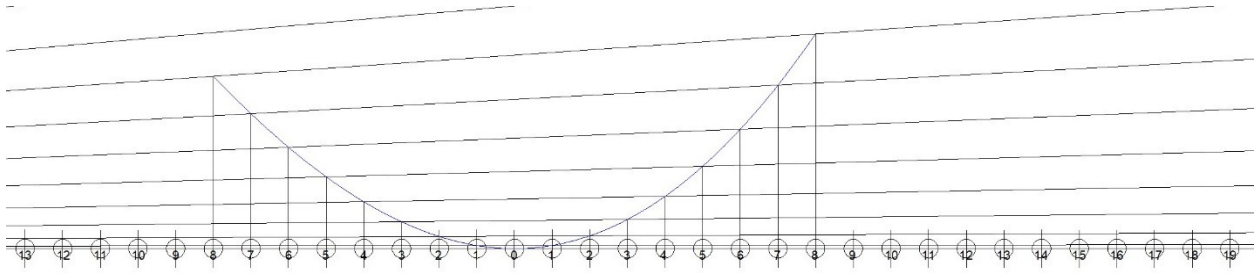


Figure 19.

Steps 1-3

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Step 4. Offset a horizontal line from the baseline by 160 in.

Step 5. Where the offset line intersects the diagonal line #19, draw a vertical line from this intersection to the baseline.

Step 6. Draw a horizontal line from the intersection of this line over the baseline aft to station 8 forward of the lowest point 0.

Step 7. Divide this line into 11 sections.

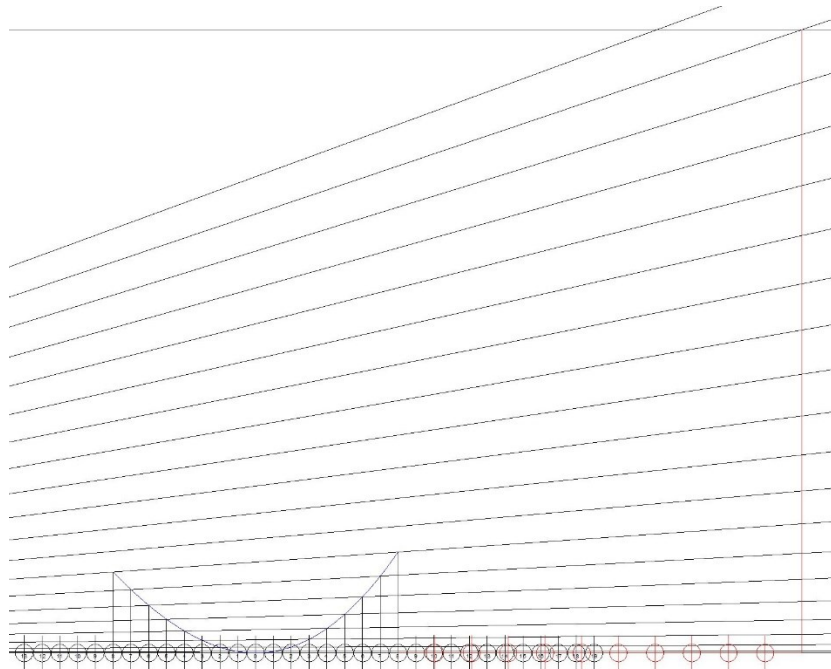


Figure 20

Steps 4-7

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Step 8. Copy the line produced by the offset to each of the 11 divisions produced in Step 7.

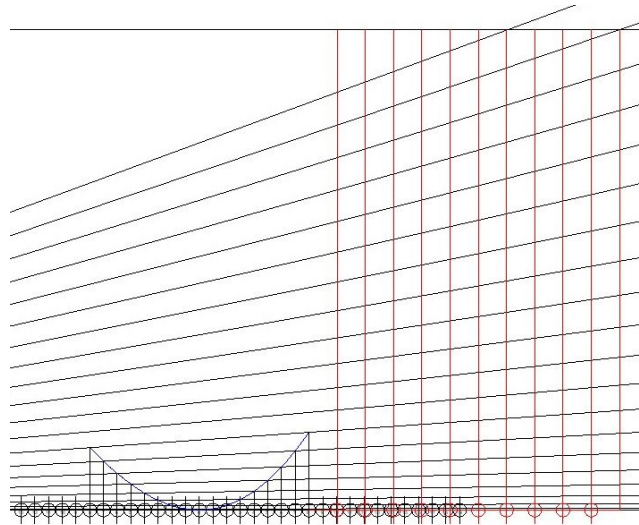


Figure 21

Step 8

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Step 9. Trim each successive line copied in Step 8 to the next diagonal line starting with the line to the left of the original line produced in Step 5.

