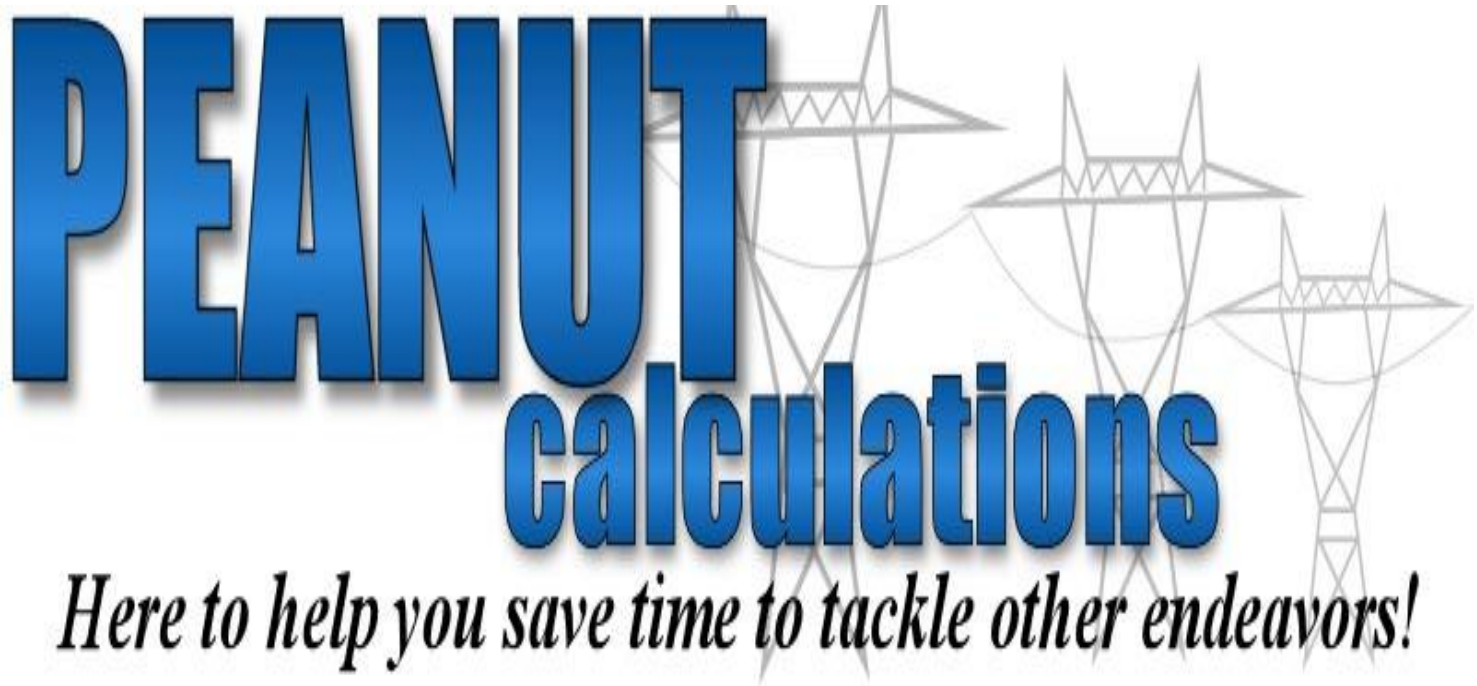
PEANUT
calculations
Here to help you save time to tackle other endeavors!

INDEX OF DIRECTIONS

BY THE WAY HERE'S PEANUT

DIRECTIONS FOR THE RETURN METHOD, SAG AND TIME PROGRAM

TO ALL USERS,

We would like to thank you for your purchase and use of this program and the other programs in this series. We have set a goal at Peanut Calculations to save the person in charge of these job tasks in the field time. Because we know your time is valuable and if your like me there's not enough of it. With a few values entered from the sag charts, names, job name, company names, date, and temperatures all the calculations and reports are ready to print. A lot of the job, personnel names, company names and P.O. numbers only have to be entered once at the beginning of a project. If you have any questions or ideas about something you would like to see in this program or others please leave us a message support@peanutcalculations.com or e-mail me at norman@peanutcalculations .com. We are here to support and help you with these programs and your ideas to make your job easier. But please remember these programs have copy rights so please use for your benefit but don't give unauthorized copies to others. If there is anyway we can support or help please contact us.

