

**FRANK GEORGE**  
**HORSE RACING**  
**WITH THE**  
**COMMODORE 64**





# **Horse Racing with the Commodore 64**

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# **Horse Racing with the Commodore 64**

**Frank George**



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# Contents

|  |     |
|--|-----|
| <i>Acknowledgements</i>  | vi  |
| <i>Using This Book</i>   | vii |
| 1 Getting to Know the Commodore 64   | 1   |
| 2 Welcome to the Track!  | 13  |
| 3 Introduction to Betting  | 17  |
| 4 Introduction to Forecasting  | 28  |
| 5 An Analysis of Horse Racing  | 57  |
| 6 Alternative Forecasting Systems  | 72  |
| 7 Staking  | 100 |
| 8 Racing All Over the World  | 118 |
| 9 Conclusions  | 134 |
| <i>Appendix I: Probability Table</i>   | 137 |
| <i>Appendix II: Weight for Age Allowances</i>                                      | 138 |
| <i>Appendix III: Age, Weight and Distance Table</i>                                | 139 |
| <i>Appendix IV: Scale of Weight for Age for Steeplechases<br/>and Hurdle Races</i> | 140 |
| <i>Appendix V: Statistical Matters</i>   | 141 |
| <i>Appendix VI: Miscellaneous Information</i>                                      | 143 |
| <i>Appendix VII: Glossary of Racing Terms</i>                                      | 149 |
| <i>Appendix VIII: References</i>   | 156 |
| <i>Index</i>   | 161 |

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F.H. George

# Using This Book

This book has two main purposes. It will help you to understand the systems involved in horse racing and betting, and it will provide you with the information and programs you need to make computer-assisted forecasts of the results of individual races. The main programs, H1 (Horse racing number one) and H3, are fully described in Chapters 4 and 6. Of the two, H3 seems to work slightly better in practice, though both have proved very successful. However, much depends on the amount and source of your information, so the book also includes modified versions of the H3 program to cope with particular circumstances.

As well as the horse racing programs themselves, this book includes detailed advice on betting (very important if you aim to make a healthy profit) and on the care and feeding of your Commodore 64 computer. Chapter 1, read in conjunction with the Commodore manual, should provide all necessary information for those who have never used a home micro before.

If you are already familiar with home micros you may be tempted to turn straight to Chapter 4 (or Chapter 6) and start keying the programs into your computer. Resist the temptation, at least until you have read Chapter 1. With the Commodore, a mistake at the keying stage can spell total disaster – Chapter 1 will show you how to avoid disaster altogether.



## Chapter One

# Getting to Know the Commodore 64

If you are interested in a book called *Horse Racing with the Commodore 64* then you probably know something either about horse racing or about computers. Since it is less likely that you know something about computers, I'll begin by introducing computers in general and the Commodore 64 in particular. If you're familiar with home computers already you could, in theory, skip this chapter altogether. In practice, though, you will find it well worth your while to read at least the section dealing with keying in programs. I can guarantee that a thorough reading of this section will save you a good deal of grief and heartache when you come to Chapters 4 and 6! However, for those whose idea of a computer may still be coloured by *Star Trek* and the galactic fantasies of George Lucas, a few words about the humble home micro.

### What is a computer?

This is not such a silly question as it sounds. Some people seem to think it's a cross between Robbie the Robot and Attila the Hun, a sort of electronic dictator ruling every aspect of our lives with a ruthless disregard for humanity. That's probably because their bank statements arrive on computer printouts: they should learn to appreciate the difference between mindless machines and pitiless machine users. It isn't 'the computer' that issues overdraft notices, it's your bank manager – the computer just tells him that your account has gone into the red, which is about as mysterious as getting a minus number on your pocket calculator. And if one of the bank clerks makes a mistake, and debits your account for £3000 that someone else has drawn out, you can't expect the computer to know the difference any more than your calculator would. It's true that some very large computers at the frontiers of research are self-programming and can even program each other. It's even true that some computers *appear* to behave 'intelligently'. The key word is 'appear'. Any computer, even a self-programming one, has been built and programmed in the first instance by human beings, and none of the workaday computers currently in use in homes and offices

## 2 Horse Racing with the Commodore 64

*Table 1.1.* Binary and decimal numbers compared. Notice the relationship between 'round' numbers in binary and powers of 2.

| Binary and decimal equivalents |            |                |            |            |                    |
|--------------------------------|------------|----------------|------------|------------|--------------------|
| <i>Bin</i>                     | <i>Dec</i> |                | <i>Bin</i> | <i>Dec</i> |                    |
| 1                              | 1          |                | 1001       | 9          |                    |
| 10                             | 2          | 2 <sup>1</sup> | 1010       | 10         |                    |
| 11                             | 3          |                | 1011       | 11         |                    |
| 100                            | 4          | 2 <sup>2</sup> | 1100       | 12         |                    |
| 101                            | 5          |                | 1101       | 13         |                    |
| 110                            | 6          |                | 1110       | 14         |                    |
| 111                            | 7          |                | 1111       | 15         |                    |
| 1000                           | 8          | 2 <sup>3</sup> | 10000      | 16         | 2 <sup>4</sup> ... |

throughout the world is at anything like this 'state of the art'. Only human beings can make a computer do things – and this book is about what *you* can do with a Commodore 64 to help yourself become more successful as a horse racing punter.

So back to the original question: what is a computer? Essentially a computer is a collection of switches – thousands of them. Each switch can be either 'on' or 'off' – if you like, at '0' or at '1'. It's perfectly possible to count using just these two numbers (see Table 1.1). Because it has only two digits, such a system is called *binary*. Our standard way of counting, with ten digits, is called *decimal*. Incidentally, the word 'digit', meaning a number, actually derives from the Latin word for finger. No wonder we like counting in tens!

The computer uses these binary digits, or *bits*, in groups of eight known as *bytes*. (This passes for humour in computer circles.) As you can see from Table 1.1, there is a close relationship between 'round numbers' like 10, 100, 1000, and 10000 in the binary system and powers of 2 in decimal: 2 is written as 10,  $2 \times 2$  (2<sup>2</sup>) as 100, and so on. As it happens, 2<sup>10</sup> is 1024 (decimal) which is very close to 1000, so we call 1024 bytes a *kilobyte*. The Commodore 64 is so called because it has 64 kilobytes (K) of memory, i.e. 65536 bits. These are 65536 switches, all ready to store, in number-coded form, the information you put into the computer.

### How does a computer work?

Fortunately we don't need to answer this question in any great detail – just in broad outline. Any computer has two different switch areas; two different kinds of *memory*, if you like. There's Read Only Memory (ROM), which is 'built-in' – whatever is in there stays put even when you unplug the computer and go to bed. Then there's Read And write Memory (RAM) – this is the

computer's temporary storage, a sort of notepad where it stores instructions and information, and changes or erases them as necessary. This RAM is wiped clear every time the computer is switched off, so we need some way of storing its contents if we want to use them again. With the Commodore 64 this storage is in one of two forms – cassette tapes, recorded on a special cassette recorder, and disks, recorded on a device known as a disk drive. The programs in this book have been written for cassette storage because every Commodore 64 owner will have this method available – disks are faster and more efficient, but not everyone has a disk drive. If you happen to own one, don't worry – changing the programs is a very simple job.

### Setting up the computer

For new Commodore 64 owners I can't do better than recommend Ian Sinclair's introductory book *Commodore 64 Computing*, published by Collins. If you're planning on using the Commodore for a wider range of activities you might consider *The Complete Commodore 64* instead. Also published by Collins, it offers a comprehensive selection of information on programming techniques, advanced programming with machine code, extra equipment ('peripherals') and program listings for leisure and learning. In this book there is no space to cover the ground fully – but for new users some sort of introduction is vital.

I'll assume you have just unpacked the computer from its box. Start by fitting a 3-pin plug to the mains lead on the small power unit box – note that there is no earth lead. Now plug the other lead from the power unit into the appropriate socket on the right-hand side of the computer (see the manual for details). Try to keep this plug in place all the time – if you need to switch off, do it at the mains. Don't rely on the switch at the side of the computer itself – if you turn this off without switching off at the mains, the power unit is likely to overheat and become damaged.

Now, in theory at least, you can switch on. Your computer will be perfectly happy – in fact it will be raring to go! The trouble is that *you* can't see what's going on – you need your first and most vital peripheral, a television set. Any modern TV is suitable, because any modern TV can receive VHF – a UHF TV from the junk shop won't do! Colour is not essential, but if you want to use your computer for games or for entertainment as well as for horse racing, colour is a welcome extra feature. You can even plug the computer into your family TV – as long as the family don't object! You'll find the cable you need packed in with the computer. One end fits into the aerial socket on your TV (you might like to invest in a twinning socket so that you can have both the computer and the aerial plugged in at the same time). The other end carries a phono plug, the same type used in some hi-fi systems. This plugs into the back of the computer. If you turn your Commodore round, you will see a slot on the left, with a series

## 4 Horse Racing with the Commodore 64

of sockets next to it. The phono plug fits only one of these – the others are for a *monitor* (which can give a much steadier, cleaner picture than the average TV – at a price) and for direct sound output to your hi-fi system.

Now try switching on, but don't expect too much – your TV has to be tuned to the signal the computer is putting out. If your TV has preset buttons (or remote control selection) you may already know how to do this. If not, check the manual for your TV or talk to your friendly local TV engineer.

One more, equally vital 'peripheral' needs to be plugged in – the Commodore cassette deck. Again, follow the instructions in the manual.

### Finding your way round the keyboard

Before you get started, take a little time to familiarise yourself with the 64's keyboard. At first sight it may look like a typewriter keyboard with a few extra buttons – in a way it is, but it's worth checking what those extra buttons actually do (see Table 1.2).

Switch on, and try typing in the words:

**PRINT "THIS IS A MESSAGE FROM YOUR COMPUTER"**

You will find that the letters appear as capitals (upper-case) as you type, and that the flashing white block (called the *cursor*) is replaced by the letter you have just typed and then moves one space across the screen. Make sure you copy what's written here exactly – and don't forget the double quotation marks. They are very important. To type them, hold down the SHIFT key and then hit the 2 key in the top row.

Now press the RETURN key and see what happens. Your message will appear on screen, without quotation marks. What you have just done is to enter and execute a *direct command*. Your 64 recognises PRINT as a command word in a computer language called BASIC which is programmed into its ROM. When it recognises the command, it carries out a whole series of preprogrammed operations that result in your message being printed on screen. However, nothing happens until you press the RETURN key, which is very different from the carriage return key on a typewriter. The RETURN key is your way of saying to the computer that you have finished entering a command, and want it to be executed. However if you press RETURN again nothing will happen – the computer does not store direct commands in memory, and it has already 'forgotten' what you told it to do.

Now use the cursor keys (see Table 1.2) to move the cursor back to the beginning of your command, and type in the number 10 so that it reads:

**10 PRINT "THIS IS A MESSAGE FROM YOUR COMPUTER"**

Table 1.2. The special keys on the Commodore 64.

| Key         | Without SHIFT   | With SHIFT   |
|-------------|---|--|
| CLR/HOME    | Sends cursor to top left-hand corner of screen.   | Clears screen and sends cursor to top left-hand corner.  |
| INST/DEL    | Deletes the character to the left of the cursor.  | Creates a space to the left of the character over which the cursor is positioned, so that an additional character can be inserted. |
| RUN/STOP    | Stops a program.  | Used only to load a program from cassette and run it automatically – not to RUN a program already stored in the computer.          |
| LOGO (C=)   | Not used on its own.  | Used to convert your 64 to 'typewriter mode' i.e. mixed upper and lower-case letters.  |
| CURSOR KEYS | Move the cursor to the right or downwards.  | Move the cursor to the left or upwards.  |
| SHIFT LOCK  | As on a typewriter, this key is used to 'lock down' the SHIFT key when typing text.   |  |
| RETURN      | Pressed at the end of a direct command in order to execute the command, or at the end of a program line in order to store the line in memory.     |  |
| CTRL        | Used to produce colour displays, often in combination with the Commodore logo (C=) key.   |  |
| RESTORE     | Used in conjunction with the RUN/STOP key to stop the program at an INPUT (see below) or to restore the 'start-up' colours to the screen display. |  |

## 6 Horse Racing with the Commodore 64

Press the RETURN key. Nothing appears to happen – but it has. Type in the word RUN, followed as usual by the press of the RETURN key, and your message will appear. Why?

The number 10 is read by the computer as a *line number*. In other words, line 10 is the first of a series of commands that can form a computer *program* – a structured list of commands to make the computer do a job you require it to do. These commands, unlike the direct command, are stored in the 64's RAM until you erase them or until you switch off the computer. If you now type in the word LIST (don't forget to hit the RETURN key afterwards) you will see your 'program' listed – all one line of it! Try adding some more PRINT commands, adding 10 to the line number each time, for example:

```
20 PRINT "IT IS PART OF YOUR FIRST PROGRAM"  
30 PRINT "EXCITING, ISN'T IT?"
```

When you've had enough of this juvenile humour, try saving your brand new program to cassette or disk, following the instructions in the manual. It's important to get to grips with the use of the cassette deck as soon as possible, so keep trying! There's no room in a book this size for a full training course in BASIC, but there *is* room for a sort of BASIC dictionary that will at least give you some idea what the various command words mean. You'll be seeing them in action throughout the rest of the book.

**AND See IF ... AND ... THEN**

### Array

A group of *strings*, *integers*, or numbers stored in memory in a structured form. Strings in a string array must all be the same length, and you cannot store strings, integers and numbers in the same array. In program H1, for instance, details about an individual race meeting are stored in a string array, R\$, which can hold six strings. The first string in the array is referred to inside the program as R\$(1), the second as R\$(2) etc. An array can also contain several *groups* of data – for instance, the H\$ array in the H programs contains 40 groups of 14 strings each, so the first string in the first group is H\$(1,1), the second string in the same group is H\$(1,2) etc. Integer arrays use the integer symbol % (yes, it is a percent sign!).

**ASCII See CHR\$**

**Character See CHR\$**

### CHR\$

This odd-looking command word stands for 'character string'. A character is any letter, number or symbol available from the computer, and a character string is a special number code used by the computer to identify any given character. These codes are standardised according to the American Standard Code for the Interchange of Information, so they're sometimes referred to as ASCII codes.

**CLOSE**

A command used in transferring information between the computer and a storage medium (disk or cassette).

**DATA**

This 'command' can look very mysterious inside a program. In the H programs, for instance, it occurs in line 25 together with two numbers. Basically, DATA is information stored by the computer for use elsewhere in the program. When the information is required, a READ command like the one in line 26 of the programs is used. This line gives the values stored in the DATA line to two *variables*, C1 and C2.

**DIM**

This has nothing to do with screen brightness! DIM stands for DIMension, and is a BASIC command used to set up an *array*. Before the computer can use an array in a program, it needs to know how big the array is going to be – how many entries there will be, in other words. In the H programs, for instance, the command DIM H\$(40,14) is used to tell the computer that H\$ will contain forty groups of fourteen *strings* each.

**FOR...TO...NEXT**

These are BASIC command words used to set up a *loop*. A *variable* is used to act as a counter. Try this one:

```
10 FOR X=1 TO 10
20 PRINT "THIS LOOP IS ON ITS ";X;"TH PASS"
30 NEXT X: PRINT: PRINT "THIS LOOP IS NOW FINISHED"
```

Incidentally, not all the spaces in this mini-program are essential, but make sure you put them all in. It will be good practice for typing the H programs accurately.

**GET**

Another form of INPUT command.

**GOSUB...RETURN**

The GOSUB command is used to divert the program to a *subroutine*. The RETURN command is used at the end of a subroutine to return the program to the point immediately after the GOSUB command. GOSUB 1000, for instance, will send the computer to a subroutine starting at line 1000.

**GOTO**

This sends the program to the line specified. A command to GOTO 1000 sends the program directly to line 1000, wherever it is at the moment. See also ON...GOTO.

**IF...AND...THEN**

A series of logical operations used in BASIC to decide between two or more possible courses of action. Effectively it's a test, just as in English you might

## 8 Horse Racing with the Commodore 64

say 'IF you are holding a red-hot poker THEN drop it.' The BASIC term AND is used to define the conditions more closely, as in the English sentence 'IF you are holding a poker AND it is red-hot THEN drop it before it burns you.' The use of AND here makes sure that pokers which are not red-hot are not dropped!

### INPUT

A command which halts the execution of a BASIC program so that you can enter information. What *sort* of information depends on the form of the INPUT command. For instance, a command to INPUT X\$ requires you to type in characters that will be stored as a *string*. A command to INPUT X% requires you to enter an *integer* – if you enter anything else the computer will display an irritating error message. A command to INPUT X allows you to enter any number, but entering letters will produce an error message. In each case, pressing the RETURN key will restart the program. The GET command avoids the need for the RETURN key – it will accept any key that happens to be pressed at the time, but needs to be used with great care.

### INT

A BASIC command that turns any number into an integer (a whole number such as 45 or 5045). The command PRINT INT (45.02), for instance, will produce the number 45 on screen – everything after the decimal point has been left off.

**Integer** See INT

### Loop

A way of making a BASIC program repeat one particular operation a number of times (e.g. asking you to enter details of a series of horses). See **FOR...TO...NEXT** for an example.

### ON...GOTO

A special command used after an INPUT or GET command. Line 160 in the H programs, for instance, reads:

```
160 ON Y GOTO 230, 5100, 3530
```

In this case you have been asked to enter a value for the *variable* Y earlier in the program – possible values are 1, 2 or 3 (the H program itself will reject any other values that you enter). If Y=1, the program goes to line 230, if Y=2, to 5100, and if Y=3, to 3530.

### OPEN

A command used in the transfer of information between the computer and a storage medium (disk or cassette).

**READ** See DATA

**RETURN** See GOSUB...RETURN

**String (LEFT\$, RIGHT\$, MID\$)**

A string is a collection of characters – any characters – defined by a BASIC command such as:

```
50 A$="THIS IS A STRING"
```

The dollar sign in this command can be translated as 'string', so you would read the line as 'A-string equals "This is a string."' Anything you put between double quotation marks in a command like this will be included in the string, whether numbers, letters, or symbols. If you now RUN the program, and then enter a direct command to PRINT A\$ (no quotation marks, notice) then the words THIS IS A STRING will duly appear! The terms LEFT\$, RIGHT\$ and MID\$ are used to 'chop out' sections of a particular string needed for particular parts of the program. The computer 'sees' a string as a series of codes; each code will cause it to put a symbol on screen. See also VAL.

**Subroutine**

A self-contained set of commands within a BASIC program. Subroutines are used to carry out operations that may need to be performed more than once within a program, such as centring a display title on screen. See GOSUB...RETURN.

**Symbols**

See Table 1.3, which gives the function of the various symbols as the computer sees them. In 'text' information such as *strings*, the symbols can be used exactly like letters on a typewriter.

*Table 1.3.* Symbols used on the Commodore 64. Notice in particular the symbols produced by the special keys – you will need to get to know these before entering any of the H programs in this book.

**Mathematical symbols** (in the order in which they are dealt with)

---

|   |                 |        |
|---|-----------------|--------|
| + | positive number | +3     |
| - | negative number | -3     |
| ^ | raise to power  | 3^3=27 |
| * | multiply by     | 3*3=9  |
| / | divided by      | 3/3=1  |
| + | add to          | 3+1=4  |
| - | subtract from   | 3-1=2  |

**Other symbols**

|    |                          |
|----|--------------------------|
| \$ | string                   |
| %  | integer                  |
| <  | less than                |
| >  | greater than             |
| <= | less than or equal to    |
| >= | greater than or equal to |

Table 1.3. *cont.*

- 
- “ used in programming to start or end string expressions
  - ( ) brackets – used to ‘seal off’ part of an expression, e.g.  $2*3-2=4$  but  $2*(3-2)=2$ , and many other uses
  - :
  - used in programming to separate two commands contained within the same program line
  - ;
  - in programming, can affect the appearance of material PRINTed on screen; compare:  
PRINT “CLOSE”: PRINT “UP” with  
PRINT “CLOSE”;; PRINT “UP”
  - ,
  - in programming, can affect the appearance of material PRINTed on screen; compare:  
PRINT “FAR”: PRINT “APART” with  
PRINT “FAR”;; PRINT “APART”

**Symbols produced by special keys**

Cursor down (no shift key)



Cursor up (with shift key)



Cursor right (no shift key)



Cursor left (with shift key)



HOME (no shift key)



CLR (with shift key)



CTRL plus key 9 (to reverse out lettering)



CTRL plus key 0 (to restore normal lettering)




---

**TAB**

Very like the tabulator on a typewriter. The command PRINT TAB(12); “I HAVE BEEN TABULATED”, for instance, will print the message on screen in the normal way, but 12 character spaces from the edge. Notice the semicolon – it’s important.

**THEN** See IF ... AND ... THEN

**VAL**

Short for VALue. In the programs it’s used to turn numbers stored in a

string into numbers that the computer can use in calculations. If, for instance, you type in `A$="2 + 2"` and then ask the computer to `PRINT A$`, you will get `2 + 2` displayed on your screen. If, on the other hand, you ask it to `PRINT VAL A$` you will get the figure 4 – two plus two!

### Variable

A computing concept rather like the 'X' in school algebra. A variable is a code used inside a program to represent a number (or a group of symbols) that is liable to be altered by an operation of the program. There are several types of variable: *string* variables, *integer* variables, and number variables. Each can be given an 'identity code' made up of one or two *characters*. In addition, a string variable uses a dollar sign (e.g. `H$` in the programs) and an integer variable uses a percent sign (e.g. `SF%` in the programs). A number variable uses characters on their own (e.g. the letter `I` in the line 100).

### Keying in programs

By now you may be starting to understand some of the pitfalls involved in keying in programs on the Commodore 64. From Table 1.3 you will see that misplaced commas, colons and semicolons can wreak havoc, and that the slightly confusing symbols created by the special keys need to be known and recognised. The truth is that *any inaccuracy at all* can cause the program to fail when you attempt to `RUN` it – so here are a few golden rules.

- Key in the program slowly and carefully – check that every line is exactly the same as the printed listing. Particular things to look out for are punctuation marks and spaces – don't add extra spaces, and don't remove any that are shown in the listing.
- Make sure that you press `RETURN` at the end of each numbered line.
- In the listings you will find special notes about 'Commodore symbols', telling you exactly how to achieve the symbols you see in the listings, and how many there are of each kind in each line where they appear. Be very careful to get these exactly right.
- Be careful to distinguish between letter `I` and number 1, between letter `O` and number 0 (the number has a stroke through it) and between brackets `()` and greater than/less than symbols, `<` and `>`.
- Don't try to key in the whole of a long program at once – key it in a section at a time. Program `H1` is actually listed in sections to help you with this.
- When you have finished a section of program and checked it, save everything in the computer to tape (or disk). That way you won't lose a day's work if the fuses blow!
- Before trying to `RUN` a program or any part of it, make sure you have saved it to tape (or disk). If you don't, you may, in certain circumstances, lose everything in the computer.

## 12 Horse Racing with the Commodore 64

Clearly tape (and disk) storage are very important ways of preserving your work, so it's worth paying particular attention to your storage equipment. Again, I would recommend that you:

- Use the best quality tapes or disks available.
- Use tapes no longer than C30 (the rest are too thin).
- Clean tape heads regularly.
- Demagnetise tape heads every one or two months.
- Store tapes and disks in closed cases, well away from any device, such as a TV or loudspeaker, that emits a strong magnetic field.
- Take at least one back-up copy of any data you can't afford to lose.
- Make a 'hard copy' of vital data (if you have a printer).

Finally, a note for sceptics. The program listings in this book have been printed out directly from a working program – I must emphasise that *there is nothing wrong with them!* If your program doesn't work, it's because you have made a mistake – perhaps because you haven't read this section! If the worst does happen, don't be discouraged. Read through this section again, and check your program section by section, and line by line within each section. Above all, use the program commentaries and the 'BASIC dictionary' to try to understand what each line is supposed to do. If you know what is supposed to be happening, it's a lot easier to find out what has gone wrong.

## Chapter Two

# Welcome to the Track!

If you want to analyse horse races and get computer forecasts of likely results, you need to know about *form*. Form is the *current* ability of the horse – like athletes, horses are not always at their best! The amount of information you need to know about every horse is considerable – its track record, its current weight and age, and its jockey, at the very least. Any daily newspaper will give you this information, but it isn't really enough. You also need to know something about each horse's *track record*. For instance, it's useful to know that a horse won its last race, but we also need to know the *class* of that race (high or low prize money), the *weight* it carried, its *speed figures* (SFs), the state of the ground (the *going*), the other horses in the race, and so on. Much of this information can be found in specialist journals – in Britain this means using at least *The Sporting Life* and preferably the *Raceform Handicap Book* as well – the less information you have, the less chance you have of making a reliable forecast of the results of a race. However, the programs in this book have been designed to make the best of whatever information you can get. For instance, the H3 program featured in Chapter 6 has three 'cut-down' versions (H3A, H3B and H3C). Which of these you use will depend on your sources of information – daily newspapers, *The Sporting Life*, or the *Raceform Handicap Book*.

### Using a daily newspaper

In a 'general' daily newspaper you might see an entry such as:

13-24F2 True Blue 4-8-6

Looking at those numbers in order, this tells you that last season True Blue ran twice, coming first (1) and third (3) in his races. This season (the numbers after the dash) he has run four races, in which he came second, fourth, fell (the F) and then came second again. If there were no numbers after the dash, you would know the horse had not run at all this season. The figures after the horse's name tell you his age (four years) and the weight he is carrying (8st 6lb).

## 14 Horse Racing with the Commodore 64

Some papers may give you even more information, for instance:

3(8) 13-24F2 *True Blue* (Mr Simmonds) D Smith ... K George

The first two numbers here tell you the number of the horse (3) and its *draw* (8) – its starting position relative to the other horses. This can be important on certain curved tracks (though not on straight ones). Mr Simmonds is the owner, D. Smith is the trainer, and K. George is the jockey. The paper will also tell you the name of the course, the name of the race, the distance of the race (5 furlongs, for instance), the prize money, and the likely starting prices (which we will refer to as SPs). These suggest the odds on each horse, starting with the likely favourite. F is often used here as an abbreviation for ‘favourite’ – don’t confuse it with F meaning ‘fell’ or ‘fallen’ in the same entry. The context should always make it clear which is meant. Many papers will include a short commentary on each race, but usually in rather general terms – it’s not likely to help your computer analysis. The writer may also tip a likely winner, but with these programs you may be able to do better yourself.

Daily newspapers really give the bare minimum of information, but it’s enough to allow you to use program H3C (see Chapter 6), which is the *minimum* information program.

### Using specialist journals

The *Raceform Handicap Book* gives speed figures (SFs) for horses, as well as telling you where the race was run, the going (state of the ground) and the distance. For instance:

True Blue 88(5f Nwby G Apr 1st)

means that the horse’s best speed figure, 88, was achieved over 5 furlongs at Newbury when the going was good (G) on April 1st. For the record, the other terms to describe the going, in order, are heavy (H), firm (F) good (G), yielding (Y), and soft (S). The rest of the information, especially about the going, is worth noting too, though going is not normally included in the program for reasons which will be explained later on.

*The Sporting Life* gives details of previous races, so you will know, for instance, not only that True Blue was second last time it ran, but also that it was carrying rather more weight (8-10) and running a slightly longer distance (6 furlongs). The paper also gives Weight Adjusted Ratings (WARs) regularly on page 2, though these days the paper calls them Marker Sheet and Rating Services – you can see some examples in the extracts from the *Life* in later chapters.

## The individualisation phase

A computer doesn't normally deal directly with the real world – it deals with data and figures. A program to forecast the results of a horse race can't possibly take account of everything that is likely to happen on the day. The going, for instance, is very unpredictable in Britain (less so in America), and in any case it will not be known until the moment the race actually starts. Although the track record will give some guide to the going, it's better to exclude this element from the program altogether and insert it in what I call the *individualisation phase*.

The term 'individualisation phase' is used frequently throughout this book. It means applying information not included in your program to the results that the program gives you. So why not include it in the program in the first place? There are two main reasons:

- Because the information is not available
- Because the information available is not definite

'Indefinite' information could include general comments in daily newspapers, or the going. A heavy rain shower is enough to change the going, so it's best not to include it in the program – it's not that it *can't* be included, simply that to do so requires a great deal of effort and gives very little advantage. You could include the jockey, owner, and trainer as well, but from experience I would say this is using a steamroller to crack walnuts!

That is not to say you must ignore all these factors – you can certainly take them into consideration if you wish, but don't let them have too much influence on your decision. If you're short of time, take your computer forecast and use it just as it comes. If not, then by all means check from the SFs what the going was like for particular horses: you can reasonably assume (though it doesn't always follow) that this is the best going for the horse. As for jockeys, good jockeys tend to ride good horses, so they're not likely to influence your selection very much. Our forecasting system is designed to show the good horses – the *best* horses compared with the others in the race. On the other hand, if your six choices to win at any given meeting are all ridden by the same jockey, you are most unlikely to be right! As far as I know, no jockey has ever turned in such an outstanding performance!

Other factors that may or may not be worth considering at this stage might be the date the horse last ran, and whether it has only an overseas record (as in the case of an Irish horse that has not previously raced in Britain). Normally you can afford to ignore these questions unless they are obviously significant – if in doubt, your safest bet may be not to bet on that race, and this is the usual consequence of uncertainty. If you try to back every race, you are no longer a serious punter.

### Using the programs

To forecast race results, all the programs in this book need *data* – information in the form of numbers and letters. The most obvious way to supply it is to key it directly into the computer, but with these programs it is also possible to store it onto cassette tape or disk and reload it at a later date for immediate use. This is especially useful when you want to accumulate the available race data in advance and add the remaining details on race day. As we have already seen, all the necessary data for the programs is available from *The Sporting Life* and the *Raceform Handicap Book*.

Once this data has been entered into the computer and processed, you may think you are home and dry – after all, you have the computer's forecast in front of you! The truth is, as always, more complicated. The computer can only make suggestions based on the data you have given it, and biased by the interpretation that the program itself puts on that data. More importantly, even the best forecast is useless if you have not learned how to bet effectively so the next chapter is all about the theory and practice of betting.

## Chapter Three

# Introduction to Betting

In this chapter, and the chapters that follow, we will make a detailed statistical and logical analysis of horse racing and betting with the help of the computer. We will finish up with a computerised forecasting system for every race run in Britain, and enough information to adapt the system to races run overseas. Each of the main programs listed in this book (including the two on staking and two on statistics) is based on results from several thousand British horse races. In theory this should mean that they are only applicable to British racing. In practice I have found that most of the relevant criteria are the same in other countries.

In Chapter 2 we studied the various different sources of information about individual horses that might be used in a computer program. This chapter is concerned with the theory and practice of betting – putting that information to work in making money.

Throughout this book I'm going to assume that you understand the basics of racing – that you know, for instance, that the *favourite* is the horse thought most likely to win, a factor reflected by the shortest odds; that all racing in Great Britain is under the rules of the Jockey Club and the National Hunt Committee; and that racing can be on the flat or may involve two kinds of jumping 'over the sticks' – hurdling and steeplechasing. If you are a real beginner it's worth buying a rule book from a reliable bookmaker or from the formal organising bodies, especially if you want to know details about obtaining credit for betting, betting by telephone, and the betting laws. I shall not be covering such topics here.

### Laying the bet

My aim in this book is to show how you can make a *steady* living as a punter, without losing the chance to hit the jackpot and make a million. Now the best chance you have of making a lot of money quickly and without great expenditure is to go for *multiple bets*, where the winnings from a first successful bet are staked on a second, or even a third, fourth and fifth bet. These include doubles (two successive cumulative bets), trebles (three

successive cumulative bets), quadruples (four successive cumulative bets) and even quintuples. Quadruples and quintuples are not horse racing terms, though – they're normally known as four- and five-horse *accumulators*. Of course, with each successive bet the odds against you winning grow enormously – but so, by the same token, does the sum you stand to win. This process is known as *exponential growth*, in which quick growth is created by multiplying rates of change.

Let's assume, for instance, that all the horses in a race are at odds of 5 to 1 against. A straight winner will then give you £5 for every £1 staked. A double gives you £36 (you put the stake as well as the winnings on the second horse of the double), and a treble £216. If you key in the simple program in Fig. 3.1. your Commodore will show you just how the figures go up for accumulator bets at different odds and with different stakes (though it'll stop after nine successive bets – your chances of winning nine bets in a row are minute!). Try

```

10 PRINT "WINNINGS ON ACCUMULATED";
15 PRINT " BETS"
20 PRINT: PRINT "THIS PROGRAM SHOWS ";
25 PRINT "ACCUMULATED WINNINGS"
30 PRINT "ON NINE SUCCESSIVE BETS."
40 PRINT: PRINT "THE PROGRAM ASSUMES";
45 PRINT "A £1.00 INITIAL BET"
50 PRINT "AND THAT YOU RESTAKE ALL ";
55 PRINT "WINNINGS PLUS"
60 PRINT "YOUR STAKE EACH TIME.":PRINT
65 PRINT "ENTER ODDS IN FORM ^3/2^"
70 PRINT
75 T=1
80 FOR J=1 TO 9
90 GOSUB 1000
100 C=A/B*T+T:T=(INT (C*100))/100
105 PRINT
110 PRINT "WINNINGS SO FAR ARE £";T
120 NEXT J
130 END
1000 PRINT "BET NO. ";J
1010 INPUT "ODDS ARE ";A$
1020 FOR K=2 TO LEN (A$)
1030 IF MID$ (A$,K,1)="/" THEN X=K:
      K=LEN(A$):NEXT K:GOTO 1040
1035 NEXT K
1040 A=VAL (LEFT$ (A$,(X-1))):
      B=VAL (RIGHT$ (A$, (LEN (A$)-X)))
1050 RETURN

```

Fig. 3.1. Program to display the results of successful accumulator bets.

entering the program now, and if you're not an experienced Commodore user do pay particular attention to the advice about keying in programs in Chapter 1.

So, now you've seen that it's possible to make a million – even several million (though you'd have to redistribute bets to different bookmakers and do the whole thing over a week or so!). You don't have to own a racehorse to make big money on it! However, as I've already said, the chances of eight or nine successive winners at 5 to 1 against (a one in six chance) are vanishingly small. On the other hand, so are the chances of winning the football pools' Treble Chance in a jackpot week. The point is that it *can* be done, and we're setting out to find the best way of doing it in mathematical, logical and scientific terms. There are no certainties – betting couldn't exist if there were – but you *can* maximise your chances.

Obviously no sensible person who had just won a large amount of money on an accumulator bet would then wager it *all* on another 5 to 1 horse. The figures produced by the program in Fig. 3.1 are just to give you some idea of what is possible. But suppose, for instance, you put half your winnings in your pocket and the rest on the next bet. That could pay dividends – and there, already, you can see how information created by the computer can be individualised and adapted in the light of your own experience!

## Checking out the odds

The next thing to think about is the odds. In our first example, the horses don't have to be at 5 to 1, as the program in Fig. 3.1 makes clear – they can be at any odds at all, as long as some are short odds (such as 2-1) and some are long (such as 20-1). However, most accumulators are won on favourites or near-favourites at short odds – using long odds with any chance of success on an accumulator bet would probably require special ('inside') knowledge. Obviously, success with an accumulator depends on your ability to pick winning horses. How do you go about it? You need to know at the very least how to do it sufficiently well to stay in the running!

If horse racing were like roulette, or fruit machines, then we might regard the task of picking winners as simply a matter of 'lucky numbers', or a random process in which the odds are inevitably loaded against you, the punter, in favour of the banker. If that were true it would be an 'unfair game' – and if you played long enough you would lose your shirt, as well as all your other negotiable assets. In fact, that isn't even true of roulette, but horse racing is a lot more predictable, and much more likely to make you your million.

Horse racing, like football pools and dog racing, isn't a random game. It involves horses, jockeys, trainers, owners, and the form. Not all the horses in a race are equally likely to win it – some of them will have better form than the others. Most people believe that the horse, in the end, is more important than its trainer, its owner, or even its jockey. This is true, but good jockeys tend to

ride good horses, so there is a degree of correlation between the two. Many people think that an owner who trains his own horses will be more successful than an owner who relies on a paid trainer. Others feel that owner-jockeys are more likely to do well in amateur rider races (usually hurdling and steeplechasing). The truth is that if the trainer and the jockey are both good, the job will be done well – it's overall standards that are important.

In any single race the odds are such that if you backed every horse you would be (almost) certain to lose overall. This is how bookmakers can stay alive! This bookmaker's profit is usually called the *overround*, and we will discuss this in more detail in Chapter 7. To illustrate the point, and introduce you to real racing, let's take a look at an actual event – the Manor Novices Handicap Chase. Now by its very nature this is a risky sort of race to bet on – it's 'over the sticks' *and* there are novices involved. Eight horses are running. We shall make our choice the way most people do – using common sense, sentiment and, if necessary, a pin. We will be deliberately unscientific. Table 3.1 shows the horses in the race, and Table 3.2 lists the forecast odds on each

*Table 3.1.* Horses running in the Manor Novices Handicap Chase.

| Horse          | Owner                          | Trainer      | Jockey        |
|----------------|--------------------------------|--------------|---------------|
| Do Justice     | G. Pritchard-Gordon            | D. Nicholson | R. Dickinson  |
| Morey St Denys | G. Luck                        | Gifford      | R. Champion   |
| Saffron Cake   | Power Packing<br>Services Ltd. | Cambridge    | R. Crank      |
| Neon Star      | Mrs C. Williams                | Turnell      | A. Turnell    |
| Marmalade      | C. Armstrong                   | G. Balding   | R. Linely     |
| Blacksboat     | C. Grissell                    | Grissell     | (doubtful)    |
| Tenecoon       | F.A. Smith                     | F.A. Smith   | Dr D. Chesney |
| Falcons Boy    | B. Arnold                      | Salaman      | M. Salaman    |

*Table 3.2* Forecast odds on runners in the Manor Novices Handicap Chase.

| Horse             | Odds against |
|-------------------|--------------|
| 1. Neon Star      | 9-4          |
| 2. Morey St Denys | 11-4         |
| 3. Do Justice     | 3-1          |
| 4. Saffron Cake   | 10-1         |
| 5. Falcons Boy    | 14-1         |
| 6. Marmalade      | 16-1         |
| 7. Blacksboat     | 25-1         |
| 8. Tenecoon       | 25-1         |

**Table 3.3.** Returns on individual winning horses if you have placed a £1 bet to win on every horse in the race.

---

|    |  |
|----|--|
| 1. | £2.25 W + £1.00 stake – £7.00 loss = –£3.75  |
| 2. | £2.75 W + £1.00 stake – £7.00 loss = –£3.25  |
| 3. | £3.00 W + £1.00 stake – £7.00 loss = –£3.00  |
| 4. | £10.00 W + £1.00 stake – £7.00 loss = £4.00  |
| 5. | £14.00 W + £1.00 stake – £7.00 loss = £8.00  |
| 6. | £16.00 W + £1.00 stake – £7.00 loss = £10.00 |
| 7. | £25.00 W + £1.00 stake – £7.00 loss = £19.00 |
| 8. | £25.00 W + £1.00 stake – £7.00 loss = £19.00 |

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horse. Suppose you bet £1 on every horse in the race. Table 3.3 shows the returns you would get on each horse (ignoring tax but including stake) if that particular horse won the race. Unless something very special is afoot, the chances are that one of the first three horses will win – so if you placed a bet on every horse you would lose overall. If the odds in any way reflect the real *probability* of success that each horse enjoys you would, of course, always lose on average. But what if ‘something very special’ is afoot?

### Inside information

If you know something about a horse that other punters don’t you may have a chance to beat the odds, so let’s look at a situation where you might have special information. Imagine you are the owner of a horse you are ‘bringing on’ because you believe it has real potential. You run it two or three times, and after consulting the trainer you say quite explicitly to the jockey ‘Take it easy – don’t win, just try out the horse, give it experience, and see how it goes.’ Suppose he follows this advice for two or three races – the horse is allowed to win if it simply cannot be avoided, but if possible it’s kept back to third or fourth place. It gains experience of large and small fields. Eventually you pick a race where its form suggests, say, 10 to 1 against. This happens because you haven’t been able to conceal its potential entirely, but very few punters will know that on this particular occasion the going should be ideal for the horse, with just the right state of turf and weather and just the right sort of opposition. This time you say to the jockey ‘Give it the gun; go all out to win.’

In practice, of course, even a plan like this isn’t foolproof. Another horse may have been groomed in precisely the same way for this particular race. Conditions may change. The horse may be ‘off colour’. There are many other possible variables. But you, as the owner, are now in the best possible position to place a bet of £100 on your horse and have a fair chance of winning £1000 – that’s what ‘inside knowledge’ is all about.

There are many variations on this story, of course, but think about it for a minute. There are other people ‘in the know’ besides the owner – there’s the trainer, and the jockey himself. As a professional, the jockey can’t bet on racing officially, but you could keep him in the dark until it was too late for

him to tell his friends. If you did that, of course, you might risk losing his cooperation – and how would he react then? Already that simple scheme is beginning to look much more complicated, but two things are certain. The people ‘in the know’ are going to keep things dark as far as possible, or the odds on the horse will shorten, and that, in turn, means that it’s most unlikely an outside observer will be able to guess or infer what’s going on. Inside information, by definition, is hard to get if you’re outside, even if you’re a reasonably good ‘detective’. After talking to some expert tipsters and punters, I’m inclined to think that owners do not normally give reliable tips.

### Starting prices and the Tote

Odds in horse racing are always given at starting prices (SP) or at Totalisator (Tote) returns. SP means the odds at the moment the race starts; these are fixed on the course. The Totalisator operates rather like a football pool – it collects all the money placed on the horses and returns it in a proportionate way to the winning punters after tax and other deductions have been made.

The results of betting with the bookmaker and accepting starting prices rather than betting with the Tote can be dramatically different, as just one example will demonstrate. At an evening National Hunt meeting at Cheltenham a horse called Bassant won at 33 to 1, giving a return of £33 for a £1 bet with the bookmaker. A 10p bet on the same horse on the Tote yielded £31.22 – a £1 bet would have paid £312.20! It’s worth making detailed comparisons between bookies and the Tote, though it seems that the bookmaker may be the better option when each-way bets (i.e. a double bet on the horse winning and on its being placed) are involved.

*Table 3.4.* Yields from place bets, depending on the number of runners in the race.

| Starting price                |   |
|-------------------------------|---|
| Each way betting – place odds |   |
| <b>Horse racing</b>           |   |
| 2–5 runners                   | All up to win                           |
| 6–7 runners                   | Quarter odds on 1st and 2nd             |
| 8 or more                     | One-fifth odds on 1st, 2nd and 3rd      |
| <b>Handicaps</b>              |   |
| 12–15 runners                 | Quarter odds on 1st, 2nd and 3rd        |
| 16–21 runners                 | One-fifth odds on 1st, 2nd, 3rd and 4th |
| 22 or more                    | Quarter odds on 1st, 2nd, 3rd and 4th   |

## Place betting

Betting to win is not, of course, either the only form of betting or the best. However, 'place only' betting, or place betting, is nearly always at Tote odds. If there are less than six runners, or when no place dividend is returned, the money is placed to win. This is an important form of betting, though less so than it used to be, so Table 3.4 shows the rules of a well-known bookmaker.

## Other betting methods

There are certain standard betting methods that the punter should be familiar with. One is *forecast betting*, and applies in any race where there are three or more runners. The two types of forecast betting operated by the Horse Race Totalisator Board (HRTB) are:

- The *straight forecast*, when the first two horses must be nominated in the correct order.
- The *dual forecast*, when the first two horses must be nominated, but need not be in order.

There are other forecast methods, but we shall not concern ourselves with them here. There is also an almost infinite number of combined and conditional bets, some of which are formally recognised. The best known is probably the *Yankee*, normally a double on each of four horses, taken in pairs (of which there are six), and a treble on each of three at a time (there are four of these). However, in this book we will be using what I call an 'extended Yankee', for which we add an extra bet to win on all four horses. In other words, a traditional Yankee involves ten bets, but our version involves fourteen. Sometimes a four-horse accumulator covering all four horses is added to make an additional bet.

It's worth looking at this bet in detail. Suppose we call the horses A, B, C and D. To keep things simple, imagine that the odds on each horse are 2 to 1 against. We start by betting to win on all four. Then we bet £1 on each possible double as follows:

AB AC AD BC BD CD

where A, B, C and D run in that order – say A in the 2 o'clock, B in the 2.30, C in the 3 o'clock and D in the 3.30. For the trebles you have:

ABC ABD ACD BCD

plus, if you like, a four-horse accumulator on ABCD. Now, what can you win?

For starters you can win £2 plus your stake back on each individual horse – up to £12 in all. Then you can win £9 on each of the doubles (up to £36 in all), £27 on each treble (up to £108 in all), and £324 on the four-horse accumulator.

## 24 Horse Racing with the Commodore 64

So if all four horses won you'd have picked up £480 on this 'extended Yankee', which is very good!

Yankees can also be 'each way' bets (betting for both a win and a place) and there are several other combinations. The *Patent*, for instance, also involves three horses, and includes the four win bets on each horse separately. This and many other 'standard' bets are fairly widely accepted by their names, and you will not need to give the bookmaker any further explanation.

### Going to the races

Before any further discussion of form and staking, it's time to go back to the track. Now we'll put ourselves in the shoes of a fairly simple punter who has no particular system but does know the rules of racing (see *Ruff's Guide to the Turf*) and the standard methods of the bookmakers. He'll be going in early spring when the flat racing starts. The flat racing season, when betting is more 'reliable', occupies the extended British summer (March to November). Flat racing is regarded as a better bet because jumping hurdles or even brush fences introduces an extra element of risk into an already risky situation.

Our novice punter is well aware that a number of factors should influence his betting, even if he still has little real idea of how to deal with them. These are:

- the horse's record in its last two races, and overall
- its weight
- whether it has gone up or down in the groups (class of race)
- its speed figures
- the kind of race being run

The groups and speed figures won't, as we have seen, be covered in every newspaper. As for the kind of race being run, we should normally avoid novice races, two-year-olds, etc. We want to make the betting scientific, and not just a matter of chance. Do remember, though, that the bookmaker will want to create the impression that it *is* all pure chance, because he has every reason to fear a professional punter – especially one who can construct a 'scientific' system.

In the race we're using as an example, I'm not going to provide any information that is not readily available in the newspapers – I'll do that later on when we're looking at other meetings. As we've seen, the previous record of the horses is normally available even in daily newspapers, with placings and code letters (such as P for 'pulled up'), the age and weight, and, in some papers, details of the sire and dam. All these factors need to be taken into account, and in the case of the Manor Novices Handicap Chase, the previous form was as follows:

|         |                     |
|---------|---------------------|
| 000UF1  | Do Justice          |
| 0421120 | Morey St Denys (BF) |
| PP-3040 | Saffron Cake        |
| 0P-0230 | Neon Star (BF)      |
| 024240  | Falcons Boy         |
| 0-00100 | Marmalade           |
| 3-43340 | Blacksboat          |
| F0-F40P | Tenecoon            |

Just to remind you once again, '-' means the break between last season and this one, F means 'fell', U means 'unseated rider', P means 'pulled up', and BF means 'beaten favourite'. The meanings of these code letters are usually given with the form, so don't worry if you can't remember them.

At this stage we are not concerned with the way a knowledgeable punter would bet on this race – he might very well choose not to bet at all! You could, of course, rely on what I call 'racing folklore'. You may have heard some of these gems yourself. 'Always back the favourite in the last race.' 'Always back an owner-rider.' 'Always back a horse with an improving record.' There are many more, and every one of them can easily be proved or disproved with the help of the record books – and, of course, your Commodore 64. However, that's a little beyond our abilities at the moment, so let's play the role of the innocent punter, using nothing more than the information about the horses I've given you here and on page 20.

Once on the course we find that there's some uncertainty about Blacksboat's rider, so we decide not to bet on him. Do Justice looks as though he has a good chance of winning, so let's place a £1 bet to win on him. Tenecoon is a possible long shot, so let's try an each-way bet of £1. An 'each-way' bet is really two bets, one to win and one for a place.

