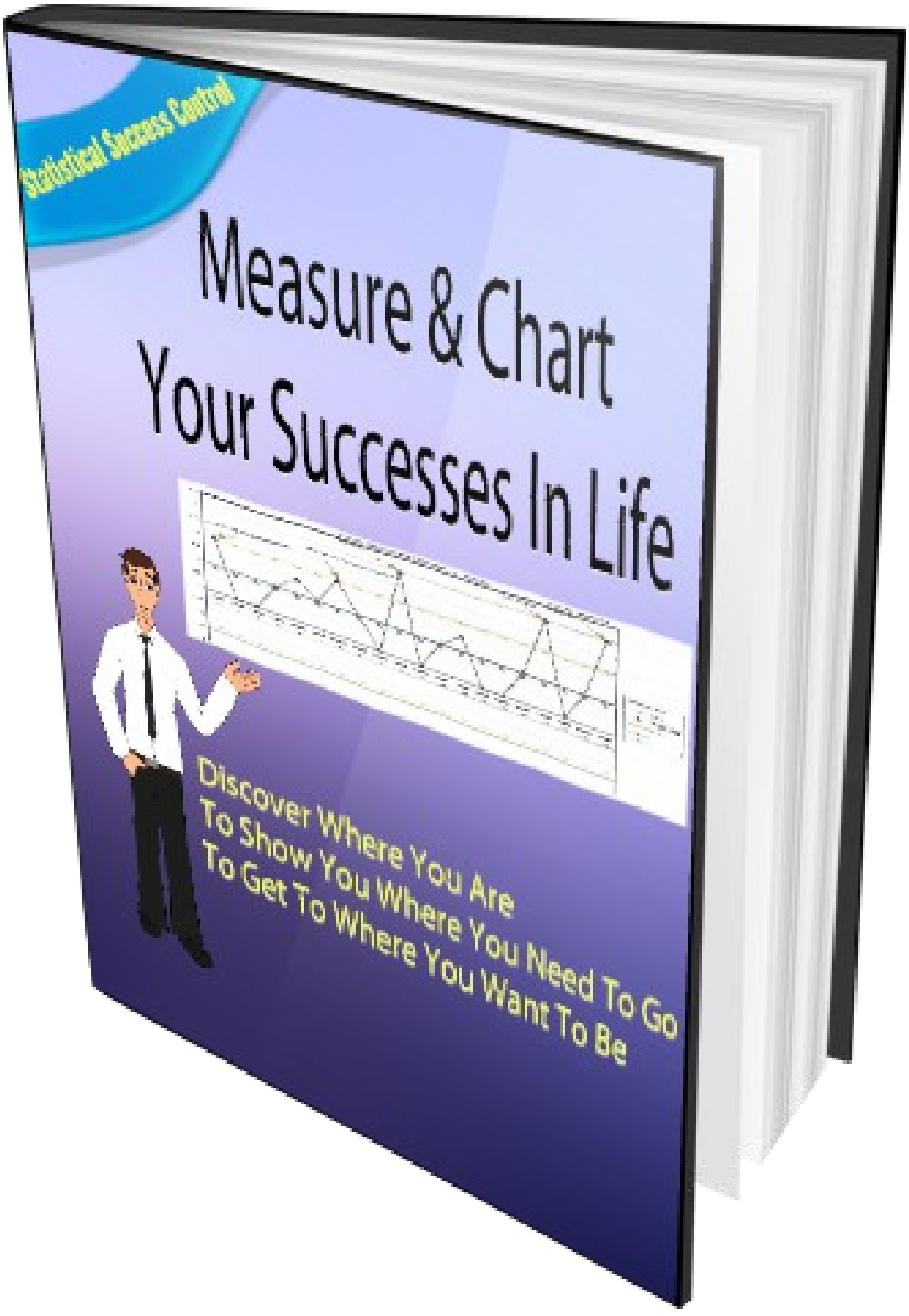
Statistical Success Control
Measure & Chart
Your Successes In Life
Discover Where You Are
To Show You Where You Need To Go
To Get To Where You Want To Be

Measure & Chart
Your Successes In Life

Discover Where You Are
To Show You Where You Need To Go
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In Your Life
In Your Career

Joe Jackson

Free Spirit Enterprises LLC
Life'sSuccess.com

About the author

Joe Jackson

I retired from my first career in quality avionics electronic manufacturing at age 46. That’s much too young to quit working. (Though I don't view what I'm doing now as work.)

