

# The planning and performance of groups of elevators

## Foreword by the author

The optimal performance of groups of elevators under all traffic conditions is an old problem and appears to be an unsolvable puzzle. Somehow I always had a feeling that I could solve this puzzle. During my years in elevator contracting I was busy and did not have the time nor the peace of mind to concentrate on the theoretical performance potential of groups. Fortunately I could retire early and my other hobbies, sailing, tennis, chess, left enough time for study.

I started my study of the performance of traditional groups with Lotus123. I was shocked when I noticed that a traditional 6-car group with small cars delivers far better performance and fits in the same space as the common 4-car groups with large cars. The 6-car groups are more expensive but better performance and their space- and energy savings would have made these configurations very attractive. Unfortunately I was not aware of this potential 40 years ago.

At that moment I did not yet realize that I had discovered the inherent relativity of group service qualities. However, my early Comparative Performance Tables undeniably proved the relativity of the configuration and the service qualities of traditional, i.e. re-active non-intelligent, groups. After this discovery I started to write this book although I did not yet have a solution for applying relativity in destination group controls. This was a more difficult problem. The breakthrough happened when I designed the "selected floors" patterns that enable the mathematical evaluation of the performance of groups with destination controls.

My book tells the story of this project. A book like this is never finished or perfect. If I had the time to write it again it probably would be much shorter. More like the article with the same title as the book. However, writing the book gave me the insights for the logical explanations presented in the article. The comparison of paternoster elevators with modern high speed groups is probably the briefest explanation of the relativity of group service qualities and the role of group controls.

An earlier version of my book was integrated in a US patent application. I was optimistic that the elevator industry would adopt the relativity of group service qualities and develop intelligent destination group controls. This has not yet happened. Will market demand for efficient configurations and better service qualities make this happen?

I have been a promoter of destination controls since meeting its inventor Mr. Leo Weiser Port in 1975. For more details please refer to Chapter 4. The discovery of the relativity of group service qualities and its application with today's technology and the systems described in this book will enable to fully realize his concepts.

Sincerely,  
Pieter J. de Groot,  
Meggen, Switzerland.