

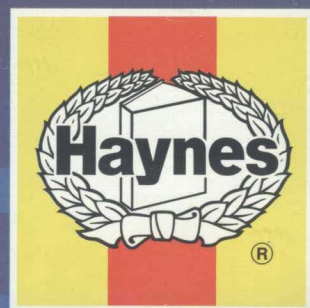


# Biking Skills Manual

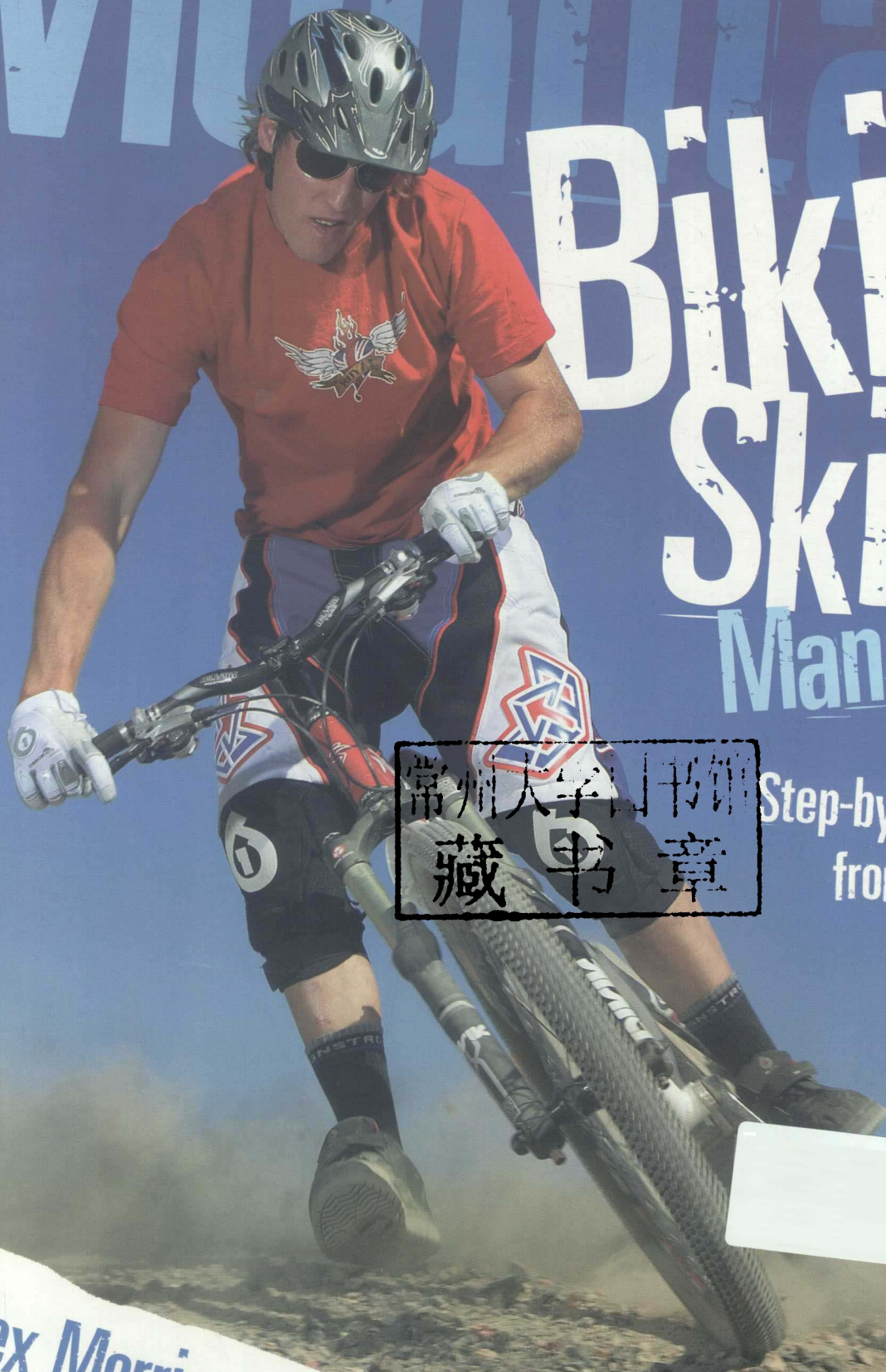
Step-by-step guidance  
from the experts

