1. proc SgScatter plot shows a few concerning graphs. There are two extremes found. The first being seemingly random spread between the points. The second being multiple points seeming to have multiple strong linear patterns. Proc CORR shows some high correlations such as the one Angle and Displacement being .78.
2. Simple Regression and Analysis
   1. Sound=126.94895 -184.42850(displacement)
   2. The R^2 of .16 is very weak.
   3. Residual vs Quantile plot shows a mostly linear pattern. The Residual vs Predicted Value show random noise with most clustering towards the end of the graph.
   4. The model required a transformation. After this was made, everything pointed to the model assumptions being met.
   5. The confidence interval is (125.3342, 128.5637). Width and values seem to be very similar to the other observation’s confidence intervals.
   6. The normal theory gave the confidence interval of (233.279, 323.256) the new interval being (-268.525, -82.9329). The new interval is negative which seems somewhat concerning due to it seeming almost opposite of the normal theory’s confidence interval.
   7. The R^2 is very weak at .16, The F statistic is 19.14, the P-Value is <.0001 showing significance. This all points to the null hypothesis being rejected and the simple linear model is not effective.
   8. The confidence interval is (119.9556, 123.6143) and the prediction interval is (109.1462, 134.4237). Both intervals showed the relatively same width, range of values, and moderate similarity to the rest of the given means in the model. The confidence interval almost mirrored the last few observations in value and width. The predicted seemed to be a happy middle of values compared to the rest of the observations, showing no extreme departures from the rest of the model.
   9. Most Vifs are below 2.5 showing no worries of multicollinearity. The only ones that are slightly concerning is Angle with a VIF of 3.98 and Displace with a VIF of 2.98.
   10. All variables have been used in the model.
   11. When comparing the full model to the nested, there is not very much of a difference. Both models show significance. The full model should be continued to use.
   12. It seems that observation was around observation 65 according to Cook’s D. After some try and error the culprit was found. There is one value that was found that was both an outlier and had leverage. I believe that it is the observation that was omitted. The observation that was omitted was observation 69.
   13. With the extreme value omitted, there was no significant change in the model that would warrant changing it. All test suggested the full model.
   14. Based on the previous analysis, everything points to the full model still being used.
   15. Although the model seems pretty good as is, the R-Squared could be higher. Looking more into the outlier may be helpful. There although removing it did not seem to make much of a difference by itself, there may be a few more questionable observations that when taken out together, could make a significant difference in the model being used.