I decided to pass on my experiences to help others find success and happiness in their lives. That's why I created, and manage, Free Spirit Enterprises LLC. I write about those experiences, and new adventures as I travel the country camping, sightseeing, scuba diving, and kayaking.

Enjoy my offerings, and if you see me somewhere in this beautiful country of ours please introduce yourself.

My main business website for Free Spirit Enterprises LLC:

http://www.freespiritenterprisesllc.com (most of my products showcased here)

Measure Your Successes In Life

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Sight In On Your Desired Result

Designing a plan for your life, establishing and writing down the goals you wish to accomplish, and identifying all the steps to take you toward that accomplishment is crucial if you want to find success in your future.

You waste all the work and time you spend on your planning if you don't take action on those steps you've determined necessary to carry you forward.

But sometimes the little details consume us, and we lose sight of the big picture.

One technique that helps us keep the end visible is statistical process control (SPC). It's a method for measuring, charting, and tracking the process to make sure everything works according to our plan.

In this report, I'll show you three basic SPC procedures that I use, with just a quick look, to see if I'm on track to where I want to go. And I'll give you a personal example.

First Picture: The Cause - The Effect

I'll show you the Fishbone and Pareto diagrams; they are two SPC methods that help you establish priorities for the project you plan.

Then I'll show you how to use a simple control chart to keep track of a project from beginning to end (use these same SPC tools for tracking the project that is your life).

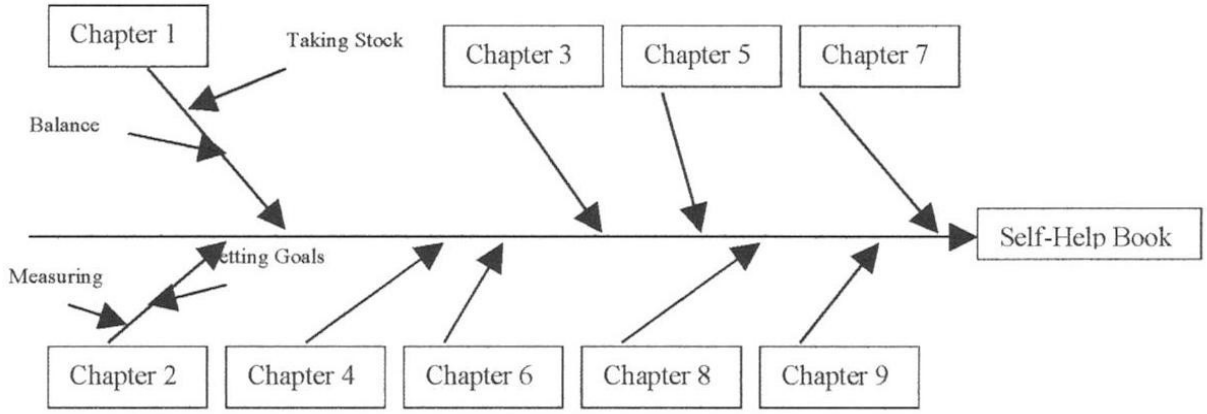
SPC techniques work for any life activity you design. Including your personal life, or building a business. To illustrate this method I'll show you my SPC activities for writing a self-help book.

I started with an outline of the topics I wanted to cover, and then created a Fishbone Diagram (also called a Cause and Effect Diagram) to give myself a quick look at my intended goal.

Measure Your Successes In Life

Keeping a printout of the fishbone, and checking off each item as I completed it, I see the "big picture" view of my book-writing project.

My Fishbone Diagram:



As you see, this isn't the complete diagram. I'm giving you an example of the first two chapters here for illustration.