At the start of the race the odds are as follows:

|                |         |
|----------------|---------|
| Morey St Denys | 5-2 (F) |
| Neon Star      | 7-2     |
| Do Justice     | 100-30  |
| Tenecoon       | 25-1    |

In the event, Neon Star is first, Tenecoon second, Morey St Denys (the favourite) third, and Do Justice comes fourth. Blacksboat does not run.

Tenecoon did not win, so we lose the £1-to-win bet, but he was placed. There were seven runners, so the successful place bet pays one quarter (see Table 3.4). In this case it's a quarter of 25 to 1, so we win £6.25. However, we have not mentioned tax. It can be paid either when the bet is made, or on the winnings. In the case of multiple bets (doubles, trebles etc.) it is always best to pay the tax first, or you will have to pay it on the winnings of each separate bet.

## Successful betting tactics

Our each-way bet on Tenecoon was reasonably successful, but notice that our winnings came from the bet on a place, not the bet to win. If form allows the kind of prediction that many people believe possible, especially in flat racing, then a place bet could well increase your chances. It's difficult to calculate precisely how good or bad those chances are – there are too many variable factors involved, and the odds on each horse are weighted, it would seem, by people betting on them to win. All the same, professional punters often use place betting as a 'winning technique', so it's reasonable to suppose that given the right adjustment and skill, and *given adequate record-keeping*, place betting could pay dividends. It's certainly less naive than the tactics suggested by so many writers on horse racing, who insist that 'you always win with the winners' – in other words, that betting on previous winners is always the best bet.

Place betting diminishes the odds against success, so it improves your chances of winning. The snag, of course, is that you don't win as much as you might if you were betting to win. It's best regarded as a bread-and-butter technique – it won't make you a million, but it may keep you alive while you work out how you *can* make a million! Remember, though, that place bets can only be made on races with six or more runners.

Let's consider what our tactics might be at a typical flat race meeting. There are at least three possibilities:

- Use trebles, accumulators etc. to increase the likely yield of successful bets.
- Try our hand at place betting.
- Work out an experimental betting method we can test on the Commodore 64, and improve upon as necessary.

A possible fourth method is 'hunch' backing, perhaps with the aid of paranormal gifts! This method is worth considering, if only because it gives us a comparison with more systematic methods: it will become what scientists would call a 'control group'. If all goes well, this should prove that our systems are an improvement on hunches!

Any of the three tactics outlined above depends on your ability to analyse form, and to stick to favourites or near-favourites unless you have inside information. We've already looked at the first two methods, but what about the third?

There is one very useful old formula sometimes known as the SIM or La Bouchere method (see Chapter 7). Using the SIM plan you increase the value of your bet after a loss. It is, as the name suggests, fairly SIMple! For instance, if you've placed a £5 bet on a horse that loses, you place a higher bet (double if you choose) on the next 'value bet'. You choose value bets according to form, basing your judgment on expert opinion, reasonable odds, a favourable record and, all being well, a sensible assessment of the chances in the context of the likely track conditions. It's vital to weigh up the

form, though, and as we have just seen, weighing up the form could be a long and tricky task. And do remember that the SIM plan is intended for flat racing, and normally involves various races at different meetings. The draw is important, so we need to go to a meeting to test the system. Don't forget that our eventual goal is a systematic mix of form strategy and betting strategy based on probability and logic.

So far the SIM plan sounds plausible, but it also sounds like very hard work – especially the business of weighing up the form. And that is why we require the services of a computer.

### **How can the C64 help?**

There are two main ways of using a computer – any computer – to help in forecasting the results of a sporting event. The same principles apply to any sport – racing, football, basketball, or tennis.

- To analyse existing evidence, usually by statistical means.
- To construct forecasts of likely results.

The Commodore 64 does not, in itself, contribute to either of these operations. Unlike the heroes of *Star Wars* and computers in the research field, you can't 'ask the computer' to tell you the information you want to know. The computer simply allows the job to be done more quickly and more accurately than a human being could do it, and enables you to organise information in quantities that would normally be confusing or awkward to handle. The computer can only do what it is told to do, and it can only process the information that you give it, so before you start you can avoid disappointment by sorting out precisely what you *do* want it to do, and precisely what information you need to give it. You need to learn how to systematise and discipline your thinking – and that's precisely what the next chapter is about. By the end of it you will be able to key in program H1 – your first working computerised form analysis on the Commodore 64.

## Chapter Four

# Introduction to Forecasting

We've now looked at some of the information that could be used to forecast and bet on the result of a horse race. But how important is it, and how much of it should be included in a computerised forecasting program? In fact we can narrow this down to two questions:

- Which races should we bet on?
- How comprehensive should the computer's coverage be?

Let's deal with these questions in order.

### **Which races should we bet on?**

I've already suggested it might be a good idea to eliminate all two-year-old races and maiden plate races right at the start. It's a tough job trying to forecast the results of every race – just ask any professional tipster! By doing so publicly he actually shortens the odds on his own selection – and in effect, he always has to place a bet, whether he wants to or not. The good punter waits for the value bet, as we have seen, and he may find it in only one race in a day of many meetings. It's true that people do bet on every race at a given meeting, especially if they are there in person, but it does make betting riskier. So our program may be deliberately designed to omit certain types of race.

### **How comprehensive should the computer's coverage be?**

Again, I've hinted at this in earlier chapters. It's important not to load up the program with factors subject to sudden change, or which are purely personal to the punter. The more choices made within the program itself, the slower and less efficient it becomes, and the greater the likelihood of small factors throwing out its accuracy. Your final choice, as a punter, is bound to be influenced by feelings, ideas, and theories that are personal to you, or at least not universally accepted. So we do not include last-minute factors such

as overweight (ow), odds, the going, non-runners, change of jockey, etc. in the program – these cannot be dealt with at the forecast stage, because the computer forecast needs to be made before the final declaration of runners. This takes place some 24 hours before the race itself, and comes from Wetherbys, who collect the fees from the owners and publish the declarations. Nor does our computer program make provision for purely personal criteria, because if they're personal you can only apply them yourself!

As always, you need to know about the horse's last two races, including the weight it carried in those races, the distance over which they were run, where they were run, and the class of the race (now decided by prize money). Another possible factor is the going, and this can (if you wish) be included in the H1 program. In general, though, it's left for what we have called the individualisation phase. This is because it complicates the program significantly, as will become clear. It might be easier to include the record of each individual horse in terms such as 'good on heavy going', but this is pretty hard to determine, and there are no reliable records available to help you. You could try to collect such records yourself, but even then your answer to a question such as 'Is the going suitable for horse X?' would be rather arbitrary.

### Asking the right questions

Let's draw up a list of 'permissible' questions, in order, to help us eliminate all but value bets.

- Is the horse racing on a higher group track, or is it racing in the same group for higher prize money? If YES, then eliminate.
- Is the horse in the first three Weight Adjusted Ratings for this race, as listed in *The Sporting Life*? If NO, then eliminate.
- Is the horse in the first three speed figure ratings for this race, as listed in the *Raceform Handicap Book*? If NO, then eliminate.
- Is the horse carrying more weight than last time? If YES, then eliminate.
- Was the horse placed in its last two outings? If NO, then eliminate.
- Has the horse been placed in 50% of its starts? If NO, then eliminate.
- Is the distance suitable? Did it race to within 1 furlong in its last two outings? If NO, eliminate.
- Is the horse among the first three in the betting? If NO, then eliminate.
- An optional question: Is the going adverse to the horse's performance? If NO, then bet on it!

Of course, we haven't considered every possible factor here, only the most important ones. However, if you are based in the USA there are other questions that may need to be added:

- Has the horse run within the last 14-21 days? If NO, then eliminate. (This is a shade arbitrary – you may wish to relax the limit to a month, or whatever circumstances suggest.)
- Did the horse run its last race but one within the last 60 days? If NO, then eliminate. (Again, this is a little arbitrary, and the limit could be relaxed.)
- Did the horse come in first in its previous race? If YES, then downgrade it. (Statistical analysis shows that this makes very little actual difference to the likely result this time! It will, however, affect the betting, so it is effectively covered by the betting question above.)
- Is the horse a filly or a mare (especially over a certain age – say six years – and weight) running against geldings or stallions? If YES, then eliminate, or at least downgrade it.
- Has the horse raced on the same track previously? If NO, then downgrade it slightly.

With all these questions neatly laid out you may feel that the computer is almost unnecessary! Have no illusions – you need it. Without it, you'd have to write down all the information about each horse, then work laboriously through all of it, checking it against each of the questions written above. In a steeplechase with 20 plus runners, that would take you a considerable time. With the computer, you will simply have to enter the basic information and wait – the computer will work through the list of runners, one at a time, checking the data you have given it against the criteria you've established for a 'value bet'. Within a few seconds you'll have its selection on screen – in the time it might take you to find your paper and pencil, in fact. And the quicker you can sort out the potential winner, the easier it is to keep the information you're working with accurate and up to date. We'll see exactly how this is done a little later on. In the mean time we need to translate those questions into something we can use to write a computer program – a *flowchart*.

## Introducing the flowchart

If you're unfamiliar with computers and computing you may not have come across flowcharts before, so a few words of explanation may be welcome here. A flowchart is a way of showing how a process works – a process of logic, a process of manufacturing plastic bags, a process of getting up in the morning, or any other process you care to think of. Flowcharts are helpful to computer programmers because any program, in any language, is a process. Figure 4.1 illustrates the idea with a flowchart for starting the car in the morning.

Notice the symbols I've used in this flowchart – I will be using them consistently from now on. The oval shape indicates the START or END of a series of actions. A decision is shown by a diamond shape. Processing, i.e. something you or the computer must do before proceeding, is shown by

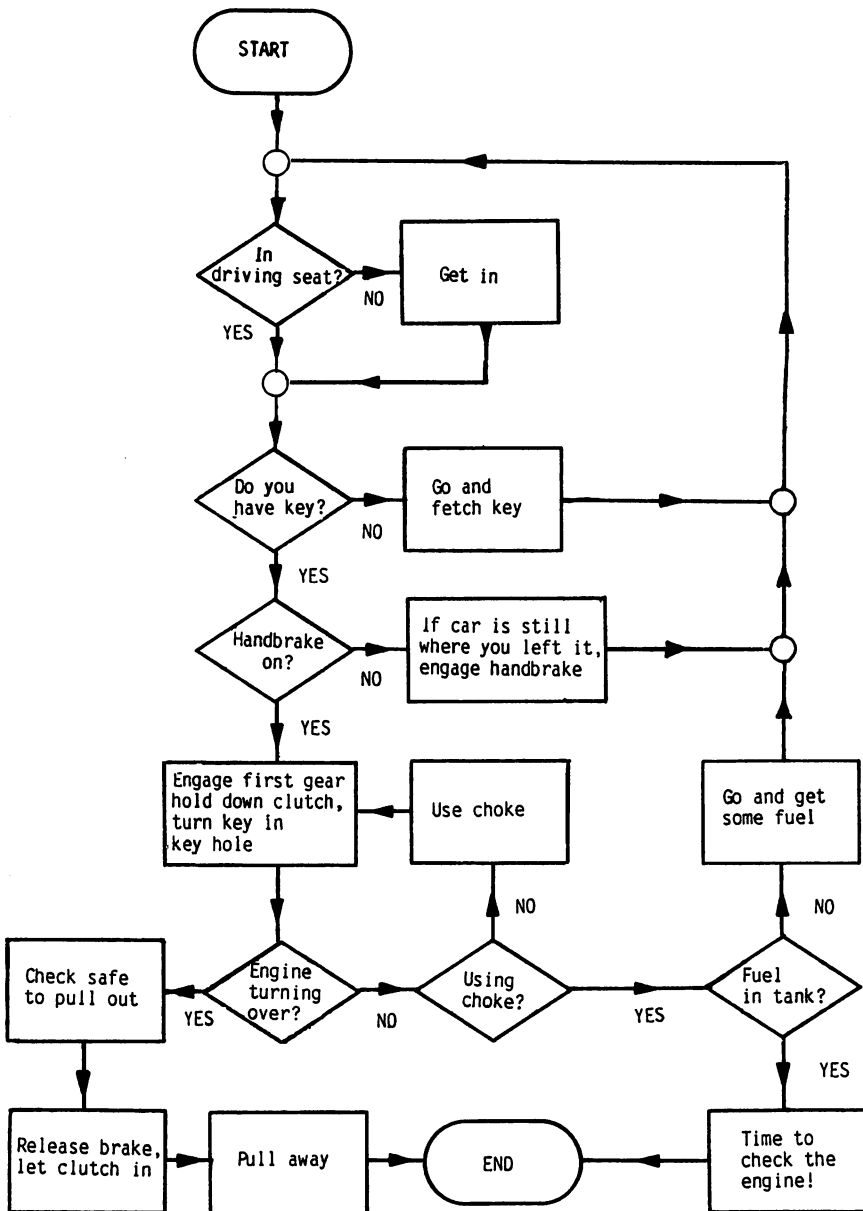


Fig. 4.1. A flowchart showing how to start a car.

a rectangle. The sloping parallelogram (see Fig. 4.2) indicates that information is being put in or taken out. The small circles are *feedback loops* – in other words, points at which you may need to return to the flowchart after a decision has been taken. A careful study of the flowchart should make this all quite clear, but if you're still a bit puzzled take a look at Ian

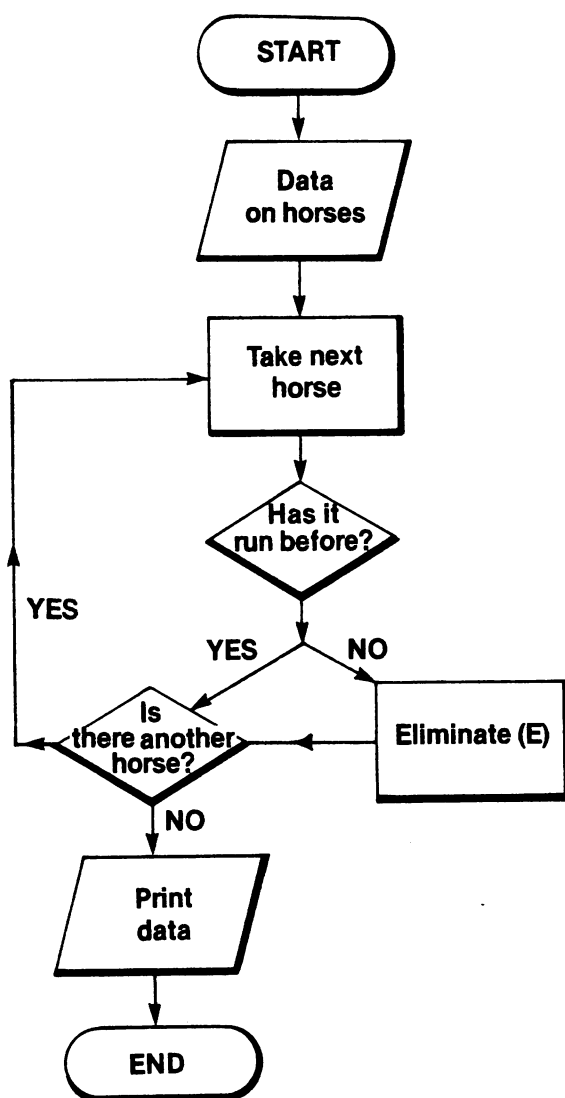


Fig. 4.2. Horse race selection flowchart – this version uses only one question to select or reject the horse.

Sinclair's *Commodore 64 Computing*, published by Collins, which includes a section on designing and setting up programs that begins with a look at flowcharts.

So how can we apply the flowchart idea to our set of questions? Figure 4.2 should explain how. Here we begin by entering *data* – useful information such as form, WARs, SFs etc. – on all the horses in the race. All this data will be stored in some way but the flowchart isn't concerned with the method of storage. It could be a computer, or it could be a box of cards

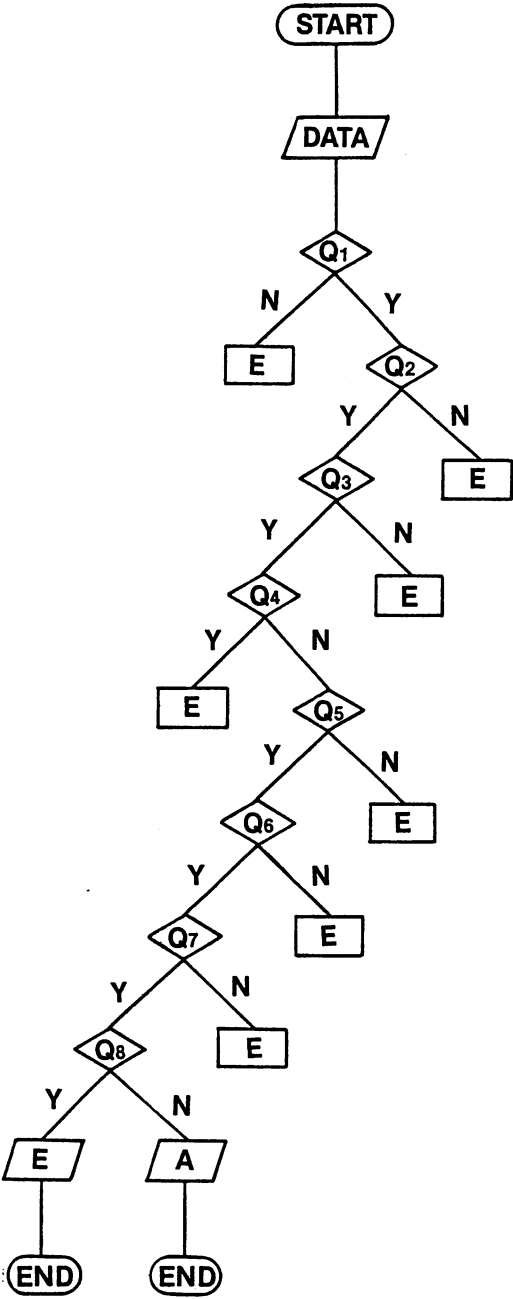


Fig. 4.3. Horse race selection flowchart with eight questions (E = eliminate, A = acceptable).

on which you have written information about the horses. If you're still unsure of yourself with the Commodore, it may help to think of the 'data store' in this way.

Once the data has been stored we go through the list of runners one at a time, and take out the data (the card) that we need from storage. (Take next horse). Once we have the information, we reach a decision point (in the diamond-shaped box) – has the horse run before? We can answer this question using the data we have just retrieved from storage. If the answer is YES, then the horse is 'selected' – you could do this by putting its card in a second box labelled 'Selections'. If there's still another horse to consider, we return to the 'Take next horse' box, take the next data card out of storage, and start again. If the answer is NO, the horse is not selected (i.e. we put its card into a third box marked 'Rejections') but again we check to see if there is another horse to consider. If there isn't, then the pile of cards in our 'Selections' box represents a shortlist of likely winners.

It's time to put theory into practice. Our computer program has eight questions, not just one – we need to see how they can be fitted together into a flowchart, and what the finished flowchart has to do with real computer programming!

If you look at Fig. 4.3, you'll see that adding the extra questions doesn't really make the chart particularly complicated. All eight questions (we're ignoring the going) have to be asked one after the other about every horse, so the chart boils down to an 'octopus' version of Fig. 4.2. There are simply eight questions instead of one inside the loop, which means seven more chances for a horse not to make it to the final selection. For the moment don't worry about how the computer handles this flowchart – we'll deal with that in detail in a moment. For now, just look at it carefully and make sure you understand exactly what is happening.

### **Choosing the right program**

Before you switch on the computer, it's important for you to know exactly which program – H1 or H3 – you wish to use, and which version of that program will be most useful to you. Briefly, then, H1 follows the selection procedure outlined above; H3 uses a different selection method based on 'weightings', which is explained more fully in Chapter 6. You may decide that H3 is more suitable for your requirements – it has three variants designed to cope with limitations you may have on the information available about a given race. H3A is the one to use if you do not have access to the *Raceform Handicap Book* – it excludes the question about speed figures. H3B excludes data from *The Sporting Life*, so it omits the questions about WARs and the weight carried and distance run in the last race. H3C can be used if you have only a daily paper to refer to – it omits both sets of questions.

Now on to a detailed analysis of the H1 program itself, including step-by-step instructions on entering and using it.

## Entering the programs

If you have already obtained the H1 program commercially, you can simply load it at this point. If you're planning to key in the program yourself, and you are not a hardened Commodore user, please make absolutely sure that you have read and understood everything in Chapter 1. Don't be tempted to dive straight in and begin typing the listing – the results will almost certainly be very disappointing indeed. Certain mistakes on the Commodore can be rather hard to track down – your entries must be absolutely accurate if the program is to run successfully and reliably. Regard any time spent at this stage as an investment, because the more you use the program, the more that investment is going to repay itself.

To help you, I've included a line-by-line analysis for each section of the program – in effect, a commentary that tells you exactly what's going on. It's intended mainly for readers fairly new to BASIC programming but familiar with its principles, and it's written in strict line order – so if you want to look at the details of a particular subroutine, look through the numbers printed in bold till you find the one you're looking for. Where a line sends the program to an important subroutine, a brief summary of what the subroutine does is included at that point, for clarity. Using this analysis should help you to make personal modifications to the program later on. If the programming theory baffles you, I would recommend you to Ian Sinclair's *Commodore 64 Computing*, also from Collins, which gives a clear introduction to the function and use of all the BASIC keywords.

## Program H1: line-by-line analysis

```
10 CLR: DIM H$(40,15),SF%(40),H1%(40),R$(6
)
```

**10**

This line creates a large array, H\$, which will be used to hold information about up to 40 runners in any given race. It consists of 40 sets each of 15 strings. The integer arrays SF% and H1% (H-one) are used to store details of speed figures (SFs) and WARs respectively. The R\$ array stores details of the race meeting itself.

```
25 DATA 3000,2000
26 READ C1,C2
```

## 25-26

These lines set up variables C1 (C-one) and C2, used to help determine the class of a meeting.

```

45 PRINT "␣":LN$="
                                ":GOTO110
64 GOSUB84:PRINTLN$:RETURN
65 GOSUB85:PRINTLN$:RETURN
68 GOSUB88:PRINTLN$:RETURN
71 GOSUB91:PRINTLN$:RETURN
78 PRINT "XXXXXXXXXX":RETURN
79 PRINT "XXXXXXXXXX":RETURN
84 PRINT "XXXXXXXXXXXXXXXX":RETURN
85 PRINT "XXXXXXXXXXXXXXXXX":RETURN
88 PRINT "XXXXXXXXXXXXXXXXXX":RETURN
91 PRINT "XXXXXXXXXXXXXXXXXX":RETURN
100 FOR I=1 TO 7:PRINTLN$:NEXT:RETURN

```

## 45-100

Line 45 sets up the blank string LN\$, which is used to clear unwanted information from the screen display. The remaining lines are used to reset the cursor to appropriate positions in various parts of the program, so that elements of a screen display can be cleared for alteration. Enter them carefully! In line 100, note that the counter variable I is a letter, not number one.

*Commodore symbols:*

Line 45: CLR/HOME + SHIFT; 40 spaces between the quotes

Line 78: CLR/HOME, cursor up/down 8 times

Line 79: CLR/HOME, cursor up/down 9 times

Line 84: CLR/HOME, cursor up/down 12 times

Line 85: CLR/HOME, cursor up/down 13 times

Line 88: CLR/HOME, cursor up/down 16 times

Line 91: CLR/HOME, cursor up/down 19 times

```

110 GOSUB8110:GOSUB8190

```

## 110

This line sends the program to subroutines 8110 and 8190, which create the title display (see below).

```

120 GOSUB78:PRINT"XXXXXXXXXXXX1. ENTER N
EW DATA"
130 PRINT"XXXXXXXXXXXX2. LOAD RACE DATA
"
140 PRINT"XXXXXXXXXXXX3. END OF PROGRAM
"
150 GOSUB84:INPUT"XXXXXXXXXXXX4.WHICH OPT

```

```

ION$ ";Y$:Y=VAL(Y$):IFY<0GOTO170
160 ONYGOTO230,5100,3530
170 GOSUB64:GOTO150

```

### 120-170

The first screen menu, offering you the option of entering new data, loading up data entered on a previous occasion, or ending the program. Lines 120-140 print out the relevant menu items on screen. Lines 150-170 allow you to choose the option you want. In line 150, the program accepts the INPUT in the form of a string, Y\$, so don't forget to press RETURN! If you type a letter by mistake, the computer will read the value of Y\$ (VALY\$) as less than 0, and the program will skip to line 170, which clears the input line on screen and sends you back to 150 to try again. Otherwise control passes to line 160, which sends you to line 230, 5100, or 3530 depending on the value of Y (1, 2, or 3). If Y is greater than 3, the program will again go to line 170.

*Commodore symbols:*

Line 120: Cursor right/left 12 times.

Line 130: Cursor up/down once, cursor right/left 12 times.

Line 140: Cursor up/down once, cursor right/left 12 times.

Line 150: Cursor right/left 12 times, CTRL + 9, CTRL + 0.

```

220 X$="INPUT RACE DETAILS":GOSUB6600:GO
SUB3820

```

### 220

This line is skipped over if you use the first screen menu. It creates a string, X\$, containing the letters "INPUT RACE DETAILS". Subroutine 6600 (see below) uses X\$ to create a 'flashing' display of the message. Subroutine 3820 clears out certain elements of the H\$ array (again, see below).

```

230 PRINT"␣":PRINT"␣INPUT RACE DETAILS␣":
    ␣":GOSUB3820
250 GOSUB5250:GOSUB5345:GOSUB5350:GOSUB5
360:GOSUB5365:GOSUB5370
290 GOSUB5300

```

### 230-290

The first routine you can select from the menu at the top of the program. It allows you to enter details about the race meeting.

Line 230 first clears the screen (see Chapter 1) then prints "INPUT RACE DETAILS" reversed-out at the top of the screen. Subroutine 3820 then clears out elements of the H\$ array ready for new data.

Lines 250 and 290 send the program to a series of subroutines. 5250 prints out the five questions that need to be answered together with the data currently held about them in R\$ (if any). 5345, 5350, 5360, 5365, and 5370 move the cursor to the end of each question in turn, accept an input, and store it in the R\$ array.

Line 290 sends the program to subroutine 5300, which allows you to alter or correct any of the information you have entered.

## 38 Horse Racing with the Commodore 64

*Commodore symbols:*

Line 230: CLR/HOME + SHIFT, CTRL + 9, CTRL + 0, cursor up/down

```
375 GOSUB68:GOSUB88:INPUT"NUMBER OF RUN
NERS ";HN$:HN=VAL(HN$):IFHN<0GOTO375
385 GOSUB3800:PRINT" ":FORH=1TOHN
410 GOSUB5410:GOSUB5570:GOSUB5575:GOSUB5
580:GOSUB5585:GOSUB5590
420 GOSUB5595:GOSUB5600:GOSUB5605:GOSUB5
610:GOSUB5615:GOSUB5620:GOSUB5625
542 GOSUB5545
700 PRINT" ":NEXT:GOTO4200
```

### 375-700

Line 375 sets the cursor as required (subroutines 68, 88), then invites you to enter the number of runners in the race with an INPUT statement. Again, the information is entered in string form (HN\$) to create a variable HN which is used a great deal in later parts of the program.

Line 385 passes control to subroutine 3800, which enables you to enter the names of the runners, and stores their names in the H\$ array. After this it clears the screen and begins the main part of the data-gathering process, contained in a FOR ... NEXT loop between here and line 700.

Line 410 passes control in turn to a series of subroutines similar in principle to those used for the 'race details' earlier in the program. 5410 and the lines up to 5540 set up the questions on screen, together with any data already in memory. The remaining subroutines in this line and line 420 allow you to enter information in response to each of these questions in turn. Line 542 accesses subroutine 5545, which gives you the chance to correct or alter any of the information you have given the computer.

Line 700 clears the screen and returns you to line 410 so you can enter details of the next horse. It does this until the number of horses dealt with equals the number of runners (HN), then sends you directly to the menu at line 4200.

*Commodore symbols:*

Line 375: CTRL + 9, CTRL + 0

Line 385: CLR/HOME + SHIFT

Line 700: CLR/HOME + SHIFT

```
800 PRINT"DISP RACE DETAILS ";:GOSUB5250
:GOSUB5300
810 PRINT" ":FORH=1TOHN:GOSUB5410:GOSUB5
545:PRINT" ":NEXT:GOTO4200
```

### 800-810

These two lines deal with the option in the main menu to "DISPLAY RACE AND FORM DATA". Line 800 uses subroutines 5250 and 5300 to print the race data currently in store and give you the chance to alter or update it.

Line 810 uses subroutines 5410 and 5545 to print data on each of the

runners in turn and in each case allow you to alter or update it. Finally it returns you to the menu at line 4200.

*Commodore symbols:*

Line 800: CLR/HOME + SHIFT, cursor up/down, CTRL+9, CTRL+0, cursor up/down

Line 810: CLR/HOME + SHIFT twice

```

820 PC=0:PRINT"┐":PC=PC+3
825 PRINT"┐";R$(1);TAB(20);R$(6);TAB(32)
;R$(2);"┐"
830 FORHD=1TOHN:PRINTHD;TAB(5);H$(HD,1):
PC=PC+1:IFPC<20GOTO850
840 PRINT:GOSUB4400:PC=0:PRINT"┐":PRINT
RUNNERS (CONT'D):┐":PC=PC+3
850 NEXT:PRINT:GOSUB4400:GOTO4200

```

### 820-850

These lines deal with the main menu option "DISPLAY RUNNERS". In line 820 the variable PC is used to control the amount of information appearing on screen at any one time. After the screen is cleared, PC is set to 3.

Line 825 uses data stored in the array R\$ to print the racecourse, the date of the race, and the time of the race.

Line 830 sets a variable HD which is used as a counter, then prints HD (equivalent to the number of the runner) followed by the name of the runner as extracted from the H\$ array. The counter PC is incremented (raised) by 1. If PC is still less than 20, control passes to line 850, which sends the program back to the top of the FOR...NEXT loop at line 830 so the details of the next runner can be printed. However, if PC is now equal to 20, control passes to line 840. This accesses subroutine 4400, which allows the user to clear the screen for more data by pressing the spacebar. Then the counter PC is reset, and a new title line is printed on screen before the loop returns to 825. Once the loop is completed, line 850 passes control to subroutine 4400, again clearing the screen and inviting the user to press the spacebar. This has the effect of returning the menu at 4200 to the screen.

*Commodore symbols:*

Line 820: CLR/HOME + SHIFT

Line 825: CTRL + 9, CTRL + 0, cursor up/down twice

Line 840: CLR/HOME + SHIFT, cursor up/down

```

900 PRINT"┐"
RED - BE BACK SOON":GOSUB3000:GOSUB4000

```

### 900

This line introduces the main menu option to "RUN FORECAST". It sends the program to subroutine 3000, which puts the WARs into the H1% array and sorts them into number order, smallest first. Then it passes control to subroutine 4000, which does the same thing for the speed figures after

loading them into the SF% array. The Commodore symbols are CLR/HOME + SHIFT and cursor up/down 9 times.

```

1000 FORH=1TOHN
1070 IF VAL(R$(5))<VAL(H$(H,14))THENH$(H
,13)="E":GOTO2870
1090 IFVAL(H$(H,6))=H1%(1)GOTO1160
1100 IFVAL(H$(H,6))=H1%(2)GOTO1160
1110 IFVAL(H$(H,6))=H1%(3)GOTO1160
1120 H$(H,13)="E":GOTO 2870
1160 IFVAL(H$(H,7))=SF%(1)GOTO1500
1170 IFVAL(H$(H,7))=SF%(2)GOTO1500
1180 IFVAL(H$(H,7))=SF%(3)GOTO1500
1190 H$(H,13)="E":GOTO 2870
1500 PL=0:RC=4
1510 IFVAL(H$(H,2))>0ANDVAL(H$(H,2))<5TH
ENPL=PL+1
1515 IFH$(H,3)<>" "THENRC=1:GOTO1535
1520 IFVAL(H$(H,3))>0ANDVAL(H$(H,3))<5TH
ENPL=PL+1
1522 IFH$(H,4)<>" "THENRC=2:GOTO1535
1525 IFVAL(H$(H,4))>0ANDVAL(H$(H,4))<5TH
ENPL=PL+1
1528 IFH$(H,5)<>" "THENRC=3:GOTO1535
1530 IFVAL(H$(H,5))>0ANDVAL(H$(H,5))<5TH
ENPL=PL+1
1535 RC=RC/2
1540 IFVAL(H$(H,12))<=VAL(H$(H,11))GOTO1
715
1550 H$(H,13)="E":GOTO 2870
1715 IFVAL(H$(H,2))<=0ORVAL(H$(H,2))>4TH
ENH$(H,13)="E":GOTO2870
1718 IFVAL(H$(H,3))<=0ORVAL(H$(H,3))>4GO
TO1730
1720 IFPL>=RCGOTO1775
1730 H$(H,13)="E":GOTO2870
1775 IF R$(4)=H$(H,9)GOTO2030
1780 IFABS(VAL(R$(4))-VAL(H$(H,9)))=16GT
02030
1790 H$(H,13)="E":GOTO2870
2030 IFH$(H,15)="N"THENH$(H,13)="E":GOTO
2870
2040 H$(H,13)="A"
2870 NEXT:GOTO3200

```

**1000-2870**

This is the core of the program, and needs careful analysis. Effectively these lines carry out the actions described in our flowchart in Fig. 4.3, so it's a good chance to see just how a flowchart relates to a real BASIC program. A loop beginning at line 1000 and ending at line 2870 checks each horse in turn, and eliminates or selects it according to strict criteria. H is set up as a counter.

Line 1070 compares the class of the present race, stored in R\$(5) with the class of the last race run by the horse, stored in H\$(H, 14). If the horse is running in a lower class than before, it's eliminated by storing a letter "E" in H\$(H,13), and no further tests are carried out. Control passes to line 2870, which increments H and takes control back to the top of the loop, where the next horse can now be considered.

If the horse is not eliminated at 1070, lines 1090 to 1110 check its WAR (stored in H\$(H,6)) against the three best WARs stored in H1%. If it does not match any of them it is eliminated at 1120, and again another horse is selected for consideration.

Lines 1160-1180 check to see if the horse's speed figure (H\$(H,7)) matches any of the three best figures in SF%. If not, it is eliminated at 1190.

Lines 1500-1550 analyse how the horse was placed in its last four outings. Line 1500 sets up two variables, PL and RC, which store the horse's PLacing record and the number of RaCes it has run. The results of these four outings have already been stored in the H\$ array – if H is the running number, we will find the result for the last race in H\$(H,2), the last but one in H\$(H,3), the last but two in H\$(H,4), and the last but three in H\$(H,5).

In line 1510, if the horse was in the first four in its last outing (i.e. if the value of H\$(H,2) is greater than 0 but less than 5) the value of PL is increased by one. If no information about the last but one outing is available then H\$(H,3) will be an empty string, which will make it equal to "" as far as the computer is concerned. If this is so, the program gives RC a value of one, and control passes to line 1535.

Similar programming in lines 1520 to 1530 checks each individual result. A place in the first four adds one to the value of PL each time. Absence of information increases the value of RC, and control passes to line 1535.

At 1535 RC is divided by two to give a new value used at line 1720 (see below). If RC is 0 then dividing by two will not affect its value!

At 1540 the program compares the weight the horse is carrying this time with the weight carried on its last outing (the figures are stored in H\$(H,12) and H\$(H,11) respectively). If its weight this time is not less than or equal to its weight last time, control passes to line 1550, which places the letter E (for eliminate) in H\$(H,13) and then calls up the next runner at line 2870. Otherwise control passes to line 1715.

Line 1715 again checks the value of H\$(H,2) and H\$(H,13). If the horse was unplaced in its last race, or if it was not among the first four, it is eliminated and control passes to line 2870 to call up the details of the next

## 42 Horse Racing with the Commodore 64

runner. Line 1718 repeats the same check for the last race but one, eliminating unsuitable runners in the same way by passing control to line 1730.

If the horse has not already been eliminated, line 1720 now checks the value of PL against RC. If PL is greater than or equal to RC – in other words if the horse has been placed in 50% or more of its outings – control passes to line 1775. Otherwise the horse is eliminated at line 1730.

Lines 1775 and 1780 check the distance of the race being considered, stored in R\$(4), against the distance of the last race run, stored in H\$(H,9). If they are the same, control passes directly to line 2030. If not, then the values of these strings are subtracted one from another in line 1780. The keyword ABS removes any minus signs from the result, so that as long as the two distances are within a furlong of each other, the horse is still considered. Otherwise it is eliminated at line 1790.

Line 2030 performs the last check. If the horse is not in the top three places in the betting (i.e. if H\$(H,15) contains the letter "N") then the horse is eliminated. Otherwise the letter "A" is put into H\$(H,13), indicating that the horse is a good bet, and line 2870 returns to the beginning of the loop to call up the details of the next runner.

At the end of the loop, control passes to the subroutine at 3200, which prints the results of the analysis for each individual runner.

```
3000 FORH1=1 TO HN: H1%(H1)=VAL(H$(H1,6)):N
EXT
3010 FORH1=1 TO HN-1: IF H1%(H1)<=H1%(H1+1)G
OTO3060
3020 H2=H1
3030 X%=H1%(H1+1):H1%(H1+1)=H1%(H1):H1%(
H1)=X%: IF H1=1 THEN 3050
3040 H1=H1-1: IF H1%(H1)>H1%(H1+1) THEN 3030
3050 H1=H2
3060 NEXT: RETURN
```

### 3000-3060

This subroutine sorts the WARs into numerical order, so that the computer can check the top three WARs when necessary. It's a simple BASIC sort routine – and very useful in your programs!

Line 3000 is a loop that sets the variable H1 equal to the running number of each horse in turn until it reaches the value HN – the total number of runners in the race. The WAR of each runner is drawn from the H\$ array – H\$(H1,6) – and placed in the equivalent place in the H1% integer array.

Line 3010 is another loop – this time it checks each WAR in the H1% array against the next one up. If it is less than or equal to the next number, control passes to line 3060, the value of the counter variable H1 is increased by one, and the next pair is considered. If not, control passes to line 3020.

In 3020 a new variable, H2, is set equal to the counter variable H1. Line 3030 effectively makes the two WARs under consideration change places within the integer array, so that the WAR with the lower value occupies a lower position in the array. If H1 is equal to one (i.e. if we are now comparing the first two numbers in the array) control passes to line 3050. If H1 is greater than 1, line 3040 checks whether the new WAR at position H1 in the array is smaller than the WAR at position (H1-1). If not, the two are once again swapped over, and the same comparison is made with the WAR at the next lower position in the array.

At line 3050 H1 is reset to H2 – the value it had before any alterations were made – and the loop continues.

```

3200 PC=0:PRINT"␣"
3220 PRINT"␣";R$(1);TAB(20);R$(6);TAB(32
);R$(2);"␣"
3240 PRINT:PRINT:PC=PC+3
3250 FORHD=1TOHN:PRINTH$(HD,1);TAB(20);
3270 IFH$(HD,13)="A"THENPRINT"EXCELLENT
BET":GOTO3360
3350 IFH$(HD,13)="E"THENPRINT"ELIMINATE"
:GOTO3360
3360 PRINT:PC=PC+2:IFPC<20GOTO3450
3400 GOSUB4400
3405 PRINT"␣":PC=0:PRINTR$(1);TAB(20);R$
(2);"CONT'D."
3420 PRINT:PRINT:PC=PC+3
3450 NEXT
3500 INPUT"REPEAT FORECAST SUMMARY (Y-
N) ";RF$:IFRF$="N"GOTO4200
3510 IFRF$="Y"GOTO3200
3520 IFRF$<>"N"GOTO3500
3530 GOSUB64:X$="GOOD LUCK!":GOSUB6600
3540 PRINT"␣":END

```

### 3200-3540

This subroutine prints the results of the computer analysis for each individual runner. Line 3200 sets a new variable PC, used to keep track of the number of lines that have been printed in a given display, and clears the screen. Line 3220 prints selected data about the race under consideration from the R\$ array: R\$(1), the racecourse, R\$(6), the date of the race, and R\$(2), the time of the race. Line 3240 prints two empty lines and sets the value of PC to 3 before line 3250 introduces the main loop, in which the counter HD rises from 1 to HN, the number of runners in the race. The second part of the line prints the name of runner HD, drawn from the H\$ array.

Lines 3270 and 3350 check the letter entered in the H\$ array at HD, 13. If

#### 44 Horse Racing with the Commodore 64

it is "A", then the legend "EXCELLENT BET" is printed next to the horse's name; if it is "E", then the legend "ELIMINATE" is printed. In either case, control then passes to line 3360 (which prints a blank line and adds 2 to the value of PC) and then on to line 3450, which returns to the beginning of the loop to collect information about the next runner. However, if PC is not less than 20, control first passes to the subroutine at 4400, so you can clear the screen (which is now full) for a new display when you have finished with the information currently on display. Control then returns to lines 3405-3420, which reinstate the information at the top of the screen and reset PC to 3.

Lines 3500-3540 allow you to repeat the forecast summary should you wish to do so – if, for instance, you accidentally cleared a screen display before you had finished with it.

*Commodore symbols:*

Line 3200: CLR/HOME + SHIFT

Line 3220: CTRL + 9, CTRL + 0

Line 3405: CLR/HOME + SHIFT

Line 3500: CTRL + 9, CTRL + 0

Line 3540: CLR/HOME + SHIFT

```
3600 IFVAL(C$)>C1 THENC1$="3":GOTO3630
3610 IFVAL(C$)<C2 THENC1$="1":GOTO3630
3620 C1$="2"
3630 RETURN
```

#### 3600-3630

This little subroutine uses the variable C\$ set up at line 5365. The value it holds is the prize money for the race, which is compared with the values C1 and C2 set up at the beginning of the program to determine whether the 'class' of the race is 1, 2, or 3.

```
3800 PRINT"INPUT NAMES OF RUNNERS:-"
3804 FORH=1TOHN
3808 PRINT"HORSE ";H;TAB(12);:INPUTHC$
3810 IFLEN(HC$)>18THENPRINT" ";TAB(12);"
                                "":GOTO3808
3812 H$(H,1)=HC$:NEXT:RETURN
```

#### 3800-3812

This simple little subroutine allows you to enter the names of the runners one by one until the counter variable, H, reaches the value of HN, the number of runners in the race. Line 3810 ensures that no name is more than 18 characters long – if you enter a longer name, the computer refuses to accept the entry and returns control to line 3808.

*Commodore symbols:*

Line 3800: CLR/HOME + SHIFT, CTRL + 9, CTRL + 0, cursor up/down

Line 3810: Cursor up/down + SHIFT, twice

```

3820 FORA=1TO40:H$(A,13)=" ":H$(A,14)="
":NEXT:RETURN

```

**3820**

A one-line subroutine! It's used to clear out elements 13 and 14 of the H\$ array: the elements that are used to store letter codes used in the forecasting routine.

```

4000 FORSF=1TOHN:SF%(SF)=VAL(H$(SF,7)):N
EXT
4010 FORSF=1TOHN-1:IFSF%(SF)>SF%(SF+1)G
OTO4060
4020 SS=SF
4030 X%=SF%(SF+1):SF%(SF+1)=SF%(SF):SF%(
SF)=X%:IFSF=1THEN4050
4040 SF=SF-1:IFSF%(SF)<SF%(SF+1)THEN4030
4050 SF=SS
4060 NEXT:RETURN

```

**4000-4060**

A sorting routine. Its job is to take the speed figures entered into the H\$ array, and put them, in numerical order, into the SF% integer array. The method used is exactly the same as that used in subroutine 3000.

```

4200 GOSUB8110:GOSUB8190
4210 GOSUB78:PRINT"1. DISPLAY R
UNNERS"
4220 PRINT"2. DISPLAY RACE AND
FORM DATA"
4230 PRINT"3. RUN FORECAST":PRI
NT"4. SAVE DATA"
4240 PRINT"5. RETURN TO MAIN ME
NU"
4250 GOSUB84:INPUT"6. WHICH OP
TION ";Y$:Y=VAL(Y$):IFY<0GOTO4270
4260 ONYGOTO820,800,900,5000,1
4270 GOSUB64:GOTO4250

```

**4200-4270**

The main menu. Again, line 4200 calls up the two subroutines that print the program's title and copyright details. Lines 4210-4250 print the menu options on screen and wait for the user to input his choice. Again, the input is read as a string, Y\$; if Y\$ is not a number, control passes to line 4270, which returns control to line 4250. In line 4260 the value of Y\$ is used to send the program to line 820, 800, 900, 5000, or 1 as appropriate.

*Commodore symbols:*

Lines 4210 to 4240: Cursor right/left, 9 times each

Line 4250: Cursor right/left 12 times, CTRL + 9, CTRL + 0

## 46 Horse Racing with the Commodore 64

```
4400 PRINT "PRESS 'SPACE' TO CONTINUE...  
";  
4402 GETPR$: IF PR$=CHR$(32) THEN RETURN  
4404 GOTO 4402
```

### 4400-4404

A useful little subroutine. The message in line 4400 is used in the program whenever a screen becomes full of data. When the spacebar is pressed, the computer reads it as CHR\$(32) i.e. 'character string number 32'. Every key on the computer can be read as a character string in this way. If PR\$ is CHR\$(32), as expected, the RETURN command is executed. Otherwise, control passes back to 4402. In other words, you can't go on until you press the spacebar!

*Commodore symbols:*

Line 4400: CTRL + 9, CTRL + 0

```
4500 IF HC$="0" THEN 4510  
4505 IF VAL(HC$)=0 THEN HC$=" "  
4510 RETURN
```

### 4500-4510

This subroutine is called during the entry of data about the runners – the program section dealing with this begins at line 5410. HC\$ in this case refers to the horse's performance in one of its last four races. If HC\$ is actually the number "0", control is returned to the questioning routine. However, if HC\$ is not "0" but VAL(HC\$) is 0 then the string can't be a number – in fact it will almost certainly be the result of the user pressing the RETURN key, indicating that he does not have the information required. Line 4505 takes care of this by making HC\$ a 'null' or empty string.

```
4600 IF LEFT$(RIGHT$(HC$,2),1)<>"." THEN 46  
20  
4610 HC$=LEFT$(HC$,LEN(HC$)-1)+"0"+RIGHT  
$(HC$,1)  
4620 IF LEN(HC$)<=2 THEN HC$=HC$+".00"  
4630 RETURN
```

### 4600-4630

This subroutine is also called during the entry of data about the runners. HC\$ here is the weight carried in stones and pounds either for the previous or the current race, for instance, 10 stone 5 lb is entered as "10.5". The routine sorts all the different types of entry for these values into a form the computer can understand. Thus line 4600 checks for a decimal point in HC\$. If there isn't one, control passes to line 4620, which adds ".00" to the end of the string as long as it is only one or two characters long. Line 4610 takes care of our hypothetical "10.5" entry by adding a "0" before the last figure to make it "10.05", otherwise the computer would read it, effectively, as 10 stone 50 lb!

```

5000 GOSUB78:GOSUB100
5002 GOSUB78:PRINT"INSERT REWOUN
D CASSETTE":PRINT";:GOSUB4400
5006 OPEN1,1,2,"RACE FILE"
5008 X$="SAVING RACE DATA":GOSUB6600
5020 FORR=1TO6:PRINT#1,R$(R):NEXT
5025 PRINT#1,HN$
5030 FORHD=1TOHN:FORH=1TO15:PRINT#1,H$(H
D,H):NEXTH,HD:CLOSE1
5035 X$="RACE DATA WRITTEN":GOSUB6600:GO
TO4200

```

### 5000-5035

This routine saves the race data to cassette. Lines 5000 and 5002 print the message "INSERT REWOUND CASSETTE" and then call up subroutine 4400 (see above). Line 5006 opens a channel to the cassette recorder in the normal way. Line 5008 creates a flashing display of the line "SAVING RACE DATA" using subroutine 6600 (see below). Line 5020 'prints' the contents of the R\$ array onto cassette; line 5025 transfers HN\$, the number of horses in the race; line 5030 transfers the entire contents of the H\$ array. Line 5035 prints a flashing message to say that the data has been successfully transferred, and then returns control to the menu at 4200. Incidentally, don't forget to write the details of the race on the cassette before you put it away – use pencil if you change the contents of a cassette regularly.