Alex Morris





# Biking Skills Manual



常州大学图书馆  
藏书章

Step-by-step guidance  
from the experts

Alex Morris

## Dedication

For Sarah and Neave

© Haynes Publishing 2011

Alex Morris has asserted his right to be identified as the author of this work

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior permission in writing from the publisher.

First published in March 2011

A catalogue record for this book is available from the British Library

ISBN 978 1 84425 442 2

Library of Congress catalog card no. 2010934896

Published by Haynes Publishing,  
Sparkford, Yeovil, Somerset BA22 7JJ, UK

Tel: 01963 442030 Fax: 01963 440001  
Int. tel: +44 1963 442030 Int. fax: +44 1963 440001  
E-mail: [sales@haynes.co.uk](mailto:sales@haynes.co.uk)  
Website: [www.haynes.co.uk](http://www.haynes.co.uk)

Haynes North America, Inc.,  
861 Lawrence Drive, Newbury Park,  
California 91320, USA

Printed in the USA by Odcombe Press LP,  
1299 Bridgestone Parkway, La Vergne, TN 37086

While every effort is taken to ensure the accuracy of the information given in this book, no liability can be accepted by the author or publishers for any loss, damage or injury caused by errors in, or omissions from, the information given.

## Photo Credits

All images courtesy of Steve Behr at Stockfile ([www.Stockfile.co.uk](http://www.Stockfile.co.uk)) except product shots on pages 15, 18 ([www.madison.co.uk](http://www.madison.co.uk)) and pages 16-17, 18-19 ([www.zyro.co.uk](http://www.zyro.co.uk))

The publishers would like to thank the following for their help with photography: Chris Smith, Rob Cole, Jack Meek, Oli Beckingsale, Will Longden.











# Contents



## 4: Introduction

What's this all about then?

## 6: History

A snapshot history of mountain biking

## 10: Bikes & Kit

The bikes and kit you need to enjoy the sport

## 26: Health & First Aid

Tips to improve your strength and fitness, plus what to do when it all goes wrong



