

SMARTsig Confidential 6.02, Feb 1999

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Our next magazine (Mar 1999, issue 6.03) is scheduled for posting on March 4th.

As if a case of SMARTsig misquoting isn't bad enough, an eagle-eyed member also points out that even if we'd printed it correctly it was still wrong in the first place!

PUTTING THE RECORD STRAIGHT

Edward Walker

Dear Stef,
I write with reference to the serialisation of The Punter's Revenge. In the last issue (601) you wrote on page 31, paragraph 3;

"Suppose such horses win roughly 80% of the time. They have a probability of 0.8 which makes them about six times more likely to win than the other horses in the race. Their true odds are thus the standard odds divided by six, i.e. 1.3/1 or around 5/4. They represent good value if offered at 13/8 or better."

The book has been misquoted. The first two numbers are 60% and 0.6 (original book - page 64, paragraph 2).

I would also point out that the book itself is wrong. By definition, the true odds of a 60% chance has to be odds-on (4/6 to be exact).

Result	Return
W 4/6	0.667
W 4/6	0.667
W 4/6	0.667
W 4/6	0.667
W 4/6	0.667
W 4/6	0.667
Lost	-1
Lost	-1
Lost	-1
Lost	-1
=====	
	0.002

For profitable post-tax betting you would need to take odds of 4/5 or greater. (The mistake lay in the method of calculation. 8/1 divided by six does not give a probability of 0.6.

You have to convert the odds back to a probability, multiply by the factor (six), and then convert back to odds).

My apologies for my error in translating the text. The original pages are scanned (Note: for C- members - computer scanning is a bit like photocopying but the image goes into the computer which then recognises it as text). A piece of software called 'Optical Character Recognition' (OCR) is then used to 'read' the text.



My program obviously has problems differentiating between the numbers '6' and '8', although I proof-read the results I'm afraid it still went undetected.

-Stef

I passed Edwards' comments on to Tony Drapkin, co-author of The Punter's Revenge, who sent the following reply;

Your error with printing the '8's instead of the original '6's is well spotted. Give your OCR a damn good thrashing.

With regards to your correspondent's assertion that the original text is incorrect, he is absolutely right.

At a distance of thirteen years, I have no idea how the error crept in past my proof reading. Initially, confusion between odds and probabilities seems to have been at the root of the error as Edward Walker has clearly demonstrated.

Full marks to him for being the first of more than ten thousand readers to spot the mistake and bring it to my attention. If he ever comes to Chepstow races, I owe him a drink!

Best wishes,

Tony

The horses-to-follow lists provided by three commercial operations are being checked, head-to-head for us by one of our members.

HORSES-TO-FOLLOW LISTS

Terry Collins

Three commercial lists are being checked out as the jumps season unfolds, these are;

Jumping Prospects by John Morris

83 from the main list plus 15 'eyecatchers', 98 in total.

One Jump Ahead by Mark Howard

50 nominated horses plus 14 'best of the rest', 64 in total.

Racing Channel Video

52 in total, obtained by Charlie Brooks interviewing trainers.

Constraints:

There may well be information to be gleaned from each publication regarding exactly when or when not to back any particular horse, etc. For the purpose of this analysis it is not possible to recreate individual tactics, and it makes my job considerably easier to record every run of every horse from the lists. This restraint must be remembered when comparing results. Checking start date was 19th October 1998 and will continue until after the Grand National in April 1999 when the Jumps season starts to wind down.

Analyses to 22 January 1999

Jumping Prospects

	selections	winners	LSP	win SP's
25-Nov	4	0	-£11.30	
26-Nov	3	1	-£8.30	5/1
27-Nov	3	0	-£11.30	
28-Nov	12	2	-£11.80	7/2, 6/1
30-Nov	1	1	-£11.30	1/2
01-Dec	1	0	-£12.30	

Jumping Prospects (continued)

	selections	winners	LSP	win SP's
03-Dec	2	1	-£9.30	4/1
04-Dec	4	1	-£11.58	8/11
05-Dec	6	1	-£15.67	10/11
07-Dec	4	0	-£19.67	
10-Dec	1	0	-£20.67	
11-Dec	4	0	-£24.67	
12-Dec	7	3	-£21.80	2/1, 9/2, 4/11
14-Dec	2	0	-£23.80	
15-Dec	2	0	-£25.80	
17-Dec	1	0	-£26.80	
18-Dec	3	2	-£27.17	3/10, 1/3
19-Dec	3	2	-£22.09	10/3, 11/4
26-Dec	6	1	-£24.84	9/4
28-Dec	6	3	-£17.84	5/2, 7/2, 4/1
29-Dec	2	0	-£19.84	
30-Dec	1	0	-£20.84	
31-Dec	3	1	-£18.34	9/2
01-Jan	4	1	-£20.54	4/5
02-Jan	4	2	-£19.44	2/1, 11/10
06-Jan	1	0	-£20.44	
08-Jan	2	0	-£22.44	
09-Jan	1	0	-£23.44	
14-Jan	3	1	-£22.44	3/1
16-Jan	1	0	-£23.44	
18-Jan	4	0	-£27.44	
20-Jan	1	0	-£28.44	
22-Jan	2	0	-£30.44	