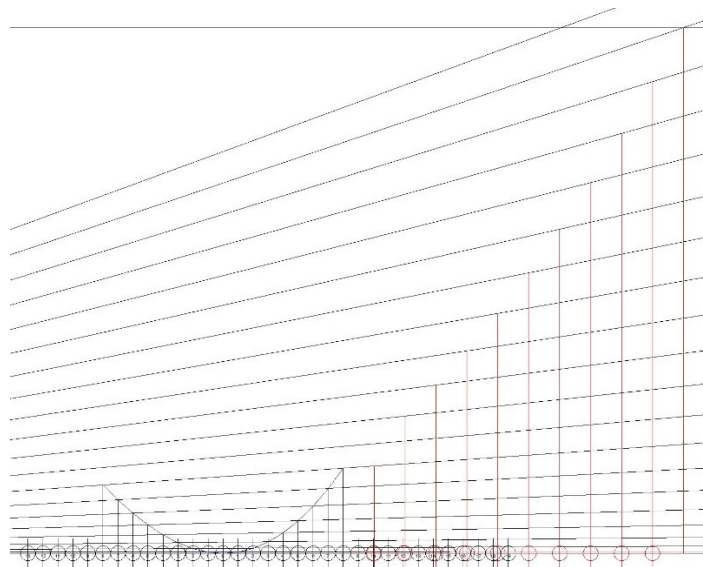


Figure 22

Step 9

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Step 10. Move each line to the original division marks starting with the line the furthest to the right and moving it to original division mark #19. Move each successive line to the original division mark to the left until the last one is moved to original division #9.

Step 11. Draw a spline connecting the tops of all of the lines on the original divisions from line #19 and finally ending the spline on original station #8 to connect to the curve section from the PSC.