*Commodore symbols:*

Line 5002: Cursor right/left, 2 groups of 8

```

5100 GOSUB78:GOSUB100:GOSUB78:PRINT"
INSERT CORRECT CASSETTE"
5102 PRINT";:GOSUB4400
5105 OPEN1,1,0,"RACE FILE"
5115 FORR=1TO6:INPUT#1,R$(R):NEXT:PRINT"
":GOSUB5250
5125 GOSUB84:INPUT"IS THIS THE RACE REQ
UIRED (Y-N) ";Y$
5130 IFY$="N"THENCLOSE1:GOSUB8110:GOSUB8
190:GOTO5100
5135 IFY$<>"Y"THENGOSUB64:GOTO5125
5150 GOSUB64:X$="LOADING RACE F
ILE":GOSUB6600:INPUT#1,HN$:HN=VAL(HN$)
5152 FORHD=1TOHN:FORH=1TO15:INPUT#1,H$(H
D,H):NEXTH,HD:CLOSE1
5155 GOTO4200

```

### 5100-5155

The reverse process – this routine loads previously stored data about a race from cassette. Line 5100 prints the message to insert the correct cassette (I

hope you've labelled them!). Line 5102 again calls subroutine 4400 (see above). Line 5105 opens a channel from the cassette recorder, and line 5115 loads the contents of the R\$ array into the computer and prints them on screen, so you can be sure you have chosen the right cassette! Lines 5125-5135 give you the chance to 'abort' at this stage if you've chosen the wrong cassette. Lines 5150 and 5152 load the rest of the data if all is well, and line 5155 returns you to the menu at 4200.

*Commodore symbols:*

Line 5100: Cursor right/left, 8 times

Line 5102: Cursor right/left, 8 times

Line 5115: CLR/HOME + SHIFT

Line 5125: CTRL + 9, CTRL + 0

Line 5150: Cursor right/left + SHIFT, 9 times

```
5250 PRINT"11. RACECOURSE: ";R$(1)
5270 PRINT"22. DATE OF RACE: ";R$(6)
5275 PRINT"33. TIME OF RACE: ";R$(2)
5277 PRINT"44. PRIZE MONEY: ";R$(3)
5280 PRINT"55. RACE DISTANCE IN FURLONGS
: ";R$(4):RETURN
```

#### 5250-5280

This subroutine prints the details stored in the R\$ (race details) array.

*Commodore symbols:*

Lines 5250-5280: Cursor up/down, one per line

```
5300 GOSUB88:INPUT"2ANY CORRECTIONS (Y-N
)<del>" ;Y$:IFY$="N"THENRETURN
5320 IFY$<>"Y"THENGOSUB68:GOTO5300
5330 GOSUB68:GOSUB88:INPUT"3WHICH LINE N
O.<del>" ;Y1$:Y1=VAL(Y1$):IFY1<0GOTO5336
5334 ONY1GOSUB5345,5350,5360,5365,5370
5336 IFY1>5THENGOSUB68:GOTO5330
5340 GOTO5300
5345 PRINT"5345";TAB(13);:INPUTR$(1):RE
TURN
5350 PRINT"5350";TAB(15);:INPUTR$(6):
RETURN
5360 PRINT"5360";TAB(15);:INPUTR$(2
):RETURN
5365 PRINT"5365";TAB(14);:INPUTR$(
3):C#=R$(3):GOSUB3600:R$(5)=C1$:RETURN
5370 PRINT"5370";TAB(28);:INPUT
R$(4):RETURN
```

#### 5300-5370

This subroutine allows corrections or alterations to be made to the R\$ array – if the array is empty you will, of course, have to 'correct' every entry! If

there are no alterations, an "N" response to line 5300 passes control back to the main program. Line 5320 takes care of errors (like typing a number, or a letter that is neither Y nor N). Line 5330 invites you to enter the number of the entry you wish to make or change, and line 5334 then sends you to the appropriate subroutine for making that entry. Notice the error-trapping at lines 5330, 5336 and 5340.

Lines 5345-5370 allow you to give appropriate answers to the questions already printed on screen by subroutine 5250. In each case the first part of the line moves the cursor to an appropriate point on screen, next to the question that needs to be answered. Once you have made your entry, control passes back to line 5300, allowing you to correct it if you have made a mistake. However, pay special attention to line 5365 which is a little different. Here C\$ is set equal to R\$(3), which holds the value of the prize money. Control passes to subroutine 3600 (see above), which sets C1\$, at either 1, 2, or 3, according to the class of the race. This 'class number' is then stored in R\$(5) – it does *not* appear on the screen display.

*Commodore symbols:*

Line 5300: CTRL + 9, CTRL + 0

Line 5330: CTRL + 9, CTRL + 0

Line 5345: CLR/HOME, cursor up/down 4 times

Line 5350: CLR/HOME, cursor up/down 6 times

Line 5360: CLR/HOME, cursor up/down 8 times

Line 5365: CLR/HOME, cursor up/down 10 times

Line 5370: CLR/HOME, cursor up/down 12 times

```

5410 PRINT" 1. NAME OF HORSE: ";H$(
H,1);"
5420 PRINT"LAST 4 RESULTS (0 IF UNPLACE
D):-"
5430 PRINT" 2. LAST           : ";H$(H,2
)
5440 PRINT" 3. LAST BUT ONE   : ";H$(H,3
)
5450 PRINT" 4. LAST BUT TWO   : ";H$(H,4
)
5460 PRINT" 5. LAST BUT THREE : ";H$(H,5
)
5470 PRINT" 6. WEIGHT ADJUSTED RATING
      : ";H$(H,6)
5480 PRINT" 7. SPEED FIGURES
      : ";H$(H,7)
5490 PRINT" 8. PRIZE MONEY IN LAST RACE
      : ";H$(H,8)
5498 PRINT"DISTANCES (IN FURLONGS) :-"
5500 PRINT" 9. LAST RACE           : ";H$(
H,9)

```

```

5510 PRINT"10. LAST BUT ONE RACE : ";H$(
H,10)
5520 PRINT"11. WEIGHT THIS RACE (ST.LB)
: ";H$(H,12)
5530 PRINT"12. WEIGHT LAST RACE (ST.LB)
: ";H$(H,11)
5540 PRINT"13. IN TOP 3 OF BETTING (Y-N)
: ";H$(H,15):RETURN

```

**5410-5540**

This subroutine works, in practice, much like lines 5250-5280. Here, lines 5410-5540 print the information required about each runner on screen, together with any data already in store in the H\$ array about the runner under consideration.

*Commodore symbols:*

Line 5410: Cursor up/down, CTRL + 9, CTRL + 0

Line 5420: Cursor up/down

Line 5470: Cursor up/down

Line 5498: Cursor up/down

Line 5520: Cursor up/down

```

5545 GOSUB91: INPUT"ANY CORRECTIONS (Y-N)
";Y$:IFY$="N"THENRETURN
5555 IFY$<>"Y"THENGOSUB71:GOTO5545
5560 GOSUB71:GOSUB91: INPUT"WHICH LINE N
O. ";Y1$:Y1=VAL(Y1$):IFY1<0GOTO5563
5561 ONLY1GOSUB5565,5570,5575,5580,5585,5
590,5595,5600,5605,5610,5615,5620,5625
5563 IFY1>13THENGOSUB71:GOTO5560
5564 GOTO5545
5565 PRINT" ";TAB(17);:INPUTHC$
5566 IFLEN(HC$)>18THENPRINT" ";TAB(17)
;LN$;:GOTO5565
5567 H$(H,1)=HC$:RETURN
5570 PRINT" ";TAB(19);:INPUTHC$:GOS
UB4500:H$(H,2)=HC$:RETURN
5575 PRINT" ";TAB(19);:INPUTHC$:GO
SUB4500:H$(H,3)=HC$:RETURN
5580 PRINT" ";TAB(19);:INPUTHC$:G
OSUB4500:H$(H,4)=HC$:RETURN
5585 PRINT" ";TAB(19);:INPUTHC$:
GOSUB4500:H$(H,5)=HC$:RETURN
5590 PRINT" ";TAB(29);:INPUTH$
(H,6):IFVAL(H$(H,6))=0THENH$(H,6)="99"
5591 RETURN
5595 PRINT" ";TAB(29);:INPUTH$
(H,7):IFVAL(H$(H,7))=0THENH$(H,7)="0"

```

```

5596 RETURN
5600 PRINT "XXXXXXXXXXXX"; TAB(29); : INPUT
C$: IFVAL(C$)=0 THEN C$="0"
5601 GOSUB 3600: H$(H,8)=C$: H$(H,14)=C1$: R
ETURN
5605 PRINT "XXXXXXXXXXXX"; TAB(22); : IN
PUT H$(H,9)
5606 IFVAL(H$(H,9))=0 THEN H$(H,9)="99"
5607 RETURN
5610 PRINT "XXXXXXXXXXXX"; TAB(22); : I
NPUT H$(H,10)
5611 IFVAL(H$(H,10))=0 THEN H$(H,10)="99"
5612 RETURN
5615 PRINT "XXXXXXXXXXXX"; TAB(29);
: INPUT HC$: IFVAL(HC$)=0 THEN HC$="0.0"
5616 GOSUB 4600: H$(H,12)=HC$: RETURN
5620 PRINT "XXXXXXXXXXXX"; TAB(29)
: : INPUT HC$: IFVAL(HC$)=0 THEN HC$="0.0"
5621 GOSUB 4600: H$(H,11)=HC$: RETURN
5625 PRINT "XXXXXXXXXXXX"; TAB(29
); : INPUT HC$
5630 IF HC$="Y" OR HC$="N" THEN H$(H,15)=HC$:
RETURN
5635 GOTO 5625

```

#### 5545-5635

Again, compare this subroutine with that at 5300. It operates in precisely the same way, and again certain entries require the use of additional subroutines such as 4500 and 4600 (see above). Try working through this one for yourself – by now you should be familiar with all the programming techniques it employs.

*Commodore symbols:*

Line 5545: CTRL + 9, CTRL + 0

Line 5560: CTRL + 9, CTRL + 0

Line 5565: CLR/HOME, cursor up/down twice

Line 5566: CLR/HOME, cursor up/down twice

Line 5570: CLR/HOME, cursor up/down 5 times

Line 5575: CLR/HOME, cursor up/down 6 times

Line 5580: CLR/HOME, cursor up/down 7 times

Line 5585: CLR/HOME, cursor up/down 8 times

Line 5590: CLR/HOME, cursor up/down 10 times

Line 5595: CLR/HOME, cursor up/down 11 times

Line 5600: CLR/HOME, cursor up/down 12 times

Line 5605: CLR/HOME, cursor up/down 15 times

Line 5610: CLR/HOME, cursor up/down 16 times

## 52 Horse Racing with the Commodore 64

Line 5615: CLR/HOME, cursor up/down 18 times

Line 5620: CLR/HOME, cursor up/down 19 times

Line 5625: CLR/HOME, cursor up/down 20 times

```
6600 X1$="XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX":
PRINTX1$;
6605 FORX=1TO3:PRINTX1$;" ";X$;" ":FORX1
=1TO200:NEXTX1
6610 PRINTX1$;X$;FORX1=1TO200:NEXTX1,X:R
ETURN
```

### 6600-6610

Despite appearances, this is actually a subroutine for making a given message 'flash' on screen. You may find it useful in your own programs.

*Commodore symbols:*

Line 6600: CLR/HOME, cursor up/down 15 times, cursor left/right 12 times

Line 6605: CTRL + 9, CTRL + 0

```
8110 PRINT"  -----
-----"
8120 PRINT"  ***      H O R S E    -    R A
C E      ***"
8130 PRINT"  ***      F O R E C A S T I
N G      ***"
8140 PRINT"  ** DEvised BY PROFESSOR F.H
. GEORGE **"
8150 PRINT"  -----
-----":RETURN
8190 PRINT"  -----
-----"
8195 PRINT"  ***      COPYRIGHT 1982
***"
8200 PRINT"  *** BUREAU OF INFORMATION S
CIENCE ***"
8205 PRINT"  -----
-----":RETURN
```

### 8110-8150 and 8190-8205

These simple subroutines just print title displays.

*Commodore symbols:*

Line 8110: CLR/HOME + SHIFT

Line 8130: Cursor up/down

Line 8140: Cursor up/down

Line 8150: Cursor up/down

Line 8190: Cursor up/down 10 times

Line 8200: Cursor up/down

And that's it. I hope that breaking the program into bite-sized chunks in this way has made it easier for you to cope with. The other programs in the book will not be analysed in anything like as much detail. If you have worked through this one carefully you will now be familiar with most of the techniques used in the others.

## Using the H1 program

Now that you have the H1 program on board your Commodore 64, a few words about using it. Before you start, make sure you have any prerecorded data about individual races ready to use. Then RUN the program.

### 1) Main menu

First the main menu will appear on screen, offering three options:

- Enter new data
- Load race data
- End of program

*Enter new data* requires new data to be input in reply to all questions. Any data already loaded into the program will be destroyed. You will be asked to enter race details and then details of each runner in the race. After data has been input, the program will display the *sub-menu* (see below) and wait for your instructions.

*Load race data* allows you to load data previously saved to cassette or disk. Make sure the correct tape or disk is in position before selecting this option. After loading, the program displays the sub-menu and waits for your instructions.

*End of program* clears the computer. Any data storage you wish to carry out must be done before selecting this option.

### 2) Race details

This routine will ask you five questions:

- The name of the racecourse
- The date of the race
- The time of the race
- The prize money
- The distance in furlongs over which the race is being run

The first three questions are simply to identify the race. The fourth determines the 'class' of the race. Remember to convert the race distance to furlongs for the fifth question – it's used for comparison with the individual runners' previous races. (8 furlongs = 1 mile.)

### 3) *Horse information*

The program will now ask you to input the total number of runners. This can be either the total number of horses in the race or the total number of horses in the race that you wish to consider for forecasting. The program will not accept more than 40 horses in any one race.

The program will now ask a series of questions about each individual horse.

- Name of horse
- Result in last race
- Result in last race but one
- Result in last race but two
- Result in last race but three
- Weight adjusted rating
- Speed figure
- Prize money in last race
- Distance of last race (furlongs)
- Distance of last race but one (furlongs)
- Weight carried in last race (st lb)
- Weight carried in last race but one (st lb)
- In top 3 of betting? (Yes/No)

Enter the *name* carefully – once you've hit the RETURN key it's too late to correct it! Note that the computer will not accept a name more than 18 letters long (including spaces) – abbreviate it if it won't fit. The next four questions ask for the horse's results in its last four races – enter 0 (zero) for anything other than a place. You'll find the relevant figures to the left of the horse's name in the sporting pages, and you should read them from right to left for this program – the last race result is the figure nearest the horse's name. If a horse does not have four previous results, type \* against the questions you can't answer.

*Weight Adjusted Ratings* are printed on page 2 of *The Sporting Life* next to the horse's name. *Speed figures* can be obtained from the *Raceform Handicap Book* or *The Sporting Life*. Not all horses are given a figure, and the highest in each case is the 'best'.

*Prize money* is important, as it indicates the class of the race the horse last entered. For *previous race distances* remember, again, to convert all distances to furlongs. *Weight carried* should be entered in stones and pounds – a weight of 8st 8lb, for instance, would be entered as 8.8.

### 4) *The sub-menu*

This menu is displayed either after loading data from tape or disk, or when new data has been input from the keyboard. The options are:

- Display runners
- Display race and form data

- Run forecast
- Save data
- Return to main menu

*Display runners* lists the names of all the horses in the race, allowing you to check which horses were running.

*Display race and form data* displays all the information for the race, and for each individual horse, allowing correction of any item – but do remember to re-save any data that you alter.

*Run forecast* produces the computer's analysis of each runner's chances. In this H1 program the choices are either 'Excellent Bet' or 'Eliminate'; program H3, listed in Chapter 6, offers a choice of six ratings here.

*Save data* allows you to save amended data on disk or cassette. Make sure you do this, if necessary, before ending the program or inputting new data.

*Return to main menu* does just that, allowing you to input new data from storage or from the keyboard, or to end the program.

### 5) Recovering from errors

To recover from accidental errors that stop the program, do not type RUN – this will clear all data in memory! To be safe, type:

GOTO 4200

The program will accept any data as input, but remember not to enter a horse's name longer than 18 letters (including spaces) and remember to put a full stop between the stones and pounds of weight carried. When no data is available for entry, type \* – don't just press the RETURN key. If you do not input an answer to a question, a default value is substituted and will be displayed when you check the data.

### 6) Using and protecting the program

If you are buying the program (or if you have just keyed it in), be sure to make a spare copy on tape or disk in case something happens to your original. However, you may not reproduce or copy the program for any other reason, or you will be in breach of copyright. When loading cassette tapes, make sure the tape is fully rewound before starting. Hold down the Commodore (logo) key, press the SHIFT key, type LOAD and then type RUN when the cursor flashes. Before selecting option 2 on the menu, make sure the right tape has been inserted.

### Prize money

The amount of prize money for each race is used to determine its *class* or *group*. The program uses three classes:

## 56 *Horse Racing with the Commodore 64*

Class A: over £3000

Class B: between £2000 and £3000

Class C: under £2000

To adjust these figures for other currencies, or for inflation, alter the DATA stored in line 25 – and remember to put the comma between the two figures you substitute! Although groups are no longer officially used, they are still a very useful guide to the status of an individual race. You will find full details of them in Appendix VI.

### **And finally...**

Don't take the computer forecast as gospel. Consider the factors not covered by the program, and decide for yourself whether they should influence your final choice. Going, as we have seen, *can* be vital, though details for individual horses aren't always easy to find. Take account of the jockey, and of the draw on tracks where this is likely to affect the result. Information about the draw is normally available even in daily newspapers.

## Chapter Five

# An Analysis of Horse Racing

Horse racing pundits are fond of sweeping generalities – and there's something very tempting about remarks like 'any horse that's going to win must have run in the last three weeks'. However, we live in the age of science, and if you want such remarks to be taken seriously you need to back them up with solid statistical proof. You certainly can't expect unquestioning acceptance! In this chapter I'd like to take a little time to look at the ways in which this proof can be established, so that you can develop your own refinements to the H1 and H3 programs in Chapters 4 and 6 in the light of your own research and analysis. For such work, the Commodore 64 is the ideal tool.

I should stress that none of the material in this chapter is directly relevant to the H series programs *as they stand*. However, if you use the principles of statistical analysis (including correlations and analysis of means as outlined in Appendix V) to conduct your own research into horse racing, you may well achieve results that will make you want to modify the H series programs. If all this sounds too complicated and time-consuming, don't worry – just skip this chapter and go on to Chapter 6.

### Starting an analysis

How could you start to examine that bold statement at the beginning of the chapter? To start with, you'd need to establish a *sample*: a group of horses sufficiently large to give a reliable guide to the general trend. It can be as large as you wish, and generally the larger it is the greater the likelihood that your results will be reliable.

From this sample you then find the exact percentage of horses that won and/or were placed and when they last ran. I have done such an analysis, and the results are very interesting. About 21 days after its last race, the chance of a horse winning or being placed begins to tail off, and after 60 days becomes markedly less. The best chances for a win or place seem to occur 19–21 days after the last race, but in the UK the period can stretch up to a month, especially if the horse has exceptional performance.

So why don't we use this information in the programs? Mainly for practical reasons. In practice you can't use this as an elimination test until about the first week in May (in the flat season) and about a month after the start of the hurdles and steeplechases – and in the UK, in any case, it's not very often applicable to the form. If you wish, you can include it in the individualisation phase.

### What are statistics?

The word 'statistics' has two distinct meanings:

- A collection of data, usually listed in some numerical order.
- The use of statistical analysis – the best known example is the process of finding an average.

Statistical analysis employs many standard techniques – just take a quick glance at any statistics textbook. Some of these techniques are discussed in Appendix V, but at this stage we need not concern ourselves with them. However, the use of these techniques to analyse carefully-kept records can help to turn horse race forecasting into a science – and the computer comes into its own for the lengthy process of analysis needed where large samples are involved. As yet this 'science' is in its infancy, but it's still extremely useful. Let's use it to check another old adage: 'the favourite always wins the last race'.

### Putting statistics to work

We don't of course, mean that the favourite literally *always* wins the last race – we simply mean that it wins the last race more often than it wins any other race. Using the detailed records available, this statement can be checked easily – so I checked it.

I used a sample of 200 races taken from flat racing and National Hunt records. A *random* sample showed that the favourite won the last race some 50 times in 200 for flat racing, and 53 times in 200 for National Hunt. On its own, though, this information is not much use – we need something to compare it with. So for the *same* meetings I took a record of how the favourite got in the first two races. At 200 meetings it won 60 and 58 times respectively for the flat racing, and 36 and 45 for the National Hunt.

Even now it is not clear exactly what the figures tell us – we need to apply a statistical technique known as the *difference between means*. It shows what the chances are that these differences are due to some definite cause, or alternatively how likely they are to be chance fluctuations. In this case the results turn out to be pure chance.

Of course, there is another point to consider before we try to draw a conclusion from these figures. We need to establish the normal ratio of

winning favourites to non-favourites. On the basis of a 250-race sample I found that the ratio for flat racing was almost exactly 1 in 3. From a 180-race National Hunt sample, I found the ratio there to be slightly less – about 8 in 27. A later, larger sample of nearly 1000 races showed that 38% of winners were favourites on the flat, while for National Hunt the number of winning favourites was over 40%. You see how important sample size can be!

Putting all this information together, we can now return to the original question and draw a valid statistical inference. Clearly there is no real justification for believing that ‘favourites win the last race’, either on the flat or in National Hunt. Indeed, there is *slight* evidence to suggest that the middle races tend to have more favourites as winners. However, this evidence is not ‘statistically significant’ – which is why the H1 and H3 programs are not concerned with the order of the races.

### **So who needs statistics?**

You may feel that this sort of evidence is not very useful – after all, it’s a bit negative! But remember that *any* idea can be checked in this way. Sometimes we may expect the answer to be positive, and other times negative – either way, you learn something! For instance, the results of that last test suggest it might be worth taking a much larger sample and analysing the results achieved by favourites in, say, the fourth and fifth races. We can carry out the same analysis for individual courses, and see if certain courses show distinct patterns of their own. I did, in fact, try this for UK courses, and the results confirmed my earlier conclusion that the differences are not statistically significant on the major courses.

That’s not the end of the story, though. For instance, statistical analysis could also be used to check the *draw* on different race courses where flat race meetings are held, or to see, for instance, how much difference weight makes to certain horses in races over a certain distance, or whether the distance of the racecourse from the horse’s stable is any guide to the horse’s likely performance.

This is where your Commodore 64 comes in. If you start out to answer these questions with masses of records, and you know how to use standard statistical and mathematical techniques, the computer will be an invaluable aid. All you need do is place the basic facts into a suitably-designed computer database, draw up a set of simple processing subroutines, and get started. To show you what I mean, let’s take a simple example.

I wanted to check the significance, if any, of odds. To do it I took an average of the odds on the winning horse in the 200 races used in our original study. It came out at  $3\frac{1}{3}$  to 1 (10 to 3) on the flat, and  $3\frac{3}{4}$  to 1 (15 to 4) over the sticks. If you want to test this for yourself, try the simple program in Fig. 5.1. Notice the subroutine at line 1000, which converts odds into the probability figures required by the computer. You can check its operation

```

10 PRINT "CALCULATION OF AVERAGE ODDS"
20 T=0
30 PRINT: PRINT "THIS PROGRAM ";
35 PRINT "CALCULATES THE AVERAGE"
40 PRINT "OF A SERIES OF ODDS."
50 PRINT: PRINT "HOW MANY EXAMPLES";
55 PRINT " OF ODDS DO YOU WISH"
60 PRINT "TO ANALYSE?"
70 PRINT
80 INPUT N
85 PRINT "ENTER ODDS IN FORM ^3/2^"
90 FOR J=1 TO N
100 GOSUB 1000
110 T=T+C
120 NEXT J
130 R=T/N
140 PRINT: PRINT "THE AVERAGE OF THE";
145 PRINT " ODDS SHOWN IS"
150 PRINT R; " %"
160 END
1000 PRINT
1010 INPUT "ODDS ARE ";A$
1020 FOR K=2 TO LEN (A$)
1030 IF MID$ (A$,K,1)="/" THEN X=K:
      K=LEN (A$):NEXT K:GOTO 1040
1035 NEXT K
1040 A=VAL (LEFT$ (A$,(X-1))):
      B=VAL (RIGHT$ (A$, (LEN (A$)-X)))
1050 C=B/(A+B)*100
1060 PRINT A$; " IS EQUIVALENT TO";C;"%"
1070 FOR K=1 TO 200: NEXT K
1080 RETURN

```

*Fig. 5.1.* Simple program to calculate average odds.

from the table in Appendix I. However, a statistician would also want to check the extent to which winners' odds departed from the average of the odds overall – what he would call the *standard deviation*. In simple terms, the results showed that there was a considerable range, but winning horses were usually in the range 2 to 1 to 5 to 1. When the winners were favourites they were quite often 'evens' or odds-on, so a few outsiders must have won to offset this bias in the odds. Nothing new here, perhaps, but if you develop a formula of your own for betting on horses and find that the average odds of your best bet are not somewhere near  $3\frac{1}{3}$  to 1 you might conclude that there's something wrong with it.

It's time to take a closer look at the data we use in the H series programs.

## Analysing Weight Adjusted Ratings

Weight Adjusted Ratings (WARs) are given daily on page 2 of *The Sporting Life*, under the heading 'Marker Sheet and Rating Services'. In fact, *The Sporting Life* adjusts the basic ratings, starting with the standard weight for age tables (see Appendix II) and deducting one point from the horse's basic rating for every pound carried less than standard 'ow' (meaning over weight). The lowest weight adjusted horse is the 'best', in terms of its winning chances, all other things being equal. The *Life's* recommended procedure for non-handicap races is especially interesting. If all horses are of the same age, you add one point for each pound carried more than the bottom weight, and the horse with the lowest rating has the best chance.

Appendix II refers only to races in the UK, but equivalent data is applicable to all countries. In some respects this information is not so important in the UK – it's readily available elsewhere. However, some of it can be used within our system along with the strategies I have already confirmed by statistical analysis. The *Life* claims that using WARs as a guide to staking would result in a loss of only 3% before tax for a crude £1 level stake bet over 19000 horses 'best in'. As we've seen, though, there are a good many other considerations, notably the suitability of the distance, the going, the draw, and the horse's fitness. In a moment we'll examine each of these in turn, but let's start by looking more closely at the significance of weight as a factor. I tested it with an analysis over 2800 races, and the results are of special interest.

- (a) 66% of all winners carried the same or less weight than the last time out. Of the rest, 17% carried more weight but ran in a lower class race. So if a horse is carrying more weight in the same (or, even worse, a higher) class race, it has less than a 16% chance of winning.
- (b) For all-age flat handicaps, weight is critical – 75% of all winners carry 8.7 (119 lbs) or less. Putting it another way, using weight criteria alone you have a 75-25 chance of eliminating horses in weight for age handicaps by ignoring horses carrying 8.8 or more. The chances are even higher in longer races – the top weights (i.e. those over 8.8) win 30% of the races below 8 furlongs, but only 21% of races above that distance.
- (c) Over jumps, weight is an even clearer factor. Analysing the incidence of winners by weight across the 1976, 1977 and 1978 jump seasons produced a set of almost identical results. They have obvious implications for the punter and require no further analysis:
  - 9% of all winners carried over 11 st 13lb.
  - 16% of all winners carried 11 st 4 lb to 11 st 12 lb.
  - 27% of all winners carried 10 st 9 lb to 11 st 3 lb.
  - 48% of all winners carried 10 st 8 lb or less.

There is also a relationship between weight and the speed figures collected

by the *Raceform Handicap Book* and sometimes, also, by *The Sporting Life*. In a statistical test I found that over a sample of 500 horses the relationship between weight adjusted ratings and speed figures was extremely close. A statistician would say that the results were highly significant at the level of confidence  $P = 0.05$ , which will probably mean nothing at all to you. Translated, it means that the chances of these figures being almost interchangeable in their estimates of a good horse are more (a great deal more) than chance – in fact, they are measures which agree with one another, and the odds against this conclusion being wrong are greater than 1 in 20 ( $P=0.05$ ). If this still puzzles you, look up the percentage equivalent of odds of 20 to 1 in Appendix I, and you'll find it's 4.762% – less than 5 in 100, or 0.05. We say, therefore, that the probability of error is 0.05 i.e.  $P = 0.05$ .

### Conclusions on weight

- Check if any horse carries more weight than it did the last time it raced. If it does, eliminate it unless it is moving down a class.
- Use *The Sporting Life* WARs. Concentrate on their top three ranked horses, especially if you are looking for a winner. In an each-way bet this condition can be relaxed.
- Look for horses that have dropped in class and yet have escaped an increase in weight. This applies for any kind of bet.

### The importance of time

I regard *Timeform* as one of the most important factors in assessing form, though it certainly isn't the only one. As a result, this review is based largely on my own methods. Timeform's central measurement is made in terms of performance in seconds (faster or slower) than a fixed standard time. The final time figure considers the relation of the particular time recorded in a race to the course record, the average time taken in a race, the going, the horse's age, and its weight.

The last column in Table 5.1 is particularly important. It translates a given single performance into a rating – and this rating can be compared directly with the overall assessment of the horse's form recorded in Timeform's weekly Black Book. Time figures are expressed in seconds per five furlongs faster or slower than a given standard. The actual conversion of time performance to weight is shown in Table 5.2. (A 0.04 second difference from standard time is taken to be equivalent to one pound weight.) In the first example, the horse was 1.12 seconds faster than standard; in the second, it was 0.36 seconds slower. As we've just seen, 0.04 seconds difference is taken to equal 1 pound weight, so the equivalent weights for the two horses are 28

Table 5.1. The importance of time. The horse is Be Easy, age 2.

| Race date | Track | Position | Distance (F) | Going | Time v. Standard | Transcription of time figure into equivalent time rating in lb |
|-----------|-------|----------|--------------|-------|------------------|--|
| June 23   | SAL   | 2        | 5F           | M     | 1.02             | 75   |
| July 13   | KEM   | 1        | 5F           | G     | 0.79             | 80   |
| July 27   | GOO   | 1        | 5F           | G     | -0.26            | 107  |
| Sept 29   | NMR   | 2        | 6F           | G     | -0.23            | 106  |

Table 5.2. Computing time figures.

|  |   |
|--|---|
| <b>Fast time figures</b>                 | <b>Example</b><br>(for a -1.12 performance) |
| ● Remove negative sign and decimal point | 112   |
| ● Divide by 4                            | 28  |
| ● Add 100                                | 128   |
| <b>Slow time figures</b>                 | <b>Example</b><br>(for a +0.36 performance) |
| ● Remove decimal point                   | 36  |
| ● Divide by 4                            | 9   |
| ● Subtract from 100                      | 91  |

lb and 9 lb respectively. However, the actual time figures are manipulated as shown to give you a guide to the likely performance of the horse. Clearly, now, a high figure means that the horse has a good rating, and a low figure means that it has a poor rating.

A good time figure (even in a single race) means the horse has good potential – but a bad time figure (even over several races) will not necessarily mean that the horse has no potential at all. The going may have been unsuitable for it, or it may simply have been too good for the opposition! Motivation is vital in all competitions, and a horse up against weaker, slower opponents is not going to give its best. On the other hand, the horse may be unfit or even unwell. Many professionals feel that this last point, in particular, casts doubt on the value of time figures in general. However, I aim to show you that the *statistical correlation* between time figures and weight adjusted ratings is significantly high.

Incidentally, don't forget that time figures are prepared on a weight for age basis – you'll find full details in Appendix IV. In practice this means that if a 3-year-old and a 2-year-old have the same rating, the older horse could concede weight in a direct confrontation.

It's interesting to see the adjustments that Timeform themselves make to take weights and ages into account – they give a very clear idea of the importance of these factors to a company that bases its service on scientific betting! Obviously a logical and scientific punter will do well to follow their guidance on the relationship between weight, speed and distance.

### **Example 1: Horses of the same age**

The time rating for each horse is adjusted for weight: one point is added to the highest time rating for each pound the horse carries less than 10 stone; one point is subtracted for each pound over 10 stone. For instance, a horse giving away 10 pounds concedes 0.40 seconds – it's common sense to say that a lighter horse with good speed figures has a better chance of winning. Table 5.3 shows how these adjustments work for horses of the same age.

*Table 5.3. The weight-time conversion for horses of the same age.*

|             | Age | Weight | lb above/<br>below 10st | Adjustment | Best time<br>rating | New<br>rating |
|-------------|-----|--------|-------------------------|------------|---------------------|---------------|
| Arm Chair   | 2   | 9.9    | -5                      | +5         | 120                 | 125           |
| Bee Sting   | 2   | 8.11   | -17                     | +17        | 105                 | 122           |
| Sister Mary | 2   | 7.3    | -29                     | +29        | 101                 | 130           |

Since the horses in this table are all the same age, no further adjustment is necessary. The best bet in this race is clearly Sister Mary.

### **Example 2: Horses of different ages**

Table 5.4 shows how age affects these figures. The month in which the race is run and the length of the course are also significant – and notice the figures giving the average weight the horse could be expected to carry before its performance was handicapped. The weight for age allowances themselves are similar to figures agreed internationally between handicappers and veterinarians in 1976, although these later tables do make a distinction between the first and second halves of each month. For instance, in a one-mile race a 3-year-old racing in August might expect to carry, say, 9 stone 3 pounds. Any weight below this figure increases its chances of improving on its best time figure performance. If the horse was only carrying 9 stone, for instance, it would be 3 pounds lighter than the average expected weight – and it would have 3 points added to its time figure.

Table 5.4. The weight-time conversion for horses of different ages.

| Horse  | Trinculo  | Feste      | Malvolio  |
|--|-----------|------------|-----------|
| Age  | 5         | 4          | 3         |
| Weight carried   | 9.8       | 9.9        | 8.12      |
| Av. weight expected                                      | 10.0      | 9.13       | 8.11      |
| Therefore lb less<br>than average                        | -6        | -14        | +1        |
| Points to be<br>adjusted to best<br>recorded time figure | +6        | +14        | -1        |
| Best recorded<br>time figure                             | 109       | 106        | 118       |
| Time rating for<br>this race                             | 115       | 120        | 117       |
| Translation of lb<br>difference into lengths             | 6 lengths | 14 lengths | -1 length |

Once these calculations have been made, Feste appears to have the best chance, all things being equal. But of course, all things are never equal, and Timeform itself emphasises that uncritical acceptance of mathematical results is unwise. By all means be critical of forecasts made in this way – but remember that time figures have proved an invaluable guide.

All the same, what can go wrong? Let's examine the critical factors one by one and see how important they should be to your final judgment.

## 1) Fitness

One idea we've already touched on is fitness. If you can't get to the track yourself, check the horse's recent form. Don't just look at the most recent results – read them in the context of the quality of the race. Look for comments on finishing qualities such as 'running on strongly at the finish', 'weakened' etc. You should be able to judge the suitability of the race length for any given horse quite easily from:

- (a) its breeding, as commented on in any book dealing with horses in training, and
- (b) its past form and performance over the distance of its last two races.

## 2) The draw

The draw alone should not be enough to influence your betting. If the choice

between two horses is so difficult that the draw becomes a factor, then the distinction is probably too fine. Unless you're considering a place or each-way bet, don't bet at all.

### 3) The going

If you're betting in handicaps the going could help you to beat the handicapper! He, of course, has no way of knowing the state of the going for a particular race in advance, and the handicap is calculated on average going. However, most horses are not greatly affected by the going, and unless you put together a detailed assessment of your own you'll need a reliable assessment from somewhere else. You'll find it either in Timeform's weekly *Black Book* or in *The Sporting Life* commentaries.

There's no formula for assessing the going, though we could probably devise one if we wanted to. Just the same, if a horse has a marked preference for a particular going this could be the single most important factor in choosing between two or more horses of generally similar ability.

### Analysing time figures

Time is clearly a very important method of discovering value bets, even when other factors – age, fitness, draw, and going – are taken into account. This is particularly true when a horse shows even one time performance that is significantly better than its generally accepted overall form rating.

It can be useful to check the winning times of a particular race for the last three seasons against the best time performances to date of the runners in this year's race. Speed figures are an ideal guide to this selection process – you'll find them in the weekly *Raceform Handicap Book*, which gives the best speed to date as well as the course, the going, the date, and the length of the race. Has one of the runners returned a time on a comparable course? Does it match previous winning times on this course? If so, you may have a value bet.

Analysing the actual spread of speed figures is interesting (see Table 5.5). The table has obvious implications, but it also invites further statistical investigation. We saw earlier on that there was a close correlation between WARs and form and that each, individually and interactively, is highly correlated with successful performance. A horse with a good WAR (compared with the other runners) and good form is very likely to be placed in any race we are trying to forecast. But how do we actually use statistics to analyse horse racing information?

One useful test, called *significance of a single mean*, can help us to find out whether, for instance, a new method of training makes a difference to the horses that receive it. Suppose, for instance, that we use numerical

Table 5.5. Distribution of speed figures.

| Speed figure        |         |
|---------------------|---------|
| 37.5% of all horses | 60-69   |
| 30.3%               | 70-79   |
| 18.5%               | 80-89   |
| 9.7%                | 90-99   |
| 2.4%                | 100-109 |
| 1.3%                | 110-119 |
| 0.3%                | 120+    |

scores taken both before and after the test as a guide. In Table 5.6, column 1 shows the result of subtracting the original score from the score after new training. If, for instance, the score had improved from 90 to 110, the figure in column 1 would be  $110-90=20$ . A minus sign shows that the score was worse after the new training – for instance, if it had worsened from 90 to 82 the figure in column 1 would be  $-8$ .

So far so good – I hope! Now things start to get a little more complicated. We need a figure, given by a standard formula, which can then be

Table 5.6. Significance of a single mean.

| Horse                 | Column 1<br>Test 2 score<br>– Test 1 score | Column 2<br>Column 1 score<br>– Average | Column 3<br>Column 2 result<br>squared |
|-----------------------|--|---|--|
| A                     | 20   | 12                                      | 144                                    |
| B                     | 10   | 2                                       | 4                                      |
| C                     | -8   | -16                                     | 256                                    |
| D                     | -6   | -14                                     | 196                                    |
| E                     | 15   | 7                                       | 49                                     |
| F                     | 25   | 17                                      | 289                                    |
| G                     | 28   | 20                                      | 400                                    |
| H                     | -6   | -14                                     | 196                                    |
| I                     | 2  | -6                                      | 36                                     |
| J                     | 0  | -8                                      | 64                                     |
| Total = 80            |  |   | Total = 1634                           |
| Average = $80/10 = 8$ |  |   |  |

The figure required for comparison with the table in Appendix V is given by taking the square root of the column 3 total divided by the total number of horses less one, i.e.  $\sqrt{(1634/9)}$  which is 13.474.

compared with the Fisher and Yates probability table given in Appendix V. To get this number, we first square each number in column 2 to give the numbers in column 3, then add up all the numbers in column 3 and take the square root of the total divided by the number of horses (N) less 1. The result is 13.474. Now turn to Appendix V and compare this result with that we would expect. For a value of  $N = 9$  the table gives a T value of 2.263 – in other words, there is a 1 in 20 ( $P = 0.05$ ) chance that the calculation will yield a result of approximately 2.263. Our result is so far away from this that the training has clearly had a very significant effect. The variation is far greater than simple laws of probability could account for.

I don't want to make too much of this simple test, but there are many other questions that could be answered using the same techniques. 'Are certain horses better sprint racers than others?' 'Is one jockey clearly better than another?' Using the significance of a single mean test you could tell whether horse or jockey had the greater influence on the result. Obviously the value of such techniques could be enormous, and there are many more – some are outlined in Appendix V. With these techniques horse racing could almost become a science – even though it will never be 'certain', it could be a lot more predictable than it is at the moment! To give yourself something to work with, try the simple program in Fig. 5.2 – and do make sure you enter it accurately (have you read Chapter 1?).

```

10 GOSUB 1000:FOR A=1 TO 10
20 PRINT "RESULT NO. ";A:INPUT A(A)
30 B=B+A(A)
40 NEXT A
50 C=B/10
55 B=0
60 FOR A=1 TO 10
70 A(A)=A(A)-C
80 A(A)=A(A)*A(A)
90 B=B+A(A)
100 NEXT A
110 C=B/9:PRINT
120 PRINT "RESULT IS: ";SQR(C)
130 END
1000 REM ***TITLE SEQUENCE***
1010 PRINT "THIS PROGRAM CALCULATES"
1020 PRINT "THE SIGNIFICANCE OF A"
1030 PRINT "SINGLE MEAN USING TEN"
1040 PRINT "RESULTS WHICH YOU SHOULD"
1050 PRINT "NOW KEY IN YOURSELF."
1060 PRINT: RETURN

```

*Fig. 5.2.* Program to determine significance of a single mean.

### Program to determine significance of a single mean

The simple program considers only ten numbers (though by changing lines 10, 50, 60 and 110 you could have as many as you wish) and these are INPUT at line 20. In line 30, the variable B keeps a running total of the values you have input. When the loop has been completed, line 50 takes the average value of A, and the loop from line 60 to line 100 subtracts this average value from the individual A values to give the computer equivalent of column 2 (line 70) and then squares each result to give the computer equivalent of column 3 (line 80). Line 90 keeps a cumulative total of these results. Finally line 110 divides this total by  $N-1$  (9 in this case) and line 120 takes the square root of the result and prints it out. You can now compare this result with the Fisher and Yates table in Appendix V.

### The importance of recent form

In this brief examination of time and weight we have already seen that the predictions of basic form can always be upset by two critical factors – recent form and the going. In fact, recent form seems to be decisive, as some of the results from our statistical survey of flat racing showed:

- 53% of all winners were placed in their previous race.
  - 20% of all the horses in training won well over 80% of all races.
- Specifically, out of 5590 horses competing, only 1000 were worth monitoring.

A professional American punter has come up with a very simple system. He confines his bets to 3-year-olds which have won at least 33% of their starts, and been placed in at least 50%. His reasoning is also very simple. Many horses never get into the frame – most reach it only a few times. By backing proven quality he is betting on ‘good’ probabilities. It sounds as though the formula should pick out nothing but red-hot favourites, but interestingly enough it doesn’t. When I tested it, 44% of the horses won at prices averaging 21-10. The longest series of losers was seven in a row, and the method showed a pre-tax profit of 36%.

For the next test I wanted to see if there was any connection between *recent* form (results in the last two races) and *longer term* form (50% success in the last six races). In a sample of 1000 I found an enormously high correlation between the two, and a further series of tests showed up some additional points worth including in a forecasting system:

- Horses seldom win twice in a row, but the higher the group (and the prize money) the better their chances of doing so.
- Horses are often placed in the next race after a win, and the higher the group, the higher the probability.

- The longer term form test is not so effective as we go from group 1 to group 4.

As we saw in Chapter 1, the idea of groups has largely been dropped, but prize money is still related to the old groups, so I still use the term in this book.

The best way of checking a horse's fitness is to be at the trackside, as I mentioned earlier. That way you can see if it is sweating or slightly lame, if it is blowing hard, or if there is some other visible clue to its fitness. If this is not possible, then previous results are your best guide. Pay particular attention to the last three results – is there an improving trend? Try to find out about 'freak' results – were they a freak, or was there some reason for them?

From my survey I have drawn up a set of rules, as usual based on statistical analysis, that should help you choose value bets from information on form:

- If a horse is not dropping in class by more than two groups, eliminate it if it was not placed in its last two outings, unless it was gaining ground at the finish over a greater distance.
- If a horse is not performing consistently, eliminate it. It must have been placed in 50% of its previous outings – and it should be not only consistently good, but improving.
- If the previous results were not achieved over the same distance, in a race of comparable value, and under comparable conditions, then you may wish to eliminate the horse in any case. Weigh the facts carefully before you decide.

### **The importance of distance**

This is relatively simple to determine – 60% of all winners win at the same distance as they ran last time out! For the rest, race commentaries will often give you a clue. A horse 'running on strongly' at the end of an 8-furlong race is likely to do well in a 10-furlong race; a horse that finished the 8 furlongs 'noticeably weakened' would not. Use the record book to make informed forecasts, and use distance to qualify your assessment of recent form. In general, of course, stables don't enter their horses at unsuitable distances. There is a feeling that horses, like athletes, are either 'sprinters' or 'long distance runners', and it's important for you to know which is which.

Finally, remember that all the elements we are using to help us in horse race forecasting are interrelated. In theory, for instance, a horse with a weight handicap will probably do less well over a long course and finish more weakly. If it doesn't, then it has done well – in fact, if it finishes within four lengths of placed horses, or within four lengths of the winner while running strongly, it has done very well. Inevitably, many of the rules we

have drawn up in this chapter will appear arbitrary in practice, and will not – in fact cannot – take account of more marginal differences between horses.

## Chapter Six

# Alternative Forecasting Systems

In Chapter 4 we looked at the H1 program, which selects value bets by a process of elimination. In this chapter I am going to introduce a rather more subtle system – instead of eliminating horses altogether, it gives them *weightings* relative to one another.

The H1 program has been successful in many parts of the world, including places as far apart as Australia, South Africa, Hong Kong and Singapore. Just the same, the eliminations it produces are sometimes a bit arbitrary. For instance, take the case of a horse that has dropped a class for no obvious reasons of age or infirmity yet fails to satisfy the question ‘Was it placed in its last two outings?’. It could have done fairly well even if it was not placed, and the drop in class could put it among the winners this time. Complete elimination is really a little unreasonable! As it stands, the program is not as flexible as it might be, and applying it requires much more information about previous races and the horse’s performance than you will find in a daily newspaper.

So how can we improve H1?

### Introducing weightings

Before I go into all the complex – and occasionally confusing – details of flowcharts, listings, and stern reminders to read Chapter 1, I’d like to look at a simple model of the new program. We’ll call it H2 for convenience, though it isn’t really a program, and uses the computer rather like a calculator. No matter – it illustrates the ideas I want to put across, and it’s easy to understand.

Let’s start, as we did for H1, with an actual race meeting, this time at Cheltenham. We’re going to set up a simple scoring method – just one of many possible methods, remember! The race is the 3.55 Churchdown Handicap Chase, so we can ignore WARs; they only apply to flat racing. We’ll presume that you have a daily newspaper, and some extra information about the jockeys, trainers, and owners. After reading this far you may also have some new ideas of your own! But be careful – simply following what

---

|  |       |
|--|-------|
| Q1. Consider the last two results this season<br>(If last season included, subtract 1)   | (0-5) |
| Q2. Consider <i>all</i> previous recorded results  | (0-3) |
| Q3. Current weight (especially if extra 1 lb carried,<br>which is usually mentioned for a previous win)<br>If previous weight and course run are known, increase<br>the weighting range to (0-7) | (0-4) |
| Q4. Consider jockey/trainer/owner and their record   | (0-2) |
| Q5. Consider tipsters' opinions and any comments   | (0-4) |
| Q6. Consider forecast starting prices  | (0-3) |

---

*Fig. 6.1. The H2 system, a simple scoring system based on weighting.*

you *think* you know may cost you a value bet. The full scoring system is given in Fig. 6.1, and at first sight it may seem rather baffling. Let's take Question 1 as an example.

You are invited to consider the horse's last two results, and work out a weighting in the range 0 to 5. If its last two results are 1 1 then clearly it scores the maximum, 5. If the results are 2 1 or 1 2 it will score 4; 2 2 will score 3; 3 2, 2 3, or 3 3 score 2; any other placings score 1; and 0 0, of course, scores 0. These 'rules' may sound a bit rigid, but there is room for your own judgment here. You may decide to be more generous after considering an individual performance against that of the other horses in the race. A computer, of course, would make no such subjective allowances – for question 6, for instance, you would probably program it to score:

1st in starting prices = 3  
 2nd in starting prices = 2  
 3rd in starting prices = 1  
 All others = 0

This, as you can see, is less easy when it comes to answering some of the other questions – which is why I haven't produced a formal program from it. The important thing to notice is the relative importance given to different aspects of a horse's background and performance. Questions 1 and 2 together carry a weighting of up to 8 points – four times as much as the weighting given to jockey, owner and trainer in question 4.

Calculations at this stage are best done with a calculator, or by using the computer as a calculator. When you've finished, just add up the scores for each horse and place them in order, with the highest score at the top. There's nothing, of course, to stop you writing a proper program H2 if you want to, but I'll be showing you some more sophisticated versions of it later in the

chapter, and in any case the H2 'programs' are really an introduction to program H3, which is listed in full later in the chapter.

