

RodDNA Workshop #1 – Enter a new Taper

This is the first in a series of step-by-step “How To” primers for RodDNA. This is intended to be a series of primers that each will build upon the previous one to help people master all the capabilities within RodDNA. Following my first overview article on RodDNA in PowerFibers on-line magazine, I was asked to do this series – it was initially put to me as do a “RodDNA for Dummies”. In reality, it is easy for people to get overwhelmed by all the capabilities of RodDNA. I proposed a series of short “how to” articles that will do a specific step. Hopefully, this series of articles will help remove some of the intimidation.

One of the most common initial questions I get is “can you enter your own tapers into RodDNA? Even though, RodDNA comes with 527 tapers (or at least that is what mine has) people want to enter new ones they have. This is easy to do and will be our first workshop. There are a few things that can confuse people, but hopefully we will get them resolved.

Last week, a customer of mine who collects rods, brought a rod over he had just purchased off eBay. He knew I would be interested in it. He had gotten a new Kent rod. Charles Kent was a little known rodmaker who lived in Vinton, VA. He was a stationmaster for the railroad and had a small shop behind his house. The locals even said he had his own grove of bamboo! He most likely made rods during the late 30’s, 40’s, 50’s and most likely stopped in the 60’s. He definitely built rods for fishing the Blue Ridge Mountains of Virginia. The customer is planning to do an article on him and been in contact with his son who is now retired. I am familiar with his work – I have a 7’ rod made by him that is the inspiration for my Blue Ridge Classic. His cases are distinctive. They are canvas covered wooden 2” x 2” wooden board that had a “U” shape tunnel routed for the butt section and two square dados for the tip section. There is a leather flap to cover the end and tie off the canvas flap to hold everything in. See picture.

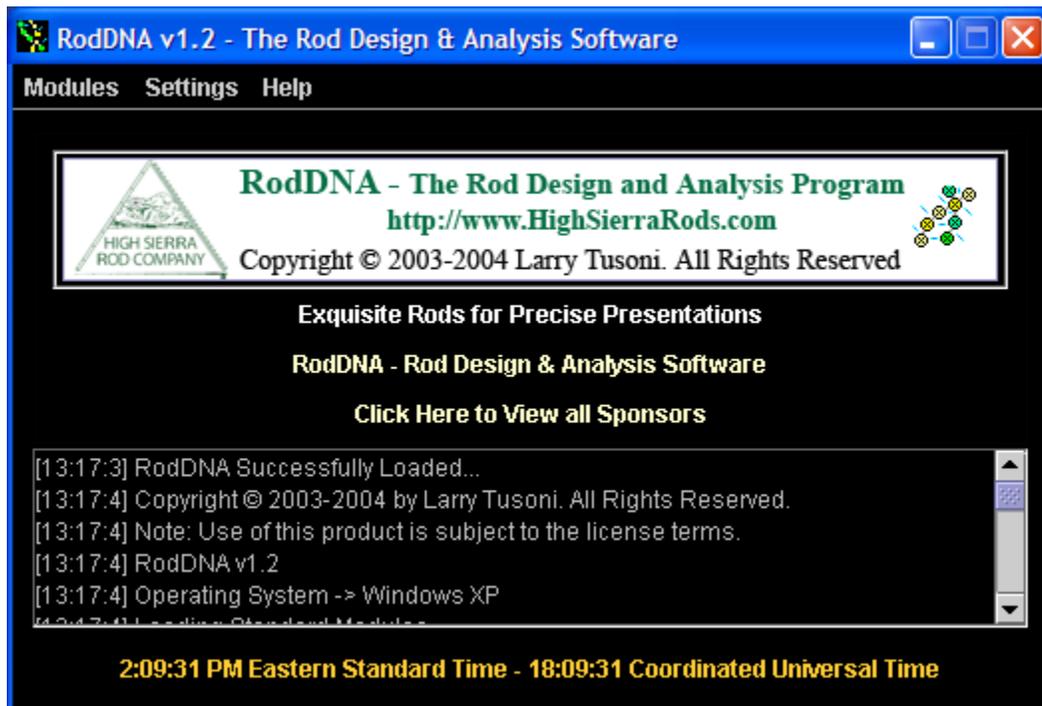
What makes his rods interesting is that, from my inspection, he most likely used Herters non adjustable forms. The tapers for the rods are pretty much identical, but he slid them up and down depending on the model he was making. The rod we will deal with is a 6’ 6” 4wt that casts very well – surprising well. Especially compared to the other rods of his (7’ 4wt and 7’ 6” 5wt). I can find where he “whittled down” the butt of the 7’ 4wt to make it fit the size 12 ferrule. It appears he took about 6” and slid it up in the Herters form – radical drop in this area. In this taper there is an equally dramatic unexpected change in the butt section. Additionally, his butt sections all show where once he planed and glued the rod, he sanded it to “tune” the taper. There are areas where it is almost round. He was making up for lack of fully adjustable planing forms. All his rods will work well on a freestone stream, casting short distances.

The taper I took is for the Kent 6’ 6”. Another idiosyncrasy of his rods are that the tip and butt sections may be of different lengths, which this rod is. It appears he did not have a system for getting both sections the same length. The tips are usually the length of the

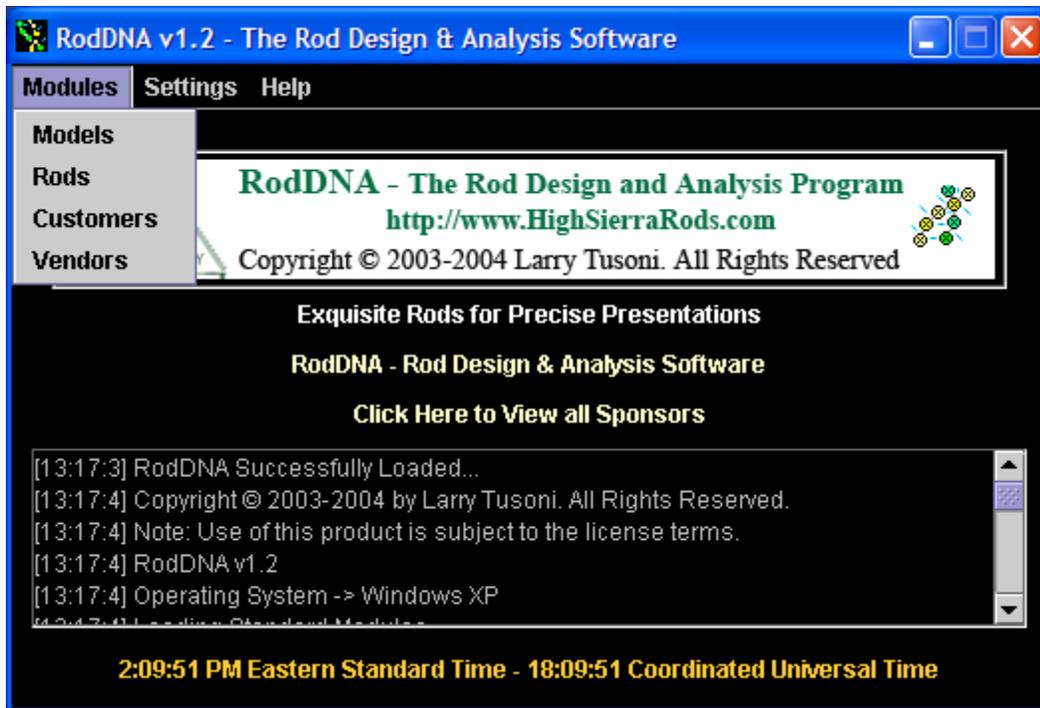
male ferrule insert longer than the butt section. When put together, the rod is at the correct length. So, as you can see, there is a number of challenges with this rod. Simply taking the numbers and plugging it into your planing form may/will not yield the desired results. Using RodDNA's capabilities we can input the taper and "clean-up" the stress curve and obtain a useable taper.

I also took the reel seat and grip length. Also recorded the guide spacing for this rod. So with this information in hand, we will enter this into RodDNA.

First step is to open the RodDNA program. You should see the following window:



Click on the "Modules" menu item:



Select “Models” from the menu and you will see the models window pop-up”

ID#	DB#	Name	LengthInch	ActLngInch	Type	Const Type	Line Weig
1	404	Straight Taper Suggestions	0	0	Fly-Rod	Hex	
2	434	Wilcox Montour Creek 8' 4wt 3 pc (e)	96	96	Fly-Rod	Hex	
3	132	Fink Bill 7341 4/5 wt 1 Pc Penta	87	77	Dry-Fly-Rod	Penta	
4	134	Fink Bill 7342 Penta	87	77	Dry-Fly-Rod	Penta	
5	377	Ray David H. Penfectionest 7.5' Pen	90	80	Dry-Fly-Rod	Penta	
6	389	Smartt Class Rod	84	74	Fly-Rod	Hex	
7	492	Leonard H.L 37-1/2 ACM	78	68	Dry-Fly-Rod	Hex	
8	66	Cattanach Wayne Sir D 7623	90	80	Fly-Rod	Hex	
9	61	Cattanach Wayne Sir D 6323	75	65	Fly-Rod	Hex	
10	65	Cattanach Wayne Sir D 7622	90	80	Fly-Rod	Hex	
11	60	Cattanach Wayne Sir D 6322	75	65	Fly-Rod	Hex	
12	378	Ray Penfectionist 8072 Penta	96	86	Dry-Fly-Rod	Penta	
13	230	Leonard H.L 7' 2pc 2/3 wt	84	74	Fly-Rod	Hex	
14	236	Leonard H.L Catskill 5'6"	66	56	Fly-Rod	Hex	
15	496	Leonard H.L Baby Catskill	84	84	Dry-Fly-Rod	Hex	
16	234	Leonard H.L Catskill	84	74	Fly-Rod	Hex	
17	68	Cattanach Wayne Sir D 7633	90	80	Fly-Rod	Hex	
18	263	Nunley 6' 9" 2 wt	81	71	Fly-Rod	Hex	
19	67	Cattanach Wayne Sir D 7632	90	80	Fly-Rod	Hex	

In entering a new taper you have to decide if you want to insert it the list of Models you see displayed or appended at the end of the list of all models. I prefer to insert a new taper where I want to see it displayed. So I first select a taper where I want to insert the new taper at. In this case it is taper number 7 – the Leonard 37-1/2 ACM:

Models Module

File Edit Print Beveler/Mill Tools Import Network Help

Models Values Compare Values Details Chart Controlled Modification

ID#	DB#	Name	LengthInch	ActLngInch	Type	Const Type	Line Weig
1	404	Straight Taper Suggestions	0	0	Fly-Rod	Hex	
2	434	Wilcox Montour Creek 8' 4wt 3 pc (e)	96	96	Fly-Rod	Hex	
3	132	Fink Bill 7341 4/5 wt 1 Pc Penta	87	77	Dry-Fly-Rod	Penta	
4	134	Fink Bill 7342 Penta	87	77	Dry-Fly-Rod	Penta	
5	377	Ray David H. Perfectionest 7.5' Pen	90	80	Dry-Fly-Rod	Penta	
6	389	Smartt Class Rod	84	74	Fly-Rod	Hex	
7	492	Leonard H.L 37-1/2 ACM	78	68	Dry-Fly-Rod	Hex	
8	66	Cattanach Wayne Sir D 7623	90	80	Fly-Rod	Hex	
9	61	Cattanach Wayne Sir D 6323	75	65	Fly-Rod	Hex	
10	65	Cattanach Wayne Sir D 7622	90	80	Fly-Rod	Hex	
11	60	Cattanach Wayne Sir D 6322	75	65	Fly-Rod	Hex	
12	378	Ray Perfectionist 8072 Penta	96	86	Dry-Fly-Rod	Penta	
13	230	Leonard H.L 7' 2pc 2/3 wt	84	74	Fly-Rod	Hex	
14	236	Leonard H.L Catskill 5'6"	66	56	Fly-Rod	Hex	
15	496	Leonard H.L Baby Catskill	84	84	Dry-Fly-Rod	Hex	
16	234	Leonard H.L Catskill	84	74	Fly-Rod	Hex	
17	68	Cattanach Wayne Sir D 7633	90	80	Fly-Rod	Hex	
18	263	Nunley 6' 9" 2 wt	81	71	Fly-Rod	Hex	
19	67	Cattanach Wayne Sir D 7632	90	80	Fly-Rod	Hex	

Leonard H.L 37-1/2 ACM 6' 6" 5wt 2p

Swell begins @ 68"; is approx .310 @70 under hook keeper wrap

Stresses

Rod Stress Curve Chart

Dimensions

Rod Dimension Chart

Now select the "Edit" menu item and down will drop a list of menu items:

Models Module

File Edit Print Beveler/Mill Tools Import Network Help

Model Compare Values Details Chart Controlled Modification

Copy
Paste
Clear
Delete
Append
Append Paste
Insert
Select All
Deselect All

ID	Name	LengthInch	ActEngInch	Type	Const Type	Line Weig
1	aper Suggestions	0	0	Fly-Rod	Hex	
2	ntour Creek 8' 4wt 3 pc (e)	96	96	Fly-Rod	Hex	
3	341 4/5 wt 1 Pc Penta	87	77	Dry-Fly-Rod	Penta	
4	342 Penta	87	77	Dry-Fly-Rod	Penta	
5	H. Perfectionest 7.5' Pen	90	80	Dry-Fly-Rod	Penta	
6	ass Rod	84	74	Fly-Rod	Hex	
7	H.L 37-1/2 ACM	78	68	Dry-Fly-Rod	Hex	
8	y Wayne Sir D 7623	90	80	Fly-Rod	Hex	
9	y Wayne Sir D 6323	75	65	Fly-Rod	Hex	
10	65 Cattanach Wayne Sir D 7622	90	80	Fly-Rod	Hex	
11	60 Cattanach Wayne Sir D 6322	75	65	Fly-Rod	Hex	
12	378 Ray Perfectionist 8072 Penta	96	86	Dry-Fly-Rod	Penta	
13	230 Leonard H.L 7' 2pc 2/3 wt	84	74	Fly-Rod	Hex	
14	236 Leonard H.L Catskill 5'6"	66	56	Fly-Rod	Hex	
15	496 Leonard H.L Baby Catskill	84	84	Dry-Fly-Rod	Hex	
16	234 Leonard H.L Catskill	84	74	Fly-Rod	Hex	
17	68 Cattanach Wayne Sir D 7633	90	80	Fly-Rod	Hex	
18	263 Nunley 6' 9" 2 wt	81	71	Fly-Rod	Hex	
19	67 Cattanach Wayne Sir D 7632	90	80	Fly-Rod	Hex	

Leonard H.L 37-1/2 ACM 6' 6" 5wt 2p

Swell begins @ 68"; is approx .310 @70 under hook keeper wrap

Stresses

Rod Stress Curve Chart

Dimensions

Rod Dimension Chart

Select "Insert" and you will notice a new line is entered into the taper list:

Models Module

File Edit Print Beveler/Mill Tools Import Network Help

Models Values Compare Values Details Chart Controlled Modification

ID#	DB#	Name	LengthInch	ActLength	Type	Const Type	Line Weig
1	404	Straight Taper Suggestions	0	0	Fly-Rod	Hex	
2	434	Wilcox Montour Creek 8' 4wt 3 pc (e)	96	96	Fly-Rod	Hex	
3	132	Fink Bill 7341 4/5 wt 1 Pc Penta	87	77	Dry-Fly-Rod	Penta	
4	134	Fink Bill 7342 Penta	87	77	Dry-Fly-Rod	Penta	
5	377	Ray David H. Penfectionest 7.5' Pen	90	80	Dry-Fly-Rod	Penta	
6	389	Smartt Class Rod	84	74	Fly-Rod	Hex	
7	99999	***Please-Rename***	84	84	Dry-Fly-Rod	Hex	
8	492	Leonard H.L 37-1/2 ACM	78	68	Dry-Fly-Rod	Hex	
9	66	Cattanach Wayne Sir D 7623	90	80	Fly-Rod	Hex	
10	61	Cattanach Wayne Sir D 6323	75	65	Fly-Rod	Hex	
11	65	Cattanach Wayne Sir D 7622	90	80	Fly-Rod	Hex	
12	60	Cattanach Wayne Sir D 6322	75	65	Fly-Rod	Hex	
13	378	Ray Penfectionist 8072 Penta	96	86	Dry-Fly-Rod	Penta	
14	230	Leonard H.L 7' 2pc 2/3 wt	84	74	Fly-Rod	Hex	
15	236	Leonard H.L Catskill 5'6"	66	56	Fly-Rod	Hex	
16	496	Leonard H.L Baby Catskill	84	84	Dry-Fly-Rod	Hex	
17	234	Leonard H.L Catskill	84	74	Fly-Rod	Hex	
18	68	Cattanach Wayne Sir D 7633	90	80	Fly-Rod	Hex	
19	263	Nunley 6' 9" 2 wt	81	71	Fly-Rod	Hex	