# Skills

## 34: Fundamentals

General trail skills to improve your core riding ability

## 52: Cross-country

Building on the fundamental skill base to ride faster and harder

## 76: Freeride

Freeride specific skills to take you higher and bigger

## 86: Dirt-jumping

How to get airborne for both speed and style

## 100: Street & Park

You don't need dirt to have fun, tarmac's made of rock too

## 118: Downhill

Gravity should be your friend but without control it'll bite

## 142: 4X & Dual Slalom

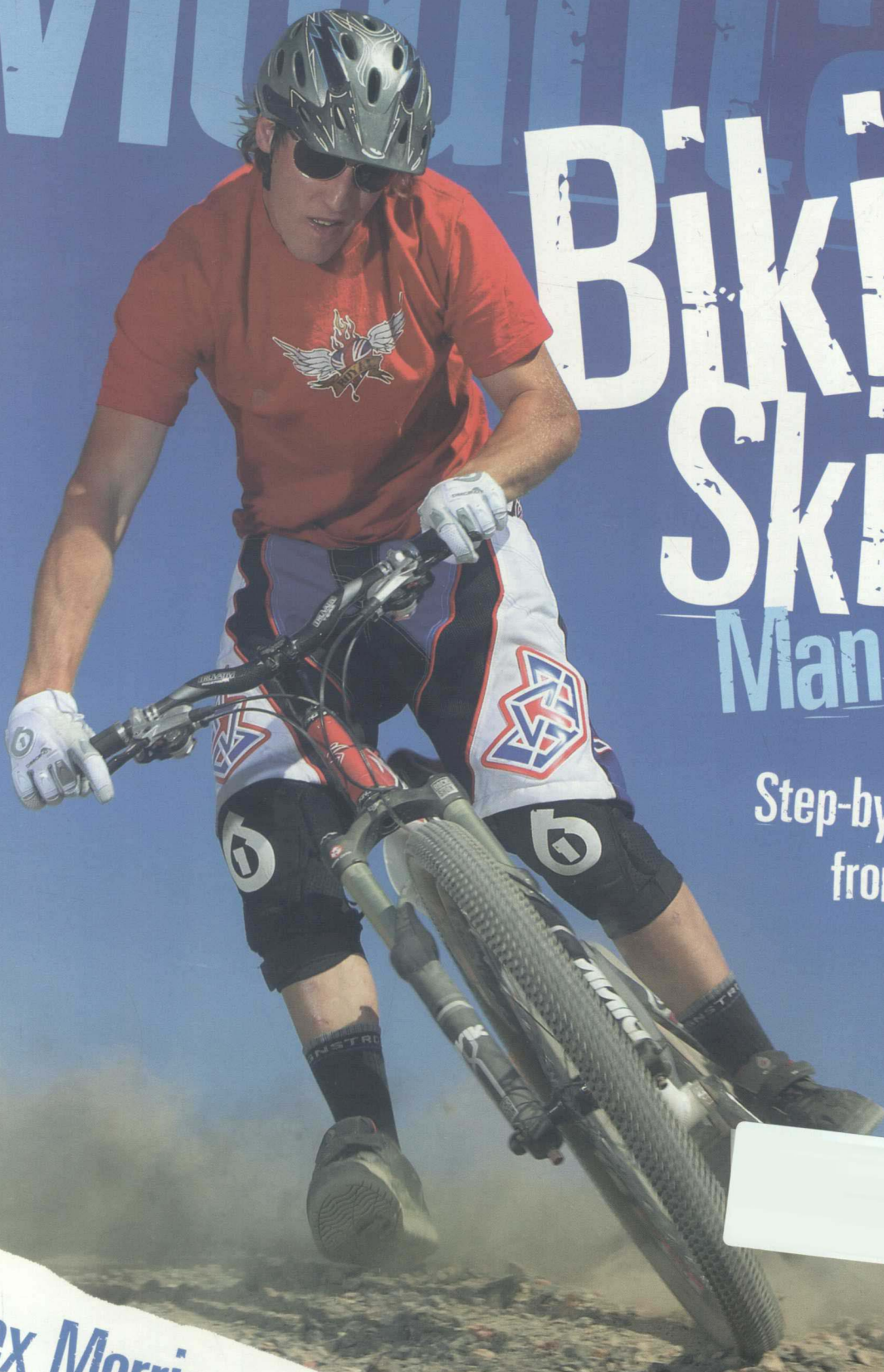
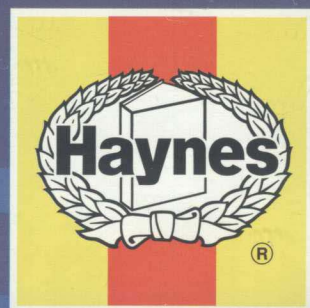
Close-quarters speed battles and how to come out on top

## 152: Trials

Defy the laws of physics – the ultimate in bike control







# Biking Skills Manual

Step-by-step guidance  
from the experts

Alex Morris



# Contents



## 4: Introduction

What's this all about then?