THANK YOU
NORMAN S. JAYJOHN
PRESIDENT OF PEANUT CALCULATIONS

PLEASE KEEP ONE COPY OF EACH PROGRAM IN A FILE TO MAKE A COPY FOR EACH PROJECT WORKED.

Disclaimer,

Please double check your input data and finished data to make sure program is working correctly. Peanut Calculations excepts no liability for miss information from our programs.

SHEET 1 **DATA INPUT, SAG AND TIME SHEET**

With this sheet you enter known data in the yellow highlighted cells and the program does the calculations and report for you. The known data is, who's line, job name, contractor or crew name, P.O. or job number, who the saggers are and the high and low temperatures and sag in feet for the high and low temperatures for the span or spans you have chose to sag in from the engineers sag chart. Enter the line section being sagged, the span being sagged, the span length, ruling span length, sag chart number, and finally the ambient temperature at the time of sag. The sag calculations are complete and your sag report is ready to print at the same time.

sample conductor sag chart from project engineer

sag chart 1 of 27
ruling span 1387.6

Structure Number	Span Length Ahead (ft)	Temperature 40 F Sag in (ft)	50 F Sag in (ft)	60 F Sag in (ft)	70 F Sag in (ft)	80 F Sag in (ft)	90 F Sag in (ft)	100 F Sag in (ft)
2	1477.5	54.29	55.03	55.76	56.49	57.22	57.94	58.67
3	1333.8	44.23	44.83	45.42	46.02	46.61	47.20	47.79
4	1252.7	39.01	39.54	40.06	40.59	41.11	41.63	42.15
5	1442.1	51.72	52.42	53.11	53.81	54.50	55.19	55.88
6	1146.2	32.65	33.09	33.53	33.97	34.40	34.84	35.28
7	1413.9	49.71	50.39	51.05	51.73	52.39	53.05	53.72
Tension	(lbs)	5504	5430	5359	5290	5223	5158	5095

figure 1 ---

(Numbers from actual issued sag chart)

sample shield wire sag chart from project engineer

sag chart 1 of 27
ruling span 1387.6

Structure Number	Span Length Ahead (ft)	Temperature 40 F Sag in (ft)	50 F Sag in (ft)	60 F Sag in (ft)	70 F Sag in (ft)	80 F Sag in (ft)	90 F Sag in (ft)	100 F Sag in (ft)
2	1477.5	42.98	43.58	44.15	44.72	45.29	45.87	46.43
3	1333.8	35.02	35.50	35.97	36.44	36.90	37.37	37.83
4	1252.7	30.89	31.31	31.72	32.14	32.55	32.96	33.36
5	1442.1	40.94	41.51	42.05	42.60	43.14	43.69	44.23
6	1146.2	25.83	26.19	26.54	26.88	27.22	27.57	27.91
7	1413.9	39.33	39.88	40.40	40.93	41.45	41.97	42.49
Tension	(lbs)	1735	1712	1689	1668	1647	1626	1607

figure 2---

(Numbers from actual issued sag chart)

SHEET 1 **DATA INPUT, SAG AND TIME SHEET**

1. Press the DATA INPUT, SAG & TIME tab at the bottom of the program to activate the sheet. Then enter names, job number, sag section structure numbers, weather conditions, ruling span length and sag chart number in yellow highlighted area's. Example used in figure 3

