



## *Performance at the Limit*

The world of Formula 1<sup>®</sup> is a powerful mirror to the world of management, where high performance relies on strong leadership, clear goals, selfless teamwork, innovation through constant learning and a winning culture. *Performance at the Limit: Business Lessons from Formula 1<sup>®</sup> Motor Racing* uses the case of Formula 1<sup>®</sup> to demonstrate how businesses can achieve optimal performance in highly competitive and dynamic environments. This third edition has been extensively updated, including a powerful new framework, the Performance Pyramid, recent interviews with leading figures in the industry and a wide range of lessons for improved business practice. It is an invaluable guide for managers and students of business alike.

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# Performance at the Limit

Business Lessons from Formula 1<sup>®</sup> Motor Racing

Third Edition

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CAMBRIDGE  
UNIVERSITY PRESS

## CAMBRIDGE UNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning and research at the highest international levels of excellence.

[www.cambridge.org](http://www.cambridge.org)

Information on this title: [www.cambridge.org/9781107136120](http://www.cambridge.org/9781107136120)

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First edition published 2005

Second edition 2009

Reprinted 2012

Third edition 2016

*A catalogue record for this publication is available from the British Library*

ISBN 978-1-107-13612-0 Hardback

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## *Foreword*

As a three-time World Champion driver, founder of two international airlines and non-executive Chairman of the Mercedes Formula One Team since late 2012, I have experienced many challenges in my life, but nothing is as exciting and relentlessly demanding as keeping a focus on winning in the ultra-competitive world of Formula One. It is not just a sport but also a business. The teams must always be at the top of their game because if their competitiveness is compromised, so is their commercial success.

This book looks deep inside the world of Formula One and provides the reader with a frank and uncompromising look at what it takes for a Formula One team to maintain its competitive position. Many of these lessons are relevant to businesses that want to develop and maintain their edge in the global marketplace.

This is the third edition that the authors have produced and, through their knowledge and access to the sport's principal players, leaders, suppliers and commercial partners, they have found further insights into what it takes to attain and, very importantly, maintain a competitive position, both on the track and in the business world today.

**NIKI LAUDA**

*Non-Executive Chairman  
Mercedes AMG Petronas Formula One Team*

## *Acknowledgements*

Having now published editions in English and Japanese in 2005 and 2009, and in 2011 as a special South Asian edition, it is our sincere wish to thank all of the people who have contributed to those earlier books and who once again have added their latest insights into the business world of Formula 1 Motor Racing, along with a number of new highly influential individuals whose contributions we are most grateful for.

Formula 1, both as a sport and as a business, requires huge commitment and unrelenting efforts from all involved. Despite these pressures, everyone we have spoken to has given freely their time, experience and knowledge, and for this we thank them one and all.

We trust that the reader will bear with us in recognising people by name, as without their time and contributions the previous editions of *Performance at the Limit* and this latest book would never have been written.

Firstly, and without whom our research and interviews could not have been undertaken so thoroughly, our sincere thanks go to Formula 1 supremo Bernie Ecclestone for allowing us unrestricted access to Round 11 of the FIA Formula 1 World Championship, the 2015 Formula 1® Shell Belgian Grand Prix at Spa-Francorchamps in August.

As with all earlier editions, his positive response to our request enabled us to meet and talk with many of the great names and characters in the sport and business of Grand Prix racing, with many of our detailed interviews taking place over that weekend.

Equally, this new edition would not have been published without the continued commitment of our publisher, Cambridge University Press, and our relationship manager Paula Parish. We would like to thank Matthew Bastock, Adam Hooper and Jeevitha Baskaran for their help with the production process. We are indebted to Michelle Atherton for transcribing our (often noisy) interviews and to Robert Swanson for preparing the index.

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While the teams and individuals we approached for interviews, materials and key information all deserve our gratitude, our thanks in particular must go to the Mercedes AMG Petronas Formula One Team, which granted us access to their staff, photo library and motorhome facilities for the weekend at Spa and also provided us with access to Head of Mercedes-Benz Motorsport Toto Wolff for a truly insightful interview – thanks also to Tobias Kappeler for his help in talking to Toto. We were also able to spend some time in the company of three-time world Drivers' Champion and team non-executive Chairman Niki Lauda, who in his inimitable style gave us a number of direct and valuable answers. Niki also kindly provided the foreword for this third edition for which we are truly honoured.

Staying with Mercedes, Executive Technical Director Paddy Lowe shared with us many of his thoughts on process, and we are most grateful to him for his openness.

All of the input from Mercedes was coordinated through their Head of Communications Bradley Lord, to whom we offer our grateful thanks for his patience and commitment to help us with this project.

The Williams Martini Racing organisation as ever did not disappoint. We were able to spend considerable time with Group CEO Mike O'Driscoll, Deputy Team Principal Claire Williams and Chief Technical Officer Pat Symonds, and to look closely at the Williams revival that once again sees them as a front-running team. Thanks to Julia Tilling and Jen Williams for their help with setting up these interviews. We also benefited from a meeting with Williams shareholder Brad Hollinger, who shared with us his passion for F1, the Williams team and why he became a shareholder of one of Formula 1's most successful entrants. Further insights to Williams and women in motor sport were generously provided by reserve and test driver Susie Wolff.