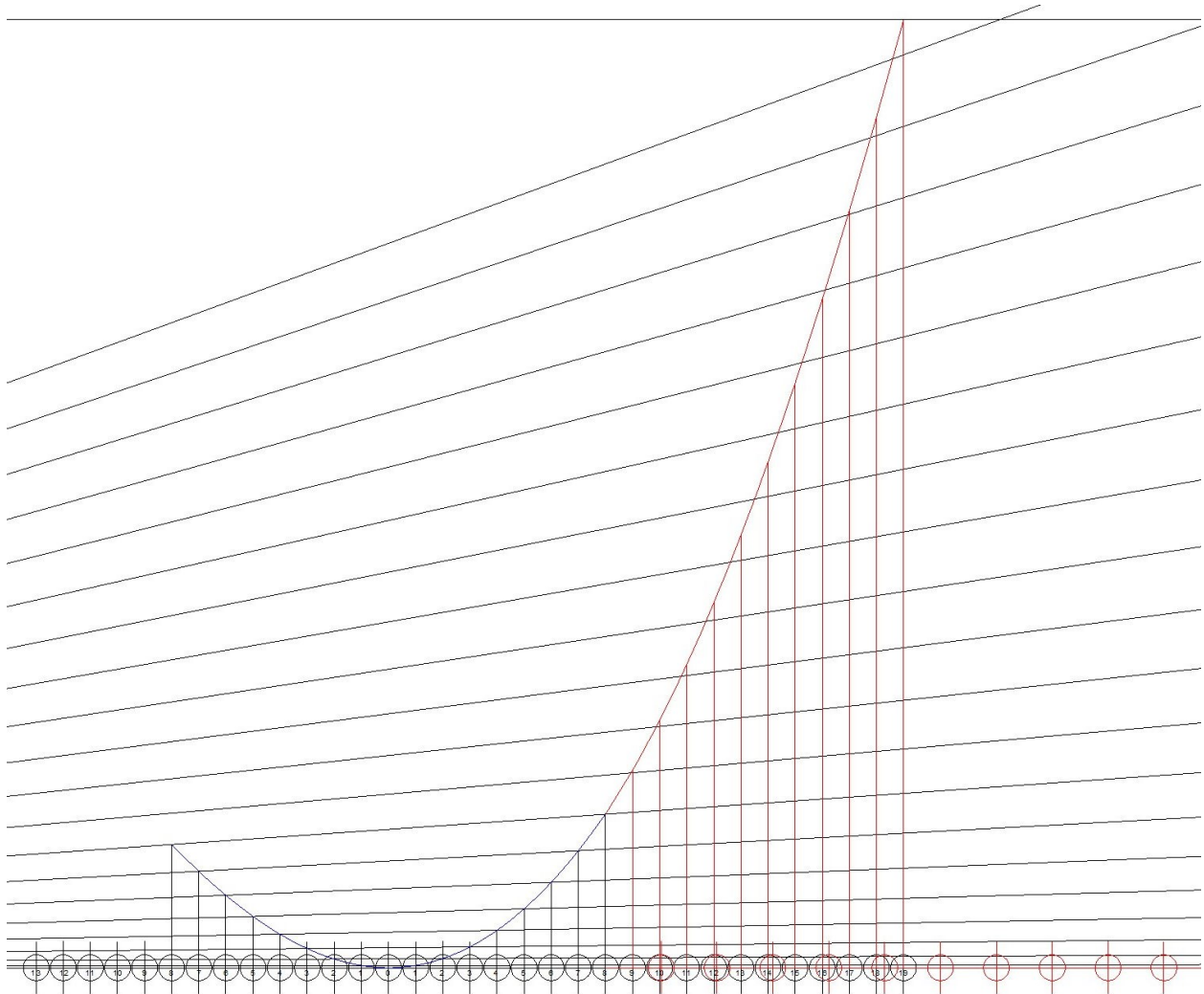


Figure 23

Steps 10 & 11

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Step 12. Offset a horizontal line from the baseline 60 inches above the baseline.

Step 13. Draw a vertical line from where the offset line in Step 12 intersects diagonal line #13 down to the baseline.

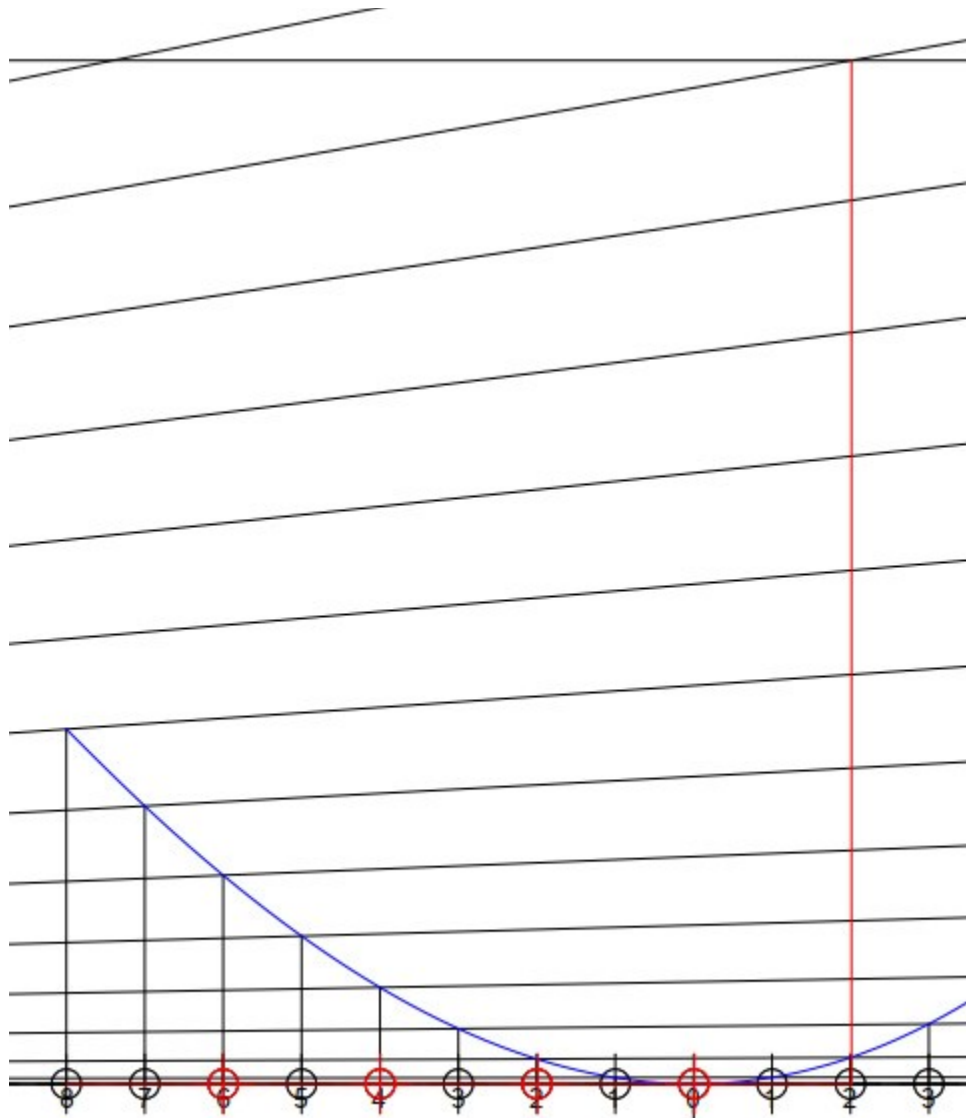


Figure 24

Steps 12 & 13

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Step 14. Draw a line over the baseline from original station #8 aft of the lowest point forward to the line produced in Step 13.