Looking at the Chapter 1 & 2 lines showed me what subjects I wanted to write about, but it didn't show the order in which to cover those subjects in those chapters. My next step was to decide that order. I wanted a reference that showed me with a quick look what was next in line for my attention.

Second Picture: Priorities

For that I assigned numbers to each subject to indicate the order of importance… the higher the number the earlier that subject appears in the book.

I placed the subjects in a Pareto Diagram to give myself that quick look reference.

We use the Pareto Principle to see what area to develop first. It's also called the 80/20 Rule and it states:

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"20% of your activities account for 80% of the value.
80% of your activities account for 20% of the value."

It means that only 20% of the efforts you perform have anything to do with 80% of the positive results. And 80% of everything you do effects no more than 20% of what happens.

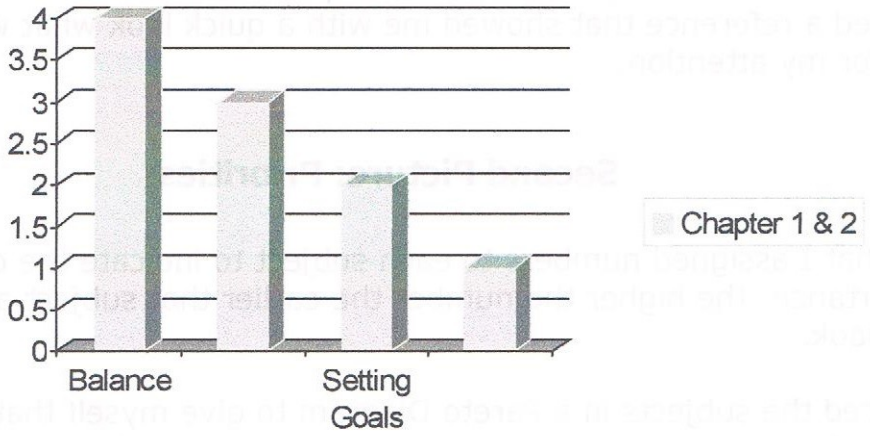
When applied to my book-writing goal, it means that only 20% of those areas – or the areas of most importance – have the greatest amount of impact on value of the finished product, when you improve the quality of those areas.

So I worked on writing the subjects of highest value to achieve the best effects to the quality of my book.

Create a Pareto Diagram for your life by asking yourself, "What one area of my life do I value more than any other? What one area of my life, that concentration and application toward improvement, would give me the biggest benefit - the greatest feeling of success, happiness and comfort?"

Then make a Pareto Diagram of the Fishbone areas in order of importance to you.

Here's how my book writing Pareto Diagram for chapters one & two came out:



Now I need only look at my Pareto Diagram to see what subject I write about next. As I completed each subject I simply drew a line through that subject title on the chart, wrote VICTORY next to it and gave myself a little reward for

reaching that particular mini-goal (or task).

I found that when I reward myself for completing a goal I'm more interested in getting started on the next goal. It helps to place those rewards in your plan right behind each goal so each time you review your plan you see the reward that awaits, and you have even more reason to go after that goal.

Make your rewards small for completion of the mini-goals (a cup of coffee or chocolate, a glass of wine, or a sweet of some sort), and large for reaching the major goals (a weekend away, a cruise, or a new car). The idea is to give you some extra motivation to help keep you moving toward creation of the bigger picture you have in mind.

I had my Pareto Diagram. My next step: measure my progress and make sure that the process of writing my book stayed in control.

Third Picture: The Big Picture

When you're ready to start tracking your successes to see your overall progress at-a-glance, look at the process, determine the desired results, and convert each step toward those results into a value of measurement.

I chose an average and range-charting technique called an XbarR Chart for my book-writing project, and used it to measure the variables in my process. I use the term "variable" in respect to tracking a measurement that changes in value.

My overall goal was "write a book to teach people how to quickly and easily see their life's progress, and how well they're doing, by measuring and tracking the process of pursuing their goals in a way that would alert them if they got off track."

Working backward from that I decided what major subjects I wanted to include in that book, how many chapters I needed, and what minor subjects to cover in each chapter.

Initially this effort indicated my book would consist of nine chapters.