Leonard H.L 37-1/2 ACM 6' 6" 5wt 2p

Swell begins @ 68"; is approx .310 @70 under hook keeper wrap

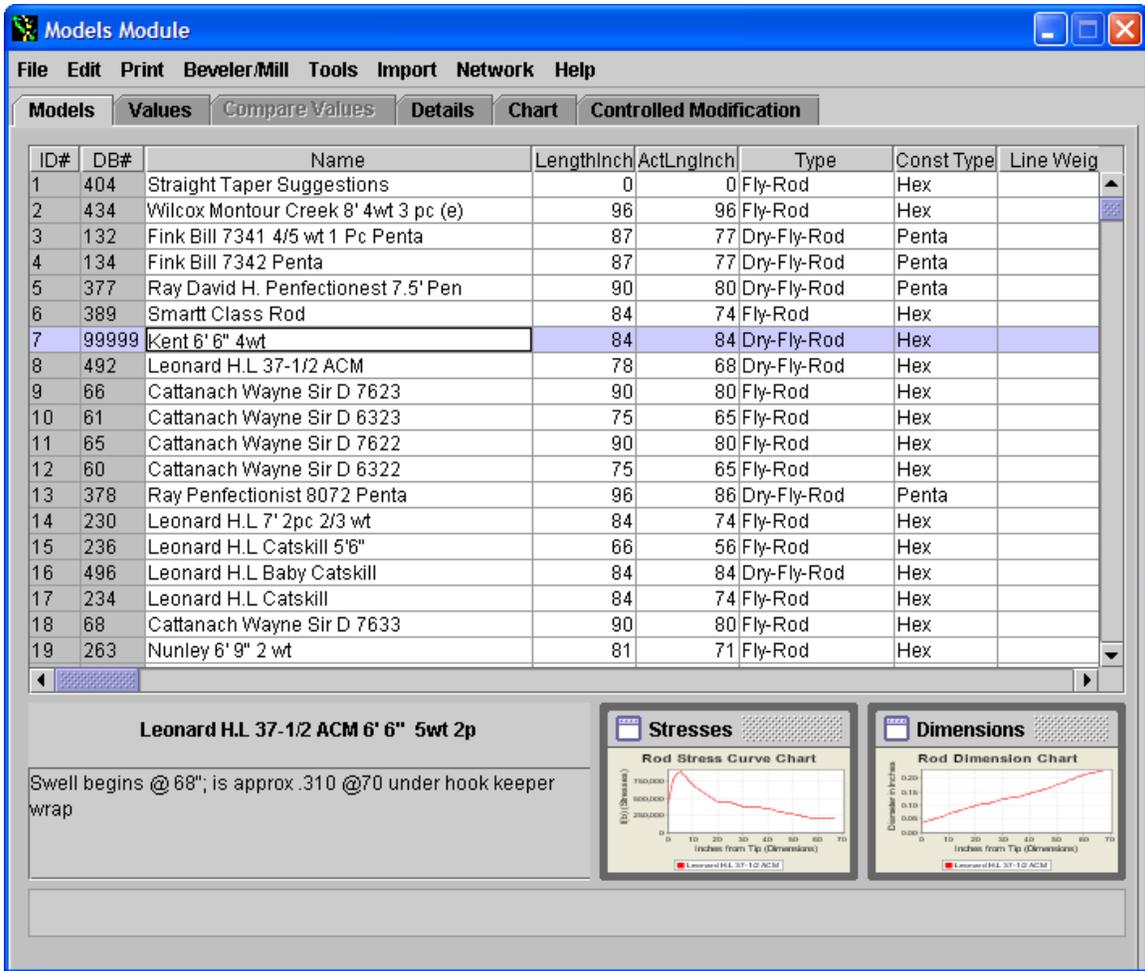
Stresses

Rod Stress Curve Chart

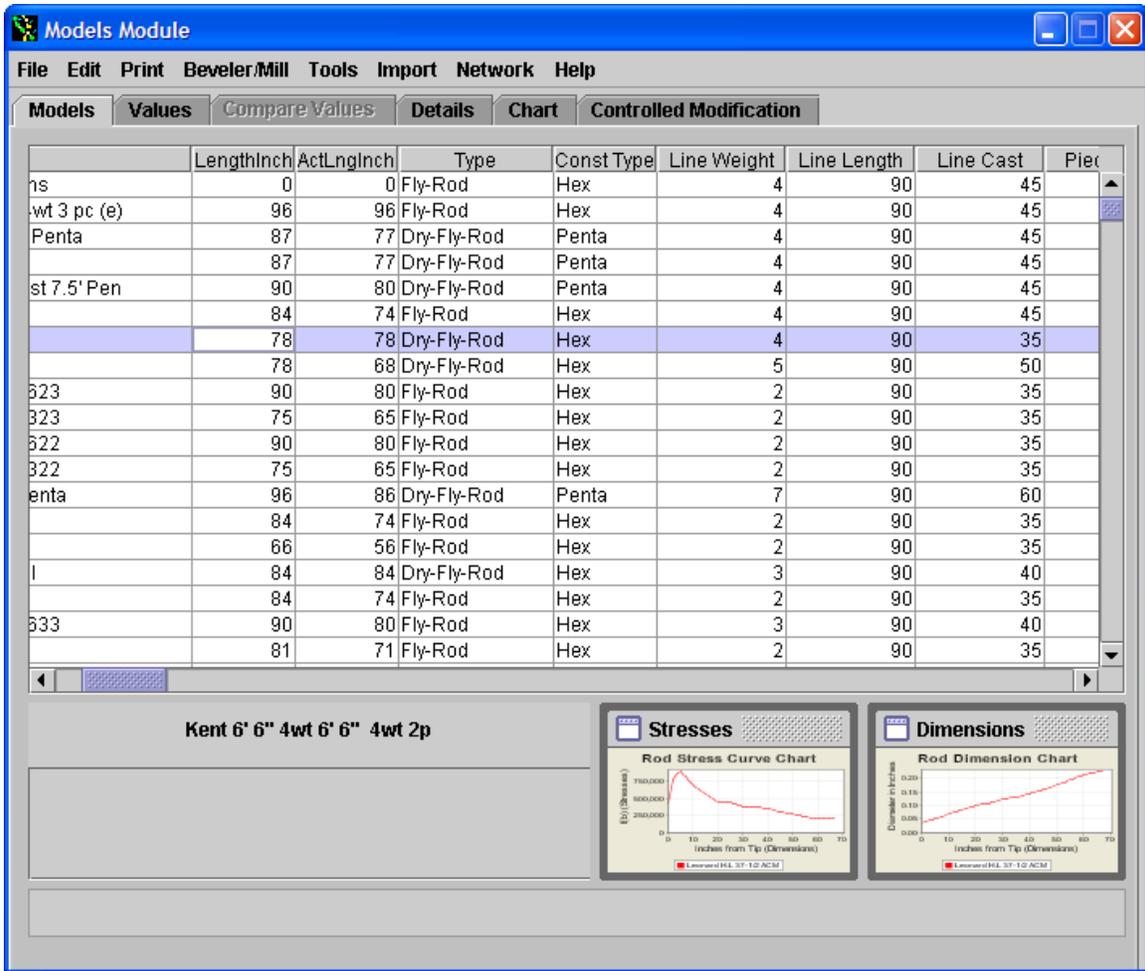
Dimensions

Rod Dimension Chart

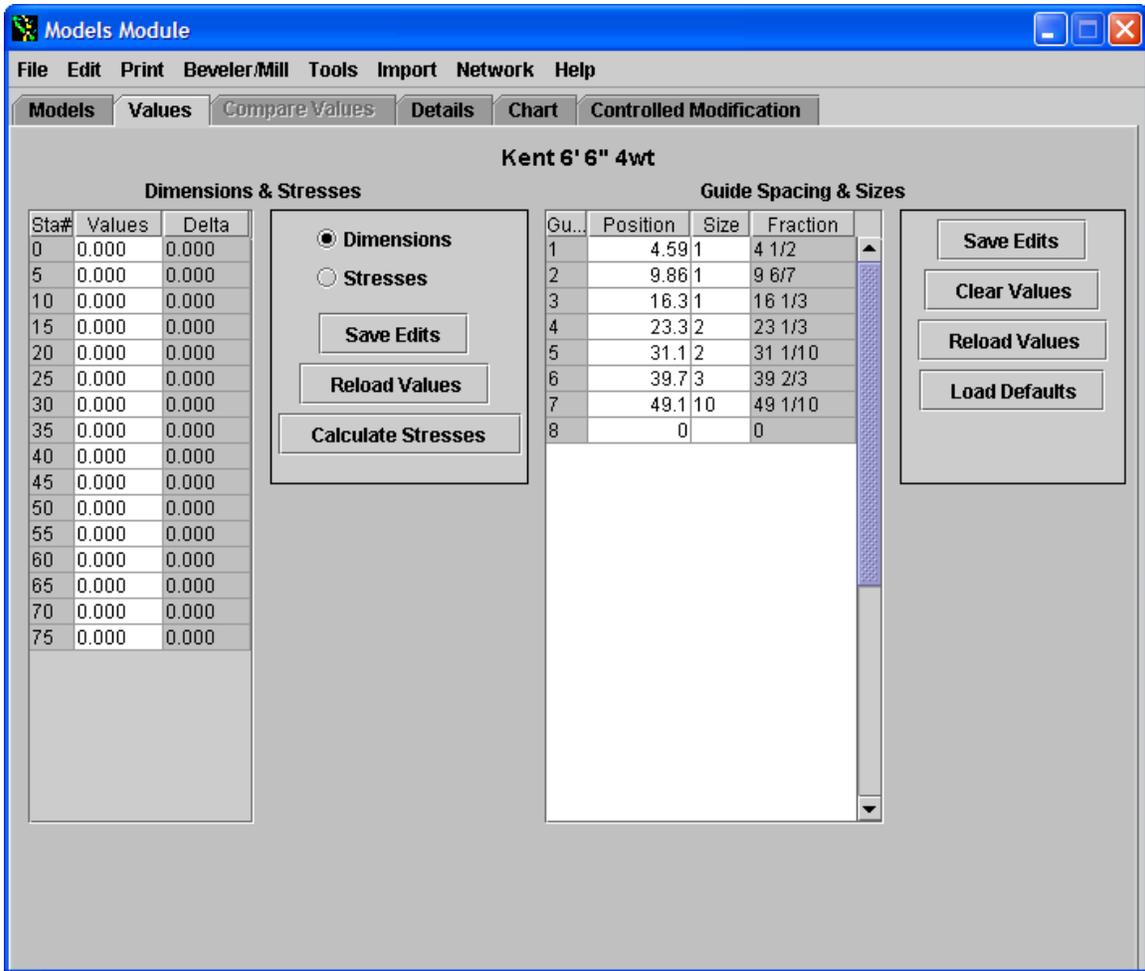
You can name the taper now – click on the “Please Rename” and you will be able to enter the name you wish. In this case I put “Kent 6’ 6” 4wt”:



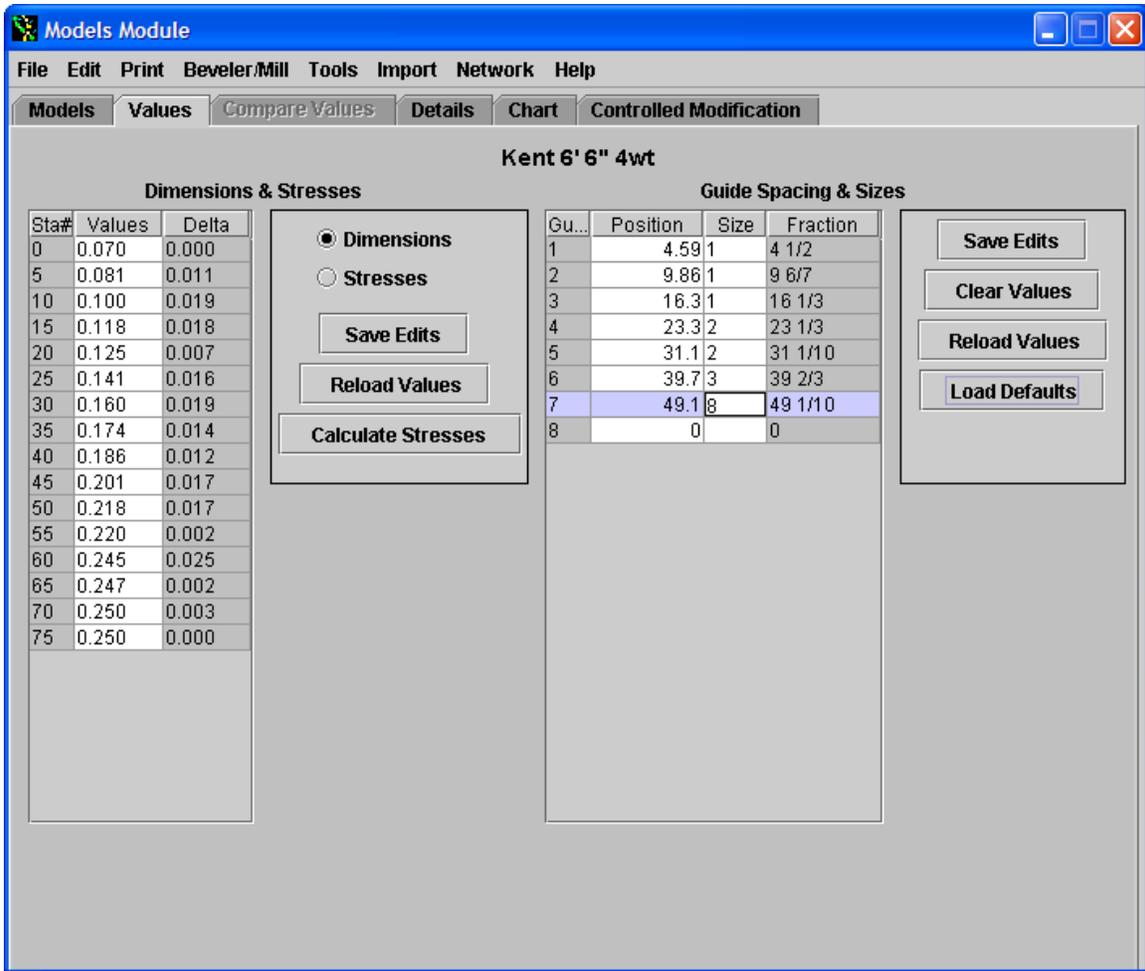
Now you can scroll across to the other fields that contain default values – note – changing RodDNA default values will be the topic of a future RodDNA workshop. I changed the length to 78” made it a 4wt and the line cast (for stress curves) to 35’:



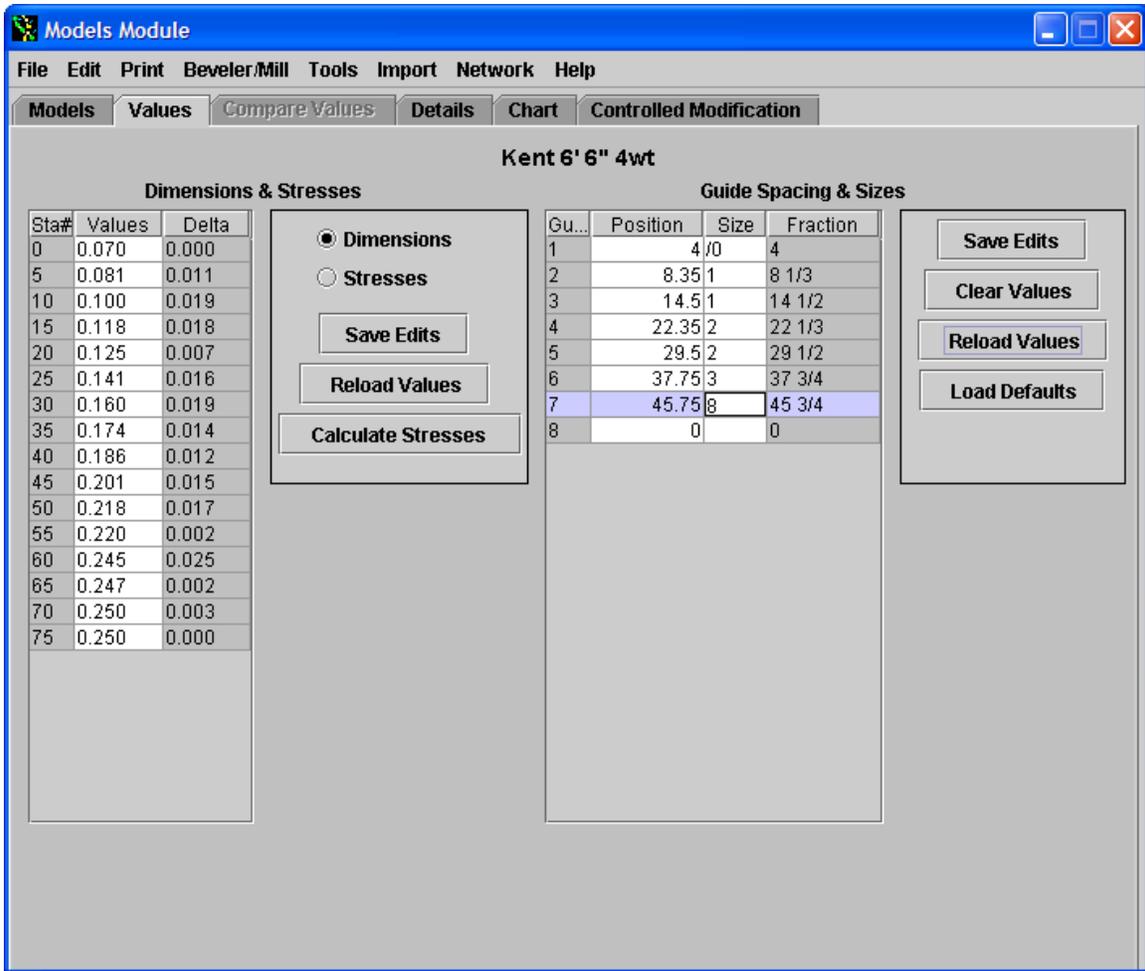
At this point, it makes no sense to enter a ferrule value – We will first enter the taper and I will have RodDNA automatically calculate the ferrule size latter. Now click on the “Values” tab and you will see the following tab displayed:



I have entered the taper and guide spacing by clicking on the boxes. You can use the arrow keys to help navigate. When you have finished entering the taper values you want click "Save Edits" button. I did take some "short - cuts" in entering the taper - I did not have a value at 40". It was under the ferrule. I had a value at 37" - .180" on the tip and 42" - .193" on the butt side. I put a nominal compromise value of .186" at 40" station:



I will now enter the guide spacing I have taken – defaults values that are calculated based upon taper length have been provided. In this case, I have the original guide spacing that I want to preserve with the taper. Notice they are similar but distinctly different than the default values – make sure you click “Save Edits” after entering.



Now that you have entered the taper data, click the “Models” tab to get the display of tapers. Then click on any other taper and then click back on our new taper and you will see the “thumbnail” preview windows of the stress curve and dimensions will be refreshed with that of the taper we have entered:

Models Module

File Edit Print Beveler/Mill Tools Import Network Help

Models Values Compare Values Details Chart Controlled Modification

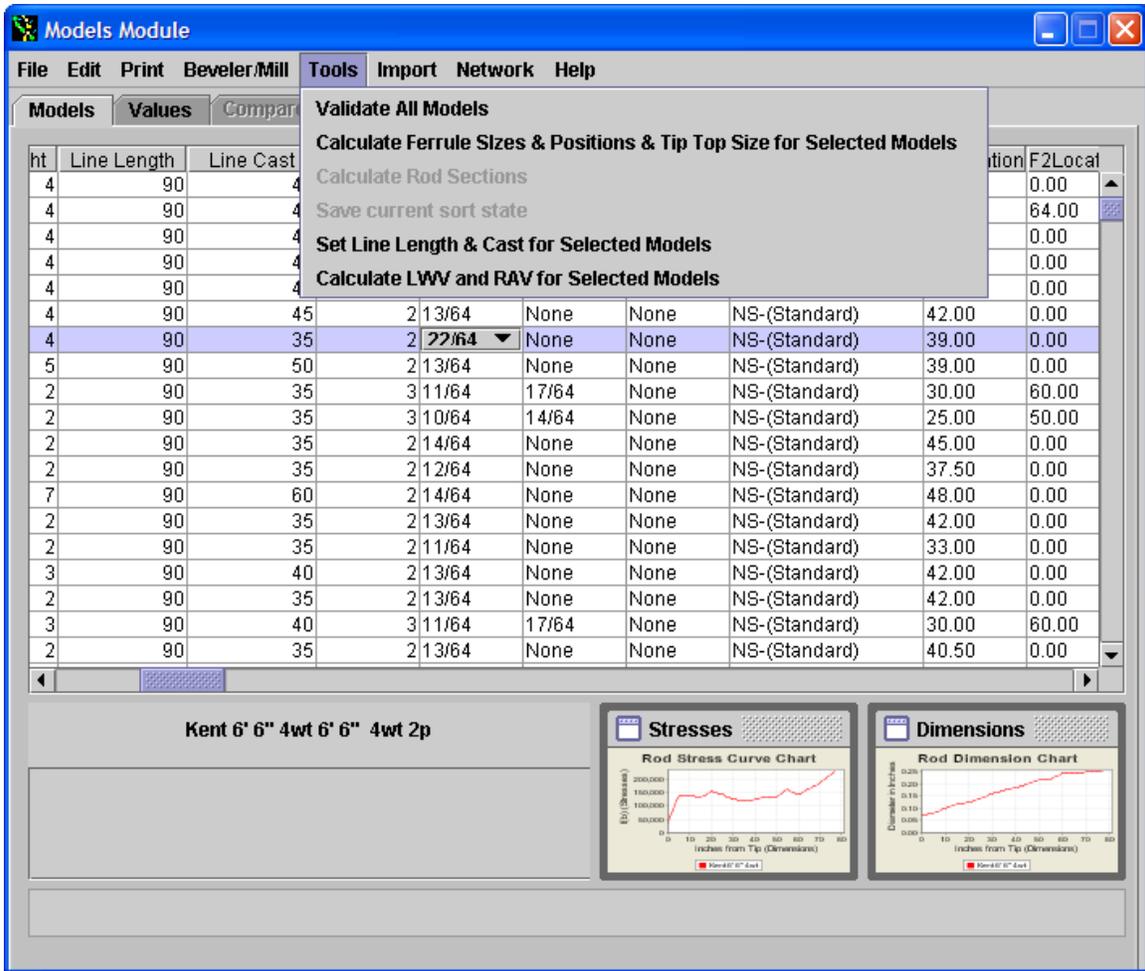
ID#	DB#	Name	LengthInch	ActLengthInch	Type	Const Type	Line Weig
1	404	Straight Taper Suggestions	0	0	Fly-Rod	Hex	
2	434	Wilcox Montour Creek 8' 4wt 3 pc (e)	96	96	Fly-Rod	Hex	
3	132	Fink Bill 7341 4/5 wt 1 Pc Penta	87	77	Dry-Fly-Rod	Penta	
4	134	Fink Bill 7342 Penta	87	77	Dry-Fly-Rod	Penta	
5	377	Ray David H. Perfectionest 7.5' Pen	90	80	Dry-Fly-Rod	Penta	
6	389	Smartt Class Rod	84	74	Fly-Rod	Hex	
7	99999	Kent 6' 6" 4wt	78	78	Dry-Fly-Rod	Hex	
8	492	Leonard H.L 37-1/2 ACM	78	68	Dry-Fly-Rod	Hex	
9	66	Cattanach Wayne Sir D 7623	90	80	Fly-Rod	Hex	
10	61	Cattanach Wayne Sir D 6323	75	65	Fly-Rod	Hex	
11	65	Cattanach Wayne Sir D 7622	90	80	Fly-Rod	Hex	
12	60	Cattanach Wayne Sir D 6322	75	65	Fly-Rod	Hex	
13	378	Ray Perfectionist 8072 Penta	96	86	Dry-Fly-Rod	Penta	
14	230	Leonard H.L 7' 2pc 2/3 wt	84	74	Fly-Rod	Hex	
15	236	Leonard H.L Catskill 5'6"	66	56	Fly-Rod	Hex	
16	496	Leonard H.L Baby Catskill	84	84	Dry-Fly-Rod	Hex	
17	234	Leonard H.L Catskill	84	74	Fly-Rod	Hex	
18	68	Cattanach Wayne Sir D 7633	90	80	Fly-Rod	Hex	
19	263	Nunley 6' 9" 2 wt	81	71	Fly-Rod	Hex	