Step 15. Divide the line produced in Step 14 into 5 segments.

Step 16. Copy the line produced in Step 14 to each of the 5 divisions produced in Step 15.

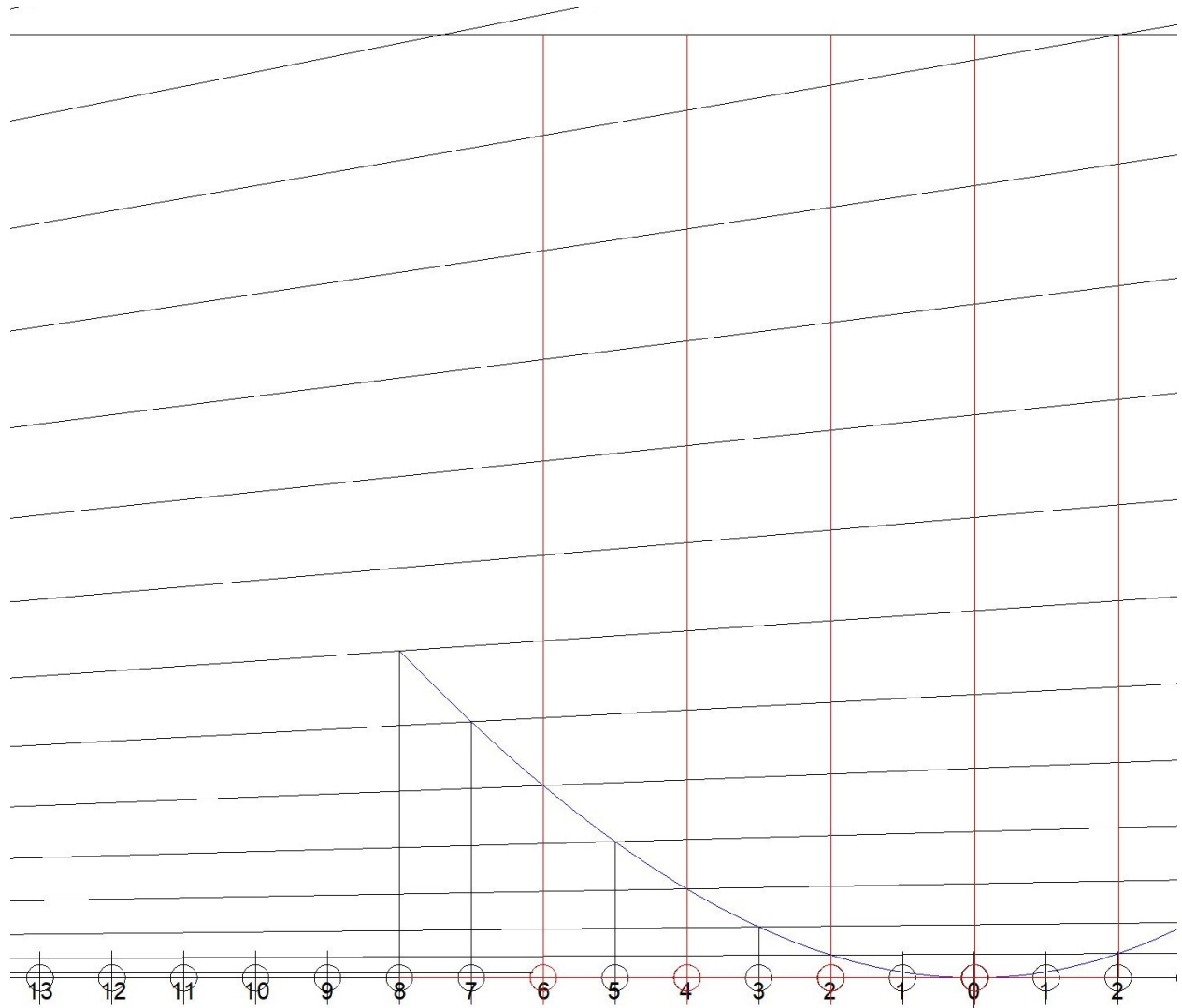


Figure 25

Steps 14-16

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Step 17. Trim each successive line copied in Step 16 to the next diagonal line starting with the line to the left of the original line produced in Step 14.