Measure Your Successes In Life

I placed a deadline of one year on the overall goal and that gave me a 1.3-month deadline for each chapter. I decided on a two-hour writing process for each day, three days each week (Monday, Tuesday and Wednesday).

The XbarR Chart gave me a tool that showed the "in control/out of control" status of my writing process.

Plotting the information that applied to that process required designating a unit of measurement. When working with variables you use units that you express by a number.

I track all the time spent on a project in a "time log" as a data reference for my SPC efforts. In that log, I write down the date, the type of activity, the start time, the end time, and then I log the number of minutes as a total.

I made "number of minutes" my unit of measurement for the chart. My sample size was the number of minutes in one day, which gave me three samples each week and I plotted my chart by placing a plot point for each week of the project.

The plot point is the average of the three samples each week.

Then I needed to calculate my upper control limit (UCL) and my lower control limit (LCL). When a plot point appears outside of the control limits on a chart you know that your process has a problem that needs attention at that particular time. Identify what action caused the process to go out of control and change the nature of the action to get back into control.

The formulas for control limits on an XbarR Chart are:

For Range:

UCL_R = D_4 times Average Range
LCL_R = 0 when sample size is 6 or less

For Average:

$UCL_{Averages}$ = Overall Mean plus (A_2 times Average Range)
$LCL_{Averages}$ = Overall Mean minus (A_2 times Average Range)

Overall Mean = the average of the sample averages

D_4 and A_2 are factors for determining control limits. They appear on the average and range chart form. Get a copy from:

The American Society for Quality Control (ASQC)
P.O. Box 3066
Milwaukee, Wisconsin 53201-3066

Or, check your phone book for a local quality counsel office.

Plugging my data into the formulas gave me the following results:

UCL_R = D_4 times Average Range
= 2.574 times 83.66667
= 215.358

LCL_R = 0 as sample size per week is 3

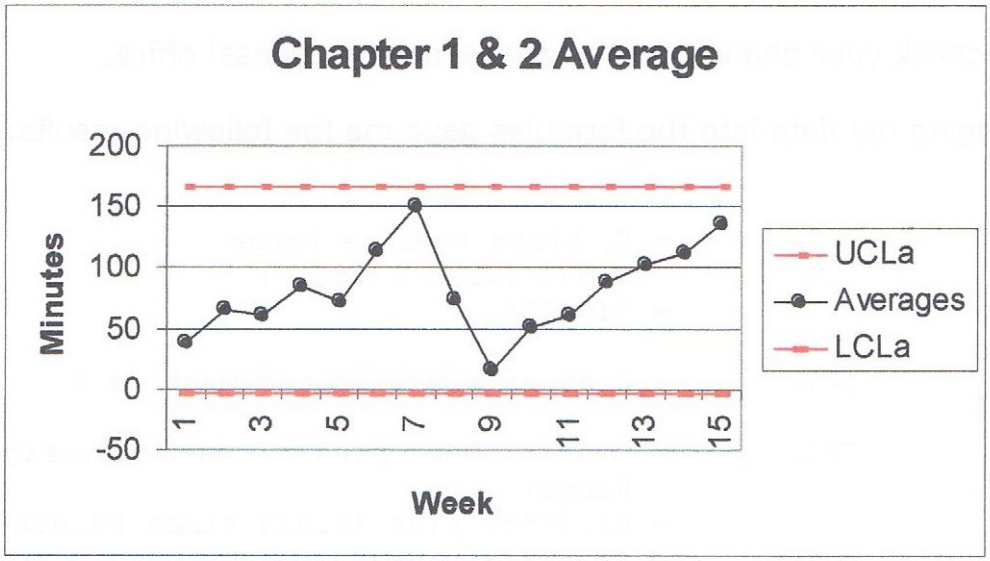
$UCL_{Averages}$ = Overall Mean plus (A_2 times Average Range)
= 81.48889 plus (1.023 times 83.66667)
= 81.48889 plus 85.591003
= 167.07989