figure 3

WHO'S LINE		GEORGIA POWER COMPANY	JOB NAME	McGraw FORD TO CRESTVIEW 500 KV LINE			
DATE		12/22/2007					
CONTRACTOR		WILSON CONSTRUCTION	JOB # or P.O----------	P7891			
WHO'S SAGGING	1	NORMAN JAYJOHN					
	2	KENNETH MITCHAM	AMBIENT TEMPERATURE----------				
	3	JACK LYONS					
LINE SECTION TO BE SAGGED: ----------STRUCTURE---------		2	TO STRUCTURE----------	8	WEATHER--	SUNNY/CALM	
			HIGH TEMPERATURE USED FROM SAG CHART----------				
1. SAG SPAN----------		SPAN LENGTH----------	LOW TEMPERATURE USED FROM SAG CHART----------				
CONDUCTOR SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART----------							
CONDUCTOR SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART----------					RULING SPAN LENGTH----------	1387.60	
ACTUAL SAG IN FEET NEEDED FOR CONDUCTOR----------			answer		SAG CHART NUMBER----------	1 of 27	
CONDUCTOR TIME IN SECONDS FOR 3 RETURNS----------			answer				
SHIELD WIRE SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART-							
SHIELD WIRE SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART-							
ACTUAL SAG IN FEET NEEDED FOR SHIELD WIRE----------			answer				
SHIELD WIRE TIME IN SECONDS FOR 3 RETURNS----------			answer				
2. SAG SPAN----------		SPAN LENGTH----------					
CONDUCTOR SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART----------							
CONDUCTOR SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART----------							
ACTUAL SAG IN FEET NEEDED FOR CONDUCTOR----------			answer				
CONDUCTOR TIME IN SECONDS FOR 3 RETURNS----------			answer				
SHIELD WIRE SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART-							
SHIELD WIRE SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART-							
ACTUAL SAG IN FEET NEEDED FOR SHIELD WIRE----------			answer				
SHIELD WIRE TIME IN SECONDS FOR 3 RETURNS----------			answer				

Figure 3 was shortened one sag location to save space, the third one on the data input page works the same as the other two.

2. After you finish with data above, look at your sag chart and enter the high temperature and the low temperature listed on the chart and enter temperatures in the proper yellow highlighted cells. This program will work with any temperature range given on the sag charts. The total temperature range works fine as long as the engineers sag chart follows a linear progression. If his chart doesn't you will have to use a smaller range. Like 60 to 80 degrees. You will have to check and see if this program is following the sag chart. When you enter 100 degrees and 40 degrees with this sample sag chart, you can check any published sag in feet from the chart. Like 50, 60, 70 , 80, or 90 degrees. Check your sag chart the same way.

example sag chart temperature range----------

from figure 1 or 2--------

Temperature						
40 F	50 F	60 F	70 F	80 F	90 F	100 F

low temperature — high temperature

from figure 3----------

HIGH TEMPERATURE USED FROM SAG CHART----------	**100**
LOW TEMPERATURE USED FROM SAG CHART----------	**40**

3. The next step we will work on is entering the sag span, span length, conductor sag in feet for the high and low temperature on the sag chart, and shield wire sag in feet for the high and low temperature on the sag chart.

sag chart 1 of 27
ruling span 1387.6

sample conductor sag chart from project engineer

Chosen sag spans and sag in feet for high and low temperatures in red.

figure 1 ---

Structure Number	Span Length Ahead (ft)	Temperature 40 F Sag in (ft)	50 F Sag in (ft)	60 F Sag in (ft)	70 F Sag in (ft)	80 F Sag in (ft)	90 F Sag in (ft)	100 F Sag in (ft)	
2	1477.5	54.29	55.03	55.76	56.49	57.22	57.94	58.67	
3	1333.8	44.23	44.83	45.42	46.02	46.61	47.20	47.79	sag point 1
4	1252.7	39.01	39.54	40.06	40.59	41.11	41.63	42.15	
5	1442.1	51.72	52.42	53.11	53.81	54.50	55.19	55.88	sag point 2
6	1146.2	32.65	33.09	33.53	33.97	34.40	34.84	35.28	
7	1413.9	49.71	50.39	51.05	51.73	52.39	53.05	53.72	
Tension	(lbs)	5504	5430	5359	5290	5223	5158	5095	

low temperature — high temperature

sag chart 1 of 27
ruling span 1387.6

sample shield wire sag chart from project engineer

Chosen sag spans and sag in feet for high and low temperatures in red.