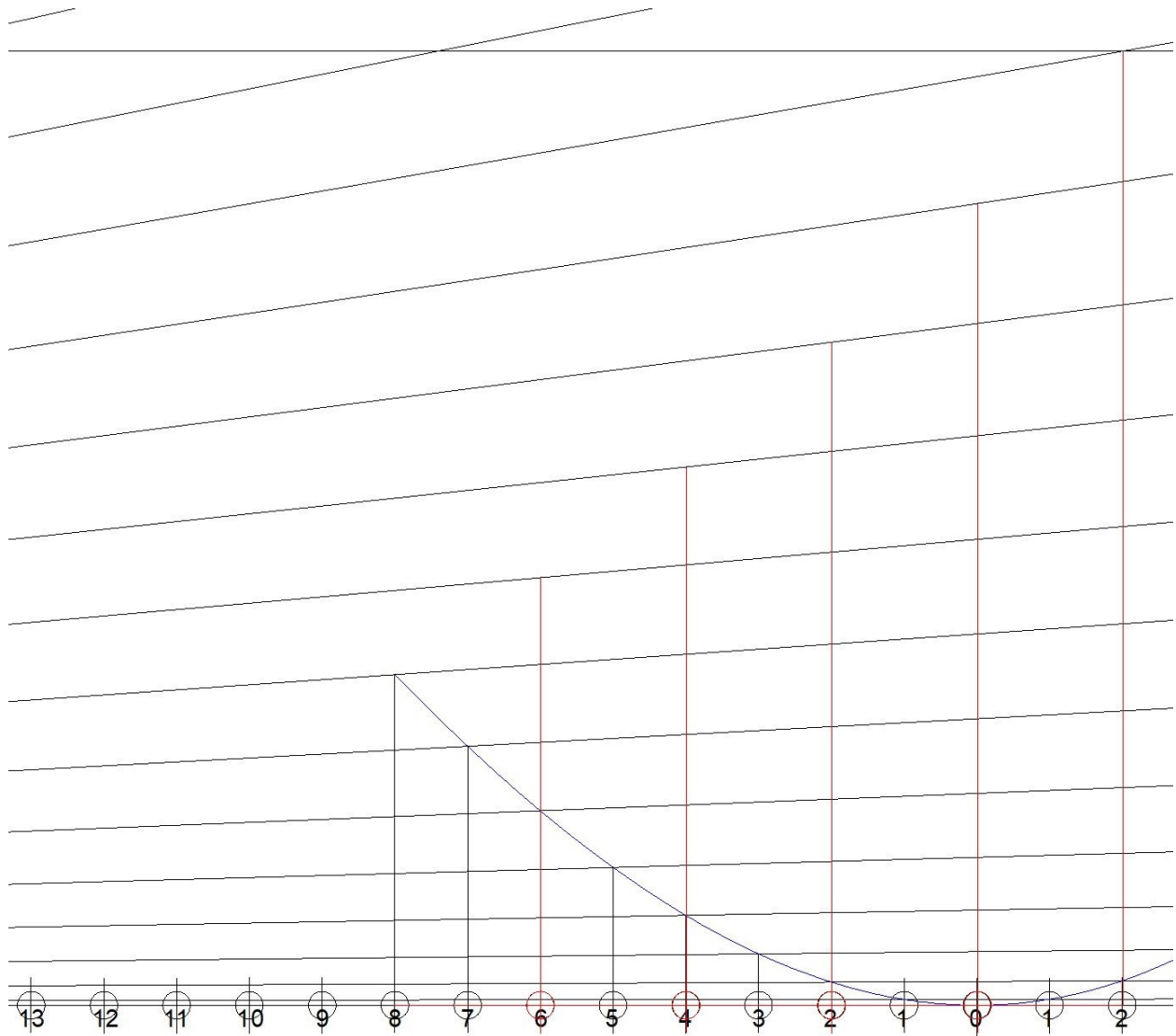


Figure 26

Step 17

[Link to higher resolution image](#)

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Step 18. Starting with the original line produced in Step 13, move this line to the original division numbered #13. Continue with each shorter line to the left of the first and move it to

the original division numbered #12 until you have finished by moving the shortest line to the original division #9.

Step 19. Draw a spline connecting the tops of these lines starting with original station #13 and ending on the line from station 8 aft of the lowest point.