All the necessary information for H2 can be found in any daily newspaper so let's take a look at them and see what they say (see Table 6.1). The experts' opinions are shown, purely for interest's sake, in Table 6.2. They're not relevant to our scoring but they do at least provide some way of checking the effectiveness of the system. In fact the H systems in this book have scored consistently better than the best single published expert over the last five years.

The final score is shown in Table 6.3. Clearly we could do with some more

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*Table 6.1. Details of the Churchdown Handicap Chase.*

---

### 3.55 Churchdown Handicap Chase, Two Miles

£3000 added to stakes, distributed in accordance with Rule 194(iv) (b); for five-year olds and upwards; £6 to enter, £24 ex if dec to run; penalties after September 19, a winner of a chase 6 lb (32 ent, ft dec for 21). Closed Sept 19. Penalty value £2389.20; 2nd £661.20; 3rd £315.60.

(W.F.A.: 5 12-2, 6 and up 12-3)

- 1 01P24-2 Even Melody – Cse Wnr 2 ½m ch-  
(S. Lycett Green) ... N. F. Crump 10 12 1 ... P. Leach
- 2 3123-14 Stopped (T. Ludlow)  
F. T. Winter 7 11 11 ... J. Francome
- 5 00001-3 Major Owen (Robert Waley-Cohen)  
N. J. Henderson 10 11 2 S. Smith Eccles
- 6 004211 Mighty Marine (6lb ex) (Mrs P. M. Lothian)  
J. M. Bradley 10 11 1 ... M. Williams
- 8 4/22221 Soon For Sale (Tony Appleyard)  
I. P. Wardle 7 10 1 ...
- 9 12F-022 Wily Talke (J. W. Blundell)  
J. W. Blundell 9 10 1 ... A. Brown
- 10 0000-21 Dornie (6lb ex) (K. O. Cunningham-Brown)  
K. O. Cunningham-Brown 9 10 0 ... P. Wells (7)
- 11 3004P-3 Stanway Lad (Marcus Priest)  
D. Nicholson 8 10 1 ... J. Suthern

Long handicap weights: Soon For Sale 9-7, Wily Talke 9-7, Stanway Lad 9-1 and Dornie 8-12

Eight runners

**Forecast:** 11-4 Even Melody, 7-2 Major Owen, 4 Stopped, 5 Mighty Marine, 13-2 Soon For Sale, 12 Wily Talke, 18 Dornie, 20 Stanway Lad

---

Table 6.2. The experts' forecast for the Churchdown Handicap Chase.

| Cheltenham (Group One)  |               |
|-------------------------|---------------|
| Augur (George Ross)     | Even Melody   |
| Form                    | Even Melody   |
| Man on the spot         | Stopped       |
| D. Express (The Scout)  | Even Melody   |
| D. Mail (R. Goodfellow) | Stopped       |
| D. Mirror (Newsboy)     | Stopped       |
| D. Telegraph (Hotspur)  | Even Melody   |
| The Sun (Templegate)    | Mighty Marine |

Table 6.3. Scores for the horses in the Churchdown Handicap Chase using the H2 system.

| Horse            | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Total |
|------------------|----|----|----|----|----|----|-------|
| 1. Even Melody   | 2  | 2  | 2  | 1  | 4  | 3  | 14    |
| 2. Stopped       | 2  | 2  | 2  | 2  | 4  | 2  | 14    |
| 5. Major Owen    | 2  | 1  | 2  | 2  | 1  | 3  | 11    |
| 6. Mighty Marine | 5  | 3  | 2  | 1  | 2  | 2  | 15    |
| 8. Soon For Sale | 4  | 3  | 3  | 1  | 1  | 1  | 13    |
| 9. Wily Talke    | 3  | 2  | 3  | 1  | 1  | 1  | 11    |
| 10. Dornie       | 4  | 1  | 2  | 1  | 1  | 1  | 10    |
| 11. Stanway Lad  | 1  | 1  | 3  | 1  | 1  | 1  | 8     |

(8 horses to run: Nos 3, 4 and 7 were non-starters)

**NB** Some of the comments which influenced Q5 (apart from tipsters' opinions) were gleaned from various papers and commentators.

information, but it does look as though horses 1, 2 and 5 could be winners, and the obvious each-way bet is 6 (Mighty Marine). On the actual race day the odds finished at:

|             |     |
|-------------|-----|
| Even Melody | 5-2 |
| Major Owen  | 7-2 |
| Stopped     | 4-1 |

So we choose a winner from these. Before betting, of course, we need to go through an individualisation phase – check the going and its suitability for the horse. Then bet if, and only if, you have a value bet – a well-fancied (forecast) horse in the first three of the betting and the first two of your forecast to win (if the odds are not below 6-4), or an each-way bet, provided

you don't stand to lose if the horse is placed. This usually means not less than 5-1. Always consider the principles of staking (covered in detail in Chapter 7) and remember the possibility of doubles and forecast bets.

Even Melody does not look a value bet. Mighty Marine at 8-1 is the obvious each-way bet, but the scoring is close - I bet just £2 this time.

In the event, Even Melody won the race, with Mighty Marine a close second. I got a small win, and nearly a big one, but H2 is obviously a very sketchy way of making a forecast. We really need something more sophisticated, using information from *The Sporting Life* and *Raceform Handicap Book* as in H1. For convenience, I have shown the relevant information from *The Sporting Life* in Table 6.4. The questions we need to answer are laid out in Fig. 6.2 - we'll call this system H2A. The suggested weightings have been tried and tested (with many others) over a whole season - they should require very little adjustment.

*Table 6.4. Information from The Sporting Life for use with the H2B scoring system example.*

### 3.55 Churchdown Handicap Chase

2m (£2389)

0006-21 *Dornie* (9-10-0) b m Spartan General - Dorrie by Dumbarnie 1977-8. 2m on firm (Taunton) 1978-9, 2¼ on good to firm (Fontwell), 2m on hard (Hereford), 2m on hard (Wincanton) 1979-80. 2m 40yd on firm (Devon and Exeter) £4488 (£1033)

Sept 27, Devon and Exeter, 2m 40yds h'cap chase firm £1033 1 *Dornie* (9-9-2- inc 3lb P. Webb 7\*) led 2nd to lead again last drew clear (7 to 1): *Mighty Marine* (10-11-11 M. Williams) led first, led 8th to last, no extra (3 to 1 fav); 3 Mouldy Old Dough (10-10-3) 8 ran. 71, 151, 111 4m 14.9s (a 5.9s)

Aug 9 Devon and Exeter 2m 3f h'cap chase firm £1042: 1 Sky Myth (7-11-0 7\*) 2 *Dornie* (9-10-3 inc 9lb ow 1 Gebbie 3\*), chased leader till went on seventh, mistake next, headed last, kept on (9 to 2); 3 Zonta (11-9-9 inc 2lb ow 7\*); 5 *Mighty Marine* (10-12-7 M. Williams 7\* b1) led to seventh, weakened three out (7 to 4 fav) 6 ran 21, 71, 11, 201 4m 38.1s (b 0.9s)

May 24 Newton Abbot. See *Stopped*

61P24-2 *Even Melody* (10-12-1) br g Even Money - Scotch Time by Tartan. 1974-5, 2m in good (Wetherby) 2m h good (Catterick) 1975-6 2m ch firm (Catterick) 2m 50 yds on good to firm (Wetherby), 2m 198 yds on good (Kelso) 2m on good to soft (Teeside Park) 2m on good (Teeside Park) 2m 1f firm (Utttoxeter); 1976-7 2m on good (Haydock) 2m 50 yds on good (Wetherby) 2m on good to soft (Ayr); 1977-8 2½ on good (Ayr) 2½ on good

Table 6.4. cont.

to soft (Cheltenham) 2m ch good (Liverpool) 2m ch good (Perth); 1978-9 2½m ch good (Haydock) 2m ch good to soft (Carlisle) £25938 (-----)

Sept 26 Perth 2m h'cap chase, good £1486 1 Carrigeen Hill (8-11-4) 2 *Even Melody* (10-12-0 C. Hawkins) prominent stayed on under pressure from two out, better for race (7 to 2 from 4 to 1); 3 Harvest Day (8-10-11) 5 ran 61, 31, dist. 3m 51.2s (b 4.0s)

May 21 Nottingham. See *Major Owen*

66501-3 *Major Owen* (10-11-2) br g Master Owen – Carotene Lady by Mustang. 1973-4 2½m h good (Fairyhouse), 2m h firm (Roscommon); 1974-5 2m 1f 172yds h good (Downpatrick), 2m h good (Wexford); 1975-6, 2m ch good (Mallow); 1977-8, 2¼ ch good to firm (Fontwell), 2¼ ch hard (Fontwell), 2m ch good (Ascot), 2m ch good to soft (Wincanton), 2m 150yds ch good to soft (Doncaster); 1978-9, 2m ch good (Nottingham), 2m ch good (Worcester), 2m ch hard (Ascot), £15071 (-----)

Sept 24, Plumpton, 2m h'cap chase, good to firm, £1623; 1 My Charlie (9-10-3); 2 Harry Hotspur (9-11-0, 4\*); 3 *Major Owen* (10-12-0, Smith Eccles, b1), headway three out every chance between last two, one pace (4 to 1 from 5 to 2); 4 *Mighty Marine* (10-11-13, M. Williams), made running until approaching two out, badly hampered approaching last, not recover (9 to 4 fav from 2 to 1). 5 ran. ½1, 21, ¾1, 101, 3m 50.9s (b 7.1s).

May 21, Nottingham, 2m h'cap chase good, £1413: 1 *Major Owen* (10-11-1, J. Francome), chased leader till led ninth, made rest, held on well (8 to 1 op 5 to 1); 2 Grass Hand (6-10-9, inc 5lb ow); 3 Bird of Prey (9-10-0); 4 *Even Melody* (10-12-1, C. Hawkins), with leader from three out till weakened and hung right flat (11 to 8 fav from 6 to 4), 9 ran, 31, 11, 21, 2½1, 21

0554211 *Mighty Marine* (10-11-1) ch g Marine Corps – Story of Tina by Pappageno II. 1973-4, 2m h hard (Hereford), 2m h firm (Newton Abbot); 1974-5, 2m ch firm (Hereford); 1975-6, 2m 40yds ch hard (Devon and Exeter), 2m 180yds ch hard (Bangor), 2m ch firm (Hereford), 2m ch firm (Ludlow), 2m 150yds ch firm (Newton Abbot), 2m ch firm (Plumpton), 2m 50yds ch firm (Towcester); 1976-7, 2m 180yds ch hard (Bangor), 2½m ch hard (Fontwell), 2¼m ch firm (Fontwell), 2m 150yds ch firm (Newton Abbot, twice), 2m 74yds ch firm (Southwell, twice); 1977-8, 2m 150yds ch firm (Newton Abbot); 1978-9 2¼ ch firm (Fontwell), 2m 40yds ch hard (Devon and Exeter); 1979-80, 2m ch firm (Ludlow), 2m ch hard (Ludlow), £15058 (£1778)

Oct 3, Ludlow 2m h'cap chase hard £829: 1 *Mighty Marine* (10-12-4, M. Williams, 4\*), made all, ridden out flat, held on well (13 to 8); 2 Erse

Table 6.4. *cont.*

(7-10-12, 4\*), 3 *Stanway Lad* (8-10-4, J. Suthern), chased winner to ninth, one pace from three out (4 to 1), 4 ran. Hd, 201, 3m 50.5s (b 4.5s).

Sept 27, Devon and Exeter. See *Dornie*

Sept 24, Plumpton. See *Major Owen*

Sept 13, Newton Abbot. See *Soon for Sale*

Aug 9, Devon and Exeter. See *Dornie*

4/22221 *Soon For Sale* (7-10-0) ch g Sheshoon - Love For Sale, by Crepello. 1976-7, 2m 150yds ch good (Newton Abbot); 1977-8 (Kempton) 2m 100yds ch good to firm (Huntingdon); 1979-80 2m 150yds ch good to firm (Newton Abbot) £3566 (£1477).

Sept 13, Newton Abbot, 2m 150yds h'cap chase, good to firm £1477: 1 *Soon For Sale* (7-10-2 inc 11b ow S. Smith-Eccles) always in touch, ridden approaching two out, got up under pressure run-in, all out (7 to 2 op 2 to 1 tchd 4 to 1); 2 *Calculator* (9-11-2 4\*); 3 *Bargain Day* (7-10-4 inc 7lb ex); 4 *Stopped* (7-12-7 J. Francome) held up, some headway from rear, three out, not trouble leaders (11 to 4 op 6 to 4); 5 *Mighty Marine* (10-11-10, Michael Williams) led to ninth, faded (12 to 1 op 8 to 1 tchd 14 to 1) 10 ran, Hd 41, 11, 31,  $\frac{3}{4}$ l, 4m 0.3s (b 5.7s).

Sept 5, Newton Abbot, 2m 150yds h'cap chase, good to firm, £1584: 1 *Bargain Day* (7-10-3); 2 *Soon For Sale* (7-10-7 S. Smith-Eccles) always chasing leaders, mistake second, third and 9th, every chance last, not quicken (2 to 1 fav op 6 to 4 tchd 9 to 4); 3 *Philwin* (-10-4), 6 ran, 21  $\frac{2}{2}$ l, 201, 71 4m 0.9s (b 6.1s).

3004P-3 *Stanway Lad* (8-10-0) b g Setay - Telado by Telegram II: 1975-6 2m 92yds h firm (Bangor); 1976-7 2m ch hard (Nottingham) 2m ch good to firm (Ludlow ); 1977-8 2m ch good to firm (Ludlow); 1978-9 2m ch firm (Ludlow ) £3049 (----)

Oct 3, Ludlow. See *Mighty Marine*

May 5, Worcester 2m h'cap chase good to firm £1255: 1 *Prince of Normandy* (7-10-3 inc 3lb ow); 2 *Lewis* (6-10-6); 3 *Star Dyker* (9-11-2); P *Stanway Lad* (8-9-10 K. Whyte 4\*) pulled up before two out (10 to 1) 9 ran,  $\frac{3}{4}$ l, 151,  $\frac{2}{2}$ l, 31, 41. 3m 59s (a 3s).

3123-14 *Stopped* (7-11-11) ch g Cracksman - Gift Bounty by Escort III. 1975-6 2m h heavy (Leopardtown); 1976-7 2m h soft (Fairycastle); 1977-8 2m 100yds h soft (Newbury); 1978-9 2m ch good (Stratford), 2m ch good to soft (Kempton); 1979-80 2m 40 yds ch firm (Devon and Exeter). £6728 (£1113)

Table 6.4. cont.

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Sept 13 Newton Abbot. See *Soon for Sale*

Aug 22 Devon and Exeter 2m 40yds h'cap chase, firm £1113: 1 *Stopped* (7-12-6 J. Francome) headway seventh, hampered after next, led again three out, ran on strongly (7 to 2); 2 Carrigeen Hill (8-12-7); 3 Island Mist (6-11-0) 7 ran. 81, sht hd, 201, 11, distance. 4m 22.2s (a 11.2s).

May 24 Newton Abbot 2m 150yds h'cap chase, good to firm £1878: 1 *Artifice* (8-11-13 7\*); 2 *Stoppea* (7-11-7 inc 7lb ex J. Francome) headway 9th led two out to last ran on same pace (6 to 5 fav tchd evens from 7 to 4); 3 *Star of the Arctic* (8-10-6) ...

---

Q1. Consider class of current race (0-5)

- If same group or at least 2 groups lower than last race, horse scores 3 or 4
- If one group lower than last race scores 2 or 3
- If same group as last race scores 2
- Add 1 or 2 if horse has run in the same or higher group before at some time

Q2. Consider all previous recorded results (0-6)

- 50% or over success, including at least 1 win, scores 5
- 50% or over success without a win scores 4
- 33.3% or over success including a win scores 2
- 33.3% or over success without a win scores 1
- Less than 33.3% scores 0
- If success is not less than 33.3%, add or subtract points for recency of results

Q3. Consider last three outings (0-6)

- If places gained on all three, including a winner, score 5 or 6
- If places gained on all three but no win, score 4 or 5
- If at least 2 places including last time out, score 3 or 4
- If at least 2 places not including last time out, score 2 or 3
- If one place score 1 or 2
- If no place, score 0 or 1

Q4. Consider speed figures (0-5)

- If in best 3 SFs score 3 or 4
  - If in best of 6 SFs score 1 or 2
  - Otherwise score 0
  - Raise or lower scores according to the difference between SFs, and raise score if SF gained at the same (or similar) distance as present race
- 

*Fig. 6.2. H2A – a more sophisticated selection process involving weighted scores.*

- 
- Q5. Consider the weight the horse is carrying (0-5)
- If weight is diminished, score 3 or 4
  - If weight is the same score 3
  - If weight is increased, score between 0 and 2
  - If the answer to Q1 gives a high mark, you can add one point to this score.
- Q6. Consider the distance over which the race is being run (0-4)
- If same distance as last race run score 4
  - If almost same distance, score 2 or 3
  - If very different distance, score 0 or 1
- Q7. Consider if the horse is a value bet (0-2)
- Maximise bet if clear value bet (2)
  - Minimise bet if no clear value bet (1), or do not bet at all
- Q8. Consider other factors affecting performance (0-7)
- Good jockey and horse travelled far score 1
  - Good jockey but horse not travelled far score 2
  - Good trainer and horse travelled far add 1
  - Good trainer but horse not travelled far add 2
  - Poor jockey and trainer score 0
  - Add or subtract points according to your personal opinions, press tips etc. (add 2 or 3)

Once these questions have been dealt with and scored, you may like to add one further, separate, weighted score to help you decide how to bet:

- Q9. Consider the odds
- If odds suitable for each-way bet score 3
  - If odds suitable for win bet score 2
  - Otherwise score 0

Incidentally, these questions (with the exception of Q8) form the basis of the H3 program series listed at the end of this chapter.

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*Fig. 6.2. cont.*

## **Adding more detail to the H2 system**

Before we try out these ideas on the computer I'd like to show you an H2B system that extends the idea of weighted scoring a little further, with some additional questions. It also demonstrates how you can adapt the material in this book to suit your own ideas and your own needs – H2B is, if you like, program H2 after the individualisation phase I have mentioned so often before. Again, the data you need is available from *The Sporting Life* (Table 6.4) and the *Raceform Handicap Book*. The same simple arithmetic is used to tot up the scores, giving you a total points score for every horse under

---

|   |       |
|---|-------|
| Q1. Has the horse gone down a group, stayed in the same group, or gone up a group?            | (0-5) |
| Q2. Consider its placing in its last few outings<br>(Score as for H2A)                        | (0-5) |
| Q3. Consider all available SFs, bearing in mind the distances at which they were achieved     | (0-5) |
| Q4. Consider weight carried now against weight carried in last race (Score as for H2A)        | (0-5) |
| Q5. Compare distance of present race with previous race, bearing previous result in mind      | (0-5) |
| Q6. Has the horse run this season (if after November in year)?<br>(Score 2 for Yes, 1 for No) | (1-2) |
| Q7. Consider the horse's finishing power at this distance                                     | (0-4) |
| Q8. Consider jockey/owner/trainer and their record  | (0-2) |
| Q9. Consider all tipsters' opinions, comments etc.  | (0-5) |
| Q10. Consider forecast starting prices  | (0-3) |

---

Fig. 6.3. The H2B forecasting system, offering even more detailed analysis of the available information.

Table 6.5. Scores yielded by the H2B system for the example race.

---

| Horse         | Q1 | Q2 | Q3  | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Total |
|---------------|----|----|-----|----|----|----|----|----|----|-----|-------|
| Even Melody   | 1  | 4  | 4   | 3  | 4  | 2  | 3  | 1  | 5  | 3   | 30    |
| Stopped       | 2  | 5  | 5   | 5  | 3  | 2  | 3  | 3  | 4  | 3   | 32    |
| Major Owen    | 1  | 3  | (3) | 4  | 4  | 2  | 3  | 2  | 1  | 3   | 26    |
| Mighty Marine | 1  | 5  | 4   | 5  | 3  | 2  | 3  | 1  | 2  | 2   | 28    |
| Soon For Sale | 2  | 5  | 2   | 4  | 4  | 2  | 4  | 1  | 1  | 1   | 26    |
| Wily Talke    | 2  | 4  | 1   | 5  | 4  | 2  | 3  | 1  | 1  | 1   | 24    |
| Dornie        | 1  | 3  | 0   | 2  | 4  | 2  | 3  | 1  | 0  | 0   | 16    |
| Stanway Lad   | 1  | 3  | 0   | 4  | 4  | 2  | 3  | 1  | 0  | 0   | 18    |

---

consideration. Remember, this won't be every horse in the race – some (e.g. those that have not run before) will be eliminated before scoring begins.

The system is shown in Fig. 6.3, and the results of applying it to the Churchdown Handicap are shown in Table 6.5. I have deliberately chosen a very difficult example here: the main National Hunt season is still young (the race took place in October) and there is a real uncertainty about Major Owen's SFs, as indicated by the brackets in Table 6.5. Remember that these SFs come from the *Raceform Handicap Book*, and are not listed here. When answering question 9, don't neglect *collateral form*: the results obtained when two or more of the horses you are considering raced together

on a previous occasion. Bear in mind, too, that questions 4 and 5 refer to the horse's *last* race, but *The Sporting Life* actually gives figures for the last *two* races. All these points should make it clear that the H2 systems only demonstrate the principles of more elaborate scoring systems.

The next step is to finalise our selection. A look at Table 6.5 suggests that it will be a very close race – one you shouldn't bet on – with a probable finishing order:

1. Stopped
2. Even Melody
3. Mighty Marine

We know the actual starting prices (see above), and they suggest that we should reverse those first and second places. In fact there can be no value bet for a winner, and Mighty Marine stands out as an each-way bet, just as it did in the other H2 systems. It's interesting that Stopped fell at the second fence and Major Owen at the fourth – that just shows the extra risks involved in betting on National Hunt races! If Stopped had not fallen, who knows what the result would have been?

In this case all three systems gave the same result – in practice, H2A and H2B have done marginally better over the last five years.

The structure of the H2B scoring system forms the basis for the H3 computer program family, which uses weightings rather than the straightforward elimination tactics of program H1. However, questions 7, 8 and 9 of the H2B system are *not* included in H3 – you can, if you wish, add them in the individualisation phase.

### Computerising the weighted forecast

The H2 system described above does not give a detailed analysis of the available information – the H2A and H2B systems, on the other hand, give so much detail that a computer program based on either of them would become very complex. What we need is a system that will take account of all the factors we have discussed, in order of importance, and weight the final score accordingly. This system is used in the H3 program.

Figure 6.4 shows the basic framework of the H3 program. At first it looks very similar to the H2 systems, but notice that in this case each question requires no more than a 'yes or no' answer – the weighting is achieved not by a scoring system, but by the order in which the questions are asked. For instance, a 'no' answer to question 1 eliminates the horse immediately; a 'no' answer to question 12 will have only a very small negative effect on the cumulative weighting. As you might expect, a flowchart for this process looks rather like a branching tree turned upside down, only by the end of the process there are so many 'twigs' on the tree that a full flowchart would look very confusing indeed. To keep things simple I have divided the flowchart into three sections (Figs 6.5 to 6.7).

- Q1. Has the horse run before?  
 Q2. Is the horse in the same or a lower group?  
 Q3. Is the horse in the top three WARs?  
 Q4. Is the horse in the top three SFs?  
 Q5. Is the horse carrying less weight than in its last race?  
 Q6. Was the horse placed on its last outing?  
 Q7. Was the horse placed on at least 50% of its previous outings?  
 Q8. Was the horse running over the same distance in its last race?  
 Q9. Was the horse placed in its last race but one?  
 Q10. Was the horse running over the same distance in the last race but one?  
 Q11. Has the horse been first on either or both of its last two outings?  
 Q12. Is the horse in the top three in the betting?

Fig. 6.4. The basic questions used in the H3 program series.

Chart I

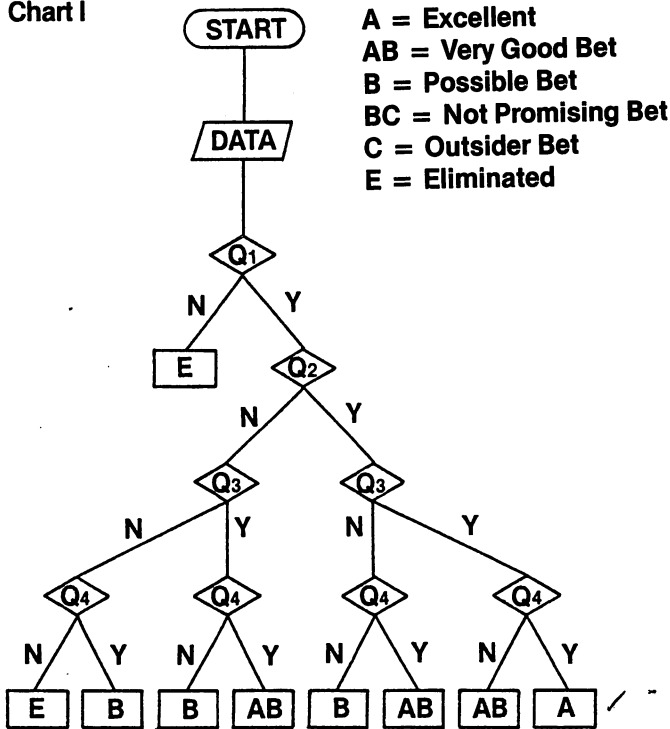


Fig. 6.5. Flowchart I for program H3.

As usual (Fig. 6.5) we begin by entering data about the runners, and then the computer checks the data. If the answer to question 1 ('Has the horse run this season?') is NO, then the horse is eliminated. If the answer is YES, the computer moves on to question 2 ('Is the horse in the same or a lower

group?"). If the answer this time is NO, the horse is not eliminated – it's simply downgraded as a potential bet. The grades available are:

- ↑ A Excellent Bet
- ↘ AB Very Good Bet
- 3 B Possible Bet
- 4 BC Not Promising Bet
- 5 C Outsider Bet
- 6 E Eliminate

A NO answer to any question affects the grade of the horse in the way indicated by the three flowcharts. By the time question 4 has been answered, as you can see, the horse will be graded either A, AB, or B, unless it has been eliminated (E).

Chart II

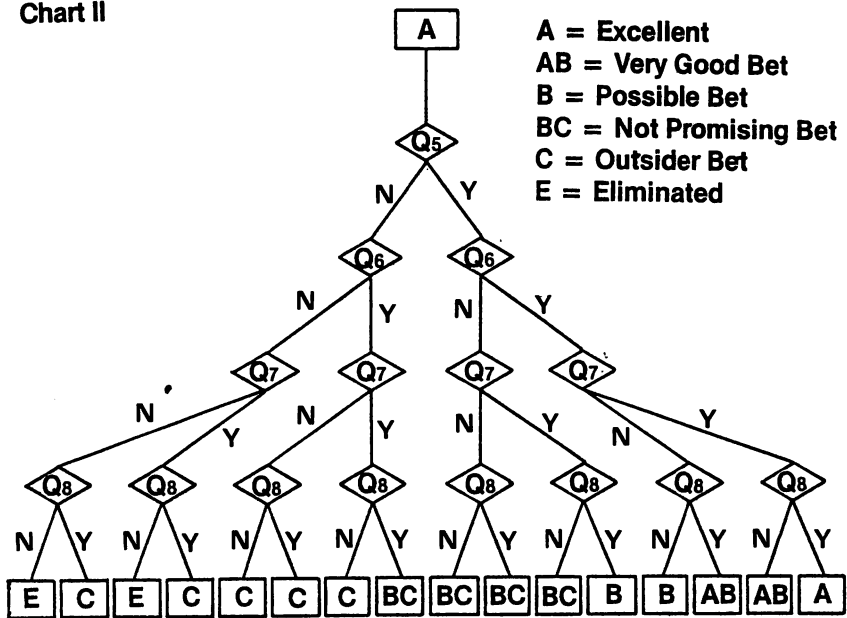


Fig. 6.6. Flowchart II for program H3.

Now look at Fig. 6.6, covering questions 5 to 8. The chart shows possible results for a horse that received an A rating on Chart I. By the time these four questions have been answered the horse may, as you see, have been downgraded to C or even eliminated altogether.

Figure 6.7, again, shows the various possibilities for a horse that finished in Fig. 6.6 with an A grade. As you can see, questions 9 to 12 are less heavily weighted – if a horse is still graded A after question 8, consistent NO answers to the remaining questions will only downgrade it to B (possible bet).

However, we are only looking at one version of Fig. 6.7. As we have already seen, a horse not eliminated at the end of Fig. 6.6 may be rated A,

Chart III

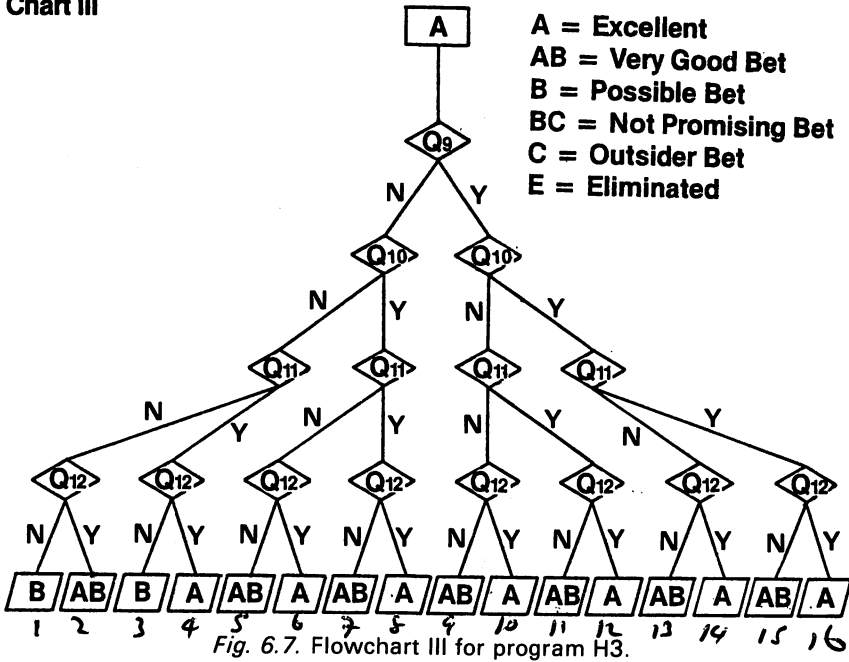


Table 6.6. Other possible results of Flowchart II in Fig. 6.6.

Starting with      Finish with (bottom row)

|   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|---|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
| 2 | AB | E | E | E | E | C | C | C | C | C | BC | BC | B  | B  | AB | A  |
| 3 | B  | E | E | E | E | E | E | C | C | C | C  | BC | BC | BC | B  | AB |

Table 6.7. Other possible results of Flowchart III in Fig. 6.7.

Starting      Finish with (bottom row)  
with

|   |    |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
|---|----|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 2 | AB | B | B | AB | AB | AB | A  | A  | A  | AB | AB | AB | AB | A  | A  | A  |
| 3 | B  | E | E | BC | BC | BC | B  | B  | B  | BC | BC | B  | B  | AB | AB | AB |
| 4 | BC | E | E | C  | C  | C  | BC | BC | BC | C  | C  | BC | BC | AB | AB | AB |
| 5 | C  | E | E | C  | C  | C  | C  | C  | C  | E  | E  | BC | BC | B  | B  | B  |

AB, B, BC, or C. Each of these ratings has its own version of Fig. 6.7, and the possible results are listed in tabular form in Table 6.7. In the same way there are really three versions of Fig. 6.6, depending on whether the horse was rated A, AB or B in Fig. 6.5; the possible results in this case are listed in

Table 6.6. Any considerations not included in this program – jockey, going, last minute changes etc. – should be left for the individualisation phase.

### The H3 program

As with program H1, I'm going to provide a commentary on this program, except where the routines are exactly the same as those used in H1. The commentary is not as detailed as the first; by this time I hope you will find it easier to follow the listing. However, reading this you should be able to understand what each part of the program is doing, which will make debugging a lot easier.

#### 10-900 (not listed)

These lines are an exact duplicate of lines 10-900 in program H1. Again the H\$ and R\$ arrays are set up, together with integer arrays SF% and H1% and the variables C1 and C2 for determining the class or group of a particular meeting.

```

1000 FORH=1TOHN
1010 IFH$(H,2)<>" "GOTO1070
1050 GOTO3750
1070 IFVAL(R$(5))<=VAL(H$(H,14))GOTO1200
1090 IFVAL(H$(H,6))=H1%(1)GOTO1160
1100 IFVAL(H$(H,6))=H1%(2)GOTO1160
1110 IFVAL(H$(H,6))=H1%(3)GOTO1160
1120 IFVAL(H$(H,7))=SF%(1)GOTO1190
1130 IFVAL(H$(H,7))=SF%(2)GOTO1190
1140 IFVAL(H$(H,7))=SF%(3)GOTO1190
1150 GOTO3750
1160 IFVAL(H$(H,7))=SF%(1)GOTO1300
1170 IFVAL(H$(H,7))=SF%(2)GOTO1300
1180 IFVAL(H$(H,7))=SF%(3)GOTO1300
1190 CH=3:GOTO1500
1200 IFVAL(H$(H,6))=H1%(1)GOTO1270
1210 IFVAL(H$(H,6))=H1%(2)GOTO1270
1220 IFVAL(H$(H,6))=H1%(3)GOTO1270
1230 IFVAL(H$(H,7))=SF%(1)GOTO1300
1240 IFVAL(H$(H,7))=SF%(2)GOTO1300
1250 IFVAL(H$(H,7))=SF%(3)GOTO1300
1260 GOTO1190
1270 IFVAL(H$(H,7))=SF%(1)GOTO1450
1280 IFVAL(H$(H,7))=SF%(2)GOTO1450
1290 IFVAL(H$(H,7))=SF%(3)GOTO1450
1300 CH=2:GOTO1500

```

```

1450 CH=1
1500 PL=0:RC=4
1510 IFVAL(H$(H,2))>0ANDVAL(H$(H,2))<5TH
ENPL=PL+1
1515 IFH$(H,3)<>" "THENRC=1:GOTO1535
1520 IFVAL(H$(H,3))>0ANDVAL(H$(H,3))<5TH
ENPL=PL+1
1522 IFH$(H,4)<>" "THENRC=2:GOTO1535
1525 IFVAL(H$(H,4))>0ANDVAL(H$(H,4))<5TH
ENPL=PL+1
1528 IFH$(H,5)<>" "THENRC=3:GOTO1535
1530 IFVAL(H$(H,5))>0ANDVAL(H$(H,5))<5TH
ENPL=PL+1
1535 RC=RC/2
1540 IFVAL(H$(H,12))<=VAL(H$(H,11))GOTO1
715
1542 W1=INT(VAL(H$(H,12)))*14+VAL(RIGHT$
(H$(H,12),2))
1543 W2=INT(VAL(H$(H,11)))*14+VAL(RIGHT$
(H$(H,11),2))
1545 WT=W1-W2
1547 IFWT<=4GOTO1715
1550 IFVAL(H$(H,2))<=0ORVAL(H$(H,2))>4G0
TO1595
1555 IFPL>=RCGOTO1585
1560 GOTO1570
1570 IFCH=1GOTO3745
1575 IFCH=2GOTO3745
1580 IFCH=3GOTO3750
1585 IFVAL(R$(4))>VAL(H$(H,9))GOTO3745
1590 IFCH=1GOTO3740
1592 GOTO3745
1595 IFPL>=RCGOTO1620
1600 IFVAL(R$(4))>VAL(H$(H,9))GOTO1615
1605 IFCH=1GOTO3745
1615 GOTO3750
1620 IFVAL(R$(4))>VAL(H$(H,9))GOTO1615
1625 GOTO1605
1715 IFVAL(H$(H,2))<=0ORVAL(H$(H,2))>4G0
TO1620
1720 IFPL>=RCGOTO1775
1725 IFVAL(R$(4))>VAL(H$(H,9))GOTO1760
1745 IFCH=1GOTO3720
1750 IFCH=2GOTO3730
1755 IFCH=3GOTO3740

```

```

1760 IFCH=1GOTO3730
1765 IFCH=2GOTO3730
1770 IFCH=3GOTO3740
1775 IFVAL(R$(4))>VAL(H$(H,9))GOTO1805
1780 IFCH=1GOTO3710
1785 IFCH=2GOTO3710
1790 IFCH=3GOTO3720
1805 IFCH=1GOTO3720
1810 IFCH=2GOTO3720
1815 IFCH=3GOTO3730
1820 IFPL>=RCGOTO1870
1825 IFVAL(R$(4))>VAL(H$(H,9))GOTO1855
1840 IFCH=1GOTO3740
1845 IFCH=2GOTO3740
1850 IFCH=3GOTO3745
1855 IFCH=1GOTO3740
1860 GOTO3745
1870 IFVAL(R$(4))>VAL(H$(H,9))GOTO1900
1885 IFCH=1GOTO3730
1890 IFCH=2GOTO3730
1895 IFCH=3GOTO3740
1900 IFCH=1GOTO3740
1905 IFCH=2GOTO3740
1910 IFCH=3GOTO3745
2000 IFVAL(H$(H,3))>0ANDVAL(H$(H,3))<5GOTO2400
2010 IFVAL(R$(4))<=VAL(H$(H,10))GOTO2220
2020 IFH$(H,2)<>"1"ANDH$(H,3)<>"1"GOTO2120
2030 IFH$(H,15)="N"GOTO2170
2040 IFCH=4THENH$(H,13)="A":GOTO2870
2050 IFCH=5THENH$(H,13)="AB":GOTO2870
2060 IFCH=6THENH$(H,13)="B":GOTO2870
2070 IFCH=7THENH$(H,13)="BC":GOTO2870
2080 IFCH=8THENH$(H,13)="C":GOTO2870
2120 IFH$(H,15)="N"GOTO2170
2130 IFCH=4THENH$(H,13)="AB":GOTO2870
2140 IFCH=5THENH$(H,13)="B":GOTO2870
2150 IFCH=6THENH$(H,13)="BC":GOTO2870
2160 IFCH=7THENH$(H,13)="C":GOTO2870
2165 IFCH=8THENH$(H,13)="E":GOTO2870
2170 IFCH=4THENH$(H,13)="B":GOTO2870
2180 IFCH=5THENH$(H,13)="BC":GOTO2870
2190 GOTO3750
2220 IFH$(H,15)="N"GOTO2130

```

```

2230 GOTO2040
2400 IFVAL(R$(4))<=VAL(H$(H,10))GOTO2560
2410 IFH$(H,2)<>"1"ANDH$(H,3)<>"1"GOTO25
10
2420 IFH$(H,15)="Y"GOTO2520
2430 IFCH=4THENH$(H,13)="AB":GOTO2870
2440 IFCH=5THENH$(H,13)="B":GOTO2870
2450 IFCH=6THENH$(H,13)="BC":GOTO2870
2460 H$(H,13)="C":GOTO2870
2470 IFCH=4THENH$(H,13)="AB":GOTO2870
2480 IFCH=5THENH$(H,13)="B":GOTO2870
2490 IFCH=6THENH$(H,13)="BC":GOTO2870
2500 IFCH=7THENH$(H,13)="C":GOTO2870
2505 IFCH=8THENH$(H,13)="E":GOTO2870
2510 IFH$(H,15)="N"GOTO2470
2520 IFCH=4THENH$(H,13)="A":GOTO2870
2530 IFCH=5THENH$(H,13)="A":GOTO2870
2540 IFCH=6THENH$(H,13)="AB":GOTO2870
2550 IFCH=7THENH$(H,13)="AB":GOTO2870
2555 IFCH=8THENH$(H,13)="B":GOTO2870
2560 IFH$(H,2)<>"1"ANDH$(H,3)<>"1"GOTO26
60
2570 IFH$(H,15)="Y"GOTO2520
2580 GOTO2670
2660 IFH$(H,15)="Y"GOTO2520
2670 IFCH=4THENH$(H,13)="AB":GOTO2870
2680 IFCH=5THENH$(H,13)="AB":GOTO2870
2690 IFCH=6THENH$(H,13)="B":GOTO2870
2700 H$(H,13)="BC":GOTO2870
2870 NEXT:GOTO3200

```

### 1000-2870

As before, this is the core of the program – only this time it uses the weighting procedure described earlier in this chapter. Again H is set up as a counter in line 1000, with HN already established as the number of runners in the race.

We can get an idea of how the program works by following through from line 1070. As before, this compares the class of the present race, stored in R\$(5), with the class of the last race run by the horse, stored in H\$(H, 14) – this was question 2 in Fig. 6.4. This time if the horse is running in a race of the same or a lower class (that's the  $\leq$  sign) control passes to line 1200. Lines 1200–1220 effectively 'ask' question 3 by comparing the horse's WAR, stored in H\$(H, 6), against the three best WARs among the runners, stored in H1%. If the computer finds a match, control passes to lines 1270–1290, which deal with question 4, the one about SFs. A match here passes control

to line 1450 which sets a new variable, CH, equal to 1. This variable is used instead of the letter codes (A, AB, B etc.) as a 'score' for the horse under consideration.

If you now check the flowchart in Fig. 6.5 you will see that we have completed the first phase. Try following through the program from line 1000 to see what else can happen – for instance, if the horse is racing in a higher class race the test at line 1070 will fail and the program will go on to lines 1090–1110 which check the WARs. If no match is found here, control passes to lines 1120–1140, which check the SFs. If there is no match here either, control passes to line 1150 and then to line 3750, which eliminates the horse by entering E in the H\$ array at the appropriate place, and then returns control to line 2870 so that the next horse can be considered.

Lines 1500–1540 are exactly the same as the equivalent lines in program H1, and perform the same function – they check how the horse was placed on its last four outings, and check the weight it is carrying this time against the weight it carried on its last outing.

However, the programming from line 1542 to line 2700 is quite different from that in H1. It's designed to apply the more exact weighting technique shown in the flowcharts, so it's hardly surprising that there is also much more programming involved. To make things clearer, let's take another example. This time the flowchart we're using is Fig. 6.6, remember, and again the computer will assign a new value to the CH variable once questions 5 to 8 have been dealt with.

Once values have been established for PL and RC (as in program H1), the weight carried is considered at line 1540. Let's assume the horse is carrying more weight this time, so it fails the test at 1540 and control passes to line 1542. This line converts the current weight carried into a whole number of pounds; line 1543 does the same for the previous weight carried. If the difference between the two is less than 4 lb, line 1547 sends control to line 1715, which 'asks' question 6: 'Was the horse placed on its last outing?' Let's assume it was, in which case H\$(H, 2) will not have a value less than 0 or greater than 4 and control will pass to line 1720, which compares PL and RC rather as program H1 did. Effectively it's asking question 7: 'Has the horse been placed on at least 50% of its outings?' If the answer is YES, control passes to line 1775, which compares the distance the horse ran in its last race (H\$(H,9)) with the distance of the present race, held in R\$(4). This, if you remember, is question 8. If the distance for this race is greater, control passes to line 1805; if not, the program moves on to line 1745. In both instances, CH is revalued to take account of the new information, and we have reached the end of the flowchart in Fig. 6.6.

From these two examples you should be able to work out how the flowchart in Fig. 6.7 applies to the program. Don't forget to check the list of questions in Fig. 6.4 if you are not sure what the program is trying to achieve at any point. Notice how the various flowlines end, from 2040 on, in routines that give letter codes to the various scores.

**3000-3060 (not listed)**

These lines are exactly the same as the equivalent lines in program H1.

```

3200 PC=0:PRINT" "
3220 PRINT" ";R$(1);TAB(20);R$(6);TAB(32)
    );R$(2);" "
3240 PRINT:PRINT:PC=PC+3
3250 FORHD=1TOHN:PRINTH$(HD,1);TAB(20);
3270 IFH$(HD,13)="A"THENPRINT"EXCELLENT
    BET":GOTO3360
3280 IFH$(HD,13)="AB"THENPRINT"VERY GOOD
    BET":GOTO3360
3290 IFH$(HD,13)="B"THENPRINT"POSSIBLE B
    ET":GOTO3360
3300 IFH$(HD,13)="BC"THENPRINT"NOT A PRO
    MISING BET":GOTO3360
3310 IFH$(HD,13)="C"THENPRINT"OUTSIDER B
    ET":GOTO3360
3350 IFH$(HD,13)="E"THENPRINT"ELIMINATE "
    :GOTO3360
3360 PRINT:PC=PC+2:IFPC<20GOTO3450
3400 GOSUB4400
3405 PRINT" ";PC=0:PRINTR$(1);TAB(20);R$
    (2);" CONT'D. "
3420 PRINT:PRINT:PC=PC+3
3450 NEXT
3500 INPUT"REPEAT FORECAST SUMMARY (Y-
    N) ";RF$:IFRF$="N"GOTO4200
3510 IFRF$="Y"GOTO3200
3520 IFRF$<>"N"GOTO3500
3530 GOSUB64:X$="GOOD LUCK!":GOSUB6600
3540 PRINT" ":END

```

**3200-3540**

This section is largely the same as the equivalent section in H1, but some lines have been added to cope with the additional codes – lines 3280-3310.

Now for the good news – the whole of the rest of the program is exactly the same as H1. I suggest you refer to the detailed commentary on H1 if you need help keying in these lines; but do remember to key them in!

**Variants on the H3 program**

As I mentioned briefly earlier on, there are three simple variants on the H3 program that allow you to work without the *Raceform Handicap Book*

(program H3A), without *The Sporting Life* (program H3B) or with nothing more than an ordinary daily newspaper (program H3C). The three listings given here are *subtractive*; in other words, they show the lines you need to *take out* of program H3 to produce the modified program you need. What you're actually doing is cutting out some of the questions shown in the flowcharts, and, as we've already seen, the analysis section stands alone in the program – you don't *have* to change anything else. However, you will find when you run any of these modified programs that the routine at 5410 will ask questions you either can't answer or don't want to; you might like to modify this section yourself to suit your individual needs. Figures 6.8 to 6.13 show the subtractive listings and flowcharts for the programs H3A, H3B and H3C.

For details on using the program refer to the detailed notes at the end of Chapter 4. In use, not surprisingly, program H3 is very similar to program H1.

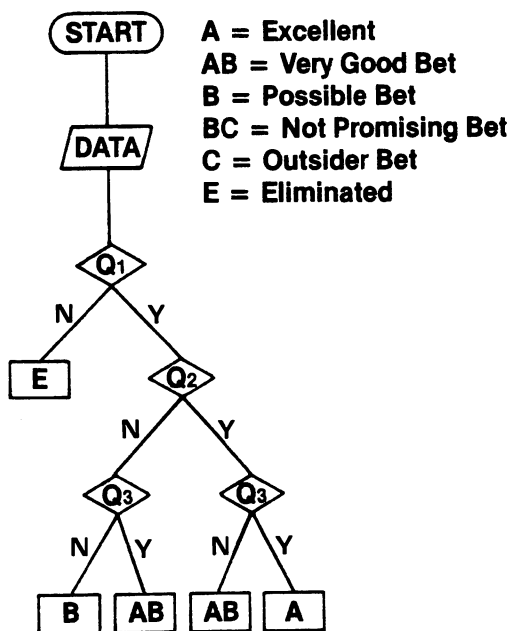


Fig. 6.8. Flowchart H3A, again in three parts.