## 6: History

A snapshot history of mountain biking

## 10: Bikes & Kit

The bikes and kit you need to enjoy the sport

## 26: Health & First Aid

Tips to improve your strength and fitness, plus what to do when it all goes wrong



# Skills

## 34: Fundamentals

General trail skills to improve your core riding ability

## 52: Cross-country

Building on the fundamental skill base to ride faster and harder

## 76: Freeride

Freeride specific skills to take you higher and bigger

## 86: Dirt-jumping

How to get airborne for both speed and style

## 100: Street & Park

You don't need dirt to have fun, tarmac's made of rock too

## 118: Downhill

Gravity should be your friend but without control it'll bite

## 142: 4X & Dual Slalom

Close-quarters speed battles and how to come out on top

## 152: Trials

Defy the laws of physics – the ultimate in bike control





# Introduction

**M**ountain Biking has developed into one of the most diverse sports in modern history. The actual origins of MTBing, as we know it today, are uncertain, with some individuals claiming that riders were getting their off-road fix as early as the late 1800s. However, the most widely recognised and tangible evidence traces a distinct line back to the 1970s, Northern California, and the now legendary Marin County.

The bikes they chose back then weren't designed for riding off-road – they were far more suited to cruising the beaches in between surfing sessions. Classics like the Schwinn Excelsior with its balloon tyres and massive bars were the weapons of choice and it's not hard to spot the evolutionary development from that unlikely of bikes to even the most technically advanced machines we get to ride today.

Naturally the technology has moved on a lot in the 30-odd years since then, perhaps even more so than in other similar sports. And as a direct influence of that development, several branches have spurred off from the main trunk of MTBing. And with each improvement in technology, smaller branches still emerge to create yet more styles of MTBing.

Virtually no other sport has had such a rapid evolution, and to the same extent so much fragmentation. Through that evolution we've seen several sub-sports emerge from the same place, each with its own industries, enthusiasts and products. Riders who favour the thrill of downhill now have machines at their disposal that would put a lot of motorcycles to shame. Infinitely adjustable, reliable suspension systems, brake set-ups that can safely bring you to a halt

from incredible speeds, and frames that can hold up under enormous strain whilst remaining nimble and manoeuvrable.

Riders who enjoy the challenge of riding cross-country can now do so on a bike that weighs next to nothing but has the benefit of intelligent suspension that isn't hindered by braking or pedalling.

All of these things have contributed to making MTBing one of the most exciting sports to be a part of, and all the developments have provided the opportunity to capitalise on all that amazing technology and change cycling from a relatively passive sport into one that can be enhanced by really understanding how bike handling can turn an ordinary ride into an experience that will leave you exhilarated, challenged and wanting to ride more.

The purpose of this book is to give you the tools you need to improve your riding, whether you're an absolute beginner, weekend rider or even someone with a lot of riding under their belt. We've worked alongside some of the best riders in the world to detail techniques from every aspect of MTB riding, from cross-country to the newer types of riding such as SlopeStyle and North Shore. And if you've yet to discover exactly what that kind of riding involves, then this could be the perfect introduction. As with other sports, most techniques develop from a core set of principles and it's the same with MTBing, so we'll make sure we cover those before leading you on to the more advanced skills.