figure 2---

Structure Number	Span Length Ahead (ft)	Temperature 40 F Sag in (ft)	50 F Sag in (ft)	60 F Sag in (ft)	70 F Sag in (ft)	80 F Sag in (ft)	90 F Sag in (ft)	100 F Sag in (ft)	
2	1477.5	42.98	43.58	44.15	44.72	45.29	45.87	46.43	
3	1333.8	35.02	35.50	35.97	36.44	36.90	37.37	37.83	sag point 1
4	1252.7	30.89	31.31	31.72	32.14	32.55	32.96	33.36	
5	1442.1	40.94	41.51	42.05	42.60	43.14	43.69	44.23	sag point 2
6	1146.2	25.83	26.19	26.54	26.88	27.22	27.57	27.91	
7	1413.9	39.33	39.88	40.40	40.93	41.45	41.97	42.49	
Tension	(lbs)	1735	1712	1689	1668	1647	1626	1607	

low temperature — high temperature

If the engineer has you adding or subtracting sag corrections you need to add or subtract from the sag in feet from your sag chart before you enter them in the DATA INPUT, SAG & TIME sheet.

Data Input, Sag & Time sheet with sag data entered from sag charts.

				HIGH TEMPERATURE USED FROM SAG CHART----------	100	
1. SAG SPAN----------	3-4	SPAN LENGTH----------	1333.8	LOW TEMPERATURE USED FROM SAG CHART----------	40	
CONDUCTOR SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART----------				47.79		
CONDUCTOR SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART----------				44.23		RULING SPAN LENGTH---------- 1387.60
ACTUAL SAG IN FEET NEEDED FOR CONDUCTOR----------					answer	SAG CHART NUMBER---------- 1 of 27
CONDUCTOR TIME IN SECONDS FOR 3 RETURNS					answer	
SHIELD WIRE SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART---			37.83			figure 3
SHIELD WIRE SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART---			35.02			with data entered
ACTUAL SAG IN FEET NEEDED FOR SHIELD WIRE----------				answer		
SHIELD WIRE TIME IN SECONDS FOR 3 RETURNS----------				answer		
2. SAG SPAN----------	5-6	SPAN LENGTH----------	1442.1			
CONDUCTOR SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART----------				55.88		
CONDUCTOR SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART----------				51.72		
ACTUAL SAG IN FEET NEEDED FOR CONDUCTOR----------					answer	
CONDUCTOR TIME IN SECONDS FOR 3 RETURNS					answer	
SHIELD WIRE SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART---			44.23			
SHIELD WIRE SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART---			40.94			
ACTUAL SAG IN FEET NEEDED FOR SHIELD WIRE----------				answer		
SHIELD WIRE TIME IN SECONDS FOR 3 RETURNS----------				answer		

4. The last step for this page is to input the ambient temperature and the program will do all the calculations for you.

Now on the data input, sag & time sheet, enter the ambient temperature at this time.

AMBIENT TEMPERATURE----------	86

figure 4

If temperature at time of sag is 86 F enter here on the data input, sag & time sheet.

A. YOU HAVE TO CLICK OUTSIDE THE LAST CELL DATA WAS ENTERED IN FOR IT TO TAKE AFFECT AND WORK.

B. You have to stay within the sag charts temperature range or your answers will zero their selves as a safety factor. This forces you the user to stay within the engineers issued charts and alleviates any errors in what is wanted by the engineer. Try it by using values used here, 100 for high and 40 for low then enter 39 degrees or 101 degrees in the ambient temperature and all sag values turn to zero. This program will work on any temperature range. What ever temperatures in Fahrenheit the issued sag chart is using.

What you been waiting for, all data complete and the answers and information you been looking for.

There is no need to print this page. All the figures you should need for this program are on the sag report.

figure 3

WHO'S LINE		GEORGIA POWER COMPANY	JOB NAME	McGraw FORD TO CRESTVIEW 500 KV LINE	
DATE		12/22/2007			
CONTRACTOR		WILSON CONSTRUCTION	JOB # or P.O----------	P7891	complete and answered
WHO'S SAGGING	1	NORMAN JAYJOHN			
	2	KENNETH MITCHAM	AMBIENT TEMPERATURE----------	86	
	3	JACK LYONS			