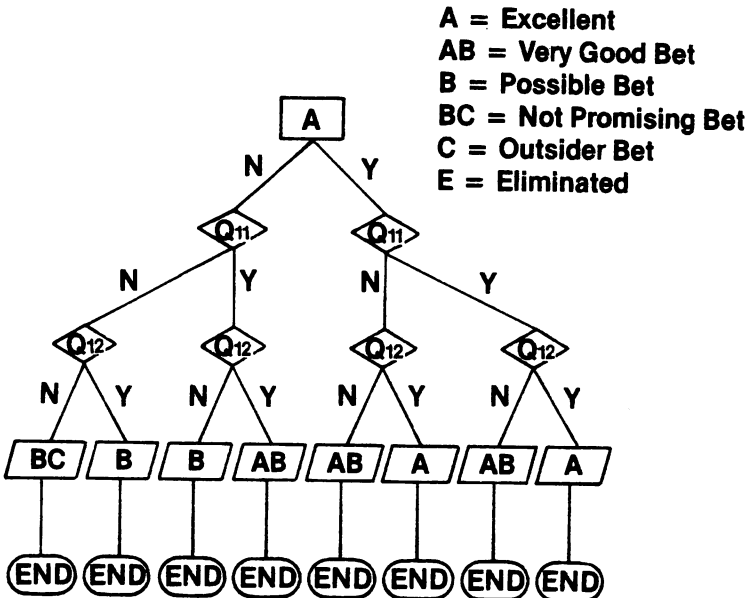
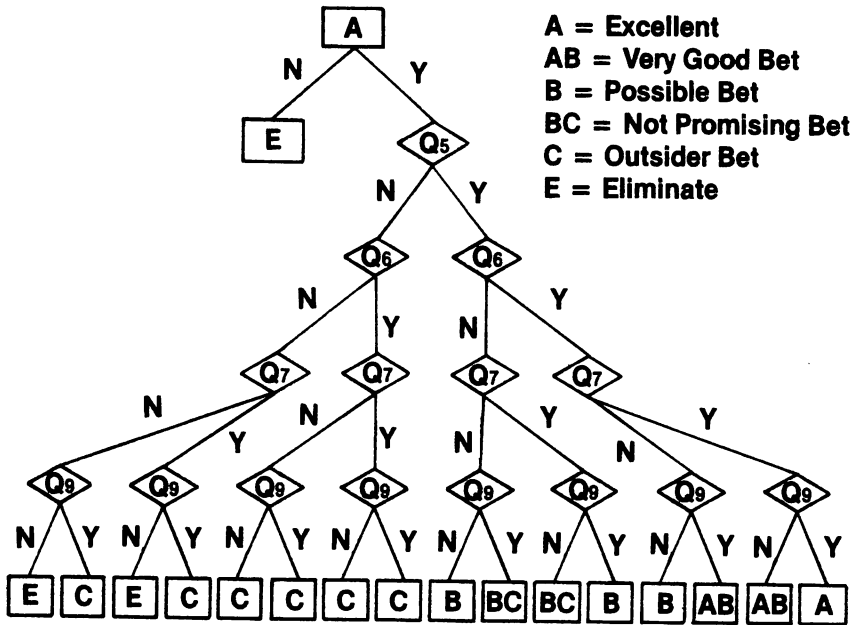


Fig. 6.8. cont.

```
1120 IFVAL(H$(H,7))=SF%(1)GOTO1190
1130 IFVAL(H$(H,7))=SF%(2)GOTO1190
1140 IFVAL(H$(H,7))=SF%(3)GOTO1190
1160 IFVAL(H$(H,7))=SF%(1)GOTO1300
1170 IFVAL(H$(H,7))=SF%(2)GOTO1300
1180 IFVAL(H$(H,7))=SF%(3)GOTO1300
1230 IFVAL(H$(H,7))=SF%(1)GOTO1300
1240 IFVAL(H$(H,7))=SF%(2)GOTO1300
1250 IFVAL(H$(H,7))=SF%(3)GOTO1300
1270 IFVAL(H$(H,7))=SF%(1)GOTO1450
1280 IFVAL(H$(H,7))=SF%(2)GOTO1450
1290 IFVAL(H$(H,7))=SF%(3)GOTO1450
```

Fig. 6.9. Subtractive listing for program H3A - delete these lines from program H3 to obtain H3A.

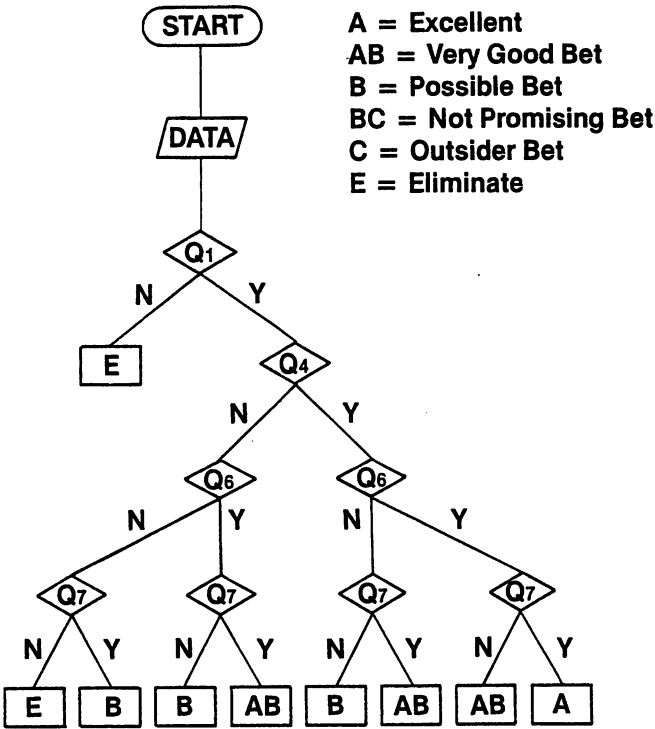


Fig. 6.10. Flowchart for program H3B, in just two parts this time.

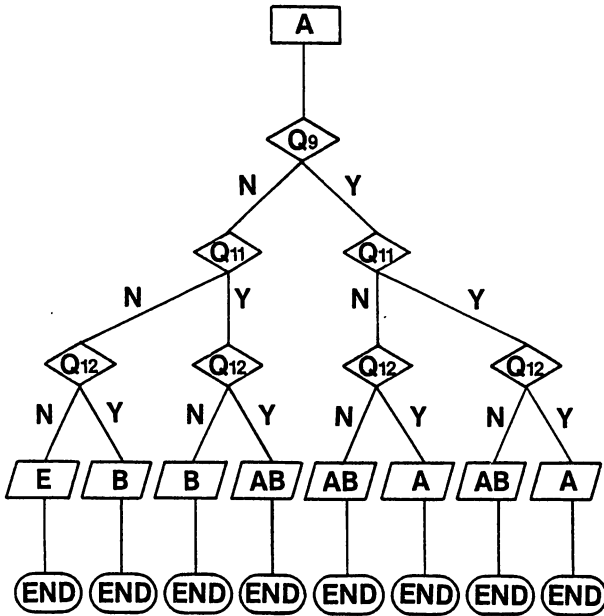


Fig. 6.10. cont.

```

1070 IFVAL(R$(5))<=VAL(H$(H,14))GOTO1200
1090 IFVAL(H$(H,6))=H1%(1)GOTO1160
1100 IFVAL(H$(H,6))=H1%(2)GOTO1160
1110 IFVAL(H$(H,6))=H1%(3)GOTO1160
1200 IFVAL(H$(H,6))=H1%(1)GOTO1270
1210 IFVAL(H$(H,6))=H1%(2)GOTO1270
1220 IFVAL(H$(H,6))=H1%(3)GOTO1270
1540 IFVAL(H$(H,12))<=VAL(H$(H,11))GOTO1
715
1542 W1=INT(VAL(H$(H,12)))*14+VAL(RIGHT$(
H$(H,12),2))
1543 W2=INT(VAL(H$(H,11)))*14+VAL(RIGHT$(
H$(H,11),2))
1545 WT=W1-W2
1547 IFWT<=4GOTO1715
1585 IFVAL(R$(4))>VAL(H$(H,9))GOTO3745
1590 IFCH=1GOTO3740
1592 GOTO3745
1600 IFVAL(R$(4))>VAL(H$(H,9))GOTO1615
1605 IFCH=1GOTO3745
1615 GOTO3750
  
```

Fig. 6.11. Subtractive listing for program H3B – delete these lines from program H3 to obtain H3B.

```
1620 IFVAL(R$(4))>VAL(H$(H,9))GOTO1615
1625 GOTO1605
1725 IF VAL(R$(4))>VAL(H$(H,9))GOTO1760
1745 IFCH=1GOTO3720
1750 IFCH=2GOTO3730
1755 IFCH=3GOTO3740
1760 IFCH=1GOTO3730
1765 IFCH=2GOTO3730
1770 IFCH=3GOTO3740
1775 IFVAL(R$(4))>VAL(H$(H,9))GOTO1805
1780 IFCH=1GOTO3710
1785 IFCH=2GOTO3710
1790 IFCH=3GOTO3720
1805 IFCH=1GOTO3720
1810 IFCH=2GOTO3720
1815 IFCH=3GOTO3730
1825 IFVAL(R$(4))>VAL(H$(H,9))GOTO1855
1840 IFCH=1GOTO3740
1845 IFCH=2GOTO3740
1850 IFCH=3GOTO3745
1855 IFCH=1GOTO3740
1860 GOTO3745
1870 IFVAL(R$(4))>VAL(H$(H,9))GOTO1900
1885 IFCH=1GOTO3730
1890 IFCH=2GOTO3730
1895 IFCH=3GOTO3740
1900 IFCH=1GOTO3740
1905 IFCH=2GOTO3740
1910 IFCH=3GOTO3745
2010 IFVAL(R$(4))<=VAL(H$(H,10))GOTO2220
2400 IFVAL(R$(4))<=VAL(H$(H,10))GOTO2560
```

*Fig. 6.11. cont.*

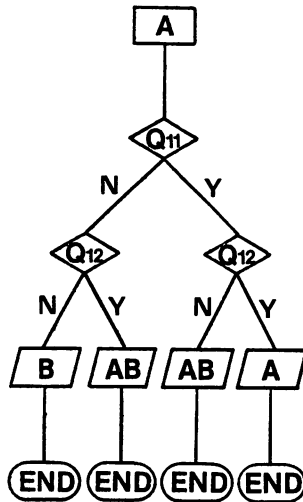
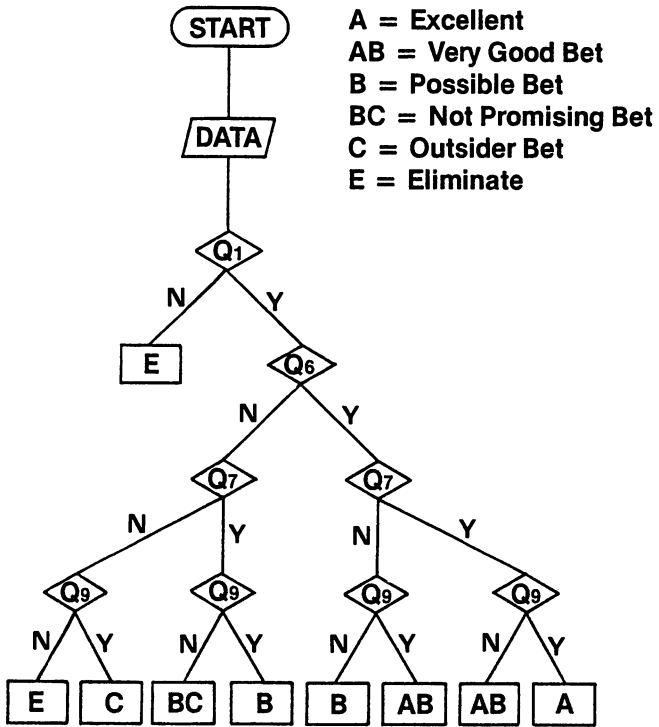


Fig. 6.12. Flowchart for program H3C, again in just two parts.

```

1070 IFVAL(R$(5))<=VAL(H$(H,14))GOTO1200
1090 IFVAL(H$(H,6))=H1%(1)GOTO1160
1100 IFVAL(H$(H,6))=H1%(2)GOTO1160
1110 IFVAL(H$(H,6))=H1%(3)GOTO1160
1120 IFVAL(H$(H,7))=SF%(1)GOTO1190
1130 IFVAL(H$(H,7))=SF%(2)GOTO1190
1140 IFVAL(H$(H,7))=SF%(3)GOTO1190
1150 GOTO3750
1160 IFVAL(H$(H,7))=SF%(1)GOTO1300
1170 IFVAL(H$(H,7))=SF%(2)GOTO1300
1180 IFVAL(H$(H,7))=SF%(3)GOTO1300
1200 IFVAL(H$(H,6))=H1%(1)GOTO1270
1210 IFVAL(H$(H,6))=H1%(2)GOTO1270
1220 IFVAL(H$(H,6))=H1%(3)GOTO1270
1230 IFVAL(H$(H,7))=SF%(1)GOTO1300
1240 IFVAL(H$(H,7))=SF%(2)GOTO1300
1250 IFVAL(H$(H,7))=SF%(3)GOTO1300
1260 GOTO1190
1270 IFVAL(H$(H,7))=SF%(1)GOTO1450
1280 IFVAL(H$(H,7))=SF%(2)GOTO1450
1290 IFVAL(H$(H,7))=SF%(3)GOTO1450
1540 IFVAL(H$(H,12))<=VAL(H$(H,11))GOTO1
715
1542 W1=INT(VAL(H$(H,12)))*14+VAL(RIGHT$(
H$(H,12),2))
1543 W2=INT(VAL(H$(H,11)))*14+VAL(RIGHT$(
H$(H,11),2))
1545 WT=W1-W2
1547 IFWT<=4GOTO1715
1585 IFVAL(R$(4))>VAL(H$(H,9))GOTO3745
1590 IFCH=1GOTO3740
1592 GOTO3745
1600 IFVAL(R$(4))>VAL(H$(H,9))GOTO1615
1605 IFCH=1GOTO3745
1615 GOTO3750
1620 IFVAL(R$(4))>VAL(H$(H,9))GOTO1615
1625 GOTO1605
1725 IF VAL(R$(4))>VAL(H$(H,9))GOTO1760
1745 IFCH=1GOTO3720
1750 IFCH=2GOTO3730
1755 IFCH=3GOTO3740
1760 IFCH=1GOTO3730
1765 IFCH=2GOTO3730

```

*Fig. 6.13.* Subtractive listing for program H3C - delete these lines from program H3 to obtain H3C.

```

1770 IFCH=3GOTO3740
1775 IFVAL(R$(4))>VAL(H$(H,9))GOTO1805
1780 IFCH=1GOTO3710
1785 IFCH=2GOTO3710
1790 IFCH=3GOTO3720
1805 IFCH=1GOTO3720
1810 IFCH=2GOTO3720
1815 IFCH=3GOTO3730
1825 IFVAL(R$(4))>VAL(H$(H,9))GOTO1855
1840 IFCH=1GOTO3740
1845 IFCH=2GOTO3740
1850 IFCH=3GOTO3745
1855 IFCH=1GOTO3740
1860 GOTO3745
1870 IFVAL(R$(4))>VAL(H$(H,9))GOTO1900
1885 IFCH=1GOTO3730
1890 IFCH=2GOTO3730
1895 IFCH=3GOTO3740
1900 IFCH=1GOTO3740
1905 IFCH=2GOTO3740
1910 IFCH=3GOTO3745
2010 IFVAL(R$(4))<=VAL(H$(H,10))GOTO2220
2165 IFCH=8THENH$(H,13)="E":GOTO2870
2400 IFVAL(R$(4))<=VAL(H$(H,10))GOTO2560

```

Fig. 6.13. cont.

# Chapter Seven

## Staking

Now that we've established two possible systems for analysing form and forecasting likely race results, it's time to look at staking strategy. The result should be a complete system for horse racing, and ideally it should also be flexible – easily adapted to different situations.

Hundreds of staking systems have been suggested. Many of them are quite useless, mainly because they don't depend on a reasonable analysis of form to pick likely bets. And before you can even start, you need to pick your race.

Some races can be ruled out immediately – if, for instance, you have no information about them, or no form on the runners. Others may be ruled out *after* analysis, because none of the runners looks like a value bet. This normally happens when too many horses come out too close to each other on the scoring table, or by whatever other method you use for forecasting. It may also happen that the odds are too short for either a winner or an each-way bet. If there are too few runners and the odds on the favourite are down to 6-4 against, then it's worth considering another race and a multiple bet. This could be a double, a treble, or a more complex bet, or it could be a forecast bet. There's no point in multiplying uncertainties, but sometimes it's the best way to get a value bet. However, a great deal depends on the circumstances – certainly multiple betting should never be a first choice.

Most books about gambling deal with staking methods rather than forecasting, probably because it's easier. It is also a massive mistake. Your first job is to find the right horse. When you've found it, and not until then, you can choose the bet that is most likely to reap dividends.

### Staking methods

If you have taken time and trouble to choose likely horses and value bets, then haphazard betting is both foolish and wasteful. You should pay as much attention to your staking methods as to your selection procedures. With the right staking strategy you can:

- Maximise returns from (above average) selections. Mathematical skills applied to your betting will not make up for bad forecasting skills.

- Provide a reasoned plan to recover your losses after the inevitable losing runs. We have already mentioned this in the context of the SIM method (described in more detail shortly). A technique of this kind must be part of *any* useful betting system.
- Remember to exercise discipline in your betting. The aim is to invest, not to gamble, and you must stick to the rules. Although you can expect to enjoy yourself, you are involved in a scientific business enterprise, not a game. If you like, you can treat it as a game, but even if you're playing *Monopoly* you will probably want to play it sensibly (and to win!).

The key principle is to have an objective, and stick to it. The stake should always be calculated to achieve a specific return, taking tax into consideration. This means that a value bet may still occur even at short odds – despite the price, the horse may still be a good bet. But clearly the stake on such a horse has to be larger than on a 4–1 value bet if it's going to deliver the same profit. 6–4 is a reasonable limit for a 'winner' bet.

### The losing streak

Losing is a part of the game, as every professional punter knows. Everyone hits a losing streak sooner or later, and it's a chance that must be taken into account by your staking system. As a guide, I'd suggest that your maximum stake on any one bet should never exceed half your bank. If you have £500 in your pocket, for instance, you should never bet more than £250 at a time. You can always increase your stakes as the winnings increase the size of your bank. Naturally you can subdivide this bank. For instance, you may decide to have a 'multiple bet bank' of £100 separate from your main bank. The problem here is self-discipline. When you're convinced you've hit on a sure-fire winner, there's an almost irresistible temptation to put everything you have on it. Resist. Stick to the rules unless you have a cast-iron reason not to.

### A practical staking plan

Let's start with an example – rather an unlikely one, but it illustrates a principle. Clearly the size of your stake should be related both to the size of your bank and the probabilities involved in the bet. Suppose you are aiming for win doubles. You start by deciding on realistic coupled win odds. Assuming these are approximately 4–1:

- The price can be low (so the probability of winning is high) and coupled odds of 6–4 and 2–1 will be enough.
- Such a winning double should be possible in 10 bets, since the horses are anything but outsiders at these odds.

Once you have made this decision, you can develop a staking plan that ensures you will be in profit wherever the winning double falls. Less careful doubling plans are not usually wise. As a 'jackpot' method, the use of each-way Yankees is hard to beat, but that is not our objective here.

Every punter must consider how much money he has to invest, and what he can afford to lose. More specifically:

- What do you want to win?
- What percentage of winners is realistic for you personally?
- What odds can you realistically expect?

Once you have answered these questions you need to stake progressively to recover losses and deliver the target profit – but *you must stay within the limits you have set yourself*. With this principle firmly established let's take a look at the value of a winning bet at a range of odds from evens to 5-1, as shown in Table 7.1.

### The 'saver bet'

The 'saver bet' is used where a value bet looks strong but analysis shows a 'danger horse' with almost equally good chances. A simple formula will protect your stake if the danger horse wins:

- Decide your total outlay £10
- Add one point to the odds of the danger Assume danger 3-1  
so  $3+1=4$
- Divide the result into your outlay  $£10/4=£2.50$
- Stake the result on the danger £2.50 @ 3-1 returns £10
- Bet the balance on your selection £7.50 @ say, 2-1 returns £22.50: net return £20.

Table 7.1. Comparative value of stake and winning bet over a range of odds.

| Odds  | Stake    | Probability (%) | Return |
|-------|----------|-----------------|--------|
| Evens | 25 pts   | 50.00           | 50 pts |
| 6-3   | 20 pts   | 40.00           | 50 pts |
| 7-4   | 18 pts   | 36.36           | 50 pts |
| 2-1   | 17 pts   | 33.33           | 50 pts |
| 5-2   | 14 pts   | 28.57           | 50 pts |
| 3-1   | 12.5 pts | 25.00           | 50 pts |
| 7-2   | 11 pts   | 22.22           | 50 pts |
| 4-1   | 10 pts   | 20.00           | 50 pts |
| 9-2   | 9 pts    | 18.18           | 50 pts |
| 5-1   | 8.5 pts  | 16.66           | 50 pts |

## La Bouchere Cancellation

This system is derived from a roulette staking plan, and it's a variation of the SIM method described earlier in Chapter 3. It can be used only with horses of evens or over.

- Write down the figures 1, 2, 3 in a row.
- The initial stake is found by adding together the two outside figures (e.g.  $1+3=4$ ).
- If the bet loses, the initial stake is added to the row of figures (1, 2, 3, 4) and the outside figures are added to give the new stake (e.g.  $1+4=5$ ).
- Whenever a bet loses, repeat this formula.
- If a bet wins, strike off the two outer figures, and add together the remaining two outer figures to produce the new stake.
- The coup is finished when all the figures are struck off, and a new coup is started.

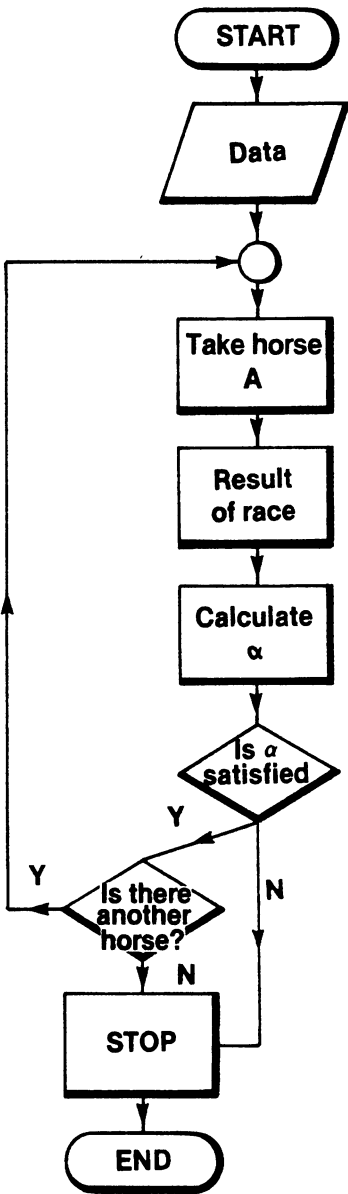
The system only functions with horses that have a high probability of winning, but the number of winners can be significantly fewer than the number of losers and still produce useful winnings, even with short-priced horses. This is because you win the sum of your initial points (the compound odds) every time you complete a sequence. In the example shown in Table 7.2 the winnings would be  $1+2+3=6$  points multiplied by the odds of your winners. You will have a winning sequence whenever you can satisfy the equation:

$$W \geq \frac{n+L}{2}$$

where  $W$  is the number of horses that achieved a place,  $n$  is the number of runners, and  $L$  is the number of unplaced horses. Figure 7.1 shows the flowchart for a Commodore 64 program which uses this formula; Fig. 7.2 shows the listing for the program itself, which is very simple. When you RUN it and enter the results of your bets, it will print the message "STOP

*Table 7.2. Example showing the La Bouchere Cancellation in action.*

| Example | System   | Stake   | Result |
|---------|----------|---------|--------|
| Race A  | 123      | $1+3=4$ | Lose   |
| Race B  | 1234     | $1+4=5$ | Lose   |
| Race C  | 12345    | $1+5=6$ | Win    |
| Race D  | 234      | $2+4=6$ | Lose   |
| Race E  | 2346     | $2+6=8$ | Win    |
| Race F  | 34       | $3+4=7$ | Win    |
| Race G  | New coup |         |        |



**Notes**

1. Data is list of 10 horses A, B, ..., J in 10 different races

A = 1st

B = 2nd

C = unplaced (0)

D = 1st

E = 0

Stop Betting

F = 1st

G = 3rd

H = 0

I = 0

J = 1st

2.  $\alpha$  is the formula

$$W \geq \frac{n + L}{2}$$

W = Winner (1st, 2nd or 3rd)

L = Loser (0)

n = 10 number of horses

Fig. 7.1. Flowchart for program to implement the La Bouchere Cancellation.

BETTING” at any time when you no longer have a winning sequence, at which point you will normally stop. If you wish to continue betting, you can do so as long as there is another horse. If you stop, or there is no further horse at the meeting or on the day, you can start again next day or at any other time of your choosing.

```

10 PRINTCHR$(147);
15 PRINT"INPUT PLACINGS (1,2,3 OR 0)"
20 A=A+1
25 IF A>10 THEN A=A-1:GOTO90
30 PRINT"HORSE ";A;": ";:INPUTA(A)
40 IFA(A)=0 THEN L=L+1:GOTO70
50 IF A(A)<0 OR A(A)>3 GOTO30
60 W=W+1
70 IFW>=(A+L)/2 GOTO130
80 PRINT "STOP BETTING"
90 FORB=1TOA
100 PRINT"HORSE ";B;": ";A(B)
110 NEXTB
120 END
130 INPUT "ANOTHER RACE? (Y OR N) ";Y$
140 IF Y$="Y" GOTO20
150 IF Y$="N" GOTO90
160 GOTO130

```

Fig. 7.2. Program to implement the La Bouchere Cancellation.

## Multiple betting

In this section I'll be looking at three well-known multiple betting methods: the Super-Patent, the Yankee, and the Canadian.

### *The Super-Patent*

The basic *Patent* is a multiple bet on three horses: three singles, three doubles, and a treble (win or each-way), making seven bets in all. The *Super-Patent* is a similar multiple bet on four horses. In effect it contains four patents, each one made up from the four possible combinations (*perms*) of four horses taken three at a time. This makes 28 bets (four sevens) plus a four-timer on the four horses together. The betting slip, however, is simplified as in Fig. 7.3 for handling on a basis of 10p stake units. With four horses at 3-1 you would do better with a straight Yankee if three or four of the horses win, considering the comparative outlays. However, simple maths show that this is only likely to happen on 13 occasions out of 256. On

---

|                                   |       |
|-----------------------------------|-------|
| 30p to win on each of four horses | £1.20 |
| 6×20p doubles                     | £1.20 |
| 4×10p trebles                     | £0.40 |
| 1×10p four-timer                  | £0.10 |
| Total =                           | £2.90 |

---

Fig. 7.3. Analysis of a Super-Patent bet in terms of 10p stake units.

---

|                                   |               |
|-----------------------------------|---------------|
| 60p to win on each of five horses | £3.00         |
| 10×30p doubles                    | £3.00         |
| 10×10p trebles                    | £1.00         |
| 5×10p four-timers                 | £0.50         |
| 1×10p five-timer                  | £0.10         |
|                                   | Total = £7.60 |

---

Fig. 7.4. Analysis of a Super Canadian Patent bet in terms of 10p stake units.

162 other occasions, when only one or two of your selections win, the Super-Patent will easily better the straight Yankee.

Another variation is the *Super Canadian Patent*, which is for five horses. It's an extension of the Super-Patent comprising 76 bets. 70 are made up of the 10 different patents that can be made by perming five horses three at a time. To these are added five that occur four times, leaving out each horse in turn, and one that occurs five times. Figure 7.4 shows the betting slip simplified for checking using 10p units.

To make the whole bet each-way at 10p stakes costs £15.20, but making only the trebles, four-timers and five-timer each-way would add just £1.60 to the cost of the straight bets, and gives insurance against loss if none of the horses wins but all are placed.

### *The Yankee*

The *Yankee* is an easy way of betting on four horses using all possible double, treble and accumulator combinations. Four selections will involve 11 bets – 22 if you bet each-way. The Yankee is a standard bet, and you will not need to spell out the details to your bookmaker. If, as before, we use a 10p stake for each bet, the details work out like this for each-way bets on horses, A, B, C and D. The arrangement (discussed before on page 23) is:

|  |
|--|
| 6 × 20p Win Doubles – AB, AC, AD, BC, BD, CD |
| 4 × 20p Win Trebles – ABC, ABD, ACD, BCD     |
| 1 × 20p Win Accumulator – ABCD               |
| Total = £2.20                                |

### *The Canadian*

A *Canadian* is a bet on five horses, and consists of 10 doubles, 10 trebles, 5 four-horse accumulators and a five-horse accumulator; a total of 26 bets.

Running a sweep for a syndicate might appear to create difficulties when multiple bets are involved, but there is a simple solution. For instance, let's say there are seven members each contributing 22p towards the stakes and each making a selection. If you charge 30p a head, there will be 56p left over in the kitty, which can go to the person whose selection gives the best win and place return.

## Staking systems

The difference between staking methods and staking systems is that the 'methods' described above are more or less standard, and are known, by name, to most bookmakers. The systems I'm about to describe are among the best. They are not accepted by name, but I can recommend them as the best of several hundred I have tested.

In an average race meeting 15 doubles are possible. On average, two favourites per meeting will win, so three of the 15 possible doubles are likely to come up. The question is, which three?

There is a system, one of the safest imaginable, that deals with this problem. You need a bank of 24 points (choose your own value!) to operate it for a week, and you'll be very unlucky if you don't finish the week with a profit. The forecast favourite and the unnamed favourite in the first and last races at the principal meeting are linked up daily in four doubles. The forecast favourites often win at good prices, and in any case the bet is based on good horses. A useful variation is to take the two races with the smallest fields at all meetings, which increases your chances of winning.

As it stands, though, this system is not good enough. We've already seen that the favourites are no more likely to win the first and last races at any meeting than they are to win any other race. But if you use the programs in this book to pick out the favourites with the best forecast score, this system makes a great deal of sense.

The *Dutching system* is simply a way of finding losers and betting on all the remaining horses. It depends, of course, on the losers losing – the ideal situation is when a hot favourite can be eliminated. This is a fairly rare situation, and unless the payoff is reasonably large the risk is really too great. All the same, it's worth looking out for chances to use the Dutching system – it can be especially useful in National Hunt races, where even the hottest favourite can fall.

## Other considerations

In 1977, when our first statistics were collected, 2889 flat races were run at 448 meetings. The figures for 1983 were almost identical. In the same year there were 2620 jumping races at 420 meetings. The total number of runners was over 50000. It's not untypical for any year.

Quite obviously, no one can conduct a thorough form check on so many races and horses. The answer is to specialise – you miss nothing. A 3-1 winner at your local grade 4 course will return you just as much money as the 3-1 winner of the Derby. And specialisation will give you extra, maybe even exclusive, knowledge. More than ever, you'll have a chance to add a valuable individualisation phase to your use of the programs in this book.

There's no such thing as a certainty in horse racing, but there are some

things that come fairly close to it. For instance, there is usually an ante-post book on the big classic races – and the odds are fairly generous, because you will lose your bet if the horse is scratched. However, if you back early enough you should be able to back your particular system at very good prices. As the odds begin to decrease in the few days before the race, you should be able to lay off (or hedge) the bet by backing all the other horses at varying stakes to win. The mathematics are simple enough, and you are guaranteed a win as long as your original selection is not scratched. Professional punters often operate in this area.

### The importance of overround

The bookmaker is assured of a profit (over a group of races, at least) because he 'rounds his book'. If you convert the odds quoted on every horse into probability percentages, then the sum of the probability percentages will always be greater than 100, which means that the bookmaker will normally make a profit whichever horse wins.

*Table 7.3. The overround on a typical five-horse race.*

| Horse         | SP odds | Probability |
|---------------|---------|-------------|
| Black Sue     | 7-4     | 36.36       |
| Helens Pride  | 15-8    | 34.78       |
| Alligator Boy | 3-1     | 25.00       |
| Cobra         | 8-1     | 11.11       |
| Spring Sound  | 25-1    | 3.84        |
|               |         | 111.09      |

In Table 7.3 we can see that the bookmaker's edge, or *overround*, is 11.09%, which is typical for a five-horse race. The average for all races is 25% including tax, but it can go as high as 40% or more for a large field race and as low as 5% in a small field race with a strong market. Clearly the lower the overround, the better the chances for the backer, and you should be aware of this – it could be a crucial factor in deciding whether or not you have a value bet.

You should *always* bear in mind that the influence of overround on multiple bets is proportionately greater than on single bets: you are not only compounding uncertainty, you are also compounding overround and reducing the value element in your bet.

## Tote versus the Bookmaker

Which gives the better deal: the Tote, or the bookmaker with his SPs? It's a perennial question, but before I try to answer it there are two fundamental points you should bear in mind:

- Place betting can be critical to making a profit out of horse race betting, and the Tote is needed for this anyway.
- The bookmaker has the big advantage in win bets of committing himself to an SP. This is important when you are trying to make precise calculations of target winnings. Leaving it to the Tote pool computation after the race is unsatisfactory.

The method of operating the Tote changed in the summer of 1977, but it is still true that:

- On horses winning at 5-2 or lower, the Tote return bettered SP.
- On horses winning at 6-5 and over, the SP bettered the Tote.

Betting tax has most effect on short-priced horses because the tax, which is 10% of the returns, represents a higher proportion of the profit. For instance, a £100 bet at odds of 1-2 returns £150. Tax is 10% of £150 which is £15. Net profit is therefore £35 (£50-£15) so the reduction of profit (£15) is 30%.

With a bet of £20 at 13-2 the returns are also £150 and the winnings also reduced by £15, but the percentage reduction (£15 from £130=£115) is only 11½%. This is one reason why bets on horses at less than 6-4 cannot, in the long run, represent value bets. A bet of £10 at 6-4 returns £25, and the tax is £2.50, reducing winnings by 16⅔% to £12.50. Of course, you can always reduce the betting tax effect by paying tax on the bet before the result (£10 at 10%=£1), but this assumes you will win!

On win bets it is better to pay tax on returns if your winning percentage is 33%. However, if you make multiple bets – doubles, patents, etc. – *always* make the bet tax-paid, because you pay the tax only once.

Which races should you bet on? Less than half the races are handicaps, which are the most difficult to forecast. The most predictable races, historically, are:

- Weight for age races
- Under 10 field
- Mid-June to mid-August (flat) races
- Smaller, often Northern courses
- 2-year old races

Very often the value bet in such races stands out clearly. The difference in predictability of form can be quite marked. For example, favourites win over 55% of weight for age races at Folkestone as opposed to 23% of the handicap races at Ascot.

**Final words on staking**

The staking methods outlined above work to produce a regular profit – as they have for scores of professional punters – but they do demand some effort from you! Despite what I have said about ‘systems’, no system is fixed and rigid; it is a plan – one that is flexible and capable of adapting to changing circumstances.

As we have seen, the most basic of all staking systems is the SIM system. There are various versions – the simplest involves doubling your bet after a loss and halving it after a win. Let’s try it. The card I shall use is for the meeting at York on Monday 18 August 1981. What follows is the time of each of the seven races, and three forecasts:

*Table 7.4.* Cumulative winnings (c.w.) on the York card for 18 August 1981 using three systems.

| Time | Forecast favourite                                      | Forecast 2nd favourite                                    | Selection  |
|------|---|---|--|
| 2.00 | Shining Start<br>£1 bet <i>1st</i> (7-2)<br>c.w. +£4.50 | Allan Wells<br>£1 bet <i>unplaced</i><br>c.w. -£1.00      | Westonbirt<br>£1 bet <i>unplaced</i><br>c.w. -£1.00        |
| 2.30 | Robellino<br>50p bet <i>2nd</i><br>c.w. +£4.00          | Church Parade<br>£2 bet <i>1st</i> (4-6)F<br>c.w. +£0.33  | Church Parade<br>£2 bet <i>1st</i> (4-6)F<br>c.w. +£0.33   |
| 3.05 | Master Willie<br>£1 bet <i>3rd</i><br>c.w. +£3.00       | Hard Fought<br>£1 bet <i>unplaced</i><br>c.w. -£0.77      | Hard Fought<br>£1 bet <i>unplaced</i><br>c.w. -£0.77       |
| 3.35 | Go Leasing<br>£2 bet <i>unplaced</i><br>c.w. +£1.00     | Leap Lively<br>£2 bet <i>2nd</i><br>c.w. -£2.77           | Home on the Range<br>£2 bet <i>unplaced</i><br>c.w. -£2.77 |
| 4.10 | Courcheval<br>£4 bet <i>unplaced</i><br>c.w. -£3.00     | Valentinian<br>£4 bet <i>unplaced</i><br>c.w. -£6.77      | Valentinian<br>£4 bet <i>unplaced</i><br>c.w. -£6.77       |
| 4.45 | Beldale Fleet<br>£8 bet <i>unplaced</i><br>c.w. -£11.00 | Ashenden<br>£8 bet <i>2nd</i><br>c.w. -£14.77             | Ashenden<br>£8 bet <i>2nd</i><br>c.w. -£14.77              |
| 5.15 | Croftthall<br>£16 bet <i>1st</i> (11-2)<br>c.w. +£77.00 | Walter Osborne<br>£16 bet <i>unplaced</i><br>c.w. -£27.77 | Sayyaf<br>£16 bet <i>unplaced</i><br>c.w. -£27.77          |

- Betting on the favourite in each race, as predicted in the morning papers.
- Betting on the predicted second favourite.
- Betting on the particular newspaper correspondent's forecast.

We will use the level £1 as the starting stake. As it happens (see Table 7.4) the first system won while the others did not, but this was due almost entirely to the bet on Crofthall in the last race. Let's try again with three different systems, as follows:

- Betting on the actual rather than the predicted favourite.
- Betting on the basis of the H3A system.
- Betting each-way on the basis of the H3A system.

This time (see Table 7.5) we shall give only the cumulative winnings (c.w.) and losses, and the name of the horse. You can work out the results of different staking systems for yourself. Clearly the SIM method is quite useful when linked with careful forecasting, so it is best to keep the bet the same on winning, and double or even treble it (within reason) on losing. 'Within reason' here means keeping your bet as a sensible fixed percentage of your total stake. The main questions to ask before staking are:

- Is it worth betting at all?
- Should I place a single or a multiple bet?

*Table 7.5.* Cumulative winnings on the York card for 18 August 1981 using three further systems.

| Time | Actual favourite          | H3A system                        | H3A (each-way)            |
|------|---------------------------|-----------------------------------|---------------------------|
| 2.00 | Westonbirt<br>-£1.00      | Shining Start<br>+£3.50 <i>W</i>  | Wodonga<br>+£0.90         |
| 2.30 | Church Parade<br>+£0.33   | Church Parade<br>+£4.25 <i>W</i>  | No Bet<br>+£0.90          |
| 3.05 | Master Willie<br>-£0.77   | Hard Fought<br>+£3.75 <i>W</i>    | Beldale Flutter<br>+£5.68 |
| 3.35 | Go Leasing<br>-£1.77      | Condisa<br>+£8.75 <i>W</i>        | Overplay<br>+£4.68        |
| 4.10 | Valentinian<br>-£6.77     | Centroline<br>+£11.50 <i>W</i>    | Sage King<br>+£2.68       |
| 4.45 | Beldale Fleet<br>-£14.77  | Beldale Fleet<br>+£11.00 <i>W</i> | Count Pahlen<br>+£3.00    |
| 5.15 | Walter Osborne<br>-£22.77 | Crofthall<br>+£15.50 <i>W</i>     | Tobermory Boy<br>+£3.00   |

The flowcharts and programs in Figs. 7.5 to 7.8 illustrate the points at issue. Sensible use of them should help you reach the right decisions when you are considering a bet. As always, though, be very careful when you are entering each program to get it absolutely accurate. As you will see, the BASIC is not particularly complicated, so I will not give line by line commentary in this instance.

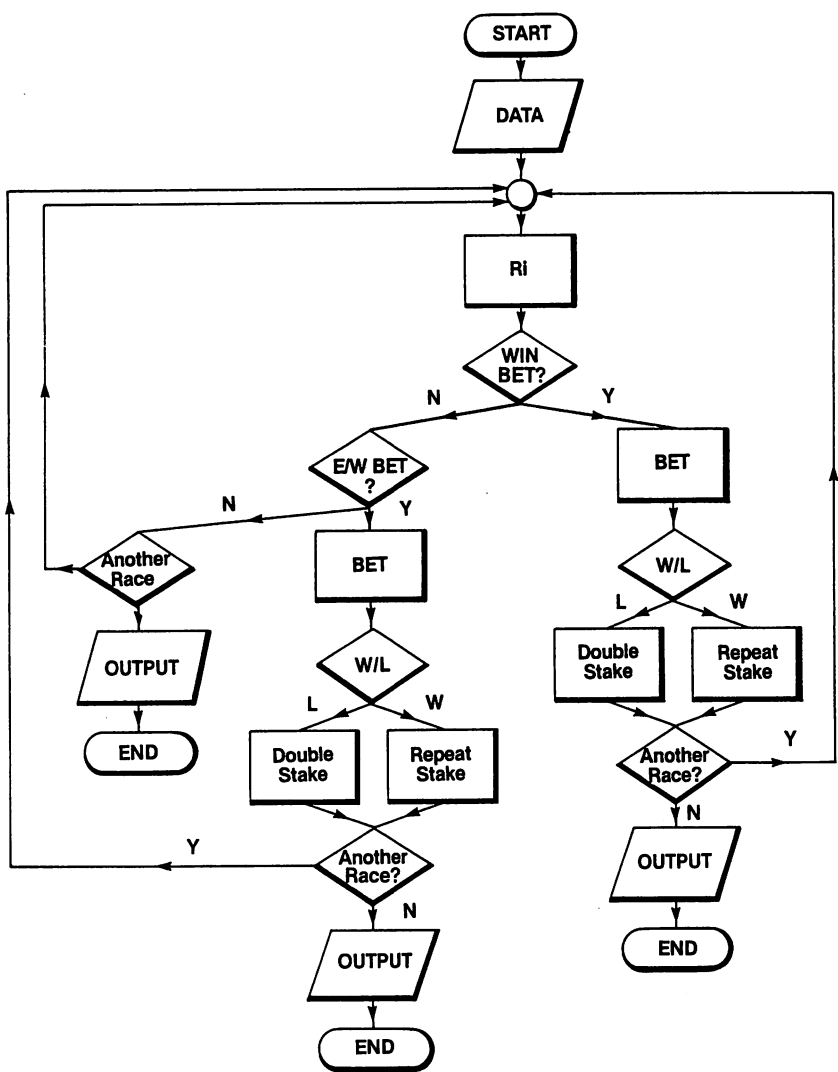


Fig. 7.5. Flowchart for the 'When to bet' program. (Ri = Race no 1)

```

10 REM WHEN TO BET
20 PRINTCHR$(147);:C=5:GOSUB500
22 GOSUB600:PRINT "HOW MANY RACES? ";
25 GETR$:IFR$<"0"ORR$>"9"THENGOTO25
26 PRINTR$:R=VAL(R$)
30 PRINTCHR$(19);:C=7:GOSUB500
40 FORRR=1TOR
50 PRINTRR;
55 INPUT"RACE MEETING AND TIME ";R$(RR)
60 NEXTRR
70 FOR RR=1TOR
80 PRINTCHR$(147);:C=4:GOSUB500
90 PRINTCHR$(18);R$(RR);CHR$(146);
92 PRINTCHR$(19);:C=6:GOSUB500
100 INPUT "WIN BET? (Y OR N) ";Y$
110 IFY$="N"GOTO199
120 IFY$<>"Y"GOTO100
130 GOSUB300
140 PRINTCHR$(17);:C=13:GOSUB600
145 INPUT"DID IT WIN? (Y OR N) ";Y$
150 IF Y$="Y"THENGOSUB350:GOTO180
160 IF Y$="N"THENGOSUB400:GOTO180
170 GOTO140
180 PRINT:PRINT
182 PRINT"PRESS SPACE TO CONTINUE..."
185 GETY$:IFY$<>" "THENGOTO185
190 NEXTRR
195 PRINT"END OF PROGRAM":END
199 PRINT"EACH WAY BET? (Y OR N)";
200 INPUTYY$:IFYY$="Y"GOTO130
210 IFYY$<>"N"GOTO110
220 GOTO180
300 PRINT:PRINT
305 PRINT"**-----**"
310 PRINT"**   BET   **"
320 PRINT"**-----**"
330 RETURN
350 PRINT:PRINT
355 PRINT"**-----**"
360 PRINT"**   REPEAT STAKE   **"
370 PRINT"**-----**"
380 RETURN
400 PRINT:PRINT

```

Fig. 7.6. Listing for the 'When to bet' program.

```

405 PRINT"**-----**"
410 PRINT"**  DOUBLE STAKE  **"
420 PRINT"**-----**"
430 RETURN
500 FORJ=1TOC:PRINTCHR$(17);:NEXTJ
510 RETURN
600 FORJ=1TOC:PRINTCHR$(29);:NEXTJ
610 RETURN

```

*Fig. 7.6. cont.*

### Avoiding Commodore control codes

These listings introduce a way of avoiding Commodore control codes that you may find useful in your own programs. Earlier on I said that every character the computer can generate has its own number code, called a character string (or, in BASIC, CHR\$). Subroutine 500 in the above listing for the 'When to bet' program uses CHR\$(17), which is the number code equivalent to the 'cursor down' key. Similarly, subroutine 600 uses CHR\$(29), equivalent to the 'cursor right' key. Each of these subroutines uses a FOR ... NEXT loop with a counter, C, set by the line that calls the subroutine (e.g. lines 20, 22 and 30). In the 'Multiple bet' program below, similar subroutines occur at lines 600 and 700. Each time the subroutine is called, it generates the appropriate Commodore symbols C times. Since many printers (even good ones!) cannot cope with Commodore control symbols, this dodge is particularly useful if you want to print out your listings for analysis, or to plan alterations.