Kent 6' 6" 4wt 6' 6" 4wt 2p

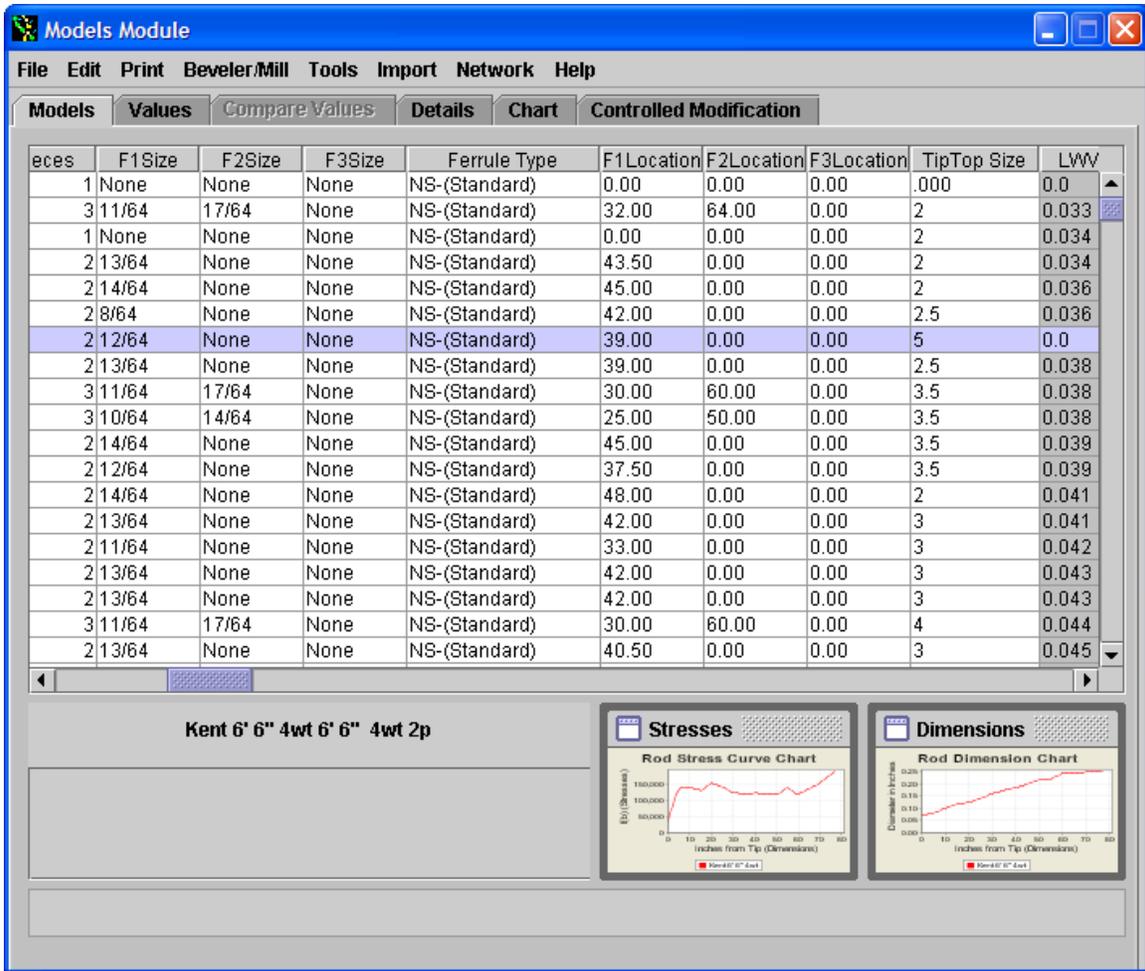
Stresses

Dimensions

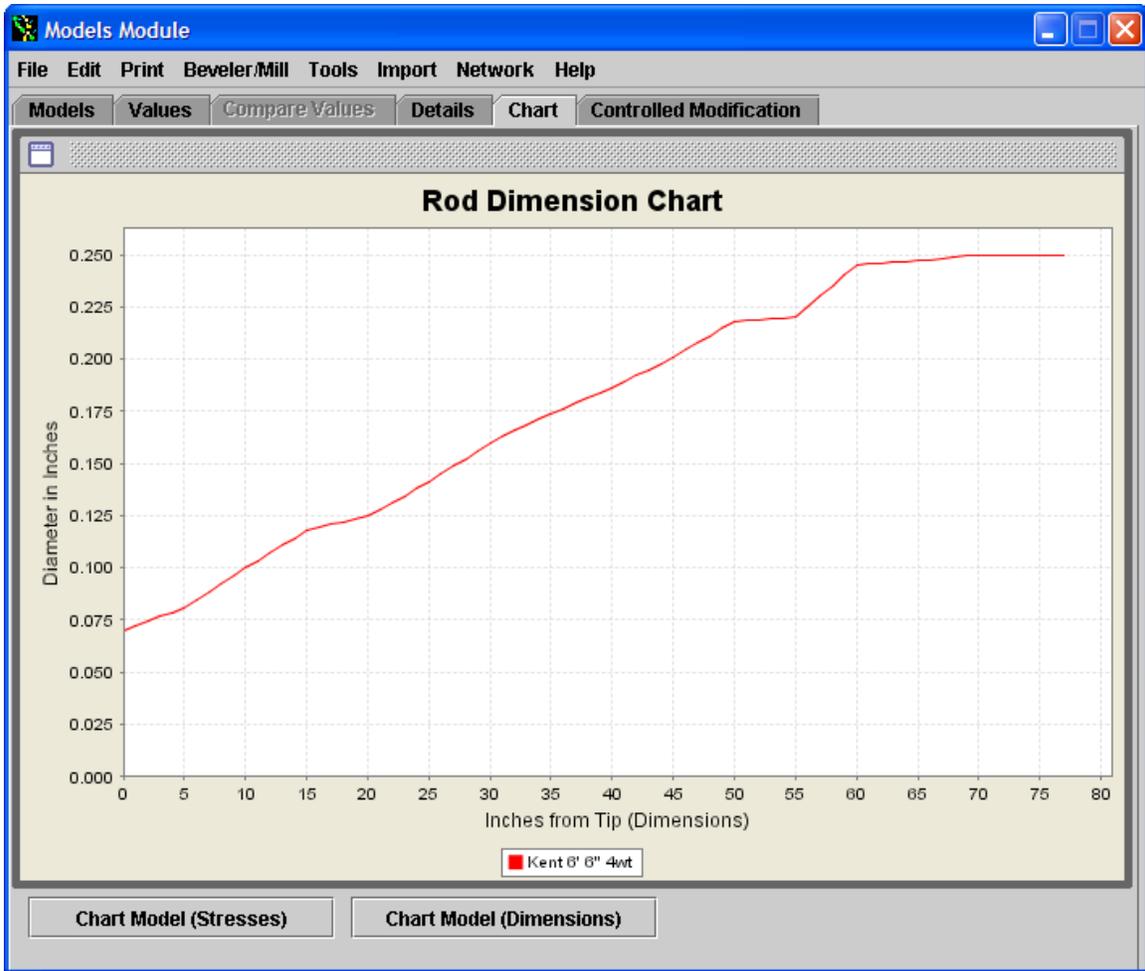
Now scroll over using the bottom slide to find ferrule value. I know the rod is a size 12 ferrule and you can easily select it from the list of ferrule values that appear when you click on that box. I will show you how to let RodDNA calculate the ferrule and tiptop sizes for you. Select the “Tools” menu item and you will see the following menu items:



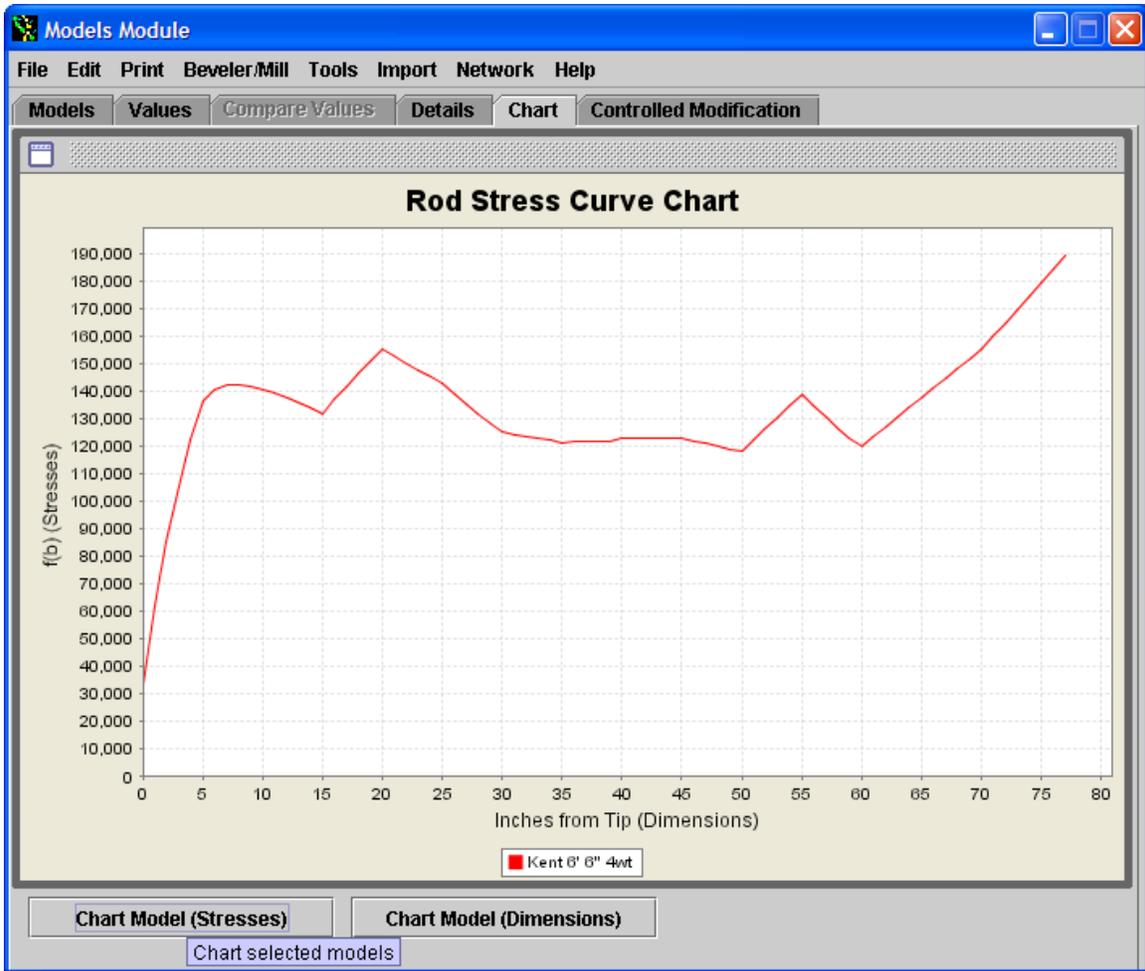
Select “Calculate Ferrule Sizes & Positions & Tip Top Size for Selected Models”. Since you have the model we have entered highlighted RodDNA will calculate the values. If you have multiple or even all models selected it will calculate the values for them. So be careful and only select those who you want to calculate sizes for. Notice when this is done, RodDNA has calculated a 12/64ths ferrule and size 5 tip top:



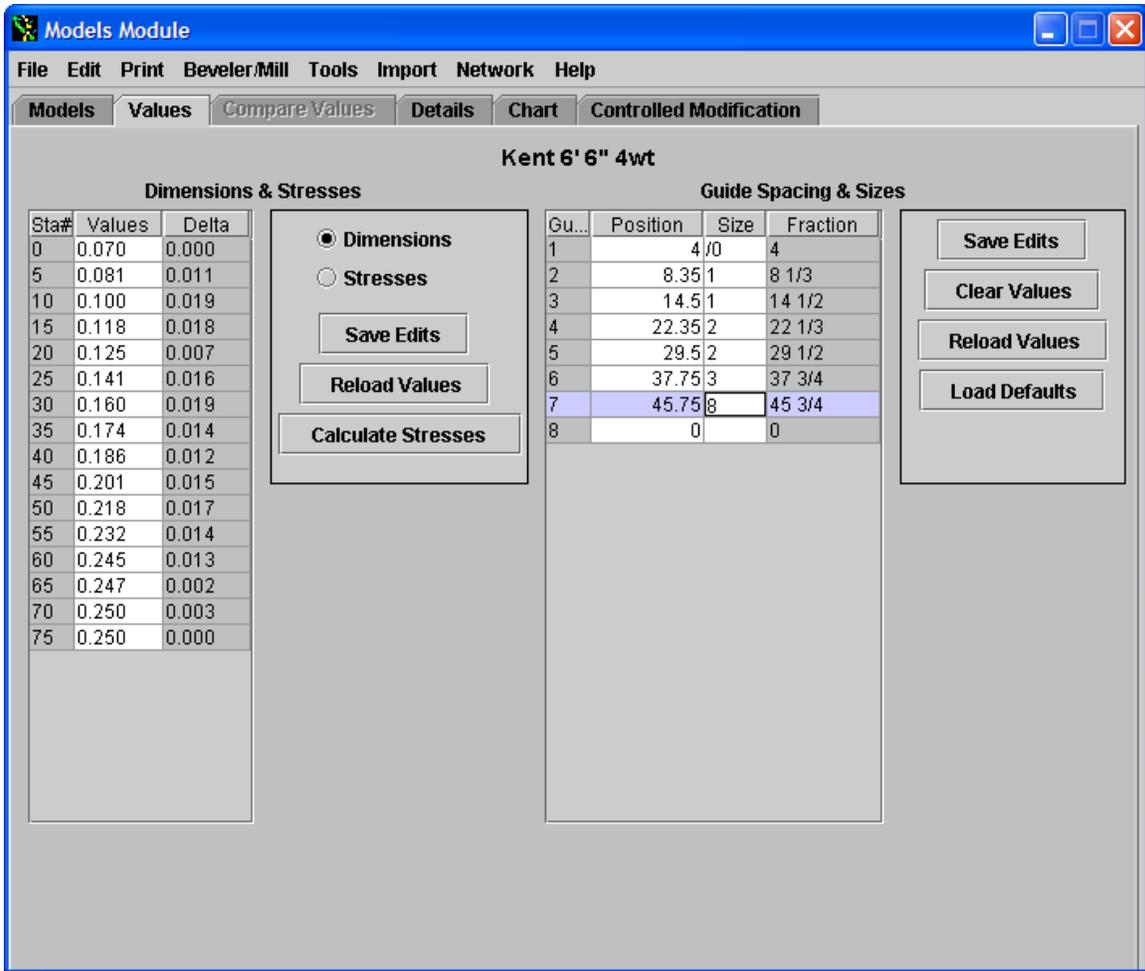
Now click on the “Chart” tab. You will see the full size Dimensions Graph displayed:



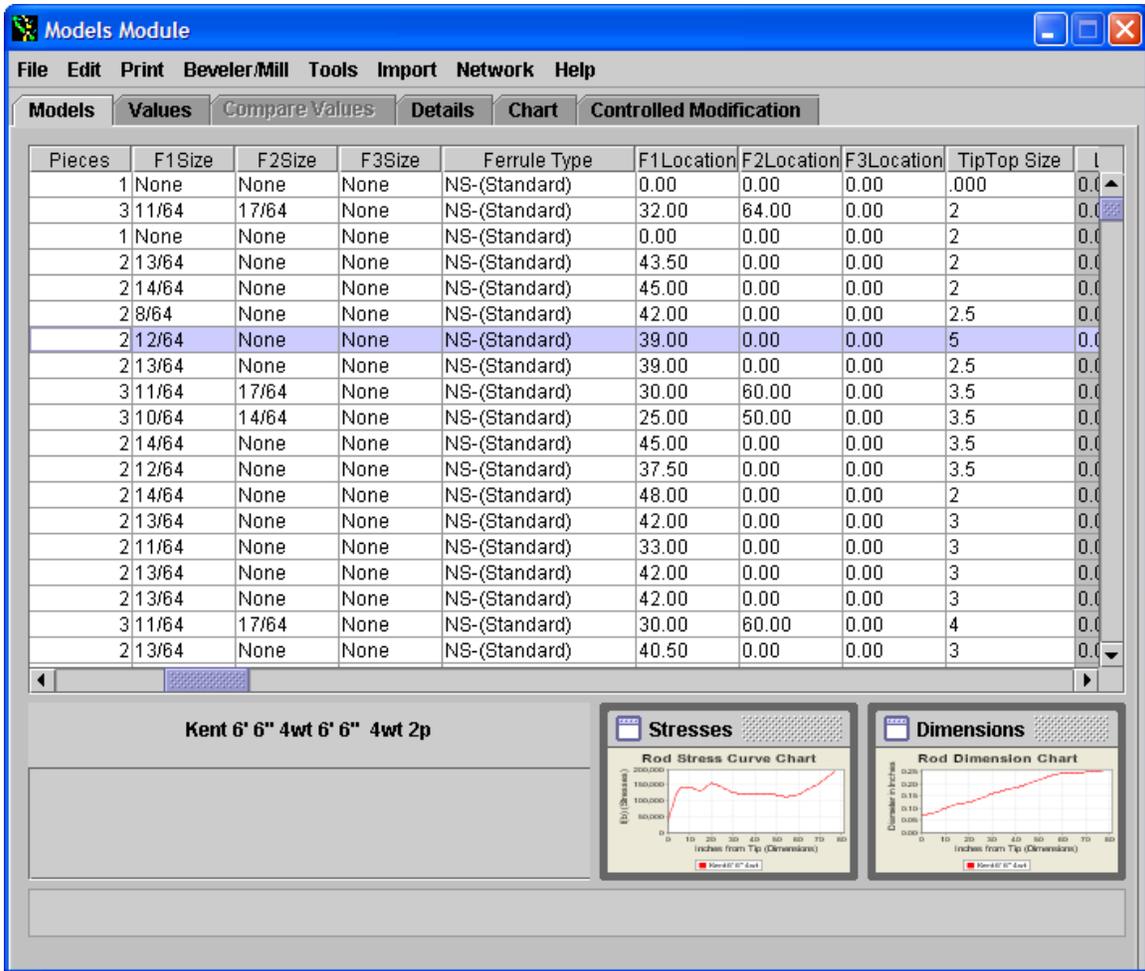
You can see a few “bumps” in the Rod Dimension Chart. But to see really where you problems are with the inputted taper, click on Chart Model (Stresses) button and see the Rod Stresses Chart:



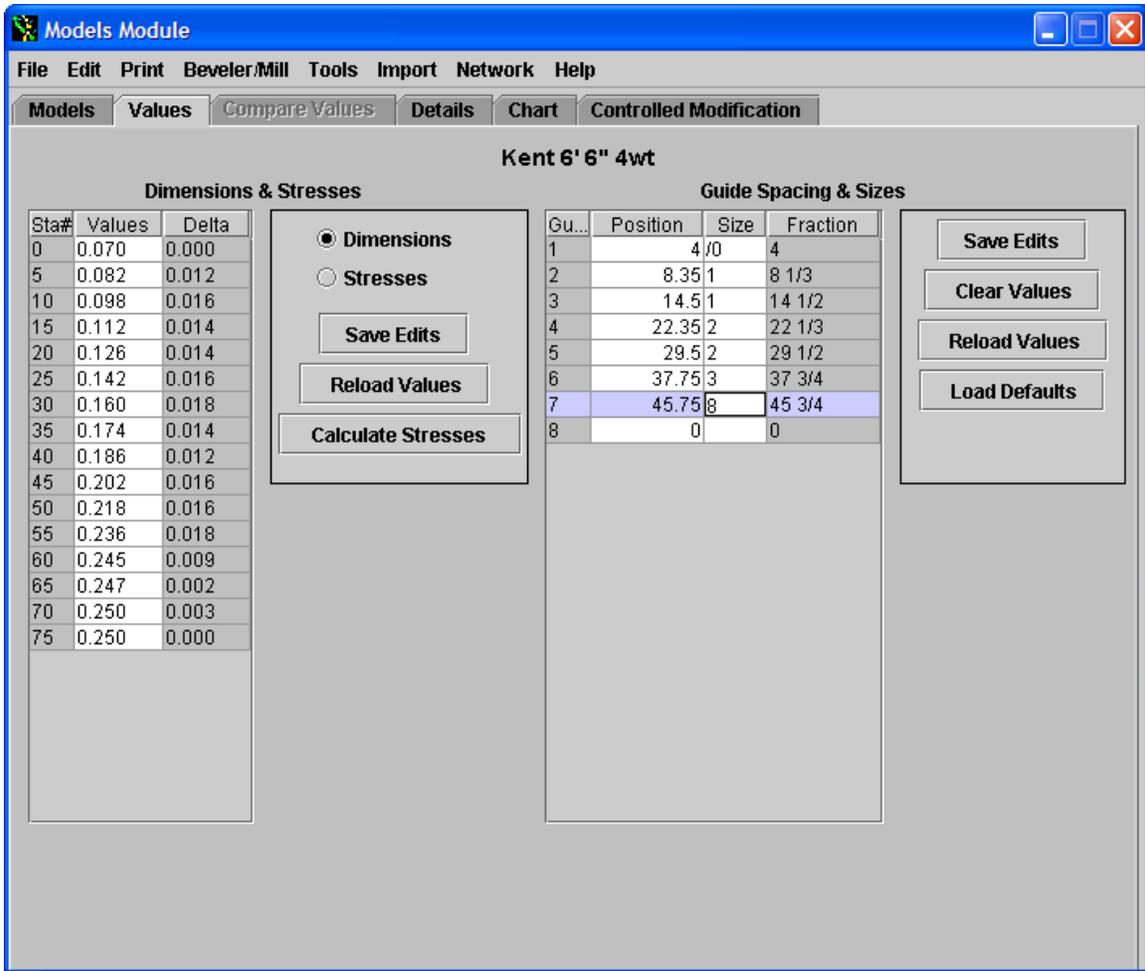
Now we can clearly see that we have a couple of issues to work out with the taper to make it useable. Let's start with the "hic-cup" at 55". I knew this was a problem area when I took the taper. This is the area where there was a dramatic change in rod dimensions that could not accurately be captured. I had values of .218 at 50", .220 at 55", .230 at 57.5", and .245 at 60". As someone would say – there is a "hinge" at this point. In my opinion, an undesired hinge and the stress curve shows it. Using RodDNA, you can go through a series of steps to adjust the taper values and see the results in the stress curve. Click on the "Values" tab and enter .236 at the 55" station. The trick here is when you enter the value and then click on another station box. Then click "Save Edits":