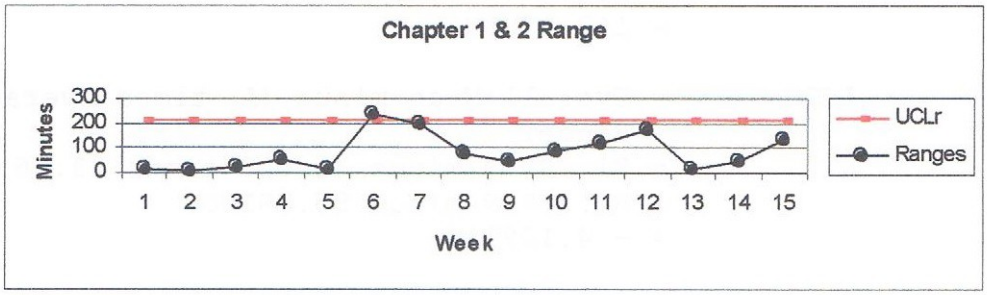
$LCL_{Averages}$ = Overall Mean minus (A_2 times Average Range)
= 81.48889 minus (1.023 times 83.66667)
= 81.48889 minus 85.591003
= - 4.102113

When your plot points fall within the control limits, consider your process "in statistical control."

When plot points fall outside of the control limits, consider your process "not in statistical control."

When I plotted my data onto a chart, I got this result as shown on the next page:





Note that the average chart shows the process in control while on the range chart one data point is above the upper control limit (or out of statistical control).

Ranges are calculated first and, when they prove to be out of control, calculating and plotting the averages is usually a waste of time. Most often an out of control range situation indicates an out of control condition for the averages too.

That takes more than one or two out of control range points though and common practice dictates that when one or two range points are outside control limits you throw them out and the calculations get redone without them.

I keep them in because even a stray point gives me information, and it gives you a better example here.

On looking at the outcome I realized that the XbarR Chart told me that if I spent zero time on the project I had an in-control process, while spending five hours on the project (an effort that I would consider a positive activity) put my process out-of-control.

Make Sure You Have The Right Tools

That told me the XbarR Chart wouldn't work for my SPC needs.

I worked up an attribute chart for the time I didn't spend working on the project during that two hours those three days each week. We use an attribute in terms of go or no go, good or bad, as a quantity rather than a variation in value.

I went back to my time log and subtracted the number of minutes spent each day from 120 minutes. The result became my number of defects for an attribute C-Chart.

The C-Chart is a method of depicting the "in-control/out-of-control" status of attributes.

Using the data based on three days each week my sample became the number of defects for each day. I added them together and got the total number of minutes I failed to work on the project each week.

Then I figured out my UCL and LCL. Also, for an attribute C-Chart you need a plot line for the average number of the defects. Here are my calculations:

Average number of defects	=	total defects divided by number of samples
	=	2133 ÷ 15
	=	142.2

The control limit formulas are different for attribute charts:

UCL_c	=	average defects plus three times the square root of the average defects
	=	142.2 plus 3 times 11.924764
	=	142.2 plus 35.774292
	=	177.97429

LCL_c = average defects minus three times the square root of the average defects

= 142.2 minus 3 times 11.924764
= 142.2 minus 35.774292
= 106.42571

I put it all on my C-Chart and found out that:

My process was all over the place!

