

# NAVIGATING WITH A GPS

Effective skills for the outdoors



**Pete Hawkins**

For more information and to buy this book click here

ISBN: 9781852844912

**CICERONE**

Guides for walkers, trekkers, mountaineers, climbers and cyclists

**[www.cicerone.co.uk](http://www.cicerone.co.uk)**

# NAVIGATING WITH A GPS

EFFECTIVE SKILLS FOR THE OUTDOORS

by

Pete Hawkins



2 POLICE SQUARE, MILNTHORPE, CUMBRIA LA7 7PY

[www.cicerone.co.uk](http://www.cicerone.co.uk)

First edition 2008  
ISBN-13: 978 1 85284 491 2

© Pete Hawkins 2008

All photos and illustrations by the author unless credited otherwise.

The author asserts his moral right to be identified as the author of this work. All rights reserved.


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

### **Acknowledgements**

Numerous people have contributed to this book's preparation. First and foremost are the many participants I have encountered over 21 years of running map and compass courses. They have provided me with ideas, thoughts, amusement and inspiration.

Thanks must also go to Silva for sponsoring my courses and for providing two GPSs, along with Magellan and Memory Map; also to Tracklogs, Fugawi and Memory Map for access to their digital mapping software, and the Ordnance Survey for permission to reproduce their maps.

Finally thank you to Annette for her help and inspiration in putting this book together. This book is dedicated to Clare and Stephen.

 This product includes mapping data licensed from Ordnance Survey® with the permission of the Controller of Her Majesty's Stationery Office.  
© Crown copyright 2008. All rights reserved.  
Licence number PU100012932

# CONTENTS

<b>Preface</b> .....	7
<b>Chapter 1 Introduction</b> .....	9
Satellites and GPS technology .....	9
Using GPS receivers .....	11
<b>Chapter 2 What GPSs Show You</b> .....	13
Why Use a GPS on the Hill? .....	18
<b>Chapter 3 Building Navigation Skills:</b>	
<b>Using a Map and Compass</b> .....	19
Understanding Maps .....	19
Grid Lines and References .....	22
Setting the Map .....	26
The Map Key .....	27
Contours .....	32
Planning Ahead .....	40
The Compass .....	40
What is a Bearing? .....	42
Holding your Compass .....	46
Walking on a Bearing .....	48
Back Bearings .....	50
Timing and Pacing .....	51
<b>Chapter 4 Basic Navigation with a GPS</b> .....	54
How are you Planning to Navigate? .....	54
Where am I? .....	55
Entering a New Location .....	57
Getting Off-route – and Getting Back Again .....	58
Using your GPS with a Map .....	61
Creating a Route .....	61
Navigating a Route .....	63

<b>Chapter 5</b>	<b>Advanced Navigation with a GPS</b>	67
	Tracing your Route	67
	Downloading Routes	70
	Pre-planning	72
	Using your GPS Abroad	76
<b>Chapter 6</b>	<b>Getting Out of Trouble</b>	78
	Checking your GPS	78
	Relocating Yourself	79
	Aiming Off	81
	Don't Panic	82
<b>Chapter 7</b>	<b>Computer Mapping Software</b>	83
	Instant Exploration	84
	Getting in Shape	84
	Drawing Routes	90
	Linking your GPS to your Computer	96
	From Computer to GPS and Back Again	97
	Transferring your Route from GPS to Computer	98
	Open-source and non-Windows Software	99
<b>Chapter 8</b>	<b>Developing Your GPS Skills</b>	100
	Practice makes Perfect	102
	Notes on using the GPS Navigation Aid	103
<b>Appendix I</b>	Further Information	104
<b>Appendix II</b>	Further Reading	106
<b>Index</b>		107

## PREFACE

The skill that separates us from the rest of the animal kingdom – apart, perhaps, from stick-wielding chimpanzees – is our ability to shape and control our environment with technology. Whether that technology always works to our benefit, and whether we are capable of using it sensibly, is open to debate, but there is no doubt that the rate of technological change in recent years has been immense.

I remember talking to my grandfather the day after the first moon landing on 20 July 1969. Born at the start of the 20th century, he told me that if he died then and there he'd go happily, having seen it all. The advances during his lifetime radically shaped the human landscape – cars, radio, television, finally being able to land on another planet – but the rate of change since then has been staggering. Although some may feel that our lives are now controlled by technology to the extent that when it doesn't work we can neither work nor play, it's important to recognise that it has brought about major advances in many fields.

In the outdoor world too we have benefitted from the march of progress. Our gear has become more technical, from the development of breathable and wickable fabrics to clothing that absorbs our excess heat and stores it until we need it.

But it is in the field of navigation where, literally, space-age technology has brought us tremendous possibilities. The price of Global Positioning Satellite (GPS) receivers has dropped rapidly over recent years (as their accuracy has increased) and it seems as if everyone is now talking about them. What used to be a toy for those with money to burn has now become a commonplace gadget on the hills and mountains of the world.

On the face of it that's fine. Here we have a technology that is now accurate to a few metres and can pinpoint your location anywhere on earth within seconds. It can supply the user with a mass of helpful information whether he is walking to the South Pole or through the leafy lanes of Surrey.

And therein lies the problem. Sophisticated as they are, GPS receivers are rarely used to their full capacity, whilst still be relied

upon to the detriment of other essential navigational skills. They are either expensive ways of calculating grid references or are treated as an infallible oracle, with the user forever staring into the screen-of-wisdom looking for insight.

The aim of this guidebook is simple: to show the user how he or she can get the most from a GPS without becoming totally reliant on it for navigation. The book will also look at the way GPS integrates with other technologies, in particular digital mapping software, which enables the user to plan a route on screen before downloading it to the GPS.

*Pete Hawkins, 2008*

**Note** So far I've used the phrase Global Positioning Satellite (GPS) with or without the word 'receiver', a clumsy description for the box of tricks available from your local outdoor shop. Through the power of Western marketing (see Chapter 1) the term GPS has become a generic acronym to describe all receiving units that translate the weak radio signals emitted from scores of satellites into a location. The Russian system, and the much newer European system, will probably be saddled with the American acronym forever, as will this book (for ease of understanding). If that upsets the purist, I apologise.

**End of extract from**  
**NAVIGATING WITH A GPS**

For more information and to buy this book click here

ISBN: 9781852844912

**CICERONE**

Guides for walkers, trekkers, mountaineers, climbers and cyclists

**[www.cicerone.co.uk](http://www.cicerone.co.uk)**

# NAVIGATING WITH A GPS

## Effective skills for the outdoors



In this practical guide to navigating with a GPS, navigation expert Pete Hawkins explains how to get the best from your GPS. The book breaks down the jargon into understandable English and takes you through GPS navigation in a clear and structured way. It also gives a potted summary of how to navigate with a map and compass, recognising that strong traditional navigational skills are the basis for effective GPS navigation. Finally the guide takes a look at digital mapping and how that can benefit the outdoor user, and how GPSs and mapping software can be used positively together.

Pete Hawkins is a qualified mountain leader, freelance journalist and author of *Map and Compass* and the *Navigation* mini-guide published by Cicerone. He runs Silva-sponsored Map and Compass courses from his Peak District home and writes on navigation for a leading walking magazine.

- What a GPS shows you
- Building traditional navigational skills
- Basic and advanced navigation with a GPS
- Getting out of trouble
- Computer mapping software
- Practising your GPS skills

ISBN 978 1 85284 491 2



9 781852 844912 >



**CICERONE**

£7.99