Introduction to the PhORS articles
By Brian Beckman

"I started this series in 1991 for my local racing club's printed newsletter. The web had just been born, though the Internet was not yet public. Nonetheless, I distributed the articles over the Internet at that time and they become reasonably well known, especially amongst the autocrossing community in the US. The first 13 parts were written in 1991, so they contain some very dated ideas, such as using Scheme for writing simulations. However, the entire series is presented here, as originally written. Perhaps at some later time I will consolidate and update the series, but for now, I am focusing on writing new parts. There are currently a number of 'live threads' in the discussion that I wish to pursue at length.

My overall goal with the series is to present a fresh outlook on racing physics, understandable to the technically inclined non-specialist. The problems I consider come from a variety of sources. Often, they're motivated by computer simulation, and just as often they arise from competition experiences. Some of the later articles get very technical, but I always try to balance conceptual discussion, which everyone should be able to understand, with mathematical analysis, which might of interest only to specialists, and with numerical results, which, again, should be universally accessible.

When I first started the series, I purposely avoided the standard reference sources, preferring to figure things out myself from first principles. In the past ten years, a number of superior source books, papers, and programs have become available, and it is no longer sensible for me to avoid them. I've had my fun, now it is time to 'get real.' So, in the later articles, I refer to the well known books by Milliken, Gillespie, Genta, and Carroll Smith; as well as to free simulation packages such as RARS, TORCS, and Racer.

There is a tremendous amount of activity in racing simulation nowadays that computer hardware is fast enough to permit extremely detailed modelling of

racing cars in real time. The realism of Grand-Prix Legends, for instance, was unimaginable in real time in 1991. Despite this growth, I continue to hope that the Physics of Racing series can fulfil its original dual roles of translating racing lore and craft into hardcore physics and of making that physics understandable to real-world working race drivers and teams.