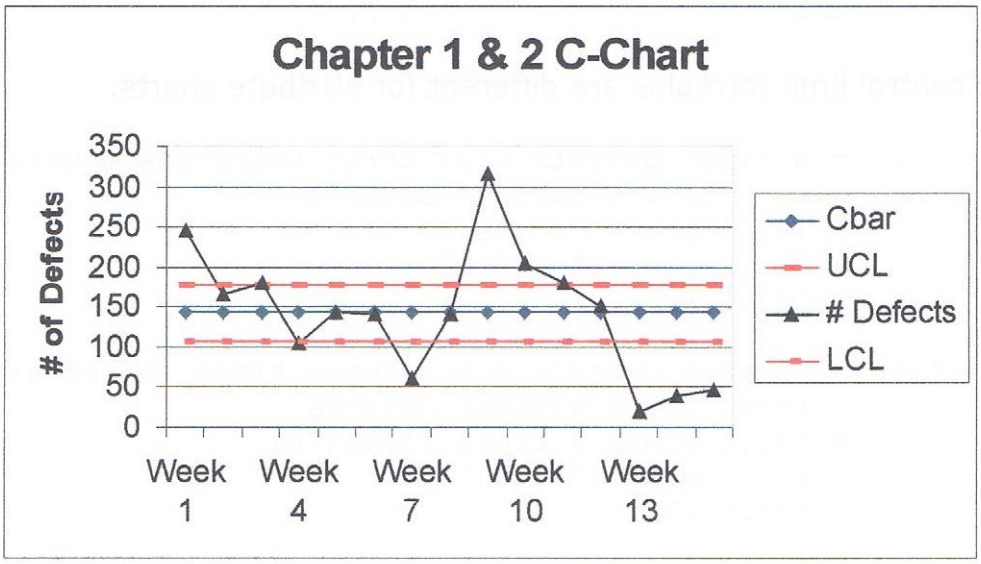
Then I calmed down and took a closer look at the chart to figure out just what this erratic activity meant.

First, note that 15 plot points appear on the chart. Obviously, I blew the control of the process by the fact that I took over 1.3 months for the first chapter alone. My C-Chart also shows that I didn't apply myself to working two hours a day either.

These SPC efforts illustrated that I needed to make some changes in my activity.

One possible cause for my out-of-control process might be that my mini-goal of two hours a day, three days a week, for 1.3 months per chapter, was too optimistic. The reason for that might be that my research efforts took longer than I expected.

Another potential cause might be that I was just plain being lazy and got a slow start on the project.



By charting my activities I knew, with a quick look at the chart, that something wasn't working right. Once I saw that, I sought out the root cause of the problem.

(When you face a problem always seek out the root cause. If you only fix the symptoms you're just putting a temporary pause on the situation. The problem's still there – and it'll come back to haunt you.)

Make Sure Your Goals Are Realistic

I found that I wasn't applying myself to the project as I'd planned and decided I needed a different schedule. I realized that I required an adjustment to my goals.

Tracking my project by the amount of time spent on it seemed unmanageable to me. So I changed my goal of completing one chapter each 1.3-months to one chapter completed each month, and started looking at that goal in terms of number of pages, instead of number of minutes, for each chapter.

I figured an average of ten pages would be about right for each chapter.

Next, I divided ten pages into the number of pages I'd need to write each week. I gave myself three weeks to write each chapter, and one week to organize and do a quick edit of the content. I stuck to my original goal of Monday, Tuesday and

Wednesday each week. That gave me a weekly goal of three-and-a-third pages. My new daily goal was "write each day until I completed at least one full page."

I know from experience that when I finish a page I'm usually on a roll and have too much in my head to stop. I expected that three-and-a-third pages was a conservative number.

Having identified the root cause for my out-of-control condition, I restated my goal to reflect the new tracking data of "number of pages," and one chapter per month, as a fix. Then I got on with the project.

How did the new schedule work out?

I stated that I decided on the following plan for writing this book:

> I set my writing goal as completing one chapter each month and looked at that goal in terms of number of pages for each chapter. I figured ten pages would be about right.
>
> Next, I divided the ten pages into the number of pages I'd need to write each week. I gave myself three weeks to write each chapter, and one-week to organize and do a quick edit of the content. I kept my original goal of writing on Monday, Tuesday and Wednesday each week. That gave me a weekly goal of three-and-a-third pages. My new daily goal was "write each day until I completed at least one full page."
>
> I added an entry to my "time log" to reflect "number of pages written" and started tracking that measurement of progress for Monday, Tuesday and Wednesday in the first three weeks of each month.

My original goal was "start chapter four in January and finish the book in August." That goal (and my starting outline) called for nine chapters.

My planned chapter six became chapters six and seven; my planned chapter nine became chapters 9 and 10, because planned material for those chapters demanded its own space.

I also added a chapter for a subject I didn't plan to write about, because I decided I needed to include that subject.

The three new chapters stretched my completion date out to the end of November. Fortunately, I had files where I wrote some of the material at an earlier time so I copied, pasted and organized. By doing that I accelerated my process and actually finished the book that July.