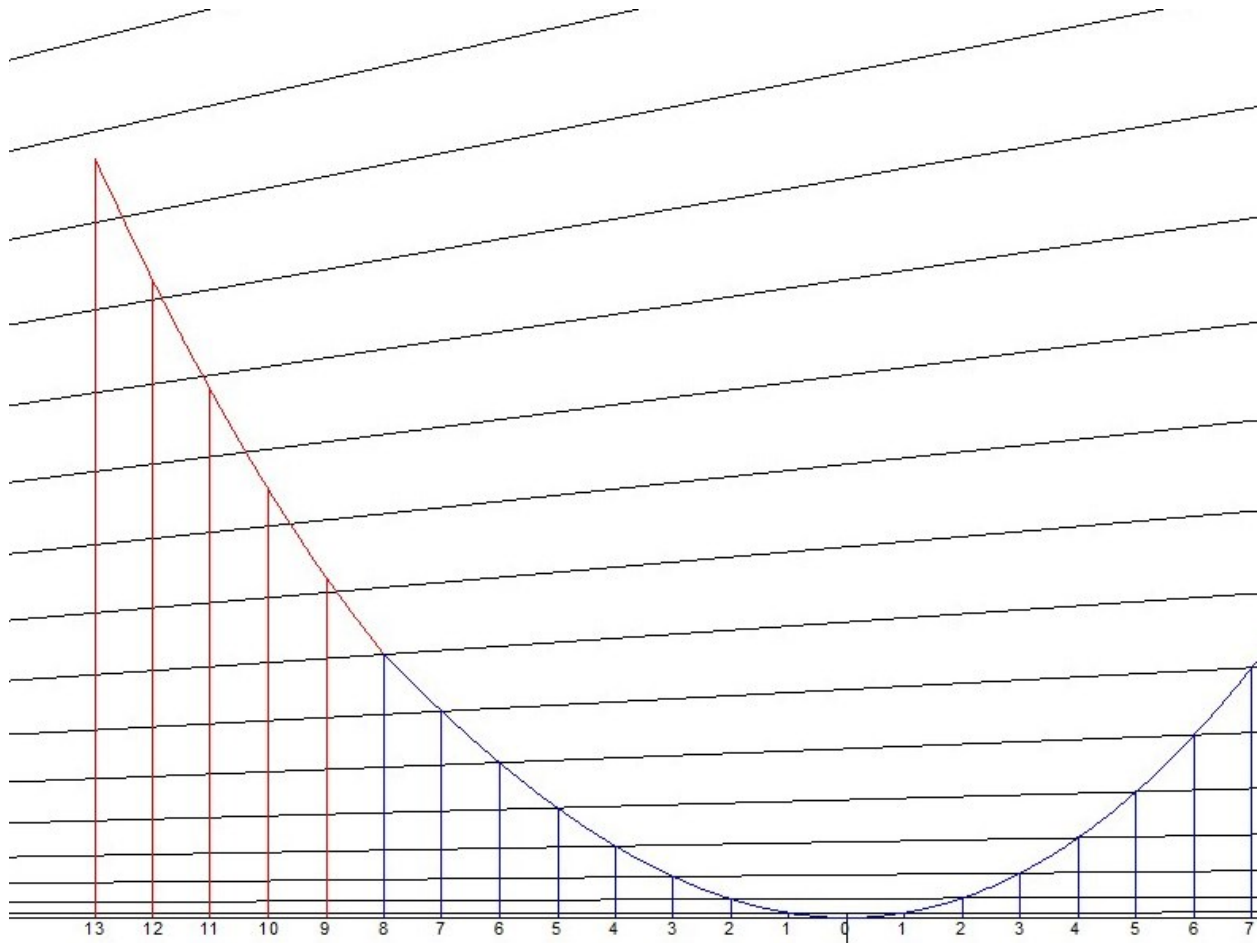


Figure 27

Steps 18 & 19

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The SSC sheer diagram is now complete and is shown in Figure 28.



