Lubrication Fundamentals – and Practicalities

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I am delighted to see this revised and expanded Third Edition of Lubrication Fundamentals. I remember fondly George Wills' first edition that, in the early 1980s, was invaluable in extending my knowledge of how lubricants are used in practice and thereby helped me refine my first undergraduate tribology teaching course. This new edition should prove equally valuable to our young and upcoming tribologists, in both academia and industry.

Although Lubrication Fundamentals emanated from Mobil and has always been authored by members of that company and its successor, the book's main thrust is not so much lubricants themselves, although these are quite adequately covered, but rather the roles and requirements of lubricants in all types of machine component. I believe its particular utility lies in the fact that it does span both lubricant and machine, so the engineer can read about lubricants and their properties and specification, while the lubricant chemist is provided with a clear description of machine components such as pumps, valves, engines and compressors, how they work and the demands they put upon lubricants.

This new edition covers all of the topics of previous editions, suitably modernised and expanded. The first six chapters describe lubricants, their history, mineral oil production, additives and tests, greases, synthetics and environmental lubricants. These are followed by seventeen chapters that describe the design and lubrication of different types of machine and machine component as well as the practical aspects of handling, supplying and conserving lubricants. This edition also has several useful and important additions, in particular a new chapter on the contribution of lubricants to energy efficiency, one on wind turbines and a final chapter on in-service lubricant analysis. These chapters reflect strongly our changing expectations in the quest for sustainability.

In summary, this is an intensely practical and thorough reference resource, both for those involved in the practical side of lubricants and lubrication such as designers, lubricant salespersons and service engineers, and also for researchers who should know more about lubricants and lubricated machines. I heartily recommend it.

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