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## The Beginner's Guide to Flying R/C Airplanes

*by Pete Carpenter*

An e-book for newcomers to the hobby of flying radio control planes.

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## Preface

This *Beginner's Guide to Flying R/C Airplanes* book has come about as a combination of my personal passion for radio control flying, and an ongoing desire to help folks get started in this very exhilarating and addictive hobby.

I've been involved in aeromodelling (building and flying model aircraft) since the early 1980s. From the simple rubber powered balsa planes flown in the field behind my parents' house, to multi-channel radio control aircraft (gliders, glow powered and electric powered planes, plus the occasional helicopter), my love of aeromodelling has never waned. The photo to the right shows me somewhere back in those early 1980s, launching a free flight rubber powered *Super Cub*. Nowadays a plane this size can be radio controlled - an unthinkable idea back then!



With the advent of the internet, my passion for R/C flying helped me create a website about the hobby ([rc-airplane-world.com](http://rc-airplane-world.com)), to share my enthusiasm and to promote the hobby to others. A natural extension of the site was to write an e-book, which first became available in 2009 and has, to date, helped more than 3000 people get started in this fantastic pastime. The website has helped many more, over the decade that it has been up, and it makes me happy to know that I've played a small part in getting people in to radio control flying, all around the globe.

As the name implies, *The Beginner's Guide to Flying R/C Airplanes* is exactly that – a beginner's guide. If you have been contemplating getting in to the hobby of radio control flying, but haven't a clue about what's involved, then this book is for you. If you've already successfully flown an R/C plane on your own then it's probably not for you, although it does contain plenty of information which you might not yet be familiar with. Certainly for the complete newcomer to the hobby, this book *will* give a solid foundation on which to build your knowledge and learning.

### **What you should get from this book**

Being a beginner's guide, the information contained within this book intentionally never gets too technical. As you progress through this fantastic hobby you'll get to learn more and more, but overwhelming you with detailed technicalities at this early stage is just pointless; having information overload just as you're starting a new pastime is never that beneficial. Learn the basics first, and progress from there.

The pages in this book *will* help you get started in radio control flying and will break things down for you so that you don't get too overwhelmed by all there is to learn in the early stages of your new hobby. The book has been written to introduce you to the joys of flying R/C planes and to give you a solid foundation on which to build your experience.

By reading these pages you will learn the things you need to know as a beginner R/C pilot, and you'll get the information from a structured, step-by-step layout. You'll get a fundamental understanding of radio control systems and how they work, how a radio controlled plane is made to do what it does, how to choose a good first plane and how to complete your first flights – plus lots more in between.

It is important to emphasise, at this point, that this book has been written primarily with electric powered (**EP**) 'ready to fly' planes and self-teaching in mind. Internal combustion (**IC**, notably glow plug power) planes are mentioned throughout the book, but EP planes do provide a cheaper and more convenient entry into the hobby, and there are few arguments against such planes being more 'beginner-friendly'. This is important if you do intend to self-teach, which is what this book assumes. But with that said, there are those beginners who do choose IC over EP and parts of this book are still very relevant to IC planes. However, self-teaching with an IC plane isn't such a practical option, and club instruction should be made a priority if this is the choice that you have made, or are thinking of making.

It is fair to say that plenty of experienced flyers will argue that club instruction is the *only* option for anyone wanting to learn to fly a radio control plane of any type, but my decade or so online with the website and forum has shown me that there are many many folks out there who just want to buy a plane and learn to fly it on their own. This is the reality of the modern radio control flying hobby, and with the types of planes now so readily available it's a perfectly realistic thing to do – so long as you're sensible. My website and this book all reflect the desire of those who just want to get out there and do it themselves.

One final point to make about this book is the use of language; it's written in British-English (with the exception of the word 'airplanes' in the title). B.E is my native language, so if you're from the US and reading this, you might see some unfamiliar or seemingly wrongly spelled words here and there!

## **1 : An introduction to your new hobby**

The pastime that you're entering into is one full of rewards and satisfaction; a pastime that will take you on a fulfilling journey from the comfort of your hobby room to the great outdoors! Not many hobbies have the potential to teach you such a diverse range of topics, or at the same time be as simple and straightforward as you want it to be. In other words, you can throw yourself into the model building side of the hobby as much as the flying side of it and learn about model plane design and construction techniques, aerodynamics, mechanical issues, model engines, electronics - the list goes on - or you can just buy a simple electric Ready To Fly (RTF) plane, charge the battery and go! This latter scenario is what this book assumes is going to happen.

Nor have many hobbies seen such a dramatic change and explosion in popularity as radio control flying has experienced in the last few years. We all know how our lives have been changed by the seemingly endless electronic revolution that has been happening since the mid 1990s. The shrinking technology that has brought us smaller and smarter everyday gadgets and gizmos has reached well into the R/C hobby too, enabling micro-sized Ready To Fly electric aircraft to be mass produced at very affordable prices.

In addition to the new breed of micro R/C planes, standard and giant size models have benefited greatly from this technology. Powerful brushless electric motors, electronic speed controllers and high capacity lithium polymer (Li-Po) battery packs now mean that electric R/C planes are giving internal combustion powered ones a good run for their money in terms of performance. That idea was unthinkable not so long ago; high performance electric flight just wasn't realistically practical, and it was a long way from being widely available to the masses, as it is now.

Radio control systems have changed too; indeed, the introduction of 2.4GHz 'spread spectrum' technology was the biggest shake-up to hit the hobby since, well, probably ever! These new systems use advanced radio transmitting technology that's long been in use by the military. The spread spectrum technology developed specifically for the radio control hobby means that R/C pilots need not worry about unwelcome radio interference any more. Traditional R/C flying club frequency control, and the associated 'peg boards', have all but been assigned to the history books since 2.4GHz systems have become commonplace.

Electronic auto-stabilisation technology is another area that is rapidly changing the face of the hobby, as we continue to progress through the revolution. Some beginner planes now come with artificial intelligence as part of the package, to make learning to fly as easy and as crash-free as possible. A plane that can self-correct its attitude, and cancel out any unwanted movements caused by gusty conditions? A beginner's dream, surely!

IC powered radio control planes haven't, unsurprisingly, been effected to quite the same degree as electric ones by this revolution.

The popularity explosion within the hobby has ensured a wider choice of RTF IC trainers being sold with a 2.4GHz radio system (a popular example is the *Hanger 9 Alpha Trainer DSM2*, shown right, image ©Horizon Hobby Inc.) but it is, without doubt, the electric sector of the hobby that has seen, and continues to see, the big changes.



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