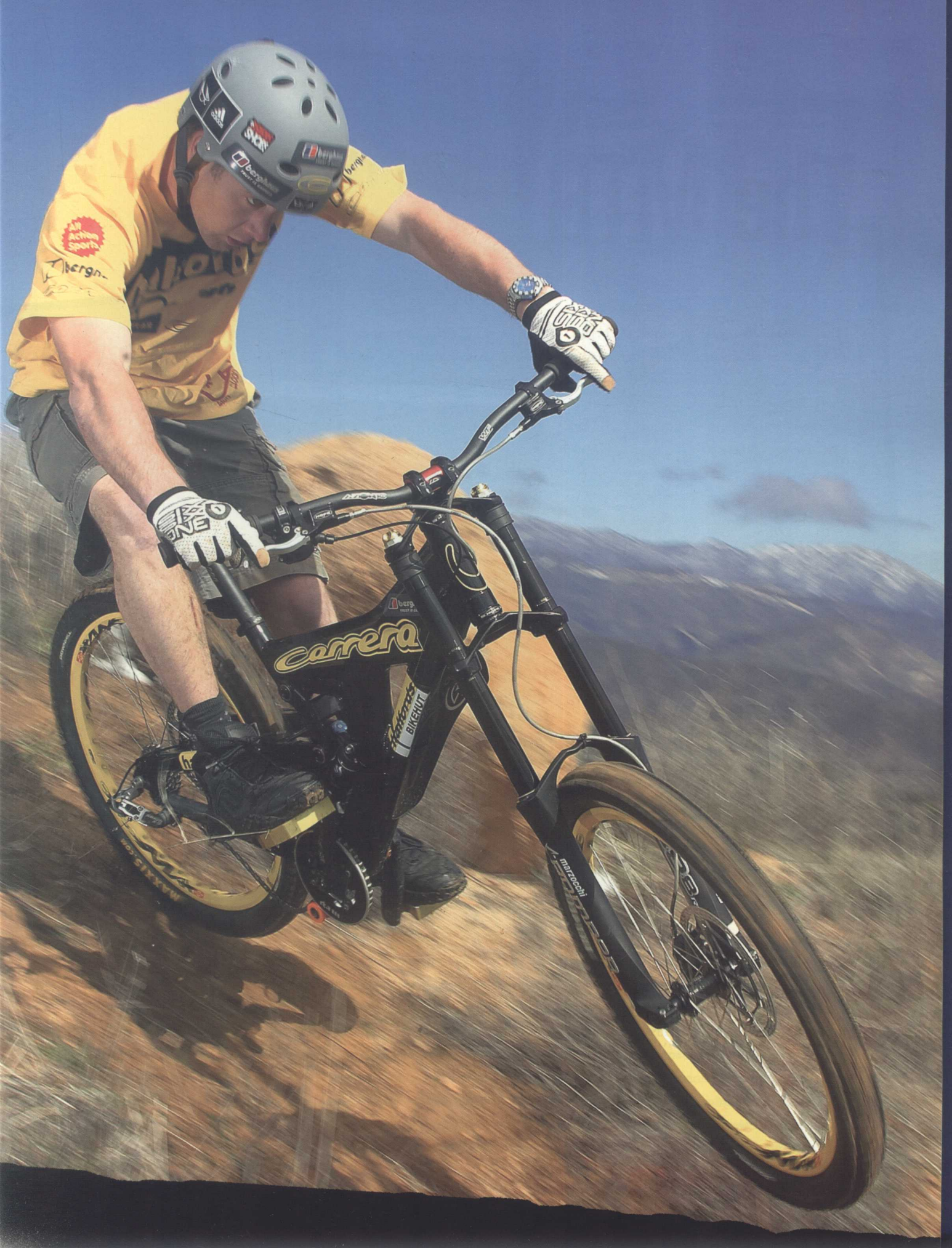
**Alex Morris**  
February 2011

4

## Introduction

此为试读, 需要完整PDF请访问: [www.ertongbook.com](http://www.ertongbook.com)







# The MTB A Brief History

**A**s we briefly touched on earlier, the MTB's origins lie in the customised beach cruiser bikes that early pioneers used for blasting down dusty Californian mountainsides in the late '70s. At that time the term 'mountain bike' or MTB had yet to be coined, but the movement was quickly growing, and the direction of the modifications those riders were making to their Schwinn Excelsiors (widely regarded by the pioneers as the best cruiser for racing down mountains) were taking tangible strides towards the birth of the first dedicated mountain bike.

The Excelsior's chunky balloon tyres were a great starting point and riders hacked together basic gear set-ups using road-bike components and added motorbike bars for more steering control and strength. They weren't pretty and quickly picked up the moniker 'Klunkers', which was a fairly accurate description of their Frankenstein-esque appearance. Their braking system – generally a very underpowered hub brake – would get so hot on the way down the hill it'd need repacking after a fast run. The practice became so common that the unofficial race series that developed from the scene was aptly dubbed the 'Repack'.

