Preface

In order to become proficient in any branch of technology, the knowledge required will have certain building blocks in its foundation. For students aspiring to become knowledgeable in process control, one of the important blocks is mathematics. As such, any student who is striving for the certification necessary to enter the process control field can expect to be subjected to one or more courses in mathematics.

Unfortunately, courses in mathematics tend to be taught by instructors whose mathematical minds are far above those of their students. The same applies to the authors of the textbooks which are dutifully purchased as an adjunct to the class room teaching. What this can mean then, is that courses in mathematics which are intended to lead to a knowledge of process control, can instead become an obstacle to success. The math course has to be passed, after all.

When I was striving to comprehend control theory, I had trouble with the math personally, not so much because it was to deep for me, but because of the way that it was presented. There were just too many gaps in the explanation. Consequently, in this text I have tried to present the mathematical concepts in the way that I wish they had been laid out for me.

In my own mind, I have an admiration and respect for mathematics, because mathematics is basically an exercise in thinking logically. Rules in mathematics are always hard and fast. From my personal observations of the way that many process control situations are dealt with in industry, it is unlikely that there is any branch of technology that is more in need of logical thinking.

I confess, at the outset, that I am in no way an authority on mathematics. My knowledge of mathematics really doesn't go one centimetre beyond what this book covers. In fact, if it were not for a wonderful stroke of luck in which I came into contact with Mrs. Florica Pascal, I would not have been able to complete this text. A superior mathematician in her own right, Mrs. Pascal reviewed chapters, corrected mistakes, and showed me how to solve problems which were beyond my humble capabilities.

All of this means that this text on mathematics was written not by an expert, but by an engineer who has to see, and understand, each step in the development of a mathematical entity. The way the text is written more or less bears this out. An accomplished mathematician will likely find it trivial or boring. But to the student of process control who has to get through the math course which the curriculum requires, it may just prove to be helpful. And, if whatever help was provided carries on into the on-the-job phase, so much the better.

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