LINE SECTION TO BE SAGGED: ----------STRUCTURE---------	2	TO STRUCTURE----------	8	WEATHER--	SUNNY/CALM

				HIGH TEMPERATURE USED FROM SAG CHART----------		100	
1. SAG SPAN----------	3-4	SPAN LENGTH----------	1333.8	LOW TEMPERATURE USED FROM SAG CHART----------		40	
CONDUCTOR SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART----------				44.79			
CONDUCTOR SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART----------				44.23		RULING SPAN LENGTH----------	1387.60
ACTUAL SAG IN FEET NEEDED FOR CONDUCTOR----------				46.96	answer	SAG CHART NUMBER----------	1 of 27
CONDUCTOR TIME IN SECONDS FOR 3 RETURNS				20.49	answer		
SHIELD WIRE SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART---			37.83				
SHIELD WIRE SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART---			35.02				
ACTUAL SAG IN FEET NEEDED FOR SHIELD WIRE----------			37.17	answer			
SHIELD WIRE TIME IN SECONDS FOR 3 RETURNS----------			18.23	answer			
2. SAG SPAN----------	5-6	SPAN LENGTH----------	1442.1				
CONDUCTOR SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART----------				55.88			
CONDUCTOR SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART----------				51.72			
ACTUAL SAG IN FEET NEEDED FOR CONDUCTOR----------				54.91	answer		
CONDUCTOR TIME IN SECONDS FOR 3 RETURNS				22.16	answer		
SHIELD WIRE SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART---			44.23				
SHIELD WIRE SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART---			40.94				
ACTUAL SAG IN FEET NEEDED FOR SHIELD WIRE----------			43.46	answer			
SHIELD WIRE TIME IN SECONDS FOR 3 RETURNS----------			19.72	answer			

Figure 3 was shortened one sag location to save space, the third one on the data input page works the same as the other two.

SHEET 2 **DIRECTIONS FOR SAG REPORT**

1. After the data input, sag & time sheet is complete and answered all you have to do is click on the SAG REPORT tab at the bottom of this program and click print. Your sag data, and numbers for your personnel use and other information are all on this sheet. This same sheet can be signed and turned in and a copy can be kept for your records if you would like. Any information that is zero on the DATA INPUT, SAG & TIME sheet will not show up on the SAG REPORT sheet. Including, sagger, sag span, span length, and all the rest of the information for that sag location. Just like there is no third sagger or sag information on the example sag chart below.

Example SAG REPORT: This example is smaller than the actual sag report that you will print.

CONDUCTOR SAG REPORT

GEORGIA POWER COMPANY — McGRAW FORD to CRESTVIEW 500 KV LINE — CONTRACTOR: WILSON CONSTRUCTION — J0B # OR P.O. P7891

DATE:	SAG SECTION	SAGGER	SPAN SAGGED	SPAN LENGTH	TEMPERATURE	SAG IN FEET	SAG IN SECONDS	WEATHER
12/22/2007	2 TO 8	NORMAN JAYJOHN	3-4	1333.80	86	46.96	20.49	SUNNY/CALM
		KENNETH MITCHAM	5-6	1442.10	86	54.91	22.16	SUNNY/CALM

SHIELD WIRE SAG REPORT

DATE:	SAG SECTION	SAGGER	SPAN SAGGED	SPAN LENGTH	TEMPERATURE	SAG IN FEET	SAG IN SECONDS	WEATHER
12/22/2007	2 TO 8	NORMAN JAYJOHN	3-4	1333.80	86	37.17	18.23	SUNNY/CALM
		KENNETH MITCHAM	5-6	1442.10	86	43.46	19.72	SUNNY/CALM

FOREMAN:_____

REPRESENTATIVE:_____

Directions for a complete Sag Report workbook

1. All you have to do is make a new Microsoft excel workbook file and name it after the project, job number or P.O. number or anything you would like. Next copy and paste a copy of the Sag Report sheet from this program each time you finish a sag set up in this program to this new excel file. Please do not use copies of this file to send data. This will violate your user agreement with Peanut Calculations.

Please remember we are here to support you, and keep checking our web site for updates and new programs. Check www.peanutcalculations.com and any questions or problems you have will be answered.