Since my C-chart only represents defectives, finishing a chapter before the scheduled deadline didn't throw my process out-of-control because writing more than one page in a day was a positive progress measurement. When I completed at least one page on any of the scheduled writing days I had no defect, if I completed only half-a-page, I had .5 defect, and 0 pages on one of the scheduled writing days created 1 defect.

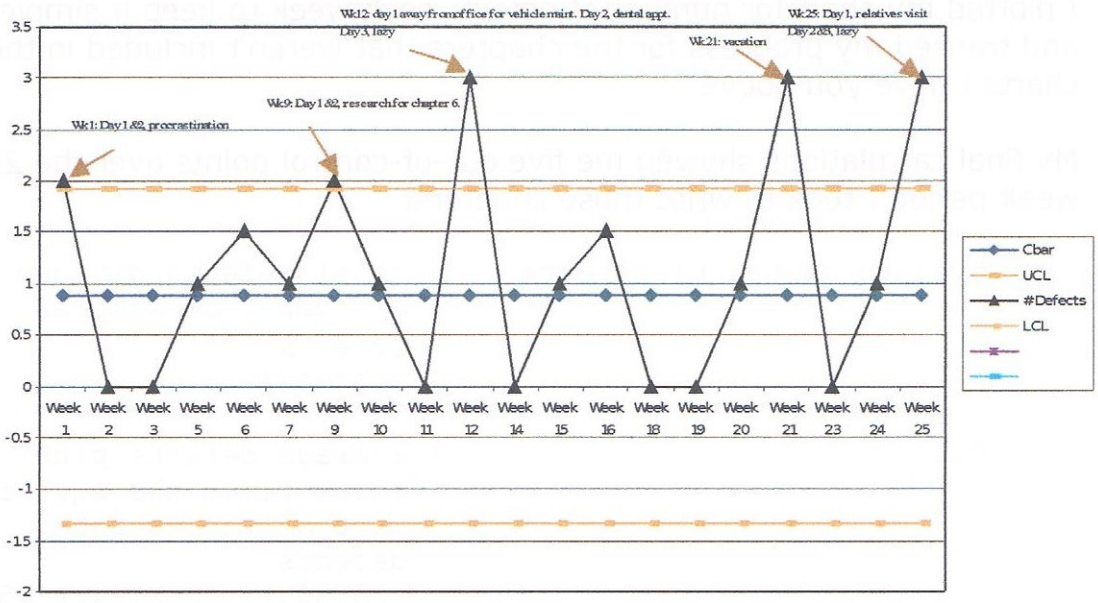
I plotted my chart for number of defects each week to keep it simple and tracked my progress for the chapters that weren't included in the charts I gave you above.

My final calculations showed me five out-of-control points over the 25-week period I took to write those chapters:

Average number of defects	=	total defects divided by number of samples
	=	22 ÷ 75
	=	.2933333
UCL	=	average defects plus three times the square root of the average defects
	=	.2933333 + 3 X.5416025
	=	.2933333 + 1.6248075
	=	1.9181408

```
LCL                          =    average defects minus three
                                  times the square root of the
                                  average defects
                             =    .2933333 - 3 X .5416025
                             =    .2933333 - 1.6248075
                             =    -1.3314742
```

The chart for Chapters 4 – 12 looks like this:



I checked the out-of-control points and found these reasons why each happened:

```
Week One – On the first and second days I
procrastinated and didn't get any writing done.

Week Nine - Days 1 & 2 I did research for chapter
6 and wrote nothing.

Week 12 – On day one I was out of the office for
vehicle maintenance. On day two I was away from
the office for a dental appointment. On day three
I was just plain lazy.

Week 21 – I took a vacation.
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```
Week 25 – I took day one off because relatives
were visiting. On days two and three, I was lazy
again.
```

One thing you'll realize when you track each project with SPC method charting is that you tend to procrastinate less; and you normally concentrate on each current task more intently. Your fascination at how the process chart shapes up, and your desire to keep that chart's indicators in control provide the motivation to follow your original plan.