Statistics to date:

Selections = 104
Winners = 23
Strike rate = 22%

One Jump Ahead

	selections	winners	LSP	win SP's
24-Nov	2	0	£12.85	
25-Nov	3	0	£9.85	
26-Nov	2	1	£9.07	2/9
28-Nov	5	2	£15.57	7/2, 6/1
30-Nov	2	1	£15.07	1/2
01-Dec	2	0	£13.07	
04-Dec	2	0	£11.07	
05-Dec	4	1	£15.07	7/1
07-Dec	2	1	£18.07	4/1
08-Dec	1	0	£17.07	
09-Dec	1	0	£16.07	
11-Dec	1	0	£15.07	
12-Dec	3	2	£18.82	2/1, 11/4
14-Dec	1	1	£19.65	5/6
15-Dec	1	1	£21.15	6/4
17-Dec	1	1	£21.82	4/6
18-Dec	2	1	£21.12	3/10
19-Dec	1	1	£23.87	11/4
22-Dec	1	1	£24.87	evs
26-Dec	5	4	£35.04	4/6, 9/4, 11/4, 11/2
28-Dec	7	3	£48.79	6/4, 9/4, 14/1
29-Dec	1	1	£49.19	2/5
01-Jan	4	1	£46.99	4/5
02-Jan	4	1	£45.09	11/10
08-Jan	2	1	£44.75	4/6
11-Jan	1	0	£43.75	
14-Jan	6	2	£44.50	3/1, 7/4
18-Jan	2	0	£42.50	
20-Jan	1	0	£41.50	

Statistics to date:

Selections = 70
Winners = 27
Strike rate = 39%

Racing Channel Video

	selections	winners	LSP	win SP's
23-Nov	1	0	£14.50	
24-Nov	1	0	£13.50	
25-Nov	1	0	£12.50	
28-Nov	4	0	£8.50	
01-Dec	4	0	£4.50	
03-Dec	3	0	£1.50	
04-Dec	1	1	£2.23	8/11
05-Dec	4	0	-£1.77	
08-Dec	1	0	-£2.77	
10-Dec	1	0	-£3.77	
11-Dec	4	0	-£7.77	
12-Dec	4	1	-£8.77	2/1
14-Dec	1	1	-£7.02	7/4
15-Dec	1	0	-£8.02	
16-Dec	1	0	-£9.02	
19-Dec	2	2	-£2.94	11/4, 10/3
26-Dec	7	2	£0.06	5/2, 11/2
28-Dec	1	1	£14.06	14/1
29-Dec	3	1	£18.56	13/2
31-Dec	3	0	£15.56	
01-Jan	1	1	£16.36	4/5
02-Jan	3	0	£13.36	
09-Jan	3	0	£10.36	
13-Jan	1	0	£9.36	
14-Jan	2	0	£7.36	
16-Jan	1	0	£6.36	

Statistics to date:

Selections = 60
Winners = 10
Strike rate = 17%

As can be seen from the tables One Jump Ahead continues to please it's followers by once again producing a healthy profit even

though this publication is the least expensive of the 3 at a mere £4.99!

Racing Channel Video, which is the most expensive at £14.99, had the worst strike rate of the period but still managed to stay in profit thanks to a 14/1 winner.

High advertised claims:

Jumping Prospects, which retails at £10.00 , has made huge losses so far on my chosen selections which were taken from supposedly it's main selections. I have seen advertisements recently in the racing press extolling winners of 10/1, 16/1 etc which were in fact true but you would have to have added another 300+ horses to your list in order to avail yourself of these gems!

It's been my experience that most National Hunt horses-to-follow lists consist of horses that are lined up for a win from their first start and run up a sequence of wins and horses that are aimed at the 3 days of Cheltenham.

With this in mind I checked the Jumping Prospects list, as this was the only one making a loss, using the following rules..

- 1) Back any horse on the list until it loses at which time it is dropped until the Cheltenham festival.
- 2) Back any horse from the original list that makes it to Cheltenham as it must have got there on merit.

This had a revitalising effect and turned a £30+ deficit into an £8.95 profit!

I haven't had time to run the same parameters on One Jump Ahead and Racing Channel Video yet due to time constraints, but I'll do it when time allows and include the results in my next follow up article.



Terry Collins operates a horse-tracking service by e-mail.

You can be alerted to the engagements of your own list on a day-to-day basis. Find out more at: <<http://home.clara.net/terrcol/tracker>.

SMART

SWAP SHOP

If you have any items for inclusion in SwapShop please send details to **SMART**.

Your telephone number or address will be included unless you say otherwise. Alternatively you may use a box number, in this case please include 2 x 1st class stamps to cover postage.

If a contact is given simply contact the advertiser direct

The goods are being offered or requested by our members - not by **SMART**. Many items offered through SwapShop will keep their value even when you have finished with them, simply recycle them again.

SWAPSHOP is a FREE service to members

FOR SALE:

I have the following books for sale, surplus to my needs, all are in very good condition and I am open to offers;

Profile" National Hunt 1995/96, Richard Hudson.

Ainslie's Complete Guide to Thoroughbred Racing, Tom Ainslie