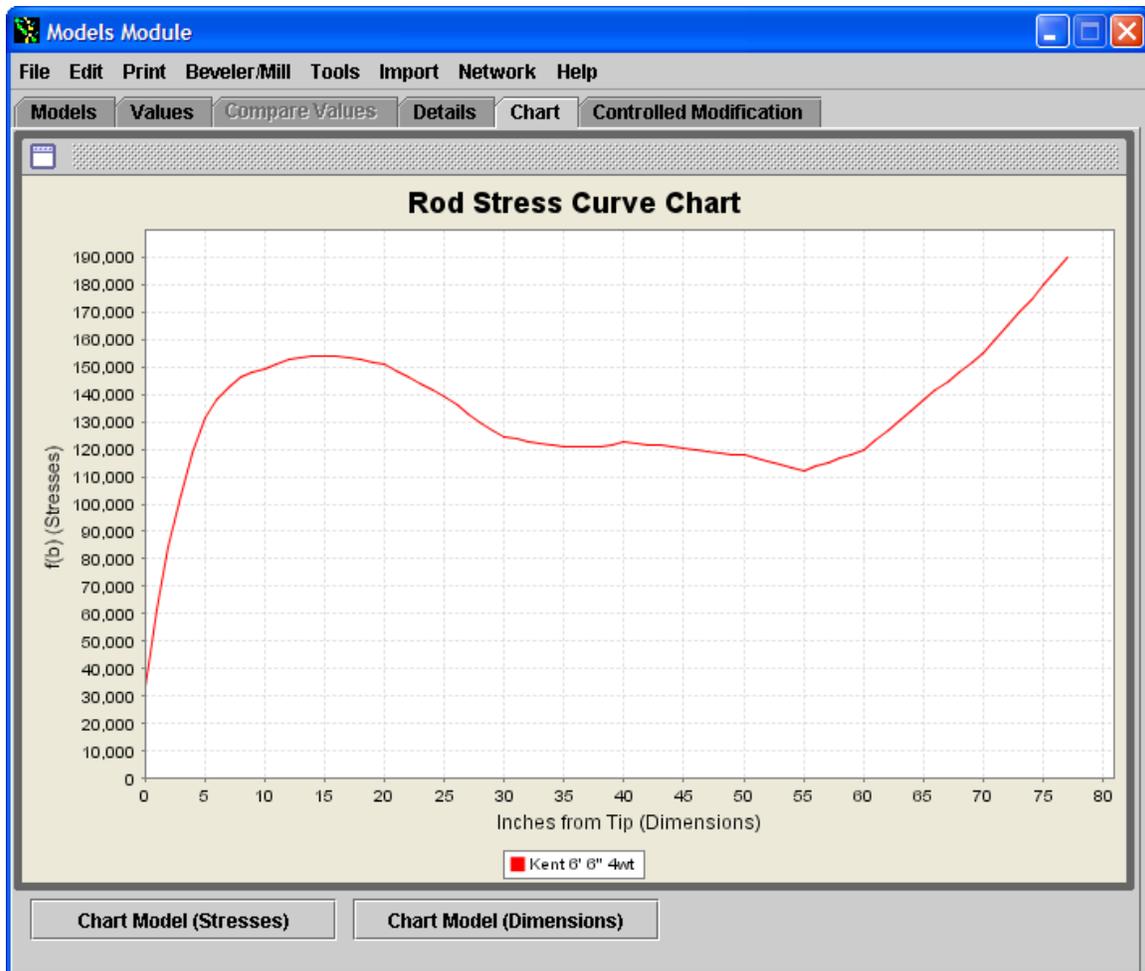
Now Click on Models Tab – if you did not save edits, you will see a pop-up window to prompt you for a yes – no answer – pick yes. Then when you see the models – click on any other model and then click back on our taper. You will see the thumbnail displays updated with new Stresses and Dimensions. The reason you must do this, is that RodDNA will automatically calculate “on the fly” the Stresses and Dimensions Graphs when a model is selected:



Notice the “blip” in the butt stress curve is now gone. Click on Chart tab to get a better view. The butt section hic-cup is now smoothed out. In looking at the tip section – there appears to be a dip in stress curve values at 10” and 15” stations. These two values need to be decreased to get more of an expected stress curve shape. I decreased the 10” station value to .098 and likewise made the 15” station .112. I also increased 20” station to .128 and did a little rounding at 25” station since I like to have even numbers in my tapers for ease of setting planing forms”

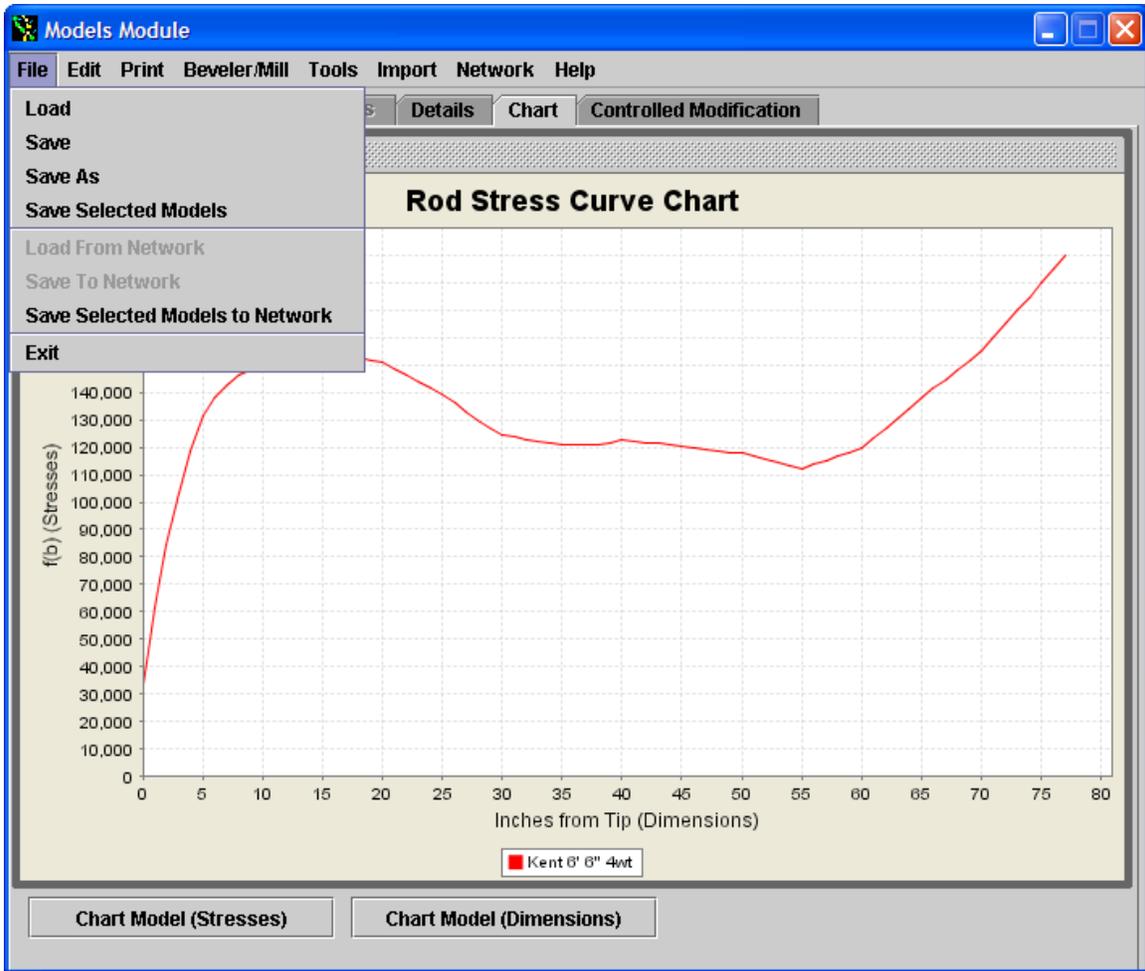


Again save the values, click on models tab, select any other taper and go back to our tapers to update the stress curves, and click on the Chart tab to view the updated stress curve:

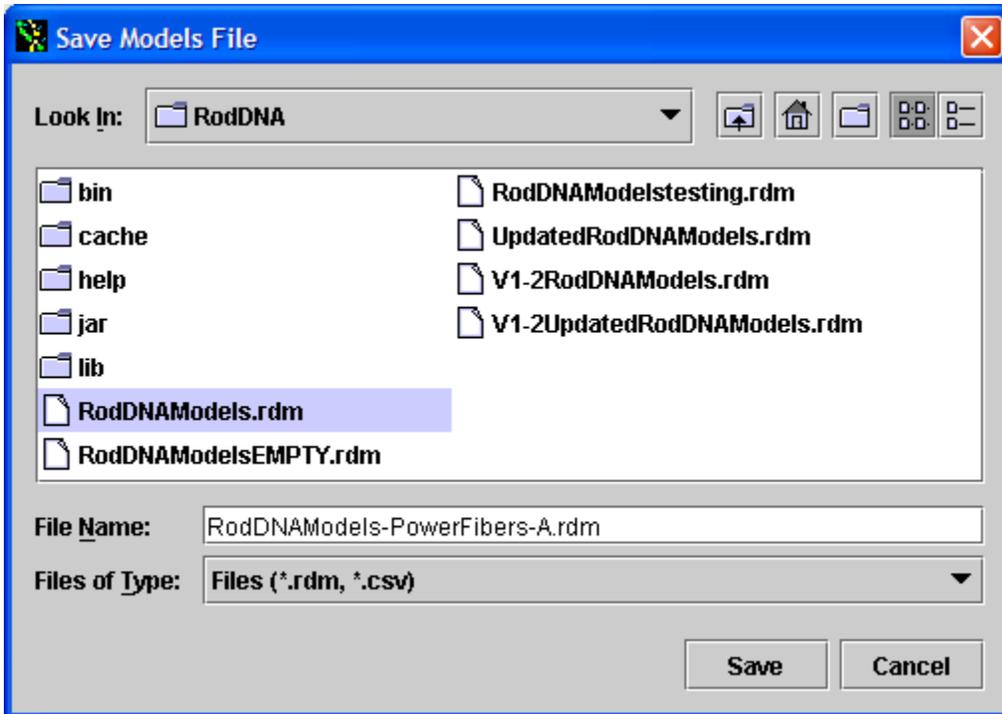


This now looks really smooth. It can be seen that this is a “parabolic” taper. It should fish the small streams very nicely. You can play with this taper some more but I would recommend building the taper first to get a “feel” for it – you may want to build the original tip and the new tip to see which one works best. You might be surprised.

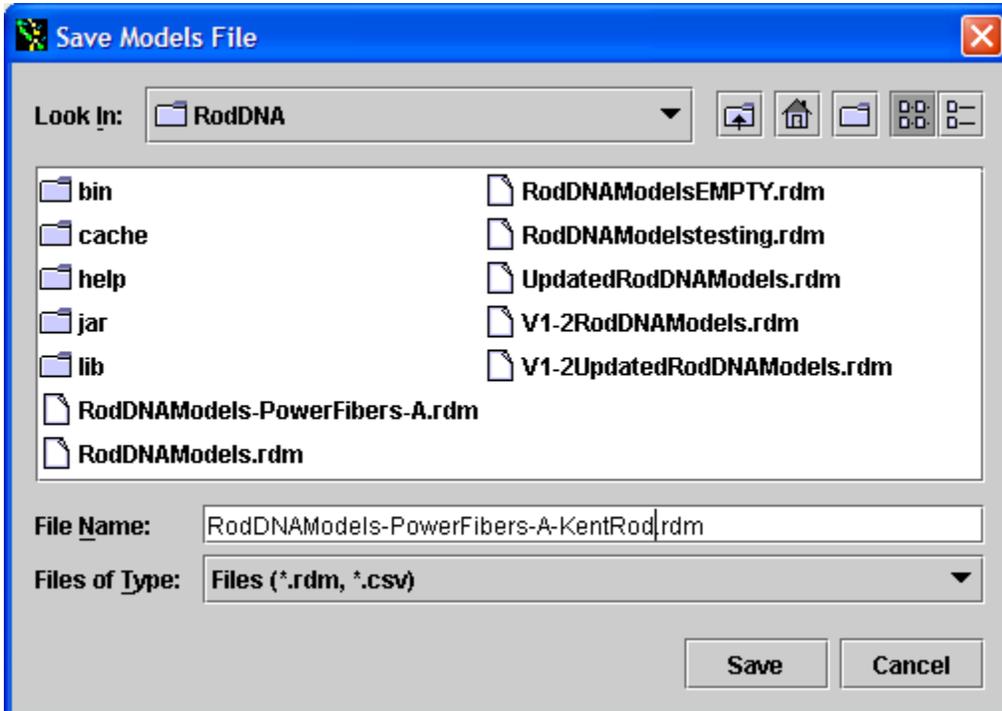
The last thing to do is save the database so the work you have done is not lost. Click the File menu item and you will see the following menu items appear:

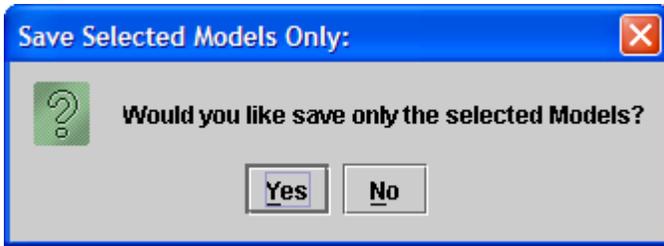


If you save then this item will be added to your local database. Save As requires you to save with a new database name – to view the taper you will need to “load” that file name rather than the default database to view. Save Selected Models will allow you just to save this taper to a separate file. I will do two things – I will save selected items to create a database for the next workshop, and save as to have a working database for future workshops. One note here – you do not need to save to the network, but you can if you want to share tapers with friends – yet another future topic. The following shows the “Save As” window:

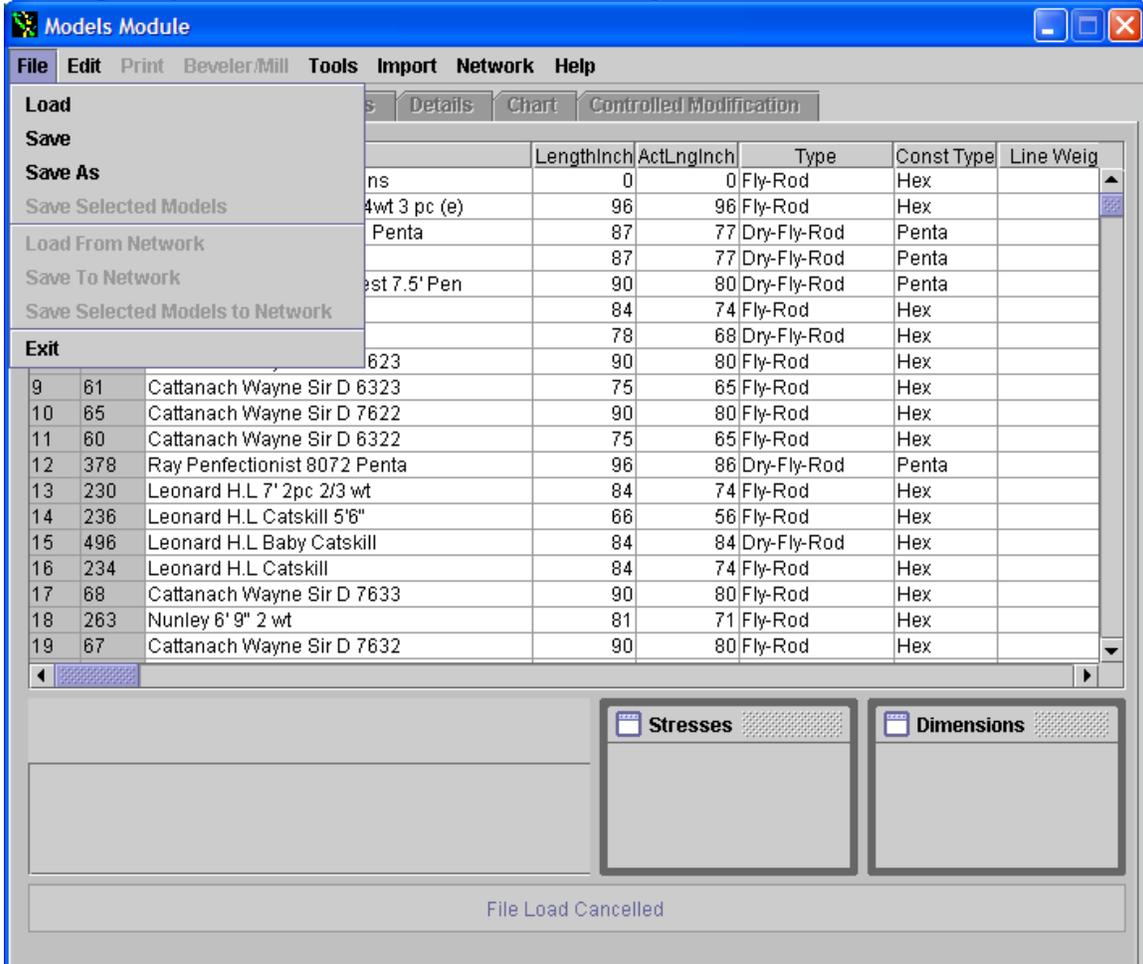


The following shows the Save Selected Models windows:

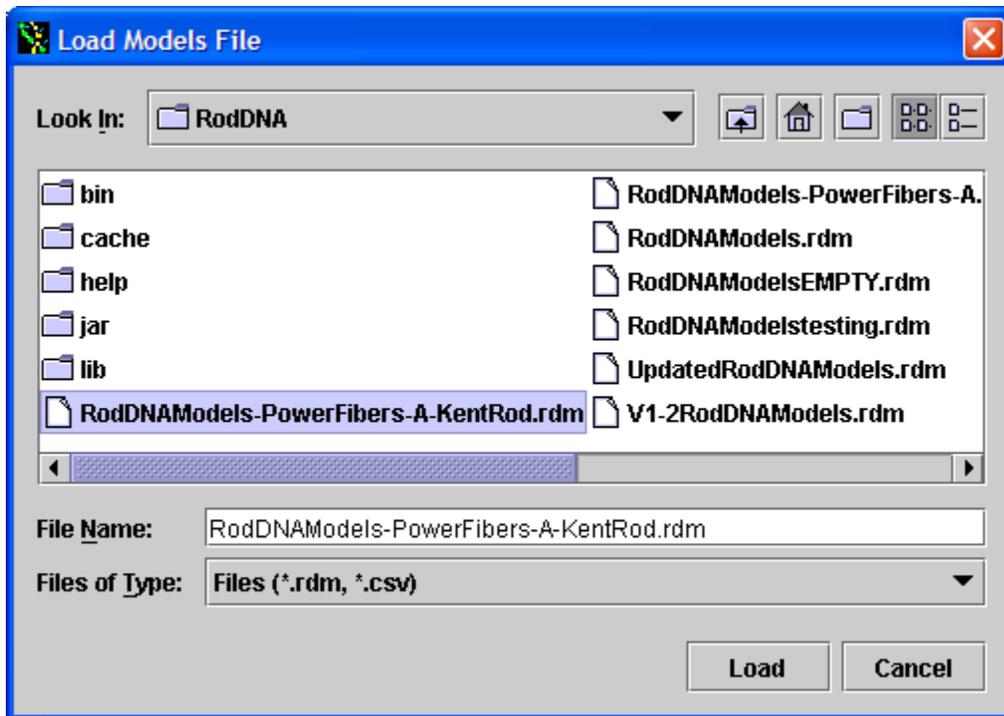




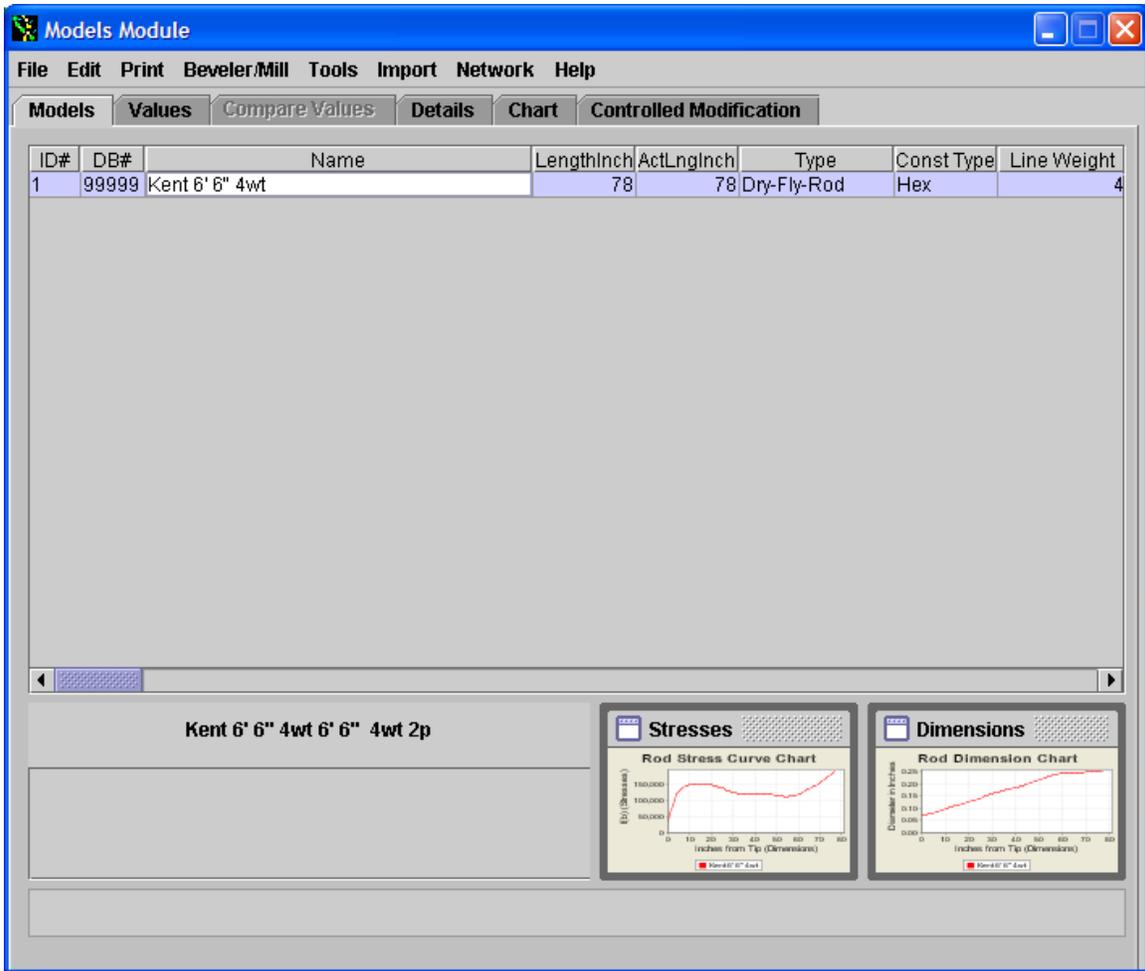
At this point you can load these different files using the load command in the file menu:



Select load and pick the file name of the database you want to load:



In this case, I selected the database that just had the selected item I saved off. This is useful if you want to have a small database just of your “select” tapers, uncluttered by all those other tapers. You can have as many databases as you want saved on your local hard drive. One for Garrison, Leonard, etc – anyway you want to have them organized. When the file we saved is loaded it looks like this:



This brings this works shop to an end. We have accomplished a number of basic RodDNA procedures. Entering a new taper, using some of the tools to edit the taper and then saving off your databases. The Kent Rod RodDNA database file is available for download from the PowerFibers website.