As you enter your plot points for each day of activity, you see immediate evidence of how successfully you're moving toward your goal. Once you form the habit of charting each day's progress, the action becomes an important and urgent task. You'll look forward to seeing the new addition to your chart at the end of each day.

SPC – A Systematic Approach For Your Use

SPC is one systematic approach you have for measuring the process of your life.

Establishing your goals so you work toward a life of balance, educating yourself toward the realization of those goals, developing your philosophy, growing your skills for communication, relationships and leadership, nurturing your creativity, and getting into the habit of being stubborn toward moving forward when you need, are also tools you'll want to use if you're serious about personal success.

But the most important tool you have in your life's measurement and auditing work shed is the question.

Ask the "what do I want" questions to first determine your goals. Ask the "what do I need to do" questions to plan the path to reaching your goals. Ask the "how am I doing" and "do I need to make any changes" and "what changes do I need to make" questions as you walk your path.

In order to evaluate your progress and help yourself keep accurate charts, use the following questions, and schedule reviews of the questions and answers periodically as works best for you:

- Am I keeping my charts current?

Measure Your Successes In Life

- Are my charting techniques working well enough to alert me of problems?
- Do I need to adapt new charting techniques?
- During the recent review period, did any data, that I wasn't tracking and charting, become important enough that I should add that information as a data point?
- Am I keeping notes that describe specifically what problems I encounter, along with their solutions, for reference when similar problems pop up in the future?
- Did I achieve my scheduled tasks during this period?
- Did I see those tasks to full completion, or did I leave some tasks unfinished?
- Did I reach my goal on or before the scheduled date?
- Am I totally satisfied with my progress?
- Is my plan still valid?
- How are my measuring and charting techniques working for me?
- Do I need to make any changes to the way I track my progress?
- Do my charts show that, if I continue at my present pace, I will keep up with my plan?
- Are my record-keeping habits working?
- Do they make sense?
- Do I need to re-evaluate my record-keeping habits?
- Do I need to shorten my deadlines?
- Do I need to extend any deadlines?
- Have I thought of any new tasks that I need to add to my plan?
- Do I still want to work this plan, should I adjust this plan, or do I want to create a new plan for my life?
- Are there new goals that I want to add to my plan?
- Am I close enough to achieving any goal that I need to start planning beyond that goal?
- Do my charts show any out-of-control process?
- If one of my processes is out-of-control, what am I going to do about it?

SPC is a tool in the auditing process, and it's a very valuable tool.

When you adapt these SPC techniques to your life's process, you'll have physical charts that show you at-a-glance how on track your efforts are to creating a life

of quality.

In my youth I spent more time mapping my vacations than planning my life. I'll never know what success levels I missed because I failed to document my visions. Finally I found mentors who guided me into better habits.

The road maps I created for vacations didn't represent the easy routes.

I've always enjoyed sightseeing, and my favorite trips involve erratic courses, not from home to destination, but from point-of-interest to point-of-interest.

You'll find your life takes an erratic path too. Your road ahead isn't easy, but if you learn from the mistakes of those who traveled before, you'll find the turns not so sharp, the roadblocks not so abundant and large, and the potholes not so deep.

Make your first objective *always* the expansion of your mind. The most valuable investment in yourself is growing your knowledge.

I wrote "Measure Your Success In Life" to help you start living your desires. I trust you'll find value in my experiences.

Additional Resources

This report, Measure Your Successes In Life, is an excerpt from my book, Life Is A Process And The Process Is Measurable. If you want to read it you can find it here:

Life Is A Process

Do you need leads for your product or opportunity offer? I've discovered a way to get 100 to 200 leads every single day.

Not only that but I belong to a unique group of entrepreneurs who take their leads and turn them into success using marketing tools and lead conversion techniques to magnify those conversion activities – AND that group of entrepreneurs *share* the tools and techniques that work with the rest of the group.

Care to learn how you can get in on this?

Check it out at the link below:

Lead Generation On Steroids

I wish you happiness, and success in everything you go for in life.
Joe Jackson, joe@discoverhowtoworkfromhome.biz