For the record, the character string equivalents to the most commonly-used Commodore symbols are:

|                  |                |            |
|------------------|----------------|------------|
| CLR/HOME         | (HOME)         | CHR\$(19)  |
| CLR/HOME + SHIFT | (CLR)          | CHR\$(147) |
| CRSR U/D         | (cursor down)  | CHR\$(17)  |
| CRSR U/D + SHIFT | (cursor up)    | CHR\$(145) |
| CRSR L/R         | (cursor right) | CHR\$(29)  |
| CRSR U/D + SHIFT | (cursor left)  | CHR\$(157) |
| CTRL + 9         | (reverse on)   | CHR\$(18)  |
| CTRL + 0         | (reverse off)  | CHR\$(146) |

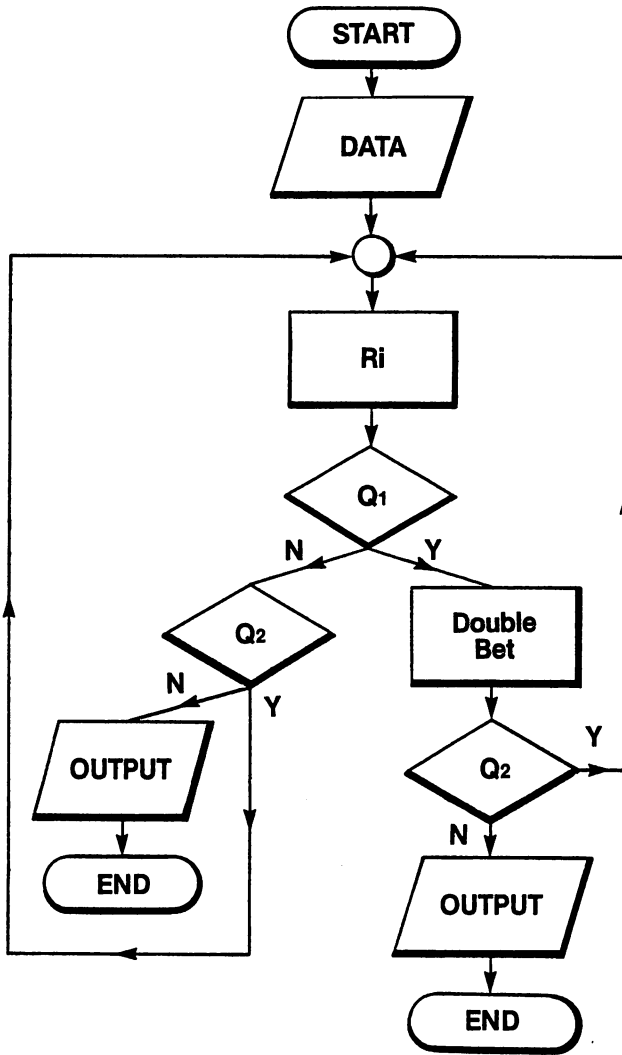


Fig. 7.7. Flowchart for the 'Multiple bet' program. (Ri = Race no 1)

```

10 REM MULTIPLE BETS
15 L=0
20 PRINTCHR$(147);:C=5:GOSUB600
22 GOSUB700
25 PRINT"MULTIPLE BETS IN THREE RACES"
30 PRINTCHR$(19);:C=7:GOSUB600
40 FORRR=1TO3
50 PRINTRR;
  
```

Fig. 7.8. Listing for the 'Multiple bet' program.

```

55 INPUT"RACE MEETING AND TIME ";R$(RR)
60 NEXTRR
65 PRINT
66 INPUT"ODDS (O) OR POINTS (P)? ";P$
67 IF P$="P"ORP$="O"THEN GOTO70
68 GOTO65
70 FORRR=1TO3
80 PRINTCHR$(147);:C=4:GOSUB600
90 PRINTCHR$(18);R$(RR);CHR$(146);
95 PRINTCHR$(19);:C=6:GOSUB600
100 PRINT"INPUT DATA FOR FAVOURITE IN";
105 PRINT" FORECAST"
110 IFP$="O"THENINPUT"ODDS (99/9) ";D$
120 IFP$="P"THENINPUT"POINTS ";PP$
130 PRINT"INPUT DATA FOR 2ND FAVOURITE";
135 PRINT" IN FORECAST"
140 IFP$="O"THENINPUT"ODDS (99/9) ";D1$
150 IFP$="P"THENINPUT"POINTS ";P2$
160 IFP$="O"GOTO200
170 IFVAL(P2$)+1=VAL(PP$)THENL=L+1
175 GOSUB400:GOTO180
180 PRINT:PRINT
182 PRINT"PRESS SPACE TO CONTINUE..."
185 GETY$:IFY$<>" "THENGOTO185
190 NEXTRR
195 PRINT"END OF PROGRAM":END
200 GOSUB500:GOSUB550
210 N=D3/D4:M=D1/D2
220 K=M*N:K=2/K
230 IFN-M>KTHENL=L+1
240 GOSUB400:GOTO180
400 IFL=0THENA$=" NO "
405 IFL=1THENA$="SINGLE"
410 IFL=2THENA$="DOUBLE"
420 IFL=3THENA$="TREBLE"
430 PRINTCHR$(147);:C=5:GOSUB600
435 PRINT"**-*****-"
440 PRINT"** ";A$;" BET **"
450 PRINT"**-*****-"
460 RETURN
500 FORW=1TOLEN(D$)
510 IFMID$(D$,W,1)<>"/"GOTO520
515 D1=VAL(LEFT$(D$,W-1))

```

*Fig. 7.8. cont.*

```
516 D2=VAL(MID$(D$,W+1)):GOTO530
520 NEXTW
525 PRINT"NO ^/^ FOUND!"
530 RETURN
550 FORW=1TOLEN(D1$)
560 IFMID$(D1$,W,1)<>"/"GOTO570
565 D3=VAL(LEFT$(D1$,W-1))
566 D4=VAL(MID$(D1$,W+1)):GOTO590
570 NEXTW
580 PRINT"NO ^/^ FOUND!"
590 RETURN
600 FORJ=1TOC:PRINTCHR$(17);:NEXTJ
610 RETURN
700 FORJ=1TOC:PRINTCHR$(29);:NEXTJ
710 RETURN
```

*Fig. 7.8. cont.*

# Chapter Eight

## Racing All Over the World

Although horse racing is conducted in a very similar fashion in very different parts of the world, conditions do vary. More importantly, punters in Australia, Hong Kong and the US all have different information available to them. To illustrate the differences I am going to pick out a single race in each country and give details of a few more, starting with the US.

### Racing in the US

Racing in the US is only marginally different from racing in Britain. The four most significant differences are:

- Many US races are on dirt rather than grass.
- The weather is so consistent that 'going' is of little real importance.
- Because of the great distances involved, race meetings at any one track go on much longer. As a result, horses do not, in effect, feature nationally, only regionally.
- Speed figures are taken over the whole race *and* over each furlong.

Let's consider a race that took place in Aqueduct on 1 January 1979 (see *A Better Bet* by F.H. George, privately printed, 1979). The first race I actually chose to play was the 3rd, at 1.30. The track was fast. The race itself was a longer than average route (race) which took stamina to win. The purse (\$12000) was good, and conditions precluded any runner who had won within the last 17 days. The Past Performance Charts in the morning's *Daily Racing Form* (America's leading horse racing paper) are shown in Fig. 8.2. Figure 8.1 provides an explanation of the various entries.

### The selection method in practice

As in British racing, our first job is to translate the mass of information in Fig. 8.2 into the race analysis shown on pp. 123–4. Now we can interpret the information to pick out the main contenders. In practice, other

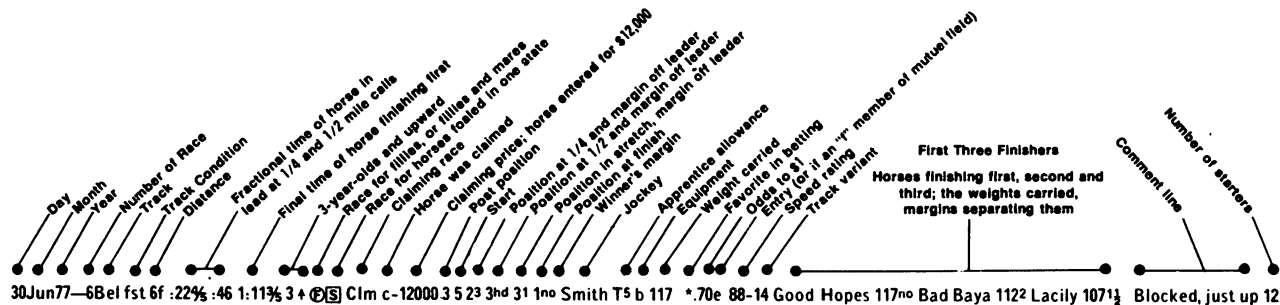


Fig. 8.1. Explanation of the past performance lines in Fig. 8.2.



# AQUEDUCT

1 3/16 MILES

INNER DIRT TRACK

AQUEDUCT

START FIN.

1 & 1/2 MILES. (INNER-DIRT). (1.56%) CLAIMING. Purse \$12,000. 4-year-olds and upward. Weights, 122 lbs. Non-winners of a race at a mile and a furlong or over since December 15, allowed 3 lbs. Of a race at a mile or over since then 5 lbs. Claiming price \$16,000; for each \$1,000 to \$14,000 2 lbs. (Races when entered to be claimed for \$12,000 or less not considered.)

## Proud Sam

Own.—Karloek M

|         |           |       |        |          |          |         |       |
|---------|-----------|-------|--------|----------|----------|---------|-------|
| 17Dec78 | 5-Aqu gd  | 1 1/4 | 47 1/2 | 1:13     | 1:46 3/4 | 3 + Clm | 15000 |
| 30Dec78 | 9-Aqu fst | 7 1/4 | 23     | :45 1/2  | 1:22 3/4 | 3 + Clm | 25000 |
| 10Nov78 | 5-Haw fm  | *1    | 48     | 1:13 1/2 | 1:39 1/2 | 3 + Clm | 15000 |
| 2Nov78  | 7-Haw fm  | 1     | 47 1/2 | 1:13 1/2 | 1:39 1/2 | 3 + Clm | 50000 |
| 9Oct78  | 6-Haw fst | 6 1/4 | 23 1/2 | :45 1/2  | 1:16 3/4 | 3 + Clm | 15000 |
| 4Oct78  | 9-Haw gd  | 1     | 48 1/2 | 1:16 1/2 | 1:39 1/2 | 3 + Clm | 18000 |
| 27Sep78 | 9-Haw fm  | 1     | 48 1/2 | 1:13     | 1:38 1/2 | 3 + Clm | 18000 |
| 9Sep78  | 6-AP hd   | 1 1/4 | 47 1/2 | 1:12 1/2 | 1:44 1/2 | Clm     | 20000 |
| 2Sep78  | 9-AP fm   | 1     | 47 1/2 | 1:13 1/2 | 1:39 1/2 | 3 + Clm | 20000 |
| 18Aug78 | 7-AP sly  | 1     | 46 1/2 | 1:12 1/2 | 1:38 1/2 | 3 + Clm | 25000 |

B. g. 5, by Proud Clarion—Bella Delta, by Gallant Man

\$14,000

Br.—Hinkle S D (Ky)

Tr.—Taliaferro Charles L

|    |    |      |      |          |     |                |       |       |
|----|----|------|------|----------|-----|----------------|-------|-------|
| 6  | 9  | 917  | 918  | 824      | 824 | Barrera C      | 115   | 49.60 |
| 5  | 6  | 663  | 813  | 818      | 916 | Asmussen C B 5 | 112   | 56.60 |
| 1  | 6  | 783  | 663  | 683      | 58  | Johnston J 5   | 113   | 9.00  |
| 2  | 5  | 59   | 863  | 783      | 710 | Donnelly E C   | 118   | 6.00  |
| 3  | 6  | 663  | 573  | 793      | 712 | Sanchez O      | 120   | 9.80  |
| 9  | 9  | 912  | 983  | 983      | 783 | Cox R          | 116   | 8.20  |
| 7  | 7  | 77   | 763  | 76       | 68  | Cox R          | 116   | 7.60  |
| 8  | 1  | 1nd  | 1nd  | 2nd      | 423 | Silva C H      | b 113 | 27.30 |
| 11 | 12 | 1217 | 1217 | 1104 1/2 | 613 | Cox R          | 118   | 11.80 |
| 5  | 8  | 816  | 812  | 783      | 783 | Cox R          | 120   | 12.10 |

## Pepysian \*

Own.—Murphy E A

|         |           |       |        |      |          |         |       |
|---------|-----------|-------|--------|------|----------|---------|-------|
| 18Dec78 | 5-Aqu fst | 1 1/4 | 47 1/2 | 1:13 | 1:52 1/2 | 3 + Clm | 20000 |
|---------|-----------|-------|--------|------|----------|---------|-------|

18Dec78—Disqualified and placed sixth

|         |           |       |        |          |          |                 |       |
|---------|-----------|-------|--------|----------|----------|-----------------|-------|
| 22Nov78 | 8-Aqu fst | 1     | 46     | 1:10 1/2 | 1:35 1/2 | 3 + Allowance   |       |
| 13Nov78 | 5-Aqu hd  | 1 1/4 | 47     | 1:12     | 1:49 1/2 | 3 + Clm c-20000 |       |
| 30Oct78 | 8-Aqu fm  | 1 1/4 | 48     | 1:12     | 1:43 1/2 | 3 + Allowance   |       |
| 14Oct78 | 3-Bel sly | 1 1/4 | 46 1/2 | 1:11     | 1:41 1/2 | 3 + Clm         | 30000 |
| 30Sep78 | 2-Bel fst | 1 1/4 | 45 1/2 | 1:10 1/2 | 1:43 1/2 | 3 + Clm         | 30000 |
| 17Sep78 | 5-Bel fst | 1 1/4 | 46 1/2 | 1:11     | 1:42     | 3 + Clm         | 35000 |
| 9Sep78  | 2-Bel fst | 1 1/4 | 46 1/2 | 1:11 1/2 | 1:42 1/2 | 3 + Clm         | 32500 |
| 2Sep78  | 6-Bel my  | 1 1/4 | 46 1/2 | 1:11 1/2 | 1:42 1/2 | 3 + Allowance   |       |
| 22Aug78 | 7-Sar fm  | 1 1/4 | 47 1/2 | 1:11 1/2 | 1:42     | 3 + Clm         | 35000 |

Dk. b. or br.

\$16,000

G. 6, by Reflected Glory—Stew Zoo, by Sunrise Flight

Br.—Wygod M J (Cal)

Tr.—Murphy Edward A

|   |   |      |      |     |     |                  |       |       |
|---|---|------|------|-----|-----|------------------|-------|-------|
| 2 | 4 | 46   | 33   | 633 | 493 | Santoro MC b 117 | 530   | 5.30  |
| 4 | 7 | 713  | 793  | 711 | 711 | Foresta R 10     | b 106 | 34.90 |
| 3 | 9 | 1017 | 1012 | 763 | 743 | Fell J           | b 117 | 3.00  |
| 4 | 6 | 611  | 57   | 553 | 463 | Fell J           | b 117 | 9.00  |
| 3 | 7 | 743  | 743  | 563 | 593 | Velasquez J      | b 115 | 3.60  |
| 4 | 5 | 415  | 511  | 563 | 45  | Cruget J         | b 122 | 4.20  |
| 9 | 7 | 733  | 633  | 56  | 493 | Cordero A Jr     | b 115 | 22.20 |
| 5 | 5 | 59   | 433  | 12  | 113 | Cordero A Jr     | b 115 | 4.40  |
| 8 | 9 | 913  | 793  | 612 | 515 | Cruget J         | b 117 | 13.20 |
| 8 | 8 | 99   | 99   | 67  | 693 | Santiago A       | b 117 | 6.90  |

## A Thousand Hopes

Own.—Schmid W

|         |           |       |        |          |          |                 |       |
|---------|-----------|-------|--------|----------|----------|-----------------|-------|
| 17Dec78 | 3-Aqu gd  | 1 1/4 | 46 1/2 | 1:13     | 1:47     | 3 + Clm         | 15000 |
| 6Dec78  | 5-Aqu fst | 1 1/4 | 46 1/2 | 1:11 1/2 | 1:51 1/2 | 3 + Clm         | 16000 |
| 13Nov78 | 5-Aqu hd  | 1 1/4 | 47     | 1:12     | 1:49 1/2 | 3 + Clm         | 20000 |
| 6Nov78  | 7-Aqu fm  | 1 1/4 | 47 1/2 | 1:11 1/2 | 1:42 1/2 | 3 + Allowance   |       |
| 3Nov78  | 7-Aqu fm  | 1 1/4 | 47 1/2 | 1:12     | 1:50     | 3 + Allowance   |       |
| 21Oct78 | 9-Bel fm  | 1 1/4 | 47     | 1:11 1/2 | 1:43     | 3 + Allowance   |       |
| 7Oct78  | 6-Bel gd  | 1 1/4 | 48 1/2 | 1:13 1/2 | 1:50 1/2 | 3 + Allowance   |       |
| 27Sep78 | 5-Bel fm  | 1 1/4 | 47 1/2 | 1:12 1/2 | 1:43 1/2 | 3 + Clm c-20000 |       |
| 15Sep78 | 6-Bel fst | 1 1/4 | 46 1/2 | 1:12 1/2 | 1:44 1/2 | 3 + Clm         | 20000 |
| 1Sep78  | 5-Bel sly | 1 1/4 | 46 1/2 | 1:12     | 1:44 1/2 | 3 + Clm         | 20000 |

Dk. b. or br.

\$16,000

G. 5, by Abe's Hope—Batting A Thousand, by Hitting Away

Br.—Mangurian W T Jr (Fla)

Tr.—Nadler Herbert

|   |    |      |      |     |     |                  |     |
|---|----|------|------|-----|-----|------------------|-----|
| 6 | 4  | 463  | 45   | 13  | 423 | Asmussen C B 5 b | 112 |
| 5 | 6  | 753  | 953  | 633 | 53  | Asmussen C B 5 b | 112 |
| 5 | 10 | 916  | 910  | 993 | 993 | Martens G        | 117 |
| 7 | 9  | 912  | 863  | 433 | 543 | Borden D A       | 117 |
| 6 | 8  | 763  | 753  | 34  | 663 | Venezia M        | 117 |
| 2 | 10 | 1021 | 1016 | 815 | 683 | Boussard R       | 118 |
| 3 | 5  | 63   | 633  | 59  | 411 | Venezia M        | 117 |
| 9 | 10 | 983  | 863  | 43  | 433 | Miranda J 7      | 112 |
| 1 | 4  | 473  | 313  | 13  | 13  | Miranda J 7      | 110 |
| 6 | 6  | 663  | 47   | 511 | 517 | Miranda J 7      | 110 |

1085

| Turf Record | St. | 1st | 2nd | 3rd | Amt.     |
|-------------|-----|-----|-----|-----|----------|
| 13          | 1   | 0   | 1   | 0   | \$10,670 |
| 1978        | 25  | 4   | 1   | 0   | \$32,355 |
| 1977        | 23  | 4   | 1   | 3   |          |

|       |                      |                      |                    |            |    |
|-------|----------------------|----------------------|--------------------|------------|----|
| 58-19 | Red Rolfe 1173       | Joyfull Ruler 1083   | Ponn's Limit 115*  | No factor  | 9  |
| 72-12 | Red Anchor 1173      | Hive 1173            | Rapid Barb 117*    | Done early | 9  |
| 76-17 | King Bolt 122*       | Native Praise 118*   | LeLegionnaire 1145 | No threat  | 7  |
| 64-30 | Native Praise 114*   | War Mongo 1143       | Cocktails 1201     | Tired      | 8  |
| 78-12 | Iron Court 1221      | Karrot Kid 1163      | Les Plumaire 1163  | No threat  | 8  |
| 64-23 | Father Wilton 1223   | Sip And Skip 111*    | King Bolt 112*     | No factor  | 9  |
| 70-22 | Father Wilton 1131   | King Bolt 1123       | Moving Miles 1141  | Outrun     | 7  |
| 84-15 | Satan's Thunder 1141 | Trimp 1141           | Proud Manner 114*  | Weakened   | 8  |
| 74-19 | Noble Lark 1163      | Don't Be Short 1163  | Jered 1163         | Late bid   | 12 |
| 61-30 | El Puma 1161         | Satan's Thunder 116* | McGoodMan 116*     | No factor  | 8  |

117

| Turf Record | St. | 1st | 2nd | 3rd | Amt.     |
|-------------|-----|-----|-----|-----|----------|
| 11          | 1   | 3   | 0   | 5   | \$36,960 |
| 1978        | 25  | 2   | 5   | 2   | \$86,730 |
| 1977        | 34  | 5   | 7   | 4   |          |

|       |                     |                        |                         |               |    |
|-------|---------------------|------------------------|-------------------------|---------------|----|
| 82-21 | Dubill 1143         | To The Tune 1173       | Deal With Strength 1174 | Drifted out   | 7  |
| 76-22 | Great Above 1151    | Bartender's Pride 1173 | Finger Paints 1153      | Outrun        | 8  |
| 92-04 | Windhover 1143      | Ramacette 108*         | Il Valletto 1131        | Outrun        | 10 |
| 82-12 | You Go First 1143   | King's Parade 1173     | Sten 1191               | Evenly        | 7  |
| 86-13 | Drums and Fife 1191 | Glorious Sheik 117*    | Sorrell's Sun 1174      | Dull          | 8  |
| 81-12 | Drums and Fife 1173 | Amano 117*             | Altar 1203              | Evenly        | 7  |
| 84-17 | Favored Son 1133    | Bold Thunder 1134      | Red Anchor 1171         | No excuse     | 9  |
| 91-15 | Pepysian 1151       | Finger Paints 1193     | Rivelinho 1191          | Ridden out    | 6  |
| 73-21 | The Real McCoy 1183 | Knight's Tale 1174     | No Sir 1133             | Outrun        | 9  |
| —     | Safford 1171        | Quick Decision 1173    | Handy Mac 1172          | Showed little | 9  |

1125

| Turf Record | St. | 1st | 2nd | 3rd | Amt.     |
|-------------|-----|-----|-----|-----|----------|
| 21          | 1   | 5   | 3   | 2   | \$16,831 |
| 1978        | 17  | 2   | 1   | 2   | \$14,625 |
| 1977        | 20  | M   | 4   | 2   |          |

|       |                       |                    |                    |            |    |
|-------|-----------------------|--------------------|--------------------|------------|----|
| 77-19 | All Our Hopes 1083    | Doubt 1121         | Grand Design 115*  | Hung       | 8  |
| 91-09 | Black Beau 1153       | Ecumenical 1133    | Noble N Royal 1151 | Mild rally | 10 |
| 87-04 | Windhover 1143        | Ramacette 108*     | Il Valletto 1131   | Outrun     | 10 |
| 88-10 | Shagbark 1151         | Ammunition 1153    | Top Pickings 114*  | Tired      | 9  |
| 88-05 | Le Militaire 1171     | T. V. Decree 1151  | Texas Playboy 1153 | Bid; tired | 10 |
| 80-09 | Fort Mackinaw 1121    | Texas Playboy 1143 | Partout 1193       | Slow early | 10 |
| 64-17 | Might Have Been 1143  | Sakura 1163        | Dana's Oscar 105*  | No factor  | 6  |
| 83-14 | Red Grasshopper 1133  | Windhover 1133     | Fort Mackinaw 1171 | Rallied    | 10 |
| 80-17 | A Thousand Hopes 1103 | Catiline 1171      | Beverly Mill 113*  | Driving    | 6  |
| 61-24 | Dr. Watson 1144       | Gay Plume 1154     | Scabbard 1131      | No mishap  | 7  |

LATEST WORKOUTS

Dec 14 Bel tr.t 4f fst :48% h

Nov 29 Bel tr.t 4f my :49% h

## Speedy Henry

Own.—Evans R M

|  |              |
|--|--------------|
| 30Dec78- 1Aqua sly 1 $\frac{1}{2}$ 48% 1:13 $\frac{1}{2}$ 1:59 $\frac{1}{2}$ | Clim 12500   |
| 10Dec78- 1Aqua my 1 46% 1:11 $\frac{1}{2}$ 1:36 $\frac{1}{2}$                | Clim 14000   |
| 22Nov78- 2Aqua fst 1 $\frac{1}{2}$ 47% 1:12 $\frac{1}{2}$ 1:52 $\frac{1}{2}$ | Clim 12500   |
| 19Nov78- 5Aqua fst 7 $\frac{1}{2}$ 24 48% 1:25 $\frac{1}{2}$                 | Clim 14000   |
| 7Nov78- 3Aqua fst 7 $\frac{1}{2}$ 23 46% 1:24 $\frac{1}{2}$                  | Clim 14000   |
| 29Oct78- 2Aqua fst 1 47% 1:13 $\frac{1}{2}$ 1:39 $\frac{1}{2}$               | Clim 14000   |
| 22Oct78- 1Bel fst 7 $\frac{1}{2}$ 22% 46 1:24 $\frac{1}{2}$                  | Clim 16000   |
| 23Sep78- 2Bel fst 1 $\frac{1}{2}$ 45% 1:10 $\frac{1}{2}$ 1:44 $\frac{1}{2}$  | Clim c-12500 |
| 14Sep78- 5Bel fst 1 47 1:11 $\frac{1}{2}$ 1:38                               | Clim 15000   |
| 31Aug78- 5Bel fst 7 $\frac{1}{2}$ 22% 45% 1:26                               | Clim 14000   |

### LATEST WORKOUTS

Dec 22 Bel tr.t 5f fst 1:03

## Dubill

Own.—Mendelson Mildred

|  |            |
|--|------------|
| 10Dec78- 5Aqua fst 1 $\frac{1}{2}$ 47% 1:13 1:52 $\frac{1}{2}$ 3 +               | Clim 18000 |
| 11Dec78- 1Aqua fst 1 $\frac{1}{2}$ 46% 1:11 $\frac{1}{2}$ 1:42 $\frac{1}{2}$ 3 + | Clim 20000 |
| 29Nov78- 6Aqua sly 1 $\frac{1}{2}$ 47% 1:11 $\frac{1}{2}$ 1:51 $\frac{1}{2}$ 3 + | Clim 18000 |
| 19Nov78- 2Aqua fst 1 $\frac{1}{2}$ 49 1:13 $\frac{1}{2}$ 1:52 3 +                | Clim 16000 |

19Nov78-Disqualified and placed second

|  |              |
|--|--------------|
| 3Nov78- 5Aqua fst 1 $\frac{1}{2}$ 48 1:12 $\frac{1}{2}$ 1:52 3 +               | Clim 18000   |
| 29Oct78- 1Aqua fst 1 $\frac{1}{2}$ 47% 1:13 $\frac{1}{2}$ 1:52 3 +             | Clim c-12500 |
| 14Oct78- 1Bel sly 1 46% 1:11 $\frac{1}{2}$ 1:36 $\frac{1}{2}$ 3 +              | Clim 14000   |
| 5Oct78- 1Bel fst 1 $\frac{1}{2}$ 46% 1:10 $\frac{1}{2}$ 1:42 $\frac{1}{2}$ 3 + | Clim 15000   |
| 14Jly78- 2Bel fst 1 $\frac{1}{2}$ 47 1:11 $\frac{1}{2}$ 1:43 $\frac{1}{2}$ 3 + | Clim 15000   |

14Jly78-Placed fourth through disqualification

|   |            |
|---|------------|
| 30Jun78- 5Bel fst 1 $\frac{1}{2}$ 47% 1:12 $\frac{1}{2}$ 1:44 $\frac{1}{2}$ 3 + | Clim 15000 |
|---|------------|

### LATEST WORKOUTS

Dec 7 Bel tr.t 5f my 1:01

## Miner's Axe

Own.—Gamill Y

|  |              |
|--|--------------|
| 21Dec78- 5Aqua gd 1 $\frac{1}{2}$ 48 1:13 $\frac{1}{2}$ 1:54 3 +                 | Clim c-10000 |
| 6Dec78- 5Aqua fst 1 $\frac{1}{2}$ 46% 1:11 $\frac{1}{2}$ 1:51 $\frac{1}{2}$ 3 +  | Clim 16000   |
| 22Nov78- 5Aqua fst 1 $\frac{1}{2}$ 46% 1:11 $\frac{1}{2}$ 1:50 $\frac{1}{2}$ 3 + | Clim 20000   |
| 13Nov78- 5Aqua hd 1 $\frac{1}{2}$ 47 1:12 1:49 $\frac{1}{2}$ 3 +                 | Clim 20000   |
| 1Nov78- 4Aqua fst 6 $\frac{1}{2}$ 23 46 1:10 $\frac{1}{2}$ 3 +                   | Clim 25000   |
| 17Mar78- 7Aqua my 1 $\frac{1}{2}$ 47% 1:12 $\frac{1}{2}$ 1:45 $\frac{1}{2}$      | Allowance    |
| 12Feb78- 5Aqua fst 170 48% 1:14 $\frac{1}{2}$ 1:45 $\frac{1}{2}$ 3 +             | Mid Sp Wt    |
| 23Jan78- 3Aqua gd 170 48% 1:14 1:44 $\frac{1}{2}$                                | Mid Sp Wt    |
| 29Dec77- 1Medfst 170 47% 1:12 $\frac{1}{2}$ 1:43 $\frac{1}{2}$ 3 +               | Mid Sp Wt    |
| 22Dec77- 1Aqua my 1 $\frac{1}{2}$ 48 1:14 $\frac{1}{2}$ 1:48 $\frac{1}{2}$ 3 +   | Mid c-25000  |

### LATEST WORKOUTS

Nov 10 Bel tr.t 3f fst :36 $\frac{1}{2}$  h

B. c. 4, by First Landing—Perhaps So, by Wilwyn

\$14,000

Br.—Tippett Mrs M E (Va)

Tr.—Gullo Thomas J

|   |             |
|---|-------------|
| 5 1 1 $\frac{1}{2}$ 2 $\frac{1}{2}$ 1 $\frac{1}{2}$ 1 $\frac{1}{2}$ Fell J      | b 119 6.50  |
| 2 5 6 $\frac{1}{2}$ 8 $\frac{1}{2}$ 7 $\frac{1}{2}$ 7 $\frac{1}{2}$ Fell J      | b 115 7.30  |
| 1 5 5 $\frac{1}{2}$ 4 $\frac{1}{2}$ 3 $\frac{1}{2}$ 1 $\frac{1}{2}$ Fell J      | b 117 *1.70 |
| 5 7 8 $\frac{1}{2}$ 7 $\frac{1}{2}$ 5 $\frac{1}{2}$ 4 $\frac{1}{2}$ Fell J      | b 115 *2.50 |
| 3 4 3 $\frac{1}{2}$ 4 $\frac{1}{2}$ 3 $\frac{1}{2}$ 2 $\frac{1}{2}$ Fell J      | b 113 3.80  |
| 6 6 3 $\frac{1}{2}$ 3 $\frac{1}{2}$ 2 $\frac{1}{2}$ 3 $\frac{1}{2}$ Fell J      | b 113 3.70  |
| 11 4 7 $\frac{1}{2}$ 8 $\frac{1}{2}$ 10 $\frac{1}{2}$ 6 $\frac{1}{2}$ Fell J    | b 117 5.80  |
| 2 7 7 $\frac{1}{2}$ 5 $\frac{1}{2}$ 4 $\frac{1}{2}$ 2 $\frac{1}{2}$ Santiago A  | b 117 4.40  |
| 3 7 7 $\frac{1}{2}$ 6 $\frac{1}{2}$ 5 $\frac{1}{2}$ 5 $\frac{1}{2}$ Santiago A  | b 117 4.40  |
| 7 7 8 $\frac{1}{2}$ 10 $\frac{1}{2}$ 7 $\frac{1}{2}$ 1 $\frac{1}{2}$ Santiago A | b 115 11.50 |

Nov 14 Bel tr.t 4f fst :48 $\frac{1}{2}$  h

B. g. 8, by Dunc—Mid Evening, by Billings

\$16,000

Br.—Church Melville III (Fla)

Tr.—Schlesinger Todd D

|   |           |
|---|-----------|
| 1 1 14 13 13 1 $\frac{1}{2}$ Martens G  | 114 *1.80 |
| 6 4 4 $\frac{1}{2}$ 4 $\frac{1}{2}$ 4 $\frac{1}{2}$ 5 $\frac{1}{2}$ Martens G | 114 6.90  |
| 5 3 34 24 1 $\frac{1}{2}$ 3 $\frac{1}{2}$ Martens G                           | 114 5.50  |
| 7 1 13 12 $\frac{1}{2}$ 1 $\frac{1}{2}$ 1 $\frac{1}{2}$ Martens G             | 119 4.30  |
| 11 4 4 $\frac{1}{2}$ 3 $\frac{1}{2}$ 24 43 Martens G                          | 114 13.50 |
| 3 3 42 3 $\frac{1}{2}$ 13 1 $\frac{1}{2}$ Martens G                           | 117 4.40  |
| 2 2 2 $\frac{1}{2}$ 3 $\frac{1}{2}$ 4 $\frac{1}{2}$ 4 $\frac{1}{2}$ Martens G | 115 4.60  |
| 2 1 1 $\frac{1}{2}$ 2 $\frac{1}{2}$ 4 $\frac{1}{2}$ 6 $\frac{1}{2}$ Martens G | 113 7.90  |
| 4 1 1 $\frac{1}{2}$ 3 $\frac{1}{2}$ 42 5 $\frac{1}{2}$ Fell J                 | 115 4.50  |
| 5 1 1 $\frac{1}{2}$ 2 $\frac{1}{2}$ 1 $\frac{1}{2}$ 2 $\frac{1}{2}$ Fell J    | 115 2.60  |

Nov 25 Bel tr.t 4f fst :49 b

B. g. 5, by The Axe II—Twisterette, by Swoon's Son

\$16,000

Br.—Headley Mrs G (Ky)

Tr.—Milla Francisco

|  |             |
|--|-------------|
| 4 5 5 $\frac{1}{2}$ 3 $\frac{1}{2}$ 13 1 $\frac{1}{2}$ Amy J                 | b 117 2.40  |
| 2 5 43 3 $\frac{1}{2}$ 53 10 $\frac{1}{2}$ Amy J                             | b 117 8.00  |
| 5 2 26 47 $\frac{1}{2}$ 6 $\frac{1}{2}$ 6 $\frac{1}{2}$ Amy J                | b 117 7.70  |
| 2 1 14 1 $\frac{1}{2}$ 2 $\frac{1}{2}$ 6 $\frac{1}{2}$ Santagata N7          | b 110 20.90 |
| 5 6 7 $\frac{1}{2}$ 9 $\frac{1}{2}$ 9 $\frac{1}{2}$ 9 $\frac{1}{2}$ Amy J    | b 113 33.70 |
| 6 1 16 13 2 $\frac{1}{2}$ 3 $\frac{1}{2}$ Amy J                              | b 122 2.60  |
| 2 1 13 13 1 $\frac{1}{2}$ Rodriguez AM5                                      | b 121 5.30  |
| 9 4 23 22 3 $\frac{1}{2}$ 3 $\frac{1}{2}$ Graell A                           | b 122 3.10  |
| 3 2 1 $\frac{1}{2}$ 1 $\frac{1}{2}$ 3 $\frac{1}{2}$ 3 $\frac{1}{2}$ Cotto E5 | b 114 3.60  |
| 8 3 35 32 3 $\frac{1}{2}$ 2 $\frac{1}{2}$ Amy J                              | b 120 *2.20 |

## 1085

|      | St. | 1st | 2nd | 3rd | Amt.     |
|------|-----|-----|-----|-----|----------|
| 1978 | 23  | 3   | 5   | 4   | \$36,420 |
| 1977 | 10  | 1   | 4   | 0   | \$12,380 |

|   |  |
|---|--|
| 87-18 Speedy Henry 119 $\frac{1}{2}$ Jo's Quad 1127 Spifty 117 $\frac{1}{2}$ Strong handling 10               |  |
| 72-14 ChampagneChappy115 $\frac{1}{2}$ Raise the Blade 117 $\frac{1}{2}$ Black Beau 115 $\frac{1}{2}$ Tired 8 |  |
| 74-22 Speedy Henry 117 $\frac{1}{2}$ T. V. Coverage 113 $\frac{1}{2}$ Jo's Quad 112 $\frac{1}{2}$ Driving 8   |  |
| 69-23 Gorizpa 117 $\frac{1}{2}$ Spifty 113 $\frac{1}{2}$ Artful Pretender 117 $\frac{1}{2}$ Rallied 9         |  |
| 72-18 Mule Train 117 $\frac{1}{2}$ Speedy Henry 113 $\frac{1}{2}$ Jo's Quad 110 $\frac{1}{2}$ Gately 7        |  |
| 68-23 Gen Pillow 117 $\frac{1}{2}$ Barter Binn 115 $\frac{1}{2}$ Speedy Henry 113 $\frac{1}{2}$ Weakened 7    |  |
| 73-13 Orfanik 117 $\frac{1}{2}$ Barter Binn 115 $\frac{1}{2}$ Under Heaven 117 $\frac{1}{2}$ Wide 11          |  |
| 77-15 Black Beau 117 $\frac{1}{2}$ Speedy Henry 117 $\frac{1}{2}$ Hey Ange 117 $\frac{1}{2}$ Gaining 7        |  |
| 73-19 Rhythm Ace 117 $\frac{1}{2}$ Orfanik 112 $\frac{1}{2}$ Dana's Escort 117 $\frac{1}{2}$ Outrun 9         |  |
| 72-20 Speedy Henry 115 $\frac{1}{2}$ Uncle Morty 117 $\frac{1}{2}$ WindAndSun 119 $\frac{1}{2}$ Driving 12    |  |

## 122

| 122 | Turf Record |     |     |     | St.  | 1st | 2nd | 3rd | Amt.     |
|-----|-------------|-----|-----|-----|------|-----|-----|-----|----------|
|     | St.         | 1st | 2nd | 3rd | 1978 | 20  | 2   | 4   | \$26,150 |
|     | 9           | 0   | 2   | 0   | 1977 | 25  | 7   | 5   | \$47,168 |

|       |                         |                      |                         |               |
|-------|-------------------------|----------------------|-------------------------|---------------|
| 87-21 | Dubill 114½             | To The Tune 117½     | Deal With Strength 117½ | Driving 7     |
| 91-12 | Edifice 117½            | Raise the Blade 110½ | Aldar 117½              | Evenly 9      |
| 75-20 | Deal With Strength 117½ | Framarco 114½        | Dubill 114½             | Weakened 7    |
| 75-23 | Dubill 119½             | Sensibly 117½        | Chocolate Lip 119½      | Bore out 7    |
| 72-22 | Seany Bear 117½         | Altar 117½           | To The Tune 117½        | Hung 12       |
| 75-23 | Dubill 117½             | Doubt 110½           | Rising Career 117½      | Ridden out 8  |
| 77-13 | Seany Bear 117½         | Ragamuffin 112½      | Scamp Boy 119½          | Weakened 8    |
| 73-17 | Patty D'Baker 110½      | Scabbard 117½        | Overtaker 113½          | Tired 8       |
| 79-10 | Trout Mound 117½        | Pompini 117½         | MightyStrong 117½       | Bothered 7    |
| 80-17 | Rivelino 119½           | Dubill 115½          | Mighty Strong 113½      | Just failed 6 |

Bel tr.t 4f fst :47½ h

## 117

|       | Turf Record      |                   |                   | St.               | 1st           | 2nd               | 3rd        | Amt. |   |          |
|-------|------------------|-------------------|-------------------|-------------------|---------------|-------------------|------------|------|---|----------|
| 117   | St.              | 1st               | 2nd               | 3rd               | 1978          | 8                 | 2          | 0    | 2 | \$15,480 |
|       | 4                | 0                 | 0                 | 1                 | 1977          | 16                | M          | 6    | 4 | \$15,170 |
| 81-19 | Miner's Axe      | 117 $\frac{1}{2}$ | HailByJove        | 115 $\frac{1}{2}$ | T.V. Coverage | 113 $\frac{1}{2}$ | Drew clear | 6    |   |          |
| 83-09 | Black Beau       | 115 $\frac{1}{2}$ | Ecumenical        | 113 $\frac{1}{2}$ | Noble N Royal | 115 $\frac{1}{2}$ | Tired      | 10   |   |          |
| 70-22 | Lancer's Pride   | 117 $\frac{1}{2}$ | Chocolate Lip     | 117 $\frac{1}{2}$ | Sensibly      | 117 $\frac{1}{2}$ | Tired      | 6    |   |          |
| 92-04 | Windhover        | 114 $\frac{1}{2}$ | Ramacette         | 108 $\frac{1}{2}$ | Il Valletto   | 113 $\frac{1}{2}$ | Used up    | 10   |   |          |
| 78-14 | Ess'n Eff        | 115 $\frac{1}{2}$ | CasparMilquetoast | 115 $\frac{1}{2}$ | CountryCorn   | 111 $\frac{1}{2}$ | Outrun     | 9    |   |          |
| 82-15 | Lancer's Pride   | 115 $\frac{1}{2}$ | Altar             | 115 $\frac{1}{2}$ | Miner's Axe   | 122 $\frac{1}{2}$ | Weakened   | 6    |   |          |
| 78-20 | Miner's Axe      | 121 $\frac{1}{2}$ | Georgetown        | 121 $\frac{1}{2}$ | GoldenMedinah | 121 $\frac{1}{2}$ | Driving    | 8    |   |          |
| 77-14 | Stanley Gardener | 117 $\frac{1}{2}$ | Fontinalis        | 724               | Miner's Axe   | 122 $\frac{1}{2}$ | Weakened   | 9    |   |          |
| 81-18 | Dancing Flight   | 119 $\frac{1}{2}$ | Silverpoint       | 115 $\frac{1}{2}$ | Miner's Axe   | 114 $\frac{1}{2}$ | Tired      | 9    |   |          |
| 65-23 | Sage             | 116 $\frac{1}{2}$ | Miner's Axe       | 120 $\frac{1}{2}$ | Bet the Limit | 116 $\frac{1}{2}$ | 2nd best   | 9    |   |          |

Fig. 8.2. cont.

## All Our Hopes

Own.—Heard D J

|                  |       |     |       |       |               |
|------------------|-------|-----|-------|-------|---------------|
| 17Dec78-3Aqu gd  | 1 1/2 | 46% | 1:13  | 1:47  | 3+ C1m 14000  |
| 10Dec78-2Aqu my  | 1 1/2 | 47% | 1:12% | 1:59% | 3+ Hcp 10000  |
| 30Nov78-4Aqu sly | 1 1/2 | 47% | 1:11% | 1:51% | 3+ Hcp 10000  |
| 16Nov78-1Aqu fst | 1 1/2 | 48% | 1:13% | 1:51% | 3+ C1m c-7500 |
| 9Nov78-2Aqu fst  | 1 1/2 | 47% | 1:12  | 1:50% | 3+ C1m 9000   |
| 30Oct78-2Aqu fst | 7 1/2 | 23% | 47%   | 1:23% | 3+ C1m 10000  |
| 2Jun78-2Bel fst  | 1 1/2 | 46% | 1:10% | 1:49% | 3+ C1m 10000  |
| 14May78-9Aqu sly | 1 1/2 | 48% | 1:14% | 1:54% | C1m 12500     |
| 4May78-2Aqu fst  | 1 1/2 | 47% | 1:13% | 1:51  | C1m 16500     |
| 13Apr78-2Aqu fst | 1 1/2 | 47% | 1:12% | 1:51% | C1m c-12500   |

## String Music

Own.—Krohn Deborah

|                  |       |     |       |       |              |
|------------------|-------|-----|-------|-------|--------------|
| 10Dec78-5Aqu sly | 6 1/2 | 22% | 46%   | 1:12% | 3+ Allowance |
| 26Nov78-1Aqu fst | 6 1/2 | 22% | 46%   | 1:12% | C1m 18000    |
| 9Nov78-3Aqu fst  | 6 1/2 | 23  | 46%   | 1:11% | C1m c-12500  |
| 28Oct78-2Aqu fst | 6 1/2 | 22% | 46    | 1:11% | C1m 9500     |
| 12Oct78-1Bel fst | 7 1/2 | 23% | 46%   | 1:24% | C1m 9500     |
| 7Oct78-5Med fst  | 6 1/2 | 23% | 47%   | 1:13% | C1m 10000    |
| 21Sep78-7Medyl   | 1     | 47% | 1:13% | 1:40  | 3+ Allowance |
| 14Sep78-2Med fst | 6 1/2 | 22% | 46%   | 1:11% | C1m 12500    |
| 13Sep78-9Med fst | 6 1/2 | 22% | 46%   | 1:11% | C1m 16000    |
| 26Aug78-4Mth fst | 6 1/2 | 22  | 45    | 1:10  | C1m c-10000  |

## LATEST WORKOUTS

Dec 27 Bel tr 3 1/2 fst :35% h

## Hail By Jove

Own.—Ricatto M C

|                  |       |     |       |       |                |
|------------------|-------|-----|-------|-------|----------------|
| 26Dec78-3Aqu fst | 6 1/2 | 22% | 46    | 1:11% | 3+ C1m 12500   |
| 19Dec78-5Aqu gd  | 1 1/2 | 48  | 1:13% | 1:54  | 3+ C1m c-10000 |
| 10Dec78-3Aqu fst | 1 1/2 | 48  | 1:13% | 1:53% | 3+ C1m 8000    |
| 3Dec78-1Aqu fst  | 7 1/2 | 47% | 1:12  | 1:41% | C1m 8000       |
| 30Nov78-1Aqu sly | 6 1/2 | 22% | 46    | 1:11% | C1m 9000       |
| 17Nov78-3Med sly | 6 1/2 | 22% | 45%   | 1:12% | C1m 10000      |
| 6Apr78-5Aqu fst  | 1     | 46% | 1:11% | 1:38% | C1m 16000      |
| 1Apr78-2Aqu fst  | 6 1/2 | 22% | 46%   | 1:12  | C1m 16500      |
| 2Mar78-6Aqu fst  | 1 1/2 | 47% | 1:13  | 1:47% | C1m 16000      |
| 13Mar78-2Aqu fst | 6 1/2 | 23  | 46%   | 1:13% | C1m c-12500    |

## LATEST WORKOUTS

Dec 13 Med 3 1/2 fst :37% b

Ch. g. 8, by Tibaldo—Hears I Win, by One-Eyed King

Br.—Simoff A (Fla)

Tr.—Sedlacek Sue

|   |    |     |     |     |                 |   |     |       |
|---|----|-----|-----|-----|-----------------|---|-----|-------|
| 3 | 6  | 712 | 674 | 413 | Figueroa R5     | b | 108 | 4.10  |
| 2 | 4  | 44  | 21  | 1nd | 413 Samyn J L   | b | 109 | 14.70 |
| 1 | 3  | 32  | 32  | 415 | 543 Samyn J L   | b | 109 | 4.10  |
| 2 | 4  | 21  | 413 | 134 | 17 Velasquez J  | b | 117 | 3.20  |
| 9 | 5  | 55  | 33  | 40  | 511 Velasquez J | b | 113 | 4.00  |
| 7 | 6  | 413 | 213 | 383 | 512 Velasquez J | b | 117 | 4.40  |
| 5 | 4  | 443 | 35  | 473 | 513 Fell J      | b | 117 | 2.60  |
| 8 | 5  | 69  | 423 | 563 | 512 Samyn J L   | b | 117 | 2.80  |
| 2 | 5  | 510 | 423 | 573 | 593 Samyn J L   | b | 115 | 6.30  |
| 7 | 10 | 812 | 653 | 55  | 553 Maple E     | b | 117 | 4.90  |

B. g. 4, by Cloudy Dawn—Gold Strings, by Tudor Minstrel

Br.—Whiteley F Y Jr (Ky)

Tr.—Krohn Nat

|   |    |      |     |     |                   |     |       |
|---|----|------|-----|-----|-------------------|-----|-------|
| 4 | 7  | 693  | 718 | 717 | 713 Martens G     | 115 | 10.50 |
| 7 | 11 | 1063 | 64  | 13  | 1m Martens G      | 113 | 13.60 |
| 3 | 8  | 633  | 54  | 32  | 113 McKnight R E5 | 114 | 2.80  |
| 5 | 8  | 413  | 413 | 313 | 13 McKnight R E5  | 110 | 4.60  |
| 1 | 5  | 42   | 53  | 40  | 413 McKnight R E5 | 110 | 6.50  |
| 5 | 2  | 42   | 643 | 743 | 77 Mize W E5      | 114 | 2.00  |
| 4 | 1  | 113  | 1m  | 323 | 773 Arellano J    | 112 | 51.00 |
| 8 | 6  | 743  | 883 | 893 | 773 Nield D       | 119 | 6.10  |
| 7 | 1  | 783  | 87  | 69  | 593 Mize W E5     | 111 | 3.90  |
| 3 | 4  | 47   | 353 | 1m  | 110 Thomas D B    | 118 | 2.40  |

B. c. 4, by Northern Jove—High Hall, by Mail To All

Br.—Cohen Mrs B (Md)

Tr.—Jacobson David

|    |    |      |      |     |                    |   |     |      |
|----|----|------|------|-----|--------------------|---|-----|------|
| 7  | 10 | 1010 | 1093 | 873 | 333 Bracciale V Jr | b | 115 | 9.40 |
| 3  | 6  | 663  | 633  | 23  | 223 Rujano M       | b | 115 | 7.70 |
| 11 | 7  | 67   | 33   | 14  | 18 Rujano M        | b | 115 | 4.20 |
| 5  | 8  | 893  | 68   | 35  | 23 Rujano M        | b | 117 | 2.30 |
| 5  | 8  | 811  | 793  | 57  | 533 Rujano M       | b | 114 | 6.20 |
| 2  | 10 | 812  | 713  | 814 | 893 Mize W E       | b | 116 | 3.70 |
| 6  | 8  | 89   | 563  | 40  | 533 Rujano M       | b | 117 | 5.90 |
| 5  | 5  | 573  | 55   | 13  | 133 Rujano M       | b | 116 | 8.30 |
| 4  | 8  | 712  | 718  | 413 | 253 Hernandez R    | b | 117 | 3.10 |
| 7  | 4  | 993  | 893  | 55  | 413 McCauley W H   | b | 117 | 2.90 |

Nov 27 Med 4 1/2 fst :50 b

## 1145

|       |                          | Turf Record           |                        |             |     | St. 1st 2nd 3rd |    |   |   | Amt. |          |
|-------|--------------------------|-----------------------|------------------------|-------------|-----|-----------------|----|---|---|------|----------|
|       |                          | St.                   | 1st                    | 2nd         | 3rd | 1978            | 19 | 5 | 1 | 2    | \$33,285 |
|       |                          | 3                     | 0                      | 0           | 1   | 1977            | 7  | 2 | 2 | 0    | \$15,530 |
| 4.10  | 80-19 All Our Hopes 1083 | Doubt 1123            | Grand Design 1154      | Driving 8   |     |                 |    |   |   |      |          |
| 14.70 | 82-16 Chocolate Lip 1180 | New Collection 1241   | Seaney Bear 1214       | Weakened 10 |     |                 |    |   |   |      |          |
| 4.10  | 74-19 Seaney Bear 1204   | Marrakesh II 1141     | Royal Hat 1072         | Tired 7     |     |                 |    |   |   |      |          |
| 3.20  | 78-22 All Our Hopes 1177 | Rising Career 1171    | Royal Hat 1170         | Handily 7   |     |                 |    |   |   |      |          |
| 4.00  | 71-20 Marrakesh II 1070  | Decision Revoked 1100 | Desk Clerk 1174        | Weakened 10 |     |                 |    |   |   |      |          |
| 4.40  | 70-15 Double Gemini 1179 | Arleno 1171           | Here He Comes Too 1080 | Tired 9     |     |                 |    |   |   |      |          |
| 2.60  | 63-22 Rising Career 1137 | Georgetown 1131       | George Of Canada 1154  | Tired 7     |     |                 |    |   |   |      |          |
| 2.80  | 52-26 Barb's Page 1101   | Doubt 1104            | Finn MacCool 1173      | Tired 8     |     |                 |    |   |   |      |          |
| 6.30  | 70-16 North Star 1171    | Time To 1143          | Cyano 1132             | Weakened 7  |     |                 |    |   |   |      |          |
| 4.90  | 70-23 Time To 1171       | Rigamole 1171         | Comradeship 1224       | Rallied 11  |     |                 |    |   |   |      |          |

## 1125

|                       |       | Turf Record        |      |                       |      | St. 1st 2nd 3rd |      |            |    | Amt.     |
|-----------------------|-------|--------------------|------|-----------------------|------|-----------------|------|------------|----|----------|
|                       |       | St.                | 1st  | 2nd                   | 3rd  | 1978            | 21   | 7          | 0  | \$37,135 |
|                       |       | 1                  | 0    | 0                     | 0    | 1977            | 6    | 2          | 0  | \$12,240 |
| 10.50                 | 68-18 | Collectors Delight | 1203 | Elk Wallow            | 1104 | Damitrius       | 1153 | Outrun     | 7  |          |
| 13.50                 | 82-20 | String Music       | 1134 | Shanty To Castle      | 1151 | Gorizpa         | 1131 | Driving    | 13 |          |
| 2.80                  | 86-22 | String Music       | 1141 | Spifty                | 1173 | Double Loom     | 1123 | Driving    | 10 |          |
| 4.80                  | 84-16 | String Music       | 1103 | Examine               | 1171 | Sue Foolish     | 1173 | Ridden out | 9  |          |
| 6.50                  | 64-15 | Barter Binn        | 1171 | Clean Edge            | 1194 | Cozy Talk       | 1124 | Tired      | 7  |          |
| 2.00                  | 72-19 | Troyville          | 1141 | Whachamacallit        | 1140 | Jaunty Jet      | 1113 | Wide       | 7  |          |
| 51.00                 | 74-18 | Cyn Way            | 1171 | Forced Busing         | 1142 | Shop Around     | 1151 | Tired      | 12 |          |
| 6.10                  | 76-15 | Stokesy Boy        | 1193 | Third Turn            | 1164 | Troyville       | 1125 | Outrun     | 8  |          |
| 3.90                  | 76-17 | Sanders Creek      | 1163 | Native Tudor          | 1194 | Elyse's Pride   | 1194 | No threat  | 9  |          |
| 2.40                  | 90-13 | String Music       | 1181 | Butcher Block         | 1073 | Emrey           | 1163 | Drew out   | 9  |          |
| Dec 7 Bel 31 3m: 36 h |       |                    |      | Nov 23 Bel 31 3f 36 h |      |                 |      | 36% h      |    |          |

Dec 7 Bel tr 3 1/2 my :36 h

Nov 23 Bel tr 3 1/2 fst :36% h

## 1113

| 113        |                            | 1978                  | 12                    | 2             | 3  | 1        | \$19,880 |
|------------|----------------------------|-----------------------|-----------------------|---------------|----|----------|----------|
|            |                            | 1977                  | 4                     | 1             | 1  | 1        | \$8,020  |
| 9.40       | 84-13 Clean Edge 1154      | Combatant 1104        | Hail By Jove 1154     | Rallied 12    |    |          |          |
| *70        | 78-19 Miner's Axe 1174     | Hail By Jove 1151     | T.V. Coverage 1131    | Second best 6 |    |          |          |
| 4.20       | 84-20 Hail By Jove 1154    | Hard Guy Bedwell 1144 | Clen'Em Up 1174       | Ridden out 11 |    |          |          |
| *2.30      | 90-09 Pride of Naskra 1154 | Hail By Jove 1175     | Silver Swdust 1124    | Second best 8 |    |          |          |
| 6.20       | 80-19 Cavalink 1124        | Combatant 1154        | Uncle Morty 1171      | Mild rally 8  |    |          |          |
| 3.70       | 74-20 Bold Brawler 1164    | Silver Pedlar 1070    | Goodbye Folks 1094    | No factor 10  |    |          |          |
| *5.50      | 66-23 Jet Envoy 1174       | Bolyston 1134         | Count Nick Koles 1104 | No excuse 8   |    |          |          |
| 3.80       | 87-17 Hail By Jove 1164    | Pistol Pet 1124       | Gorizpa 1173          | Ridden out 7  |    |          |          |
| *3.10      | 70-22 Orfanik 1174         | Hail By Jove 1174     | Jet Envoy 1121        | Second best 8 |    |          |          |
| *2.90      | 76-20 Clean Edge 1123      | Cavalink 1183         | Gun Quill 1173        | Rallied 9     |    |          |          |
| Nov 15 Med |                            | 3rd 137               | b                     | Nov 11 Med    | 54 | 1st 1:03 | b        |

Nov 15 Med 3 1/2 fst :37 b

Nov 11 Med 9 1/2 fst 1:03 b

Fig. 8.2. cont.

considerations would probably make us eliminate several horses before reaching this stage.