Towards the end of the '70s the first proper MTB was built by one of the regular competitors in those Repack events. Joe Breeze used some of the latest road-cycling technology to produce a lightweight geared bike that was designed purely for off-road use. Other bikes began emerging soon after, with models branded up as 'MountainBikes', which was a collaboration between Gary Fisher, Charlie Kelly and Tom Ritchey. You might have noticed

↓ **A hockey helmet and virtually no brakes. A world apart from modern downhill.**



a few of those names dotted around on various components on your own bike, as both Fisher and Ritchey went on to develop mainstream brands that were and still are massively successful.

MTBing hit the big time in the early '80s when Specialized took the custom-made bikes of the time and made their own mass-produced versions in the Far East. Suddenly the floodgates opened and new MTB companies began appearing at a phenomenal rate.

Developments in MTB technology came thick and fast from that point on. Transmissions went from road-style shift levers to bar-mounted





← The iconic XT thumbshifter. Bringing reliable, controlled 'indexed' shifting to the masses.

↓ Specialized were at the forefront of bringing mass-produced mountain bikes to the market.



↑ One of the first dedicated mountain bikes. Many of the innovations still exist today on modern bikes.

thumbshifters and along the way also picked up indexing (the system where a gear position is set using a predefined click). With advances in chain technology moving along swiftly, the number of gears also seemed to grow as each year passed, with systems starting out at 12 speeds and then rapidly moving on to 15, 18, 21 and 24 speeds. At various

stages throughout that time we saw big gears, small gears, gears that used oval chainrings to enhance power transfer and even a few attempts at electronic gears.

Brakes started out as hub-based systems like those on the Klunkers before them, followed by a brief dalliance with U-brakes, cam-brakes and variants of them before



↓ **Innovative and iconically British, Pace Cycles went their own way with square-profile tubing and concepts that were way ahead of their time.**

moving onwards and upwards to the beautifully simple but powerful cantilevered systems, and then on to the V-brake realisation of that concept. Disc brakes were always on people's minds, having seen them work so well in the motor industry, and in the mid-'90s we saw the first rudimentary systems begin to appear in both cable-actuated and hydraulic flavours. Nowadays they're almost de rigueur on any modern MTB worth its salt, with even budget bikes making use of them.

In MTB's second decade suspension was the big new thing. Several manufacturers put a basic fork into production and, although pricey, opened the door for early adopters to get a taste of what was to come. For those who couldn't afford a fork, one manufacturer offered a hinged handlebar stem with an elastomer damper that was surprisingly effective once you got over the initially strange sensation of riding it. Suspension technology went from systems with almost no travel, damped by



← **Doug Bradbury helped change the face of mountain biking as we know it by bringing motorcycle technology and manufacturing techniques to the sport. The first-generation Manitou fork from 1990 helped shape the design of modern forks.**

➤ **MTBing has had its share of fads and fashions. Garish anodising is one that doesn't seem to go away!**





← Suntour fell victim to market domination by Shimano, but not before sowing the seeds of the modern drivetrain – Micro Drive lead the way with compact cassettes and smaller chainrings.

↓ Pro-flex championed the concept of lightweight full suspension mountain bikes.



lumps of rubber with very little control over their behaviour, to complex air, oil and spring systems, with countless combinations of these in between. Motorcycle-style triple clamp forks appeared for downhill bikes and frames had to be rethought to cope with the stresses that came with all that extra leverage.

Mountain biking has had its fair share of trends, fashions and fads over the years too. We've ridden out the hideous period when every component of your bike had to be anodised blue or purple. We've just about

survived the phase where people were drilling and chopping off parts of their bikes to save grams of weight. And most happily of all, we're through the other side of a period no one likes to discuss much where it was deemed clever to wrap yourself in neon-coloured lycra before you went out in public.

MTB's past is colourful, fascinating and incredible in even parts, but 30 years on there's still a sense of innovation, creativity and excitement to it that you'd be hard pushed to find in any other industry or sport.



# Bikes & Kit