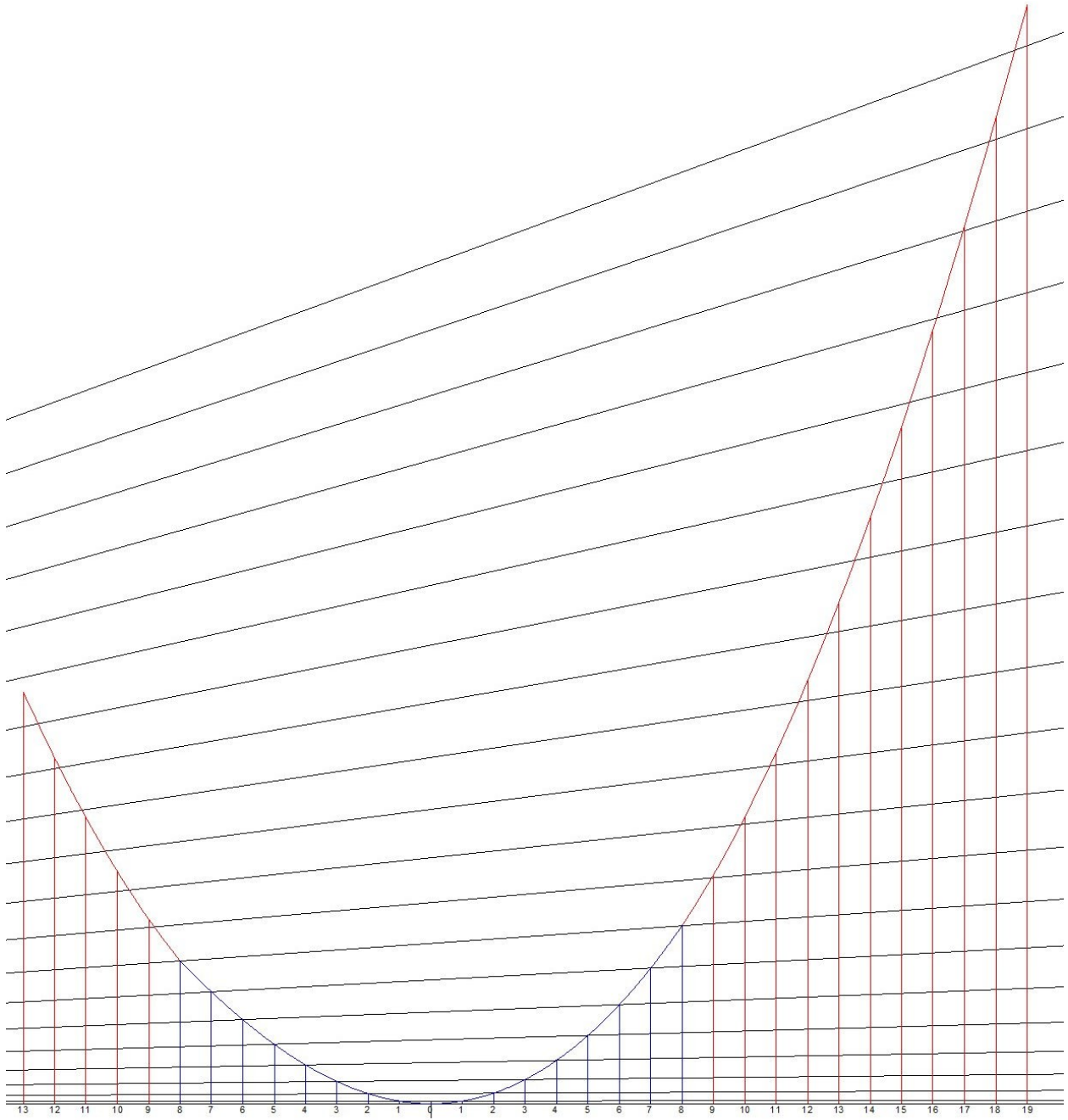


Figure 28

Completed shear diagram of Secondary Shear Curve

[Link to higher resolution image](#)

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A comparison of the PSC (in blue) and the SSC (in red) is shown in Figure 29.

