Winter 1996

February 1996

Stat Teaser

The Stat-Ease Corporation Newsletter

Coming Soon...

Experiment Design Made Easy workshops

March 26-29, Raleigh NC
May 21-24, Minneapolis MN
July 23-26, Cincinnati OH
Sept 17-20, Minneapolis MN
Oct 29-Nov 1, Philadelphia

Response Surface Methods for Process Optimization

April 23-26, Minneapolis MN
July 9-12, Philadelphia PA
Oct 8-11, Minneapolis MN

Mixture Design for Optimal Formulations

June 11-14, Minneapolis MN
Oct 8-11, Minneapolis MN

Advanced DOE & Robust Design

July 16-18, Minneapolis MN

Attendance is limited to 24 attendees. To reserve your place, please call Carol Summer at:
800-325-9807 ext 18

Our new book is *big* help.

Remember filling out an evaluation form at the end of your Experimental Design Made Easy workshop? A frequent request from you was if we had refresher notes. Did we? No. Do we? YES!

What's so great about it? For starters, a FREE time-limited DESIGN-EASE® disk is included.

Each annotated instructor's page lies opposite the corresponding page from the student manual. This format was chosen to help remind and refresh the reader. It's almost like being in the workshop again. Only instead of overheads, you have hard-copy pages.

The 600-page soft-cover book shows you notes normally available only to Stat-Ease Corporation instructors.

Here's how some of our clients are using the notes:

For grads of the Experimental Design Made Easy workshop:

- Review answers not given in class.
- Refer at will to "transcript" of instructor comments.

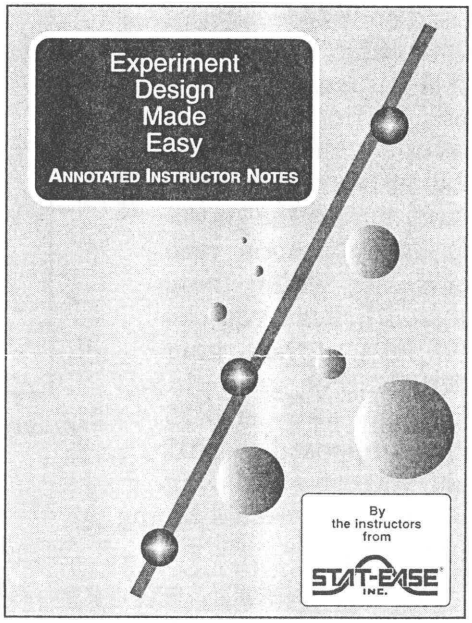
For users of DESIGN-EASE®:

- Use as a reference to augment software manual and online help.
- Use as a self-study workbook. Do case studies and simulations.

For others:

- Use as a self-study workbook.
- Do case-studies and simulations.

As you glean information from the book, call us if you need help, but



please keep in mind that the book isn't a substitute for the workshop.

Many of you will want to attend the workshop in person. To help, we offer $100 off the workshop when you purchase the book for $195. Current users or grads pay only $95.

To request your value-packed copy, fill out the mini-form below or call us at **1-800-325-9807**.

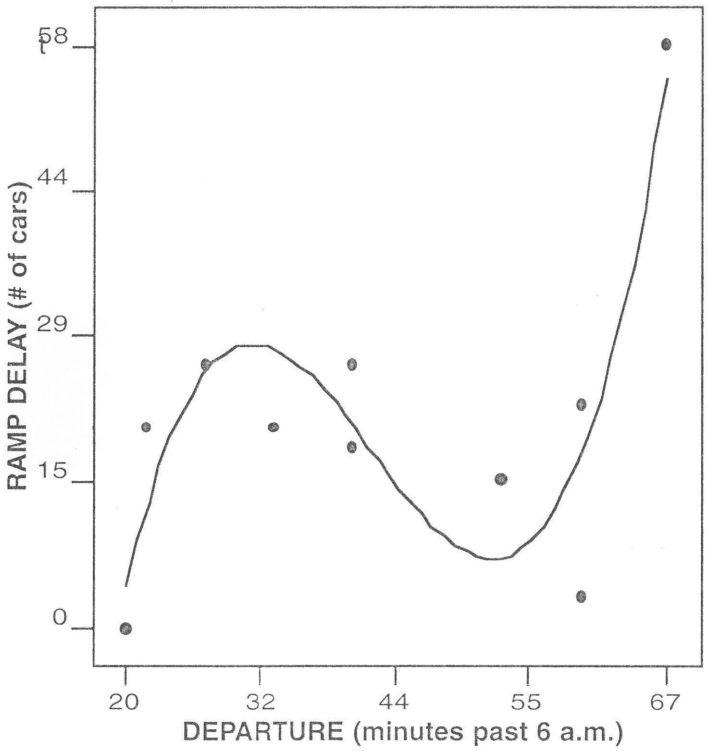
Less Time in Traffic: Part Two

A recent editorial in *Quality Engineering*, a fine journal published by American Society of Quality Control, laments the increasing pressures of time — to get products to market, to solve problems, to get news from the media, and so on. I decided to take control of my time via the tools of DOE. My objective: reduce the duration of my daily commute. In Part 1, I used a one-way analysis of variance to find the best route from four alternatives. In Part 2, I use response surface methods (RSM) to determine the optimum time of departure.

Based on two decades of commuting around the Twin Cities, I believe that traffic comes in waves within waves. Obviously there are big waves during the morning and afternoon rush hours, but within these surges I believe you can find lulls at half hour intervals. For example, if you get away at 4:55 p.m. as opposed to 5:05 p.m., you can avoid a big rush of shift-workers hitting the roads at 5 p.m.

I "told" my DESIGN-EXPERT software to give me departure times between 6:20 a.m. and 7:00 a.m. (coded as 20 to 60) in a way that would fit a cubic equation. I hoped to find a trough in the hypothesized waves of traffic.

The program showed 10 runs, including 3 sets of repeats for measurement of pure error. I clocked my times for each run and also counted the cars lined up in the metered ramp. (See Part 1 for background on this ramp, which became a trap after the *#%! highway engineers installed a metering light.)



As you can see in the figure, I found the expected waviness in the lineup of cars at the metered ramp. There is a definite lull just before 7 a.m. (Due to a faulty alarm clock, I left late once, hence the data point beyond the 60 minute mark.)

Unfortunately, overall travel time followed a monotonic curve through my departure window. Savings due to fewer cars in the ramp were lost to congestion on the main road.

Based on this data, I now try to leave before 6:20 a.m. In fact, I found that if I leave at 6:19 a.m., I get to the ramp before the meter light begins. I expect that after reading this, our clients in the Minnesota Department of Transportation (MN-DOT) will make the needed adjustments to slow me down again. They're driving me crazy!

I'll just have to keep doing DOE to stay one jump ahead of them. If anyone asks me what I'm doing with the data sheet and stop watch, I'll say MN DOT is making me drive crazy!

— Mark J. Anderson

No Workshop Near You? Unable to Travel? Read this! ➡

Small groups of experimenters throughout the nation want to attend our workshops. Because of internal travel restrictions or very tight budgets, they can't travel to our "public" courses.

These groups are looking for others like them so they can bring our workshops to their areas. We're acting as a clearinghouse for names, areas, and courses. Call Leslie at 800-325-9807 ext. 19 to get on our clearinghouse list.