*Proud Sam*

Distance is not his best feature, and elsewhere he has been running mainly on turf. This makes his fractional times (times throughout a race) difficult to assess. However, he is not consistent, and he shows no form in terms of results, *patterns* of results, or improvement in beaten lengths. Despite his drop in 'class' we can rule him out – he has not yet found a winning spot, and despite a drop in weight he lacks the speed and stamina to be anything but a tail-ender.

*Pepysian*

Pepysian is a gelding, 6, and recently raced (for a route). He is stepping up 2 furlongs from his usual race and shows little consistency. Recent results suggest no obvious form, but they were earned in higher company. He has an improving pattern in his last race at  $1\frac{1}{8}$ , and his results have been earned in \$20000 *allowance* (prize money) company. He is easily the class horse of the field, and class tells in routes. He is no front runner but should be a definite contender.

*A Thousand Hopes*

This is another gelding with class – he was running for \$20000 only three months back. His recent results *in terms of beaten length* show an improvement in form. The stable seems to be serious about him – they are racing him again after just 15 days. This horse also justifies detailed analysis.

*Speedy Henry*

A 4-year old colt with good form in his last three races, even though they were in a cheaper class. The 23-day layoff is not too encouraging, but he won last time out at this exact distance, which makes him worth considering. However, he will probably not be able to contend with Pepysian and A Thousand Hopes, so significantly superior in class. The weights are favourable (notice that the 5 pound allowance means he is assigned 113, so we do not 'suspect' him as being below 110 pounds).

*Dubill*

In practice I eliminated him as an 8-year old in younger company. He is also positively penalised by a 122-pound weight that we have no indication he can carry, especially over this distance. I continued to rate him on our system purely to see why the public made him favourite. They appeared to like his recent results and *apparent* class drop, but in practice he is racing at about his true price.

*Miner's Axe*

Unmistakable signs of the original trainer trying to find the right 'spot' for a

win. After his easy win in a Maiden Special weight, he has been steadily dropped to \$16000, where there is as yet no evidence that he can win. His real value is probably around the \$14000 mark, so he is well outclassed by Pepysian and A Thousand Hopes. The odds reflect this opinion, and although his win place percentages are good, he is stretching out a further  $\frac{1}{16}$ th, and was claimed last time out, which is a slight negative.

#### *All Our Hopes*

He is 8 years old and running several classes above his average during October/November. Unlikely to be a contender in this race.

#### *String Music*

We can safely ignore him. A sprinter who has not raced for 23 days is presumably out for stamina training.

#### *Hail By Jove*

This 4-year old colt must be out of his class, even though he is fast and justifies a good condition rating. I would expect him to be fading in the stretch.

To summarise, we can eliminate:

|               |                           |
|---------------|---------------------------|
| Proud Sam     | No form whatever          |
| Dubill        | Age penalised by weight   |
| All Our Hopes | Age/outclassed            |
| String Music  | Strictly out for exercise |

We are doubtful about:

|              |                             |
|--------------|-----------------------------|
| Hail By Jove | Relative class              |
| Miner's Axe  | Relative class/just claimed |

In practice I would only have continued to examine Pepysian, A Thousand Hopes, and Speedy Henry. I have shown the ratings for most of the horses so you can follow the systems in detail.

Notice that when you are preparing ratings, some can be given at once; others cannot be given until you have the data for all the horses. For instance, it is fairly easy to give a rating for 'recency' – the number of days since the last race – and for the suitability of the distance. You have a fairly simple objective standard to work against! However, when you are rating a horse for speed or the significance of weight, you cannot finalise your rating until you have the speed ratings and weights of *all* the horses in the race. A horse may be the speed horse one day, because he is in slower company, and rated poorly the next day, in faster company. It is his *comparative* strength you are assessing.

## The final comparison

From the evidence in Fig. 8.2 we would expect our sprinter, String Music, to take the lead, with Dubill, Miner's Axe, and All Our Hopes prominent by the  $\frac{1}{2}$  mile (3rd call). We would then expect Speedy Henry, A Thousand Hopes and Pepysian to start coming through by the stretch, and for the last two horses to be battling it out, with A Thousand Hopes clinching the race thanks to his better condition. To check the supposition I calculated the probable pace figures for the two real contenders. Taking the representative *good* races over their most frequent common distances ( $1\frac{1}{16}$  and  $1\frac{1}{8}$ ) and ignoring turf races, I calculated that:

|                                | 4 furlongs      | 6 furlongs                 |
|--------------------------------|-----------------|----------------------------|
| Pepysian is capable of         | $47\frac{2}{5}$ | 1 min 12 secs              |
| A Thousand Hopes is capable of | $47\frac{4}{5}$ | 1 min $12\frac{3}{5}$ secs |

In view of this pace analysis, Pepysian's average modified SR of 106 and his superior class will just allow him to win. A Thousand Hopes has an average modified SR of only 98, even though he is fitter. Speedy Henry should be third.

## The bet

The bet is the whole point of the exercise, and you should always make your analysis of the probable winner away from the track, to allow yourself plenty of time. It takes some 25 minutes to analyse a race in the necessary detail – which is a great deal of effort. All the same, *it is only worth betting if:*

- You think there is a clear probable winner.
- The odds are higher than your degree of confidence in your choice.

*or*

- There are two horses that allow you to play and win irrespective of which one wins.

In Chapter 7, you will remember, I showed you how to win money simply by picking one horse in the entire race that will lose, because the overround will be in your favour. You can have 8 or 9 horses all running for you. The point to remember is that you *always* need a value bet – so bet where the probability is greater than the odds suggest.

In the 3rd race at Aqueduct on New Year's Day I was certainly favoured by the odds on the Totalisator Board. With one minute to Post time the odds were:

|                  |         | Probability<br>indicated (%) |
|------------------|---------|------------------------------|
| Dubill           | \$3.90  | 21                           |
| Hail By Jove     | \$4.60  | 18                           |
| Speedy Henry     | \$4.60  | 18                           |
| Pepysian         | \$4.60  | 18                           |
| All Our Hopes    | \$6.80  | 13                           |
| A Thousand Hopes | \$8.00  | 11                           |
| Miner's Axe      | \$13.20 | 7                            |
| Proud Sam        | \$49.30 | 2                            |
| String Music     | \$18.00 | 5                            |
|                  |         | <hr/> 113                    |

These odds represent the public's assessment of probabilities, as shown in the third column. In fact the race as a whole looks a reasonably good investment – the odds mean that the overround is less than normal. Because the odds on both selections represent an 'overlay' we can calculate a bet that will return us the same winnings irrespective of whether Pepysian or A Thousand Hopes wins. If you refer to the table of odds in Appendix I you can determine the stake needed to achieve this. So:

|                  | Odds   | Probability | Stake | Return                    |
|------------------|--------|-------------|-------|---------------------------|
| Pepysian         | \$4.60 | 18%         | \$18  | \$82.80 +<br>\$18 = \$100 |
| A Thousand Hopes | \$8.00 | 11%         | \$11  | \$88 +<br>\$11 = \$99     |

The profit on the bet will be \$71.80 if Pepysian wins and \$70 if A Thousand Hopes wins, on a stake of \$29. In practice I staked Pepysian to win, and bet \$22 on A Thousand Hopes to win and \$22 to place. The actual race result is shown in Fig. 8.3.

The 3rd race at Aqueduct paid \$18 win and \$8.20 place on A Thousand Hopes and a better than expected \$4.60 place on Pepysian. The return was \$288.20 for an outlay of \$87; a profit of \$201. It was a good start to 1979 and a tribute to the subtlety of the selection method. But can it be done every time?

Of course not. You are trying to separate two horses racing over  $1\frac{3}{16}$  miles by  $\frac{1}{5}$  of a second! You'll have about 6 losers in 10 bets, but if you follow the rules, you'll make a steady profit. This particular race is a perfect example of a value bet – I really did end up with just two contenders, and fortunately the odds did not force me to choose between them.

Fig. 8.3. Result of the 3rd race at Aqueduct. (Reproduced by courtesy of Daily Racing Form Inc.)

### THIRD RACE Aqueduct

JANUARY 1, 1979

1  $\frac{1}{2}$  MILES.(INNER DIRT). (1.56%) CLAIMING. Purse \$12,000. 4-year-olds and upward. Weights, 122 lbs. Non-winners of a race at a mile and a furlong or over since December 15, allowed 3 lbs. Of a race at a mile or over since then 5 lbs. Claiming price \$15,000; for each \$1,000 to \$14,000 2 lbs. (Races when entered to be claimed for \$12,000 or less not considered.)

Value of race \$12,000, value to winner \$7,200, second \$2,640, third \$1,440, fourth \$720. Mutuel pool \$113,329. Track Exacta Pool \$206,536. OTB Exacta Pool \$177,603.

| Last Raced | Horse | Eqt.             | A. | Wt | PP  | St | $\frac{1}{4}$ | $\frac{1}{2}$    | $\frac{3}{4}$    | Str              | Fin              | Jockey           | Cl'g                      | Pr             | Odds  | 51    |
|------------|-------|------------------|----|----|-----|----|---------------|------------------|------------------|------------------|------------------|------------------|---------------------------|----------------|-------|-------|
| 17Dec78    | 3Aqu4 | A Thousand Hopes | b  | 5  | 112 | 3  | 6             | 84               | 72 $\frac{1}{2}$ | 75               | 6 $\frac{1}{2}$  | 1nk              | Asmussen C                | B <sup>5</sup> | 16000 | 8.00  |
| 18Dec78    | 5Aqu6 | Pepysian         | b  | 6  | 117 | 2  | 3             | 9                | 9                | 88 $\frac{1}{2}$ | 4 $\frac{1}{2}$  | 24 $\frac{1}{2}$ | Bracciale V Jr            |                | 16000 | 4.60  |
| 28Dec78    | 3Aqu3 | Hail By Jove     | b  | 4  | 114 | 9  | 8             | 5hd              | 63               | 6 $\frac{1}{2}$  | 7 $\frac{1}{2}$  | 3nk              | Maple E                   |                | 14000 | 4.60  |
| 17Dec78    | 3Aqu1 | All Our Hopes    | b  | 8  | 114 | 7  | 7             | 62 $\frac{1}{2}$ | 4 $\frac{1}{2}$  | 3hd              | 3 $\frac{1}{2}$  | 4hd              | Figueroa R <sup>5</sup>   |                | 16000 | 6.80  |
| 9Dec78     | 5Aqu7 | String Music     |    | 4  | 112 | 8  | 9             | 1hd              | 22               | 21 $\frac{1}{2}$ | 21 $\frac{1}{2}$ | 52 $\frac{1}{2}$ | McKnight R E <sup>5</sup> |                | 16000 | 1.00  |
| 9Dec78     | 1Aqu1 | Speedy Henry     | b  | 4  | 108 | 4  | 5             | 41 $\frac{1}{2}$ | 33               | 41               | 81 $\frac{1}{2}$ | 61 $\frac{1}{2}$ | Miranda J <sup>5</sup>    |                | 14000 | 4.60  |
| 18Dec78    | 5Aqu1 | Dubill           |    | 8  | 122 | 5  | 2             | 21 $\frac{1}{2}$ | 1 $\frac{1}{2}$  | 1 $\frac{1}{2}$  | 1 $\frac{1}{2}$  | 72               | Martens G                 |                | 16000 | 3.90  |
| 21Dec78    | 5Aqu1 | Miner's Axe      | b  | 5  | 117 | 6  | 4             | 3 $\frac{1}{2}$  | 52               | 52               | 5 $\frac{1}{2}$  | 81 <sup>5</sup>  | Amy J                     |                | 16000 | 13.20 |
| 17Dec78    | 5Aqu8 | Proud Sam        | b  | 5  | 113 | 1  | 1             | 71               | 84               | 9                | 9                | 9                | Barrera Ct                |                | 14000 | 49.30 |

OFF AT 1:30, EST. Start good, Won driving. Time, :23 $\frac{1}{2}$ , :47 $\frac{1}{2}$ , 1:12 $\frac{1}{2}$ , 1:38 $\frac{1}{2}$ , 1:58 Track fast.

### \$2 Mutuel Prices:

|                              |       |      |      |
|------------------------------|-------|------|------|
| 3-(C)-A THOUSAND HOPES       | 18.00 | 8.20 | 3.80 |
| 2-(B)-PEPYSIAN               |       | 4.60 | 3.20 |
| 9-(I)-HAIL BY JOVE           |       |      | 3.60 |
| \$2 EXACTA 3-2 PAID \$96.80. |       |      |      |

dk b or br. g, by Abe's Hope—Batting A Thousand, by Hitting Away. Trainer Nadler Herbert. Bred by Mangurian H T Jr (Fla).

A THOUSAND HOPES, unhurried for six furlongs, steadied awaiting racing room behind a wall of horses on the second turn, found room to rally through midstretch to gain a clear lead, then just lasted over PEPYSIAN. The latter, also void of early foot, settled suddenly in upper stretch and closed stoutly through the final furlong to just miss. HAIL BY JOVE came outside for the drive but lacked a strong closing response. ALL OUR HOPES improved position steadily down the backstretch, steadied behind the leaders leaving the backstretch then finished evenly. STRING MUSIC prompted the pace from the start, loomed a threat in upper stretch but tired. SPEEDY HENRY faded under pressure. DUBILL made the pace until the furlong marker and faltered badly.

Owners— 1, Schmid W; 2, Murphy E A; 3, Ricatto M C; 4, Heard D J; 5, Krohn Deborah; 6, Evans R M; 7, Mendelson Mildred; 8, Gamil Y; 9, Karlock M.

Trainers— 1, Nadler Herbert; 2, Murphy Edward A; 3, Jacobson David; 4, Sedlacek Sue; 5, Krohn Nat; 6, Gullo Thomas J; 7, Schlesinger Todd D; 8, Mflia Francisco; 9, Taliaferro Charles L.

† Apprentice allowance waived: Proud Sam 5 pounds. Overweight: Hail By Jove 1 pound.

### Racing further afield

All the world goes in for horse racing. It is popular in all European countries, especially France and Italy. In France, of course, big races are often run on a Sunday, which is a blank day both in Hong Kong and in Britain. In most countries other than Britain, however, flat racing is the norm.

In Hong Kong and in France, all bookmakers have vanished. They have all but disappeared in America, too. The French equivalent of the Totalisator is the *parimutuel*, which takes all bets and ploughs back a percentage of the money into horse racing. The result is to make the whole process much less expensive, with better prizes than Britain can offer. *Le Pesage* is the best part of the racecourse (equivalent to Tattersall's in Great Britain) and the place where you have a really good view of the horses. It also costs a great deal less than Tattersall's.

The equivalents to *The Sporting Life* and *Raceform Handicap Book* are *Paris Turf* and *Sport Complet*. They supply all the details of French racing and the French equivalents of Yankees, patents etc.

American racing has more in common with France than with Britain. The courses are not so naturally attractive, but in general they have better facilities. American race meetings at any particular place often last a month or more at a time, rather than occurring sporadically at any one course as they do in Britain. This is largely a result of the far greater distances involved. The *mutuel* rules all American betting, and again it has its own different combinations and permutations of standard bets. A typical example is *Quinella betting*, which nominates the winner and second without specifying their order (compare forecast betting). This originated in Canada but is also used a great deal in the US.

As mentioned earlier, the *Daily Racing Form* is the best-known American racing newspaper, and publishes extensive statistical analyses. Although it is more detailed than the forms supplied in France or Britain, it still falls short of what we are seeking for our purposes. Remember that the word 'statistics' can refer both to compiled records (how many races a horse has won, where the race was run, who rode it etc.) and the use of methods of analysis and comparison. Our chief concern is with this second meaning, but the horse racing world makes little or no use of it. (See Appendix V.)

To round off these general comments on world racing we should add that Japan has a fast-expanding *parimutuel* system similar to that of France. The systems in Australia and New Zealand are rather similar to each other, much as the Irish system is rather similar to the English. Racing also takes place in India, South Africa, Spain; in fact there is hardly a country in the world that cannot boast some form of horse racing – even the Soviet Union has some state-owned horse racing. The methods of running horse racing are, on the whole, closer to the Franco-American model than to the British, but from a scientific and statistical point of view the problem remains exactly the same.

## Racing in Hong Kong

Racing in Hong Kong takes place on two magnificent courses; the Happy Valley and Shatin. To give you an idea of racing in the colony we will look at a newspaper account of races at Shatin. Because of the consistent weather, racing in Hong Kong is much like racing in the US. However, details of horses and their track record are rather sparse. The only information given in the newspapers or the race programme is shown in Fig. 8.4.

It is the information available to the punter that concerns us – the methods of processing it are the same anywhere. As a punter, you are entirely dependent on the information at your disposal. In the UK and the US this information is detailed and extremely useful; in Hong Kong, Singapore and Australia it is much more limited, and this will determine the betting system you choose. Let's see what a Hong Kong punter can learn from the daily papers. Typical information might look like this:

### *Merger 5b Eg (Lear Jet-Forest Row)*

Enjoyed the heavy conditions April 7 when took up running round home bend and then pulled away to easy 6-length win over Wildfire and Jack-O-Lantern 1235m for which he has been crucified in this with \*11lb more. Can handle this trip but unless there is rain, hard to suggest.

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|                                      |     |   |        |        |     |        |        |     |
|--------------------------------------|-----|---|--------|--------|-----|--------|--------|-----|
| 1. 751 Merger (Carr)                 |     |   |        |        |     |        |        |     |
| Cruz, A.S.                           | 135 | 9 | 59.0   | (27.2) | TC  | 59.1   | (28.1) | TC  |
| 2. 080 Royal King (Cheng)            |     |   |        |        |     |        |        |     |
| Leyshan, P                           | 133 | 1 | 53.0   | (26.2) | KSH | 1.00.0 | (27.0) | KSH |
| 3. 483 Excellent Strike (Hutchinson) |     |   |        |        |     |        |        |     |
| Brosnan, D.                          | 132 | 5 | 29.4   | (29.4) | rb  | 1.20.4 | (25.4) | DB  |
| 4. 631 Village Bard (Cheung)         |     |   |        |        |     |        |        |     |
| *Shum, C.S.                          | 132 | 7 | 1.34.2 | (30.1) | DB  | 1.29.3 | (30.0) | KWL |
| 5. 445 Amethyst (Metrevelli)         |     |   |        |        |     |        |        |     |
| *Tsui, K.L.                          | 129 | 4 |        |        |     | 1.30.4 | (29.2) | NV  |
| 6. 359 New Moonstar (Sofronoff)      |     |   |        |        |     |        |        |     |
| + Lui, K.W.                          | 127 | 6 | 55.0   | (27.0) | KWL | 53.3   | (26.3) | KWL |
| 7. 9 Hope Win (Burns)                |     |   |        |        |     |        |        |     |
| Voigt, N.                            | 124 | 3 | 56.1   | (25.4) | NV  | 1.27.0 | (29.2) | NV  |
| 8. 026 Wildfire (Collinwood)         |     |   |        |        |     |        |        |     |
| Hood, W.                             | 124 | 2 | 1.02.3 | (29.0) | KOW |        |        |     |
| 9. 456 King River (Chan)             |     |   |        |        |     |        |        |     |
| Lau, T.O.                            | 119 | 8 | 57.4   | (26.1) | YSW | 1.00.3 | (26.4) | YSW |
| + Allowed 3lb                        |     |   |        |        |     |        |        |     |
| *Allowed 7lb                         |     |   |        |        |     |        |        |     |

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Fig. 8.4. Details of the race at Shatin, Hong Kong.

*Royal King* 4b Eg (Green God-Party Love)

Reputed to be a good sprinter with liking for a firm track but after promising first-up 2nd behind Ekels Pridge yielding 1650m, failed next four runs, one of them a sprint. Slightly unlucky last outing June 3 when forced to check twice before finishing 13 lengths behind shock winner Highenden firm 1600m and may be worth one more chance.

*Excellent Strike* 4gr Eg (Zedaan-The Shakings)

Quite a good run June 2 when ran home strongly last 300m to finish 2 lengths 3rd behind Villa D'Este and Jack-O-Lantern straight 1000m on a firm track. Work since then has been most pleasing and as English record indicates will prefer this distance even more. Can follow with confidence.

*Village Bard* 4b IRg (Balidar-Itoldyouso)

Most impressive May 19 when made all the running to beat Berncastler and Can't Say No sand 1575m for which has been promoted and dropped only 8 lb. Very versatile with a win over 1235m on a heavy track Jan 31 and placing up to 2450m but appears to have a task in this grade.

*Amethyst* 4b NZg (Regalis 11-Zalida)

Not a bad type and quite consistent, finishing no worse than 5th in five starts. Only win was when sent out over 1235m on yielding track, beating Arc de Triomphe, Take All and Mount Go-Go. Showed was almost back at best last outing June 2, when came from rear to finish less than 5 lengths behind Villa D'Este straight 1000 and extra distance suits. Chance.

*New Moonstar* 6br Eg (Wolver Hollow-Tudor Lullaby)

Outpaced soon after the start and never a chance after that, finishing nearly 10 lengths behind Villa D'Este firm 1000m June 2. Will find this trip a little better but needs a soft track to give best. Hard.

*Hope Win* 4b Eg (Burglar-B and D)

Slightly disappointing in debut March 31 when tightened too soon after start, made headway till Rock then weakened to finish 14 lengths behind Pink Jet yielding 1235m. However since then has been working the place down and as English record indicates prefers a good to firm track. Can follow again.

*Wildfire* 6br Ag (Aureo-Eastern Lyric)

Not a bad run for a mudlark June 2 when ran on strongly last 200m to finish 6th, beaten less than 2 lengths behind da Vinci firm 1000m. Can get this distance but needs all the breaks he can get and that means rain.

*King River* 4ch Ag (Hotroy (GB)-Sandpera)

Not a bad run June 2 when came from rear of the field to challenge leaders before plodding to the line 6 lengths behind Villa D'Este firm 1000m. Appears to be on the improve and may trouble some here.

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|                             |   |         |          |            |      |            |
|-----------------------------|---|---------|----------|------------|------|------------|
| 1. 0*00* Brown Mint         | 5 | GS 57   | +2       | Mansor     | (7)  | Soo        |
| 2. *90*4 Dad's Boy          | 6 | GH56.5  |          | West       | (12) | Gwilliam   |
| 3. *0*0* Eye Opener         | 6 | GH56    | d1D      | Mansor     | (1)  | Masruhen   |
| 4. 0099* Prince of All      | 7 | GH54.5  | d2D +2.5 | Rodgers    | (2)  | A.K. Cheam |
| 5. 40*** Red Hari           | 6 | GY 54.5 | d3D +4.5 | West       | (13) | D. Harris  |
| 6. *0**6 Martial Call       | 8 | GH54.5  | -1.5     | E. B'kelen | (3)  | Chiam      |
| 7. 08736 Jingle Bell III    | 4 | GS 54   | d1D +.5  | Teh        | (4)  | Compton    |
| 8. *076* Major Share        | 6 | GH53    | -4       | M. Ismail  | (10) | Heng       |
| 9. 0*87* Credit Cen. II     | 5 | GS 51.5 | -1.5     | Teh        | (11) | Yeap       |
| 10. 84055 Pingat Mas        | 9 | GY 51.5 | -1.5     | K. Noordin | (5)  | Ooi        |
| 11. *9*0 Field<br>Commander | 5 | GS 50.5 | -1.5     | Mak        | (6)  | Sng        |
| 12. 0*7*7 Star Trier        | 5 | GH48    | -1.5     | Heddle     | (9)  | Mahhat     |
| 13. ***00 Gerard            | 5 | G- 48   | -1.5     | Mansor     | (8)  | Seow       |

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Fig. 8.5. Details of the horse race in Singapore.

### Racing in Singapore

Next we examine another magnificent race track at Ipon in Singapore. Figure 8.5 includes details of the second race, laid out in the way they would appear in the Singapore papers or the track programme. The conditions here are almost identical to those found in Hong Kong, and you can interpret this information in much the same way.

### Racing in Australia

We finish with information typical of that provided at Melbourne's Randwick Racecourse, or in the local Melbourne paper. The conditions in Australia are much the same as those in the US, Hong Kong and Singapore but again only limited information is available. Here we show information on two successive races:

---

**3. - 2.05 Breeders' Plate (2) Randwick 3**  
**1000 metres (2-Y-O colts and geldings. Special weights)**  
**\$12000**  
**Inside barrier an advantage**  
**\*1st Leg ACT Treble**

1 Big Convoy 3 53 (c 2 Convamore-Prujoy tr J. Greenwood) First start. Full brother to Definate and Prunella. Trial form entitles him to some consideration.

2 Coogee Breeze 4 53 (c 2 Sorocco-Tethys tr E. Sandford) First start. Well beaten but did plug on when 2nd beaten 4.5 lengths to Starmunda in Randwick trial.

- 3 Impalo 8 53 (c 2 Dignitas-Peep Show tr A.V. McKenna) First start. Won trial and was 3rd to Show King in Canterbury trial.
- 4 Konarak 1 53 (c 2 Dignitas-Faithful Affair tr Dr. T.A. Chapman) First start. Bred to have speed and could surprise.
- 5 Lew's Dream 10 53 (g 2 Coolness-Cindy Lass tr P.J. Baizen) First start. Made up ground when 4th beaten 2.5 lengths to Regal Lad in Randwick trial. Full brother to early season winner Hot Cinders.
- 6 Monkey's Pride 2 53 (g 2 Lucky Monkey-The Actress tr R.F. Ferris) First start. Half brother to Speed Star and was a good winner of Randwick trials beating Black Zephyr by one length.
- 7 Mr Mezz 5 53 (c 2 Mezzanine-Sweet Thing tr K.J. Wallace) First start. Raced erratically when 3rd to Just A Breeze in Randwick barrier trial.
- 8 Princely Heir 13 53 (c 2 Princely Son-Triple Blue tr A.V. McKenna) First start. Trial form good with a win at Randwick and a 2nd to Mr Blanche at Canterbury. Must be included.
- 9 Red Amour 6 53 (c 2 Redesdale-Marmora tr J.D. Paton) First start. Could only finish 8th in Canterbury trial and big improvement is necessary.
- 10 Regal Cheer 12 53 (c 2 Recalled-Jazz Princess tr T.W. Jacobson) First start. Was a good second beaten a head to Show King in Canterbury trials. Consider.
- 11 Snow Vain 7 53 (c 2 Vain-Snow Valley tr A.V. McKenna) First start. Improving all the time and could surprise after good 2nd beaten 3.5 lengths at Canterbury trials.
- 12 Spear 11 53 (c 2 Vibrant-Ettine tr T.J. Smith) First start. Full brother to good sprinting mare Miss Personality and trial form good with a 5th at Randwick followed by a win at Canterbury.
- 13 Super Crest 9 53 (c 2 Gala Great-Summer Smoke tr M.G. Barnes) First start. Made up ground when 5th, beaten 5.5 lengths to Hope 'N' Joy at Canterbury trials.
- 

**4. - 2.45 Spring Champion Stakes**  
**2000 metres (Three-year-olds. Set weights)**  
**\$80500**

**Inside barrier an advantage**  
**\*2nd Leg ACT Treble \*2nd Leg WA TAB Double**

1. 212 Denbern 3 (tw) 55.5 (c 3 Minor Portion-Jambo Rose tr M.D. Sherd) 2nd R'hil Sept 16 1850m 53 L. Masters (10/1) Kapalaran 51 1 Led at turn beaten 3 lens. Must be chance again.
2. 333 Just A Steal 8 (twb) 55.5 (g 3 Steel Pulse-Just Life tr T.J. Smith) 3rd R'hil Sept 23 2000m 57.5 P. Cuddihy (13/8) Cafe 54 1 7th at turn beaten 5.5 lens. Hard to recommend with any confidence in this field.

3. 411 Cafe 10 (tw) 55.5 (c 3 Lunchtime-Endeavour Lady tr M.S. Edgar) Won R'hill Sept 23 2000m J. Duggan (4/1) Blarney Prince 49.5 2 Led all the way won by  $3\frac{3}{4}$  lens. In top form and forward showing expected here.
4. 724 Career 5 (tw) 5.5 (c 3 Showdown-Kirana tr T.J. Smith) 4th R'hill Sept 16 1850m 53 J. Duggan (13/2) Kapalaran 51 1 8th at turn beaten 7.25 lens. Will stay the distance and should be thereabouts at the finish.
5. 133 Earthquake (w) 55.5 (c 3 Diamond Joe-Die Laughing tr G.T. Murphy) 3rd M. McGoon 13 Sept 16 1600m 55 B. Andrews (16/1) Beau D'Or 48.5 1 6th at turn, beaten  $\frac{3}{4}$  len. Unlucky last start and has a chance.
6. 221 Red Nose 12 (tw) 55.5 (c 3 Reindeer-Pin tr T. Green) Won Randwick Sept 9 2000m 49.5 R. Quinton (2/1) Rodway Glen 52 2 3rd at turn, won by 3 lens. Easy winner last run but will find this a lot harder.
7. 423 Young and Rich 1 (w) 55.5 (c 3 Beaufort Sea-Pango tr T.J. Smith) 3rd R'hill Sept 16 1850m 53 P. Cuddihy (20/1) 51 1 6th at turn, beaten 4.5 lens. Must be improved by last run, his first since coming from South Australia.
8. 119 March To Glory 7 55.5 (g 3 Onoidium-Millbrae tr T.J. Smith) 9th R'hill Sept 26 1850m 53 M. Johnston (12/1) Kapalaran 51 1 7th at turn. Beaten 17.5 lens. Hard to recommend on last run.
9. 128 King's Ideal 2 (tw) 55.5 (c 3 King Apollo-Gaylee tr J.B. Cummings) 8th Randwick Sept 9 1400m 58 K. Langby (9/2) Cafe 51 19th at turn beaten 12 lens. Has the ability to surprise these.
10. 340 Ace Attack 4 (w) 55.5 (g 3 Agricola-Swiftly Joy tr T.J. Hughes) 10th R'hill Sept 16 1850m 53 G. Palmer (50/1) Kapalaran 51 1 11th at turn beaten 20 lens. Better suited in something a little easier.
11. 111 Bold as Brass 14 (w) 55.5 (c 3 Knightly Manner-St Alphage Lass tr M.H. Wiggings) Won Canterbury Sept 20 1900m 5.5 A. Marney (7/4) Pleasant Prince 55.5 1 3rd at turn won by 3.25 lens. Faces steep class rise but should give an honest account.
12. 652 Blarney Prince 9 (w) 55.5 (g 3 Alderney-Ice Temple tr J.B. Cummings) 2nd R'hill Sept 23 2000m 49 N. Voigt (4/1) Cafe 54 18th at turn, beaten  $3\frac{3}{4}$  lens. Place chances look best.
13. 427 Rodway Glen 6 (w) 55.5 (c 3 King of Babylon-Farsak tr R.W. Craig) 7th R'hill Sept 16 2400m 50 N. Smith (14/1) Play the Game 51.5 1 11th at turn beaten 9 lens. Looks safely held.
14. 111 Katalaran 1 (w) 53 (r 3 Snowdown-Better Gleam tr N.C. Begg) Won R'hill Sept 16 1850m 51 R. Quinton (8/11) Denbern 53 25th at turn won by 3 lens. Brilliant filly. Impossible to go past her.

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So much for the brief round-the-world tour! This should give you some impression of the world racing scene and the range of information available to the punter in different countries.

# Chapter Nine

## Conclusions

In this book I have tried to put across a general approach to horse race forecasting based on a scientific analysis involving logic, statistics and, because of the size of the problem, the use of the Commodore 64 computer. My intention is to forecast with greater accuracy than other means permit, though obviously no forecast can – or should! – reach the level of complete certainty.

Since the book is aimed at Commodore 64 users and racing enthusiasts, and not at statisticians, only a sample of all the statistical (in both senses!) evidence is given here. References and the brief notes in Appendix V should serve as a guide to those more familiar with statistics as such.

I have referred on several occasions to the importance of the individualisation phase. Commodore 64 users should not assume that the programs will necessarily give good results if they are used without some knowledge and understanding of horse racing. Such knowledge will certainly affect your choice of suitable races for betting; it will also allow additional factors, not covered by the program, to be considered. Staking plans, too, fall outside the scope of the basic program, but they are vital to success as I have shown. And the computer program itself is adaptive – you, as the user, must choose the particular H program that works best for you.

So far most, but by no means all of the statistical data I have gathered has come from British horse racing. A great deal of data has been collected in North America, and some in the other countries discussed in Chapter 8. It is certainly true that some of the strategies also originated in North America.

In general successful horse race forecasting, especially for handicaps, is best carried out by computer, but it may still be too blunt an instrument for the professional punter. In general, success depends on detailed knowledge of each horse's past performance, including:

- speed figures
- the conditions under which those figures were acquired, including the going
- success in the past at various distances

The other conclusions I have reached can be summarised as follows:

- There are various degrees of knowledge you can use in backing horses. Up to a point the more knowledge you have, the better.
- There is, however, a limit to the amount of information you can really use. Too much (often irrelevant) information simply makes forecasting more difficult – and there is always an element of the unpredictable (fortunately!). Make sure the information you use is *relevant*.
- The same limit applies to direct personal knowledge of horses and courses.
- You can bet with the basic information supplied in most daily newspapers, using the H2 systems or the H3C program. However, most serious punters will find a specialist newspaper vital. *The Sporting Life* and *The Raceform Handicap Book* are especially important in Britain, and with the information they give you can use programs H3A, and H3B, as well as the more sophisticated H2 procedures.
- With the advent of computers horse race forecasting can be more complete and accurate. Computers also help you to sift evidence, especially the causal relations between different aspects of a horse's performance. A computer can be used both to analyse statistical evidence and to forecast the result of a particular race.
- The most obvious criteria for judging a horse are:
  - Class
  - Form
  - Consistency
  - Speed
  - Weight carried
  - Distance of race
  - Going
  - Value and status of the race

The jockey and trainer both play a part in the outcome of the race, but the value of their contribution has never been scientifically investigated.

- Chapter 7, which outlines a very small selection of the many staking strategies that have been devised, can be summarised briefly by saying that complicated systems, in general, do not make up for bad forecasting, and may actually increase the number of difficulties and inaccuracies encountered.
- Generally it is better to go for either straight winners or each-way bets, but doubles, forecast bets and even the occasional Yankee can be worth a try.
- It is well worth looking for sequences or runs, both in horses and among your successes. The amount staked should reflect your confidence in your forecast – with care it can be used either to regain losses or to increase winnings. In either case this will involve some increase in the stake.

I should add that the principles involved in steeplechasing and hurdling are in no way different from those of flat racing, apart from the added risk of a fall. In our example at Cheltenham in Chapter 6 one of the possible

winners, Stopped, fell. As a result we will never know what he would have done, but *prone*ness to falling and other such factors should be considered in jumping races. This is one reason why professional punters tend to avoid them.

My conclusions are that horse race forecasting really is a job for your computer; this is particularly true for handicapping because it allows you to consider every horse. Forecasting sheets select only a few horses. However, even computer forecasting is sometimes too coarse-grained to meet the requirements of the professional punter. The additional refinements you will need depend upon three features central to the success of this approach:

- The use of heuristic programming techniques, i.e. the forming of hypotheses, or, at the worst, guesses. This technique is now sometimes used in the forecasting of complex systems (e.g. for NATO, international business organisations, etc.)
- The use of statistical methods of great power – and here I would emphasise correlations especially. However, the techniques known as the significance of a single mean and the difference between means, among others, also have a part to play.
- The adaptive nature of the forecasting program, which has been built on a large statistical database and is always being monitored both for changes of weighting and for the significance of its criteria. If one particular test loses its significance on analysis, it can be removed or replaced.

The combination of these precise techniques allows effective use of the H series of programs on the Commodore 64 – as I hope you will discover for yourself.

# Appendix I

## Probability Table

Converting Odds to Percentage Probability

| Real Odds | Probability | Real Odds | Probability |
|-----------|-------------|-----------|-------------|
| 1-3       | 75.000      | 4-1       | 20.000      |
| 1-2       | 66.667      | 9-2       | 18.182      |
| 4-6       | 60.000      | 5-1       | 16.667      |
| 4-5       | 55.556      | 11-2      | 15.385      |
| 5-6       | 54.545      | 6-1       | 14.286      |
| 10-11     | 52.381      | 13-2      | 13.333      |
| Evens     | 50.000      | 7-1       | 12.500      |
| 21-20     | 48.780      | 15-2      | 11.765      |
| 11-10     | 47.619      | 8-1       | 11.111      |
| 6-5       | 45.454      | 17-2      | 10.526      |
| 5-4       | 44.444      | 9-1       | 10.000      |
| 11-8      | 42.105      | 10-1      | 9.091       |
| 6-4       | 40.000      | 11-1      | 8.333       |
| 13-8      | 38.095      | 12-1      | 7.692       |
| 7-4       | 36.364      | 13-1      | 7.143       |
| 15-8      | 34.783      | 14-1      | 6.667       |
| 2-1       | 33.333      | 15-1      | 6.250       |
| 35-40     | 32.00       | 16-1      | 5.882       |
| 9-4       | 30.769      | 18-1      | 5.263       |
| 95-40     | 29.630      | 20-1      | 4.762       |
| 5-2       | 28.571      | 22-1      | 4.348       |
| 11-4      | 26.667      | 25-1      | 3.846       |
| 3-1       | 25.000      | 28-1      | 3.448       |
| 7-2       | 22.222      | 33-1      | 2.941       |

# Appendix II

## Weight for Age Allowances

Allowance, assessed in pounds, which 3 yrs old will receive from 4 yrs old, and 2 yrs old will receive from 3 yrs old

|             |   | March<br>April  |    | May |    | June |    | July |    | Aug |    | Sept |    | Oct |    | Nov | — |
|-------------|---|---|----|-----|----|------|----|------|----|-----|----|------|----|-----|----|-----|---|
|             |   | Mar &<br>1-15 16-30 1-15 16-31 1-15 16-30 1-15 16-31 1-15 16-31 1-15 16-30 1-15 16-31 |    |     |    |      |    |      |    |     |    |      |    |     |    |     |   |
| 5 furlongs  | 2 | 32  | 31 | 29  | 27 | 26   | 25 | 25   | 23 | 21  | 20 | 19   | 18 | 17  | 16 | 15  |   |
|             | 3 | 13  | 12 | 11  | 10 | 9    | 8  | 7    | 6  | 5   | 4  | 3    | 2  | 1   | —  | —   |   |
| 6 furlongs  | 2 | —   | —  | 30  | 29 | 29   | 28 | 27   | 26 | 26  | 24 | 22   | 21 | 21  | 20 | 18  |   |
|             | 3 | 15  | 14 | 13  | 12 | 11   | 10 | 9    | 8  | 7   | 6  | 5    | 4  | 3   | 2  | 1   |   |
| 7 furlongs  | 2 | —   | —  | —   | —  | —    | —  | —    | —  | —   | —  | 24   | 23 | 23  | 22 | 21  |   |
|             | 3 | 16  | 15 | 14  | 13 | 12   | 11 | 10   | 9  | 8   | 7  | 6    | 5  | 4   | 3  | 2   |   |
| 1 mile      | 2 | —   | —  | —   | —  | —    | —  | —    | —  | —   | —  | 27   | 27 | 26  | 25 | 24  |   |
|             | 3 | 18  | 17 | 16  | 15 | 14   | 13 | 12   | 11 | 10  | 9  | 8    | 7  | 6   | 5  | 4   |   |
| 9 furlongs  | 3 | 18  | 17 | 16  | 15 | 14   | 13 | 12   | 11 | 10  | 9  | 8    | 7  | 6   | 5  | 4   |   |
| 1¼ miles    | 3 | 19  | 18 | 17  | 16 | 15   | 14 | 13   | 12 | 11  | 10 | 9    | 8  | 7   | 6  | 5   |   |
| 11 furlongs | 3 | 20  | 19 | 18  | 17 | 16   | 15 | 14   | 13 | 12  | 11 | 10   | 9  | 8   | 7  | 6   |   |
| 1½ miles    | 3 | 20  | 19 | 18  | 17 | 16   | 15 | 14   | 13 | 12  | 11 | 10   | 9  | 8   | 7  | 6   |   |
| 13 furlongs | 3 | 21  | 20 | 19  | 18 | 17   | 16 | 15   | 14 | 13  | 12 | 11   | 10 | 9   | 8  | 7   |   |
| 1¾ miles    | 3 | 21  | 20 | 19  | 18 | 17   | 16 | 15   | 14 | 13  | 12 | 11   | 10 | 9   | 8  | 7   |   |
| 15 furlongs | 3 | 22  | 21 | 20  | 19 | 18   | 17 | 16   | 15 | 14  | 13 | 12   | 11 | 10  | 9  | 8   |   |
| 2 miles     | 3 | 22  | 21 | 20  | 19 | 18   | 17 | 16   | 15 | 14  | 13 | 12   | 11 | 10  | 9  | 8   |   |
| 1½ miles    | 3 | 23  | 22 | 21  | 20 | 19   | 18 | 17   | 16 | 15  | 14 | 13   | 12 | 11  | 10 | 9   |   |
| 2½ miles    | 3 | 25  | 24 | 23  | 22 | 21   | 20 | 19   | 18 | 17  | 16 | 15   | 14 | 13  | 12 | 11  |   |

Appendix III

# Age, Weight and Distance Table

For use with time figures

| <i>Distance</i> | <i>Age</i> | <i>Mar</i> | <i>Apr</i> | <i>May</i> | <i>June</i> | <i>July</i> | <i>Aug</i> | <i>Sept</i> | <i>Oct</i> | <i>Nov</i> |
|-----------------|------------|------------|------------|------------|-------------|-------------|------------|-------------|------------|------------|
| 5 furlongs      | 4          | 10-0       | 10- 0      | 10- 0      | 10- 0       | 10- 0       | 10- 0      | 10- 0       | 10- 0      | 10- 0      |
|                 | 3          | 9- 0       | 9- 2       | 9- 4       | 9- 6        | 9- 8        | 9-10       | 9-11        | 9-12       | 9-12       |
|                 | 2          | 6- 8       | 6-13       | 7- 3       | 7- 7        | 7-11        | 8- 1       | 8- 5        | 8- 8       | 8-11       |
| 6 furlongs      | 4          | 9-13       | 10- 0      | 10- 0      | 10- 0       | 10- 0       | 10- 0      | 10- 0       | 10- 0      | 10- 0      |
|                 | 3          | 8-11       | 9- 0       | 9- 2       | 9- 4        | 9- 6        | 9- 8       | 9-10        | 9-11       | 9-12       |
|                 | 2          |            |            | 6-13       | 7- 3        | 7- 7        | 7-11       | 8- 1        | 8- 5       | 8- 8       |
| 7 furlongs      | 4          | 9-12       | 9-13       | 10- 0      | 10- 0       | 10- 0       | 10- 0      | 10- 0       | 10- 0      | 10- 0      |
|                 | 3          | 8- 8       | 8-11       | 9- 0       | 9- 2        | 9- 4        | 9- 6       | 9- 8        | 9-10       | 9-11       |
|                 | 2          |            |            |            |             | 7- 4        | 7- 8       | 7-12        | 8- 2       | 8- 5       |
| 1 mile          | 4          | 9-11       | 9-12       | 9-13       | 10- 0       | 10- 0       | 10- 0      | 10- 0       | 10- 0      | 10- 0      |
|                 | 3          | 8- 6       | 8- 9       | 8-12       | 9- 1        | 9- 3        | 9- 5       | 9- 7        | 9- 9       | 9-10       |
|                 | 2          |            |            |            |             |             |            | 7- 9        | 7-13       | 8- 2       |
| 9 furlongs      | 4          | 9-11       | 9-12       | 9-13       | 9-13        | 10- 0       | 10- 0      | 10- 0       | 10- 0      | 10- 0      |
|                 | 3          | 8- 4       | 8- 7       | 8-10       | 8-13        | 9- 2        | 9- 4       | 9- 6        | 9- 8       | 9- 9       |
| 1¼ miles        | 4          | 9-10       | 9-11       | 9-12       | 9-13        | 10- 0       | 10- 0      | 10- 0       | 10- 0      | 10- 0      |
|                 | 3          | 8- 2       | 8- 5       | 8- 8       | 8-11        | 9- 0        | 9- 3       | 9- 5        | 9- 7       | 9- 8       |
| 11 furlongs     | 4          | 9- 9       | 9-11       | 9-12       | 9-13        | 9-13        | 10- 0      | 10- 0       | 10- 0      | 10- 0      |
|                 | 3          | 8- 0       | 8- 4       | 8- 7       | 8-10        | 8-13        | 9- 2       | 9- 4        | 9- 6       | 9- 7       |
| 1½ miles        | 4          | 9- 9       | 9-10       | 9-11       | 9-12        | 9-13        | 10- 0      | 10- 0       | 10- 0      | 10- 0      |
|                 | 3          | 7-12       | 8- 2       | 8- 5       | 8- 8        | 8-11        | 9- 0       | 9- 3        | 9- 5       | 9- 7       |
| 13 furlongs     | 4          | 9- 8       | 9-10       | 9-11       | 9-12        | 9-13        | 9-13       | 10- 0       | 10- 0      | 10- 0      |
|                 | 3          | 7-11       | 8- 1       | 8- 4       | 8- 7        | 8-10        | 8-13       | 9- 2        | 9- 4       | 9- 6       |
| 1¾ miles        | 4          | 9- 7       | 9- 9       | 9-10       | 9-12        | 9-13        | 9-13       | 10- 0       | 10- 0      | 10- 0      |
|                 | 3          | 7- 9       | 7-13       | 8- 3       | 8- 6        | 8- 9        | 8-12       | 9- 1        | 9- 3       | 9- 5       |
| 15 furlongs     | 4          | 9- 6       | 9- 8       | 9-10       | 9-11        | 9-12        | 9-13       | 10- 0       | 10- 0      | 10- 0      |
|                 | 3          | 7- 8       | 7-12       | 8- 2       | 8- 5        | 8- 8        | 8-11       | 9- 0        | 9- 2       | 9- 4       |
| 2 miles         | 4          | 9- 6       | 9- 8       | 9-10       | 9-11        | 9-12        | 9-13       | 10- 0       | 10- 0      | 10- 0      |
|                 | 3          | 7- 7       | 7-11       | 8- 1       | 8- 5        | 8- 8        | 8-11       | 9- 0        | 9- 2       | 9- 4       |
| 2¼ miles        | 4          | 9- 6       | 9- 8       | 9- 9       | 9-11        | 9-12        | 9-13       | 9-13        | 10- 0      | 10- 0      |
|                 | 3          | 7- 6       | 7-10       | 8- 0       | 8- 4        | 8- 7        | 8-10       | 8-13        | 9- 1       | 9- 3       |
| 2½ miles        | 4          | 9- 5       | 9- 7       | 9- 9       | 9-10        | 9-11        | 9-12       | 9-13        | 10- 0      | 10- 0      |
|                 | 3          | 7- 5       | 7- 9       | 7-13       | 8- 3        | 8- 6        | 8- 9       | 8-12        | 9- 1       | 9- 3       |

For 5 year olds and older use 10-0 in all cases.