McLaren Honda's racing director, Eric Boullier, was gracious with both his time and honesty at a time when McLaren was rebuilding its on-track fortunes, and Christian Horner, team principal of Infiniti Red Bull Racing, gave us valuable time and information in our quest for leading content. Thanks are also due to Sylvia Hoffer-Frangipane and Matt Bishop for their help in providing access to McLaren, and for Nicole Carling and Nikki Vasiliadis for Red Bull Racing.

From an organisational perspective we spoke with FIA Race Director Charlie Whiting, the man charged with ensuring safe race starts and

dealing with on-track safety issues, and from the back end of the grid we appreciated the time and insights provided to us by Graeme Lowdon of the Marrusia/Manor Team.

With investment and sponsorship playing a critical role in the sport, a session with Just Marketing International (JMI) founder Zak Brown provided valuable insights, and Nick Chester, technical director of the Lotus F1 team, also provided us with an interesting interview and great insights on the pit-stop process. Thanks also to Chloe Todd of JMI and Clarisse Hoffmann of Lotus for both of their contributions.

With so much continued talk around engine supply and performance, Andy Cowell, managing director at the Mercedes engine division at Brixworth, guided us through the complex world of F1 power plants, and chance meetings with behind-the-scenes men of the stature of ex-Philip Morris man John Hogan gave us yet more valuable insights.

From a key transmission suppliers perspective we spoke with Xtrac chairman Peter Digby, and gained some very entertaining and valuable insights from three of the sport's leading scribes, David Tremayne, Joe Saward and Kevin Eason of *The Times* newspaper.

With the arrival of the new Haas F1 Team in 2016, our thanks go to long-serving motor racing stalwart Tony Dowe, currently serving with Walkinshaw Performance in Australia. Tony kindly arranged contact between us and Haas Team Principal Guenther Steiner. Also, thanks to Nigel Geach and Steve Troon at Repucom for updated information on F1 audiences in the USA.

To former Grand Prix driver and Le Mans winner and now TV commentator Martin Brundle, we offer our sincere thanks. Concise and to the point, Martin can always be counted upon for a true insight into the comings and goings of the F1 industry, and we also traded information with Le Mans winner and former F1 driver Allan McNish, both of whom were generous with their time.

Former Philip Morris press officer and now international media syndicator Agnes Carlier provided us with invaluable assistance in meeting and interviewing the Sauber F1 team's team principal, Monisha Kaltenborn, for which we also thank Robert Höpoltzeder, who throughout the build-up to Spa provided us with assistance in a number of areas.

Thanks go to Andrew Lezala, CEO of Metro Trains Melbourne PTY, who over a number of years as a huge Formula 1 fan has

*Acknowledgements*

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utilised many of the *Performance at the Limit* lessons in building better practices and safety within businesses under his control, and who in a brief and frank exposé revealed how he was able to save £64 million in a single year by applying F1 philosophy to his engineering teams in the rail industry.

Lynden Swainston and her team at LSA rose to the challenge of sourcing quality accommodation for us in the centre of Spa, and to Marie and Georges for their great hospitality at La Vigie Spa. We were fortunate in meeting Willem Dinger, Unilever's global F1 manager working closely with the Williams team, who kindly helped us with access support at the Spa circuit.

Since commencing on our publishing journey with *Performance at the Limit* and now this latest book, we have benefitted in earlier editions from inputs from some who have moved on to new careers and roles, some who have sadly passed away and others who have moved teams and business roles; however, it would be remiss not to thank notable people such as Sir Jackie Stewart, Sir John Allison, John Barnard, Paul Edwards, Bernard Ferguson, (now Sir) Patrick Head, Eddie Jordan, Paul Jordan, Paolo Martinelli, Raoul Pinnell, David Richards, Dickie Stanford, Paul Stoddart, Jean Todt, John (Boy) Walton, Alex Burns, Sir Frank Williams and Hiroshi Yasukawa. Their words are in some cases still quoted and for those who are not, we still recognise their earlier contributions and the value of their comments to our earlier research process.

We hope and trust we have correctly identified everyone's inputs and contributions; however, last and most definitely not least, our thanks go to our ever supportive wives, Sandra, Harriet and Denise, who also give their continual commitment in terms of understanding the long hours of discussion, research, writing and production that a book such as this requires, and of course taking account of the visits to race tracks, team facilities or interview sessions that made creating this third edition of our book such a pleasure.

Mark Jenkins, Ken Pasternak and Richard West  
Amphill, Helsinki and Dartford 2016

## *Note on the reference system*

A numbered list of all sources used is given in the References section at the end of the book. Where these sources are quoted from or referred to in the main text, a superscript numeral cross-refers to the relevant numbered source.