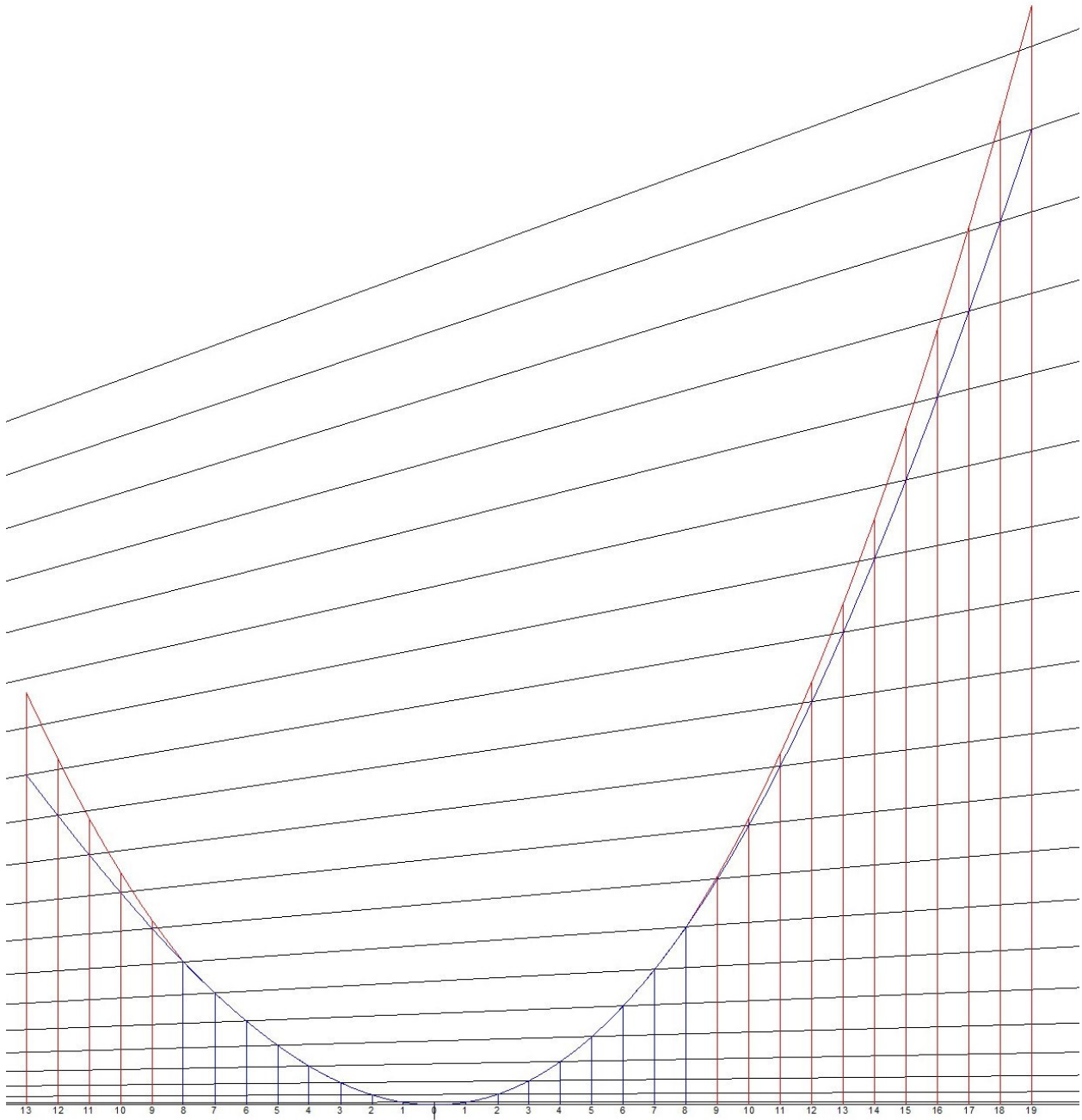


Figure 29

Comparison of PSC (in blue) to SSC (in red)

[Link to higher resolution image](#)

The only thing that remains to complete the discussion of the SSC is to generate tables of offsets which will be done in the following section.

# Titanic SSC Table of Offsets

LBP divided into 32 sections.

Station Number	X (inches)	Y (inches)
1 (AP)	0	60
2	318 – 3/4	50 – 7/16
3	637 – 1/2	41 – 11/16
4	956 – 1/4	33 – 7/8
5	1275	26 – 7/8
6	1593 – 3/4	20 -13/16
7	1912 – 1/2	16 – 5/16
8	2231 – 1/4	12 – 1/4
9	2250	8 – 11/16
10	2868 – 3/4	5 – 11/16
11	3187 – 1/2	3 – 1/4
12	3505 – 1/4	1 - 7/16
13	3825	3/8
14 (MB)	4143 – 3/4	0
15	4462 – 1/2	3/8
16	4781 – 1/4	1 – 9/16
17	5100	3 – 1/2
18	5418 – 3/4	6 – 5/16
19	5737 – 1/2	9 – 15/16
20	6056 – 1/4	14 – 7/16
21	6375	19 – 3/4
22	6693 – 3/4	25 – 15/16
23	7012 – 1/2	33 – 5/16
24	7331 – 1/4	41 – 3/4
25	7650	51 – 3/16
26	7968 – 3/4	61 – 5/8
27	8287 – 1/2	73
28	8606 – 1/4	85 – 3/8
29	8925	98 – 11/16
30	9243 – 3/4	112 – 13/16
31	9562 – 1/2	127 – 13/16
32	9881 – 1/4	143 – 9/16
33 (FP)	10,200	160

# Titanic SSC Table of Offsets

LBP divided into 24 sections.

Station	X (inches)	Y (inches)
1 (AP)	0	60
2	425	47 – 3/8
3	850	36 – 3/8
4	1275	26 – 7/8
5	1700	19 – 1/4
6	2125	13 – 9/16
7	2550	8 – 11/16
8	2975	4 – 13/16
9	3400	1 – 15/16
10	3825	3/8
MB	4143 – 3/4	0
11	4250	1/16
12	4675	1 – 1/16
13	5100	3 – 1/2
14	5525	7 – 7/16
15	5950	12 – 7/8
16	6375	19 – 3/4
17	6800	28 – 5/16
18	7225	39 – 13/16
19	7650	51 – 3/16
20	8075	65 – 5/16
21	8500	81 – 3/16
22	8925	98 – 11/16
23	9350	117 – 3/4
24	9775	138 – 3/16
25 (FP)	10,200	160

## Conclusion

How the sheer curves of the decks of *Titanic* was developed has been somewhat of a mystery. The research done in this article found what is likely to be the method used from Thomas H. Watson's *Naval Architecture: A Manual of Laying-off Iron, Steel, and Composite Vessels*. **Special Note: For those who want to purchase a copy of this book, do not buy a reprint. There are original copies available at reasonable prices. The reprints do not have the crucial fold-out illustrations included.**