# Appendix IV

## Scale of Weight for Age for Steeplechases and Hurdle Races

| Age   | Jan<br>st lb | Feb<br>st lb | March<br>st lb | April<br>st lb | May<br>st lb | June<br>st lb | July<br>st lb | Aug<br>st lb | Sept<br>st lb | Oct<br>st lb | Nov<br>st lb | Dec<br>st lb | Distance |
|-------|--------------|--------------|----------------|----------------|--------------|---------------|---------------|--------------|---------------|--------------|--------------|--------------|----------|
| 4 yrs |              |              |                |                |              |               | 11- 2         | 11- 2        | 11- 3         | 11- 4        | 11- 5        | 11- 6        | 2 miles  |
| 5 yrs | 11- 7        | 11- 8        | 11- 9          | 11-10          | 11-11        | 11-11         | 12- 0         | 12- 0        | 12- 1         | 12- 2        | 12- 3        | 12- 3        |          |
| 6 yrs | 12- 3        | 12- 3        | 12- 3          | 12- 3          | 12- 3        | 12- 3         | 12- 3         | 12- 3        | 12- 3         | 12- 3        | 12- 3        | 12- 3        |          |
| 4 yrs |              |              |                |                |              |               | 11- 1         | 11- 1        | 11- 2         | 11- 3        | 11- 4        | 11- 5        | 2½ miles |
| 5 yrs | 11-6         | 11- 7        | 11- 8          | 11- 9          | 11-10        | 11-10         | 11-13         | 11-13        | 12- 0         | 12- 1        | 12- 2        | 12- 3        |          |
| 6 yrs | 12- 3        | 12- 3        | 12- 3          | 12- 3          | 12- 3        | 12- -3        | 12- 3         | 12- 3        | 12- 3         | 12- 3        | 12- 3        | 12- 3        |          |
| 4 yrs |              |              |                |                |              |               | 11- 0         | 11- 0        | 11- 1         | 11- 2        | 11- 3        | 11- 4        | 3 miles  |
| 5 yrs | 11- 5        | 11- 6        | 11- 7          | 11- 8          | 11- 9        | 11- 9         | 11-12         | 11-12        | 11-13         | 12- 0        | 12- 1        | 12- 2        |          |
| 6 yrs | 12- 3        | 12- 3        | 12- 3          | 12- 3          | 12- 3        | 12- -3        | 12- 3         | 12- 3        | 12- 3         | 12- 3        | 12- 3        | 12- 3        |          |
| 3 yrs |              |              |                |                |              |               | 10- 7         | 10- 7        | 10- 8         | 10- 9        | 10-10        | 10-12        | 2 miles  |
| 4 yrs | 11- 0        | 11- 2        | 11- 4          | 11- 6          | 11- 7        | 11- 7         | 11-10         | 11-10        | 11-11         | 11-12        | 11-13        | 12- 0        |          |
| 5 yrs | 12- 1        | 12- 2        | 12- 3          | 12- 3          | 12- 3        | 12- 3         | 12- 3         | 12- 3        | 12- 3         | 12- 3        | 12- 3        | 12- 3        |          |
| 6 yrs | 12- 3        | 12- 3        | 12- 3          | 12- 3          | 12- 3        | 12- -3        | 12- 3         | 12- 3        | 12- 3         | 12- 3        | 12- 3        | 12- 3        |          |
| 3 yrs |              |              |                |                |              |               | 10- 6         | 10- 6        | 10- 7         | 10- 8        | 10- 9        | 10-11        | 2½ miles |
| 4 yrs | 10-13        | 11- 1        | 11- 3          | 11- 5          | 11- 6        | 11- 6         | 11- 9         | 11- 9        | 11-10         | 11-11        | 11-12        | 11-13        |          |
| 5 yrs | 12- 0        | 12- 1        | 12- 2          | 12- 3          | 12- 3        | 12- -3        | 12- 3         | 12- 3        | 12- 3         | 12- 3        | 12- 3        | 12- 3        |          |
| 6 yrs | 12- 3        | 12- 3        | 12- 3          | 12- 3          | 12- 3        | 12- -3        | 12- 3         | 12- 3        | 12- 3         | 12- 3        | 12- 3        | 12- 3        |          |
| 3 yrs |              |              |                |                |              |               | 10- 5         | 10- 5        | 10- 6         | 10- 7        | 10- 8        | 10-10        | 3 miles  |
| 4 yrs | 10-12        | 11- 0        | 11- 2          | 11- 4          | 11- 5        | 11- 5         | 11- 8         | 11- 8        | 11- 9         | 11-10        | 11-11        | 11-12        |          |
| 5 yrs | 11-13        | 12- 0        | 12- 1          | 12- 2          | 12- 3        | 12- -3        | 12- 3         | 12- 3        | 12- 3         | 12- 3        | 12- 3        | 12- 3        |          |
| 6 yrs | 12- 3        | 12- 3        | 12- 3          | 12- 3          | 12- 3        | 12- -3        | 12- 3         | 12- 3        | 12- 3         | 12- 3        | 12- 3        | 12- 3        |          |

## Appendix V

# Statistical Matters

A detailed knowledge of statistics is useful, but not vital, to understanding parts of this book. If you would like to extend your knowledge, the following list covers the methods mentioned in the text:

| Method  | Purpose  |
|---|--|
| Average (median, mode, arithmetic mean)                 | A guide to the typical member of a group, e.g. the average height of a racehorse.  |
| Standard deviation                                      | A measure of the <i>average</i> spread of values in a distribution, e.g. the range of heights of horses.   |
| Significance of a single mean                           | A method of deciding whether, for example, a set of horses is improving under special training conditions.   |
| Difference between means                                | Similar to significance of a single mean, but this method decides whether two sets of horses are different from each other as a result of some characteristic such as different methods of training. |
| Correlation   | A test for similarity of some sort between e.g. two breeds of horse.   |
| Chi-squared (also $2 \times 2$ , $2 \times n$ , tables) | Similar to correlation, but simply measures the number of things in a class, e.g. all horses more than 5 years old.  |

Nothing more than simple arithmetic is required to use any of these tests, although most require probability tables that will only be found in suitable textbooks (see Appendix VIII).

**Fisher and Yates**  
Table for t values for  $P = 0.05$

| <i>n</i> | <i>t</i> |
|----------|----------|
| 1        | 12.76    |
| 2        | 4.303    |
| 3        | 3.182    |
| 4        | 2.776    |
| 5        | 2.571    |
| 6        | 2.447    |
| 7        | 2.365    |
| 8        | 2.306    |
| 9        | 2.263    |
| 10       | 2.228    |
| 11       | 2.201    |
| 12       | 2.179    |
| 13       | 2.160    |
| 14       | 2.145    |
| 15       | 2.131    |
| 16       | 2.120    |
| 17       | 2.110    |
| 18       | 2.101    |
| 19       | 2.093    |
| 20       | 2.086    |
| 21       | 2.080    |
| 22       | 2.074    |
| 23       | 2.069    |
| 24       | 2.064    |
| 25       | 2.060    |
| 26       | 2.056    |
| 27       | 2.052    |
| 28       | 2.048    |
| 29       | 2.045    |
| 30       | 2.042    |

# Appendix VI

## Miscellaneous Information

This appendix provides a selection of useful information for the punter, or anyone else interested in National Hunt or flat racing. Much of it can be found elsewhere, but not always easily!

### **Grouping of racecourses**

In the past all Britain's racecourses were graded into groups, based on the prize money each course offered. These groups are no longer used officially, but they still provide a useful guide to the standard of races held on each course.

#### *Group I (Flat)*

Ascot, Ayr, Doncaster, Epsom, Goodwood, Haydock Park, Kempton Park, Newbury, Newcastle, Newmarket, Sandown Park, York.

#### *Group II (Flat)*

Brighton, Chester, Lingfield Park, Redcar, Ripon, Salisbury, Thirsk.

#### *Group III (Flat)*

Bath, Beverley, Chepstow, Hamilton Park, Leicester, Liverpool, Nottingham, Pontefract, Windsor, Yarmouth.

#### *Group IV (Flat)*

Carlisle, Catterick, Edinburgh, Folkestone, Lanark, Teeside, Warwick, Wolverhampton.

#### *Group I (Jumping)*

Ascot, Ayr, Cheltenham, Doncaster, Haydock Park, Kempton Park, Liverpool, Newbury, Newcastle, Sandown Park.

#### *Group II (Jumping)*

Chepstow, Fontwell Park, Lingfield Park, Newton Abbot, Wetherby.

#### *Group III (Jumping)*

Catterick, Folkestone, Huntingdon, Leicester, Market Rasen, Nottingham, Plumpton, Stratford, Uttoxeter, Warwick, Wincanton, Windsor, Wolverhampton, Worcester.

*Group IV (Jumping)*

Bangor-on-Dee, Carlisle, Cartmel, Devon and Exeter, Fakenham, Hereford, Hexham, Kelso, Ludlow, Perth, Sedgefield, Southwell, Taunton, Teeside, Towcester.

**Flat courses**

Since the majority of flat courses also provide for jumping, I include a complete list with a brief description of each course.

*Ascot*

Right-handed undulating 1m 6f round course with a stiff 2.5f straight.

*Ayr*

Left-handed 1.5m oval course. Flat with gentle undulations.

*Bangor-on-Dee*

Left-handed 1.5m nearly round course. The ground is reasonably flat.

*Bath*

An oval left-handed 1.5m course with a sharp final bend and a 3.5f straight.

*Beverley*

Right-handed 1m 3f oval course with a 2.5f straight rising to the winning post.

*Brighton*

Left-handed 1.5m horseshoe course. Sharp downhill for final 5f. Last 100 yds a steep rise.

*Carlisle*

Right-handed 1m 5f undulating oval course. Straight 6f.

*Cartmel*

Left-handed 1m round flat course.

*Catterick*

Left-handed 9f oval course with sharp downhill turn into 3f straight.

*Cheltenham*

Left-handed galloping undulating 1.5m oval course with stiff uphill finish.

*Chepstow*

Left-handed 2m galloping undulating course with straight mile downhill until joining round course 5f out.

*Chester*

Very tight left-handed flat 1m and 73 yds circular course.

*Devon and Exeter*

Undulating right-handed 2m course.

*Doncaster*

Left-handed cone-shaped galloping course of 1m and 7.5f straight course.

*Edinburgh*

Right-handed 1.25m oval course with 4f run-in.

*Epsom*

Left-handed 1.5m horseshoe-shaped course undulating with a rise to the winning post.

*Fakenham*

Left-handed 1.5m undulating course with 250 yds run-in from final fence.

*Folkestone*

Right-handed 1m 3f undulating course with straight 6f joining round course.

*Fontwell Park*

Hurdle course left-handed 1m round. Steeplechase course figure-of-eight.

*Goodwood*

Straight 6f course with a right-hand loop for all races from 7f to 2m.

*Hamilton Park*

Left-handed flat 1m 5f oval course. Straight 5f course.

*Hereford*

Left-handed 1.5m course with 300 yd run-in from final fence.

*Hexham*

Left-handed undulating round 1.5m course with 250 yd run-in from final fence.

*Huntingdon*

Flat right-handed oval 1.5m course.

*Kelso*

Left-handed 1m 2f course.

*Kempton Park*

Right-handed 1.75m flat triangular course with separate 5f and 6f courses.

*Leicester*

Right-handed undulating 1.75m oval course. Straight mile.

*Lingfield*

Easy undulating left-handed 1.25m round course joined by straight 7f course to give a 4f straight.

*Liverpool*

Two left-handed courses; one triangular 2m 2f and the other 1m 2f oval. The Grand National course is 4m 856 yds with 30 fences.

*Ludlow*

Right-handed oval 1.5m fairly flat course with a 400 yd run-in from final fence.

*Market Rasen*

1.25m slightly undulating oval course.

*Newbury*

Left-handed 1m 7f oval undulating galloping course with straight mile joining round course to give 4.5f straight.

*Newcastle*

Left-handed oval 1.75m course. Straight 1m course rising for the last 4f.

*Newmarket*

Two courses. The Rowley Mile incorporates the 1.75m straight course and the 2.25m Cesarewitch course.

*Newton Abbot*

Left-handed 1m oval course with 300 yd run-in from last fence.

*Nottingham*

Left-handed 1.5m galloping course with 4.5f straight. Straight 6f course.

*Perth*

Left-handed 1.5m course.

*Pontefract*

Undulating left-handed pear-shaped 2m course with an uphill finish.

*Redcar*

Left-handed oval course of 2m. Flat straight mile joins round course to give a 5f straight.

*Ripon*

Right-handed 1m 5f slightly undulating oval course with 5f straight.

*Salisbury*

Right-handed 1m 6f loop course with uphill gradient for last 5f.

*Sandown Park*

Right-handed oval 13f course with easy turns and stiff uphill climb to winning post. Separate 5f course slightly uphill all the way.

*Sedgefield*

Left-handed flat 1m 2f round course.

*Stratford-on-Avon*

Triangular left-handed 1.25m fairly flat course.

*Taunton*

1.25m right-handed flat oval course.

*Teeside Park*

Left-handed 1.75m flat oblong course.

*Thirsk*

Left-handed flat oval 1.25m course with 4f straight. Straight 6f.

*Towcester*

Right-handed 1.5m course with steady climb over last 6f.

*Uttoxeter*

Left-handed 1.25m oval course with slight undulations.

*Warwick*

Left-handed 1.75m round course. 5f course set at an angle to join round course to give a 3f straight.

*Wetherby*

Left-handed 1.5m course with gradual rise to finish.

*Wincanton*

Right-handed 1m 3f oval course with 200 yd run-in from final fence.

*Windsor*

Flat 1.5m figure-of-eight course. Straight 6f course. Races on 1m 70 yds and 1.25m right-hand bends only.

*Wolverhampton*

Flat pear-shaped 1m 5f course with easy left-hand turns and a 5f straight. Straight 6f course.

*Worcester*

Flat left-handed 1m 5f course with 4f straight.

*Yarmouth*

Left-handed 1m 5f course. Straight mile joins course to give a 5f straight.

*York*

Flat 2m course with well-graded left-hand bends and a 5f straight.

## Location of British racecourses

The map in Fig. A6.1 shows the location of British racecourses. They are also listed in *The Raceform Handicap Book* with a full list of trainers. You should refer to this list so you can see at a glance how far a horse has had to travel to its race. National Hunt and flat racing speed figures for hurdles and chases can also be found in the *Raceform Handicap Book*. For racing facts I would also recommend the *National Hunt Annual*; the first few pages also explain how to read *Raceform Up-to-Date*.



Fig. A6.1. Location of British racecourses.

## Appendix VII

# Glossary of Racing Terms

*Accumulator.* A compound bet covering two or more speculations, e.g. a double or a treble.

*Age.* Irrespective of their actual date of birth, all horses have their birthdays on 1 January. Until that date in the following year they are foals – afterwards, till the next January, yearlings.

*Ante-post odds.* Quotations offered in advance of the day of a particular race. Bets so placed are lost if your horse is a non-starter.

*Apprentice.* Any lad who has bound himself to be a licensed trainer with a view to becoming a jockey. Depending on the number of winners they have ridden, all apprentices can claim an allowance (3, 5, or 7 lb) against senior jockeys except in the more valuable weight for age races.

*Bar.* A term used in connection with bookmakers' prices. '6-1 bar' means that you can obtain odds of at least 6-1 on any horse *bar* the first two in the betting. '10-1 bar three' means at least 10-1 on any horse *bar* the first three in the betting.

*Basic line.* An arrangement of betting forecasts conforming to a standard distributional pattern.

*Blaze.* The area of white hair over a horse's face. A patch of white on the forehead is known as a star.

*Blinkers.* A cloth hood with stiffened shields at each side for the eyes. It fits over the horse's head and prevents his gaze from straying to either side.

*Blower.* A service provided for bookmakers informing them of the state of the on-course betting market, and enabling them to invest any surplus money with the course bookmakers when their liabilities for certain horses become too heavy.

*Blue bet.* A bet which is not genuine, made as a bait to catch mug punters.

*Board price.* The price offered against each horse on the bookmaker's board, or on the display area in betting shops etc. 'Taking the board price' means accepting the last price shown against your selection at the time you strike the bet.

*Bridle, won on the.* Won easily without being pushed out.

*Bumpers race.* A race confined to amateur riders and designed to give purpose-bred steeplechasers/hurdlers an introduction to racing.

*Canadian.* A multiple bet on five horses, making up ten doubles, ten trebles, five four-horse accumulators, and one five-horse accumulator – 26 bets in all.

*Chalk jockey.* Racecourses have the names of all the better-known jockeys painted on boards, ready for the number frames. When a rider is not in stock his name has to be chalked up on a number board, hence the name.

*Classic.* There are five English classics: the One Thousand and Two Thousand Guineas (each run over a mile at Newmarket in the spring), the Derby and Oaks (run at Epsom in early June over a mile and a half), and the St Leger (run at Doncaster over a mile and three-quarters in September). They are all for three-year olds only, and are designed to test the best of any generation at level weights (apart from the sex allowance) over distances. Fillies can enter all five classics, but colts are barred from the One Thousand Guineas and the Oaks. Only a filly can win all five classics, a feat yet to be achieved, though Formosa (in 1868) and Sceptre (in 1902) managed to win four. In both cases the missing link was the Derby. Fifteen colts have won the triple crown (Two Thousand Guineas, Derby and St Leger), the most recent being Nijinsky in 1970.

*Collateral form.* When two horses, A and B, have run on separate occasions against a third horse, C, the form of A and B by direct comparison with their separate performances against C is known as collateral form.

*Colt.* An entire male horse (one which has not been gelded) not less than two years old and no more than four.

*Combinations.* The number of different smaller sets of articles that can be created out of a larger set of articles.

*Commission agent.* A bookmaker who passes on the bets he collects from his clients to another bookmaker, while he himself relies on the commission paid for the business.

*Corner horse.* A horse holding its position in the market whose price is many points shorter than that shown in the betting forecasts (e.g. average suggested price 100-8, actual price firm at 9-2). Should not be freely tipped by the racing correspondents.

*Daily Tote double.* A pool comprising the third and fifth races on the card. Tickets are £1 each.

*Daily Tote treble.* A pool comprising the second, fourth and sixth races on the card. Tickets are 50p each.

*Dead-heat.* When the judge cannot split horses that have crossed the line together he declares a dead-heat. In such cases the prize money is divided between the winning owners. The banker receives full odds to half his stake money while the other half is lost.

*Distance.* That point 240 yds from the winning post. When declaring the distances between horses at the finish, a judge will generally call distances in excess of 30 lengths a 'distance' (cf. stretch call in the US).

*Double.* A multiple bet. In a win double, both horses must finish first for the double to succeed. In an each-way or place double both horses must be placed to draw the place double dividend.

*Draw.* In flat races a random draw is held to ascertain from which stall the horses will start. The draw can be of great consequence on certain courses in shorter races, especially when the field is large. It does not occur in National Hunt racing.

*Drifted.* When the price of any horse lengthens, e.g. from 3-1 to 10-1, that horse is said to have drifted in the market.

*Dual forecast.* The forecast that two named horses will gain the first two places in a race, without specifying the order in which they will finish.

*Each-way.* A horse backed each-way is backed for both a win and a place (second, third, and fourth depending on the number of runners). Place odds are generally one-fifth of the starting price.

*Easy courses.* Those courses favouring horses who are compact and whose strong point is speed rather than stamina. The long-striding animal with good stamina will generally be unsuited to the twists and turns of such courses, and therefore at a disadvantage. Good examples are Chester, Lingfield and Epsom.

*Equitable.* Fair for all concerned.

*Filly.* A female horse not less than 2 years old and not more than 4.

*Flutter.* A mild gamble for small stakes.

*Foal.* A horse of either sex in its first year – often the prefix ‘filly’ or ‘colt’ is added to differentiate the sex of the animal.

*Forecast.* Nominating not only the winner but the second as well. A straight forecast is first and second in the correct order.

*Form book.* A book recording the result of every race under Jockey Club (or National Hunt) Rules, showing the details of the weight carried by each horse, the jockey riding, the draw, the distance between the first six horses, the winner’s time, the starting prices and comments on the running.

*Free handicap.* A handicap compiled at the end of each season by the official handicapper, listing horses in order of merit with respect to differences in allotted weight, judged on their overall form in the previous season.

*Furlong.* One-eighth of a mile or 220 yds.

*Gelding.* A horse that has been castrated.

*Get the trip.* Stay the distance.

*Going.* The state of the turf over which the horses race. Going may vary from hard to firm, good to firm, good, good to soft, yielding, soft, and heavy.

*Good money.* Money from an informed quarter, e.g. stable money. Not mug money.

*Grand.* Term used for £1000.

*Green.* A horse is said to have ‘run green’ when its running shows marked signs of inexperience, e.g. looking around when hitting the front.

*Hand.* A hand is equivalent to 4 inches, and horses are measured from ground level to their withers (the highest part of the back of the horse, behind the neck and between the shoulders).

- Handicap.** A race in which weights to be carried by the horses are adjusted by the official handicapper to 'equalise' their chances of winning. The result, in theory, should be a dead-heat between all the horses competing!
- Hard courses.** Courses that demand a lot of effort from the horse, where the need is for stamina rather than speed. Good examples are Newmarket, Sandown and Doncaster.
- Hedging.** Bookmakers often lay off excess money on a particular horse so that their liability if it wins will be decreased. This is known as hedging.
- Jackpot.** The Tote jackpot comprises the second to sixth races inclusive. All five winners must be nominated. Tickets are 50p each.
- Key races.** Races which, because of their quality or the exceptional time in which they were run, are likely to act as an important guide in future contests.
- Knock out.** Coup involving a manipulation of the odds at the course to achieve a generous starting price for the favourite.
- Lady.** A five-pound note, derived from the Cockney rhyming slang 'Lady Godiva' (fiver).
- Lay.** A bookmaker's offer quoting the price at which he wishes to trade, e.g. 'I'll lay 6-4 this favourite'.
- Levy.** Statutory imposition on bookmakers to provide funds for improvements to and the administration of racecourses.
- Maiden.** A horse of either sex that has never won a race.
- Mark your card.** Make selections for each race.
- Market.** A market is created, according to demand, by the prices offered for each runner by bookmakers at the course.
- Martingale.** A system of increasing stakes to ensure an eventual profit once a winning coup materialises.
- Monkey.** Term used for £500.
- Mutuel.** American name for a totalisator (*parimutuel*) is the French equivalent).
- Nap.** The main selection.
- No offers.** A certain horse having no quotation – the bookmakers are not betting on it for the moment.
- Nursery.** A handicap for two-year olds. No nursery can be run before July 1, as two-year olds' form is difficult to assess early in the season.
- Off (Is it off?).** Is the animal in question going to run to the best of its ability?
- On the nose.** Describes a bet made to win only.
- Outside stable.** A stable other than the one by which the jockey is retained or employed, or for which he normally rides.
- Over-broke.** Descriptive of an odds list which gives the punters an edge.
- Overround.** The percentage of total stakes which the bookmakers will net as profit.
- Over the top.** Beyond its best.
- Parimutuel.** French totalisator (see *Mutuel*).
- Partie.** A French series of coups.

*Patent.* A multiple bet composed of seven bets: three selections in three singles, three doubles and a treble. It can be win or each-way.

*Penalised horses.* Horses that have incurred a weight penalty as a result of previous success.

*Percentage.* (a) A proportionate part (of 100). (b) An advantage for a gaming organiser, usually a fraction of 100, e.g.  $\frac{30}{100}$  equals 30%.

*Permutation* (colloq. *perm*). (a) A pools or other betting system giving multi-chances. (b) Mathematical term given to the arrangement of a set of articles in every possible combination.

*Pigeon catcher.* Exceedingly fast.

*Place bet.* In America, a bet that a horse will come first or second. In England and most other countries, a bet that it will come in the first three, or sometimes the first four.

*Place-pot.* Similar rules to the jackpot, but your selections need only be placed.

*Plater.* A moderate horse whose best form has been shown in the lowest type of race, i.e. 'selling plates' (see also *Selling race*).

*Pony.* Term used for £25.

*Post.* Although the old starting post has long since been replaced by the starting gate or stalls, racing people still talk about horses 'going to the post'. The term survives in 'ante-post' (literally 'before the post') and, of course, races still finish at the winning post.

*Pulled.* Prevented from winning, or at least from obtaining a better placing, by the jockey.

*Punter.* One who 'bucks the odds' by playing an inequitable game, or making a bet with a professional.

*Put.* The option to sell at a future date at an agreed price less than that ruling at present but higher than that which then prevails.

*Pyramid.* A gambling operation in which holdings are increased as paper profits ensue.

*Rails.* The dividing barrier between Members' and Tattersall's enclosures, where the big bookmaking firms are represented.

*Retainer.* A contract made between a trainer or an owner and a jockey for first call on the latter's services. This frequently involves a large amount of money, half of which is paid in advance and the other half at the termination of the agreement.

*Ride work.* Exercise horses on their home training ground/gallops.

*Ring.* The bookmakers – collectively – in one of the enclosures.

*Score.* Term for £20.

*Selling race.* The lowest class of race where the winner is offered up for auction at either the advertised value of the race or £1000, whichever is the lower. Other horses running in the race may also be claimed by prospective purchasers. Such races are often used by owners to get rid of unwanted animals, and by trainers wishing to bring off a nice gamble.

*Short runner.* A horse who does not quite make five furlongs, even on an easy course. Such horses are notoriously difficult to place, and by necessity must be ridden from the front in the hope that by the time they start coming back to their field they will have opened up a big enough gap to clinch the race, even if they are slowing almost to a standstill..

*Show bet.* A bet in American horse racing that a horse will come in the first three.

*Silver ring.* An enclosure cheaper than Tattersall's and usually sited next to it.

*Snowball.* Unwon stakes carried forward in a kitty for subsequent distribution.

*Speed figures (SFs).* Best speeds achieved by horses under stated conditions.

*Springer.* A horse that is backed down from long odds until it holds a prominent place at the head of the betting market.

*Stable's betting pattern.* The method usually adopted by connections when placing the stable money.

*Stake.* An amount placed by way of a bet.

*Starting price (SP).* The price prevailing for the various horses in a race when the 'off' is announced. The official starting prices are returned by special representatives employed by *The Sporting Life* and *Race-form* whose integrity in such matters is unquestioned. They work independently in Tattersall's ring during the betting transaction period before each race, and compare after the 'off' before the SP is returned. If they agree on a particular animal all is well; if they disagree they generally compromise, hence the return of prices such as 85-40 when one has recorded 2-1 and the other 9-4.

*Sticks.* Jumps (hurdles or fences) as opposed to the flat.

*Super Canadian Patent.* A set of five patents making up 76 bets.

*Super Patent.* A patent for four horses (or four patents) making up 29 bets.

*Suspect form.* Form which may not be as sound as it looks on paper, e.g. a race run in very slow time, or one in which the main contenders were slowed by the ground.

*Tattersall's.* The enclosure next in stature to Members'. Those choosing this enclosure have access to the main betting area (the Ring) and the paddock.

*Tic tacs.* Persons employed by bookmakers on the course. By signalling, they inform their employers of all fluctuations in the Ring. This enables bookmakers in the smaller enclosures to adjust their prices accordingly, and results in stabilisation of prices all over the course.

*Totalisator (Tote).* (a) Machine which calculates winnings by dividing winning stakes into total stakes. (b) Adjective, descriptive of the process by which this is done.

*Tote rigging.* Inflated returns are achieved by investing money on unwanted horses on the course (which goes into the Tote pool) while sizeable

investments are made away from the course on the desired animals. The 'away' money does not normally find its way into the Tote pool.

*Yankee.* A multiple bet composed of four selections in six doubles, four trebles, and a four-horse accumulator. The bet can be for a win or each-way.

## Appendix VIII

# References

No list of references on horse racing can hope to be complete – the total number of publications on all aspects of the sport is enormous. I include a selected and fairly representative list of books, which are mostly easily available, but many more can be found on library shelves.

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*Ruff's Guide to the Turf*

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*Timeform Publications*

And a whole host of publications all over the world, some mentioned in this text.





# Index

(See also Appendix VII: Glossary of Racing Terms, p. 149)

- accumulators, 18, 19, 23, 26, 106
- age, 13, 62, 63–5, 66, (*see also* weight for age tables)
- age, weight and distance table, 139
- alternative forecasting systems, 72–99
- America, *see* USA
- analysis of horse racing, 57–71
- analysis of time figures, 66–9
- analysis of Weight Adjusted Ratings, 61
- AND, *see* IF ... AND ... THEN
- ante-post book, 108
- array (in Commodore BASIC), 6, 7
- ASCII, (American Standard Code for the Interchange of Information), 6
- Australia, 118, 128, 129, 131–133
- average, 141
- average odds program, 60
- average time, 67
  
- backup storage, *see* storage
- BASIC, 4, 35
- beaten favourite, (BF), 25
- betting, 17–27, 125, (*see also* staking)
- betting tactics, 26, 100–117
- betting tax, 101, 109
- BF, *see* beaten favourite
- bibliography, 156–8
- binary numbers, 2
- bits, 2
- Black Book* (Timeform), 62, 66
- bookmakers, 109
- books, 156–8
- breeding, 65
- bytes, 2
  
- Canada, 128
- Canadian, (bet), 106
- cassette deck, 4
- cassette tapes, 3, 12, 47
- character, *see* CHR\$
  
- chi-squared, 141
- choosing the right program, 34
- CHR\$, 6, 114
- Churchdown Handicap Chase, 72, 74–9, 81
- class, (group), 13, 24, 29, 36, 41, 44, 49, 53, 55–6, 70, 79, 81, 83, 86, 89, 135, 143
- CLOSE, 7
- CLR/HOME key, 5
- collateral form, 81
- command, *see* direct command
- Commodore 64,
  - cassette deck, 4
  - introduction to, 3–12
  - special keys, 5, 10
  - special symbols, 10, 11
- computer programs, *see* programs
- computers
  - definition of, 2
  - introduction to, 1–12
- correlation, 141
- coverage, (in computer forecasting), 28–9
- CTRL key, 5
- cursor keys, 4, 5
  
- daily newspaper, *see* newspapers
- Daily Racing Form*, 118–22, 127, 128
- danger horse, 102
- data, 16
  - displaying, 55
  - loading, 47–8
  - saving, 47, 55
- DATA, 7
- decimal numbers, 2
- DIM, 7
- direct command, 4
- discipline, (in betting), 101–102
- disk drives, 3

- disks, 12
- display data, 55
- display runners, 55
- distance, 14, 53, 54, 59, 70–71, 80, 81, 83, 134, 135, 138–9
- doubles, *see* multiple bets
- draw, 14, 59, 65–6
- dual forecast, 23
- Dutching system, 107
  
- each-way betting, 22, 24, 25, 26, 80, 100, 135
- each-way Yankee, *see* Yankee
- error-trapping, 49
- exponential growth, 18
- extended Yankee, 23, 24, (*see also* Yankee)
  
- F, *see* fell, (fallen); favourite
- fast time figures, 63
- favourite, 14, 17, 19
- feedback loops, 31
- fell, (fallen), 25
- Fisher and Yates probability table, 68, 142, (*see also* probability)
- fitness, 65, 66, 70
- flat courses, 144–7
- flat races, 59, 107, 109
- flat racing, 24, 26, 143, 144–7
- flowchart, 30–34
  - for H3 program, 83–5, 90
  - for H3A program, 92–3
  - for H3B program, 94–5
  - for H3C program, 97
  - for La Bouchere Cancellation program, 104
  - for 'Multiple bet' program, 115
  - for 'When to bet' program, 112
- FOR ... TO ... NEXT, 7
- forecast betting, 23
- forecast odds, 20
- forecast, interpretation of, 15–16
- forecasting, 17, 27, 28–56, 72–99, 100, 136
- form, 13, 19, 100, 135
  - previous form, 24–5, 65, 69–70, 79, 81, 83
- France, 128
- freak results, 70
- further reading, 156–8
  
- GET, 7
- glossary, 149–55
- going, the, 13, 14, 15, 56, 66, 118, 134, 135
  
- GOSUB ... RETURN, 7
- GOTO, 7
- groups, *see* class
  
- H1 program, vii, 29, 35–56, 57, 72
  - use of, 53–6
- H2 program, 72–82, 135
  - H2A, 75–80
  - H2B, 80–82
- H3 program, vii, 13, 34, 57, 80, 82–99
  - H3A, 13, 34, 92–4, 135
  - H3B, 13, 34, 94–6, 135
  - H3C, 13, 34, 97–9, 135
- handicaps, 22, 109
- Hong Kong, 118, 128, 129–30, 131
- horse information, 54
- Horse Race Totalisator Board, (HRTB), 23
- hurdle races, *see* jumping races
  
- IF ... AND ... THEN, 7–8
- India, 128
- individualisation phase, 15, 29, 56, 58, 75, 80, 82, 86, 107
- INPUT, 8
- inside information, 21
- INST/DEL key, 5
- INT, 8
- integers, 6, 8, 11, (*see also* INT)
- Ireland, 128
- Italy, 128
  
- Japan, 128
- jockey, 13, 14, 15, 19–20, 21, 73, 80, 81, 135
- Jockey Club, 17
- jumping races, 24, 107, 135, 140
  
- K, *see* kilobytes
- keyboard, 4–5
- keying in programs, *see* programs, keying in
- kilobytes, 2
  
- La Bouchere Cancellation, 103–105, (*see also* SIM)
  - flowchart for, 104
  - program, 105
- laying the bet, 17–19
- LEFT\$, *see* strings
- line number, 6
- location of racecourses, 147–8
- logical analysis, 17
- logo (C=) key, 5

longer term form, 69-70, (*see also* form)

loop, 7,8

losing streak, 101

loss recovery, 101

Manor Novices Handicap Chase, 20, 24-5

marker sheet and rating services, 14, 61

mathematical symbols, 9, (*see also* symbols)

mean, 141

means, difference between, 58, 141

median, 141

MID\$, *see* strings

mode, 141

monitor, 4

'Multiple bet program', 114-17  
flowchart, 115

multiple bets, 17, 25, 26, 100, 105, 108, 109, 111

mutuel, 128

National Hunt, 22, 58-9, 81, 107, 143

National Hunt Committee, 17

New Zealand, 128

newspapers, 13-14, 24, 72, 74, 92, 135

numbers, 6, 11

odds, 14, 19, 59-60, 100, 102, 108  
average odds program, 60  
probability table, 137

ON ... GOTO, 8

OPEN, 8

overround, 20, 108, 126

overseas record, 15

owner, 14, 19, 21, 73, 81

P, *see* pulled up

parimutuel, 128

*Paris Turf*, 128

past performance charts (USA), 119-22

patent, (in betting), 24, 105, 128

peripherals, 3-4

place betting, 22-3, 26, 109

placing, 41, 90

power unit, 3

previous form, 24-5, 79, 81, 83

longer term form, 69-70

recent form, 69-70, 79

printouts, 12

prize money, 14, 44, 53, 54, 55-6

probability, 21, 68

Fisher and Yates table, 68, 142

odds to percent probability, 137

program, choosing the right one, 34

programs

accumulators, 18

average odds, 60

H1, H3, *see* H1 program, H3 program

La Bouchere Cancellation, 105

'multiple bet', 114-17

significance of single mean, 68-9

'When to bet', 112-14

programs

definition of, 6

keying in, 11, 35

saving, 6, 11

publications, 156-8

pulled up, 25

questions to ask, 29-30, 73, 79-80, 81

Quinella betting, 128

race analysis, 125

race details, 37-8, 53

racecourses, 143-8

flat courses, 144-7

grouping of, 143-4

location, 147-8

*Raceform Handicap Book*, 13, 14, 16, 29, 34, 54, 62, 66, 76, 80, 81, 91, 128, 135

races, which to bet on, 28, 100

racing rules, 17

racing terms, 149-55

racing track, 13-16

racing worldwide, 118-33

racing, analysis of, 57-71

RAM, (Read And write Memory), 2-3

Random Access Memory, *see* RAM

random sample, *see* sample

rating services, *see* marker sheet and rating services

READ, *see* DATA

Read And write Memory, *see* RAM

Read-Only Memory, *see* ROM

reading material, 156-8

real numbers, *see* numbers

recent form, 69-70, 79, (*see also* form)

record, *see* track record

RESTORE key, 5

RETURN, *see* GOSUB ... RETURN

RETURN key, 4, 5

RIGHT\$, *see* strings

ROM (Read-Only Memory), 2

*Ruff's Guide to the Turf*, 24

rules of racing, *see* racing rules  
 run forecast, 39-44, 55  
 RUN/STOP key, 5

sample, 57-9  
   random, 58  
 saver bet, 102  
 saving data, 55, (*see also* storage)  
 saving programs, *see* programs  
 scoring systems, 72-99  
 SFs, *see* speed figures  
 SHIFT key, 5  
 SHIFT LOCK key, 5  
 significance of a single mean, *see*  
   single mean, significance of  
 SIM method, 26, 101, 103-105, 110, 111  
 Singapore, 129, 131  
 single mean, significance of, 66-9, 141  
   program, 68-9  
 slow time figures, 63  
 sound output, 4  
 South Africa, 128  
 Soviet Union, 128  
 Spain, 128  
 special keys, 5, 10  
 specialisation, 107  
 speed figures, 13, 14, 24, 29, 54, 61-2,  
   66, 67, 79, 81, 83, 89, 90, 118, 134  
 speed ratings (USA), 125, (*see also*  
   speed figures)  
*Sport Complet*, 128  
*Sporting Life, The*, 13, 14, 16, 29, 34,  
   54, 61, 62, 66, 75-9, 80, 82, 92, 128,  
   135  
 SPs, *see* starting prices  
 SR, *see* speed ratings  
 staking, 100-117 (*see also* betting)  
   methods, 100-106  
   systems, 107-117  
 staking plan, 101-102  
 standard deviation, 59-60, 141  
 starting prices, 14, 22, 73, 81  
 state of ground, *see* going, the  
 statistical analysis, 17, 27, 57-71, 128  
 statistical terms, 141  
 statistics 58, (*see also* statistical analysis)  
 steeplechases, *see* jumping races  
 storage, 3, 47-8, (*see also* cassette;  
   disk)  
 straight forecast, 23

strings, 6, 7, 8, 9, 11  
 subroutine, 9, 35, (*see also* GOSUB ...  
   RETURN)  
 Super Canadian Patent, 106  
 Super-Patent, 105-106  
 symbols, 9-10, (*see also* mathematical;  
   Commodore 64)  
   on flowchart, 30-31

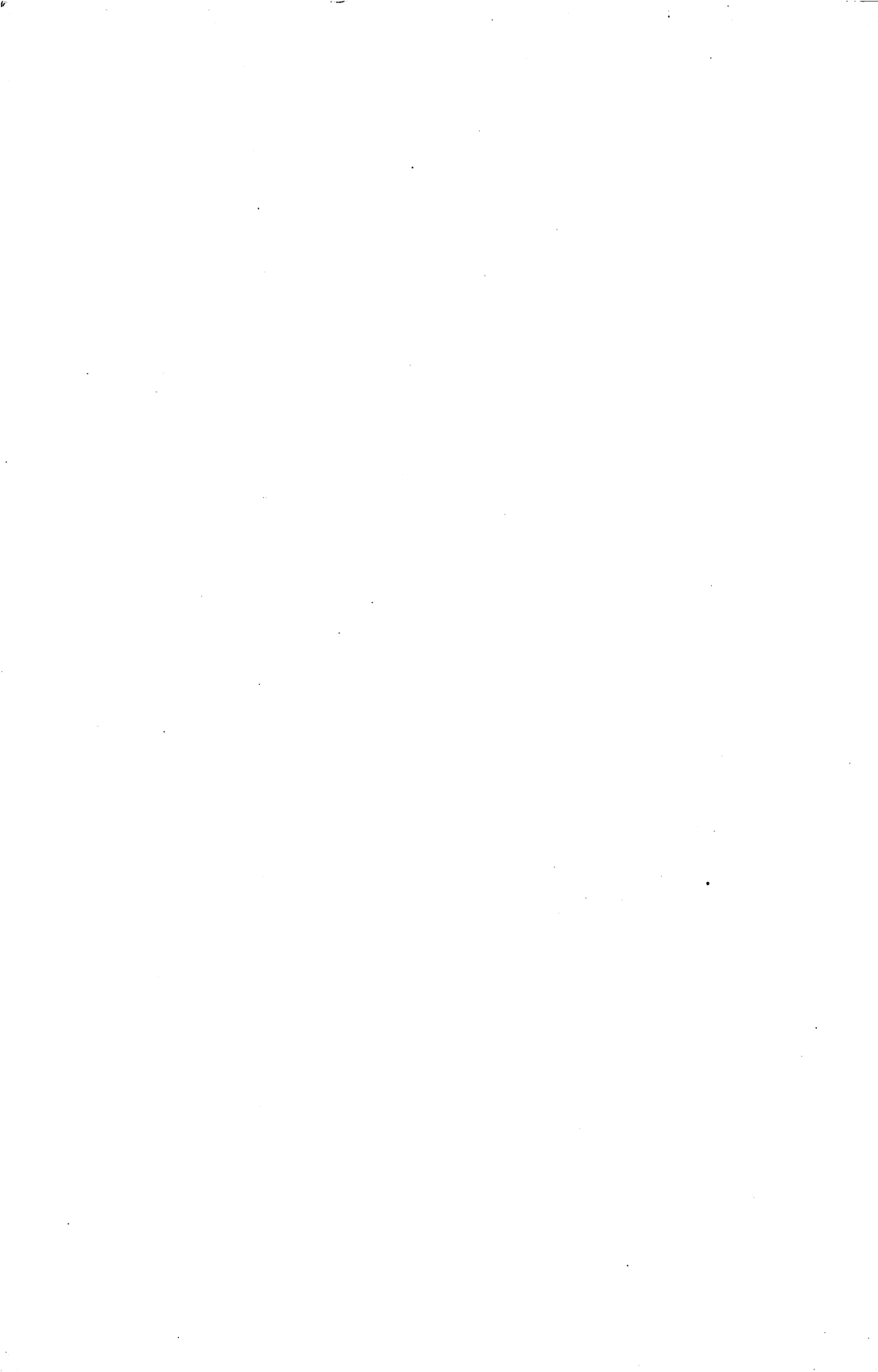
TAB, 10  
 Tattersall's, 128  
 tax, *see* betting tax  
 television, 3  
 THEN, *see* IF ... AND ... THEN  
 time, 62-5  
   analysis of figures, 66-9  
 Timeform, 62-6  
 Tote (Totalisator), 22, 23, 109, 125  
 track record, 13, 24, 73, 79, 81  
 track, the, 13-16  
 trainer, 14, 19-20, 21, 80, 81, 135  
 trebles, *see* multiple bets  
 TV, *see* television

unseated rider, (U), 25  
 USA, 118-27, 131  
 USSR, 128  
 VAL, 10-11  
 value bet, 75, 80, 100, 101, 108, 109, 125,  
   126  
 variables, 7, 11

WARs, *see* Weight Adjusted Ratings  
 weight, 13, 24, 59, 62, 73, 138-40  
 Weight Adjusted Ratings, 14, 29, 34,  
   54, 62, 63-5, 66, 83, 89, 90  
   analysis of, 61-2  
 weight carried, 13, 29, 54, 80, 81, 90, 135  
 weight for age races, 109  
 weight for age tables, 61, 63-5, 138-40  
 weight-time conversion, 64, 65  
 weighting, 34, 72-85, 89  
 Wetherbys, 29  
 'When to bet' program, 112-14  
   flowchart, 112  
 worldwide racing, 118-33

Yankee, 23, 24, 105, 106, 128, 135  
   each-way Yankee, 102





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Frank George is one of Britain's leading scientists. He was Head of the Department of Cybernetics at Brunel University and a consultant to NATO and the Department of Industry and the Treasury. One of his special interests has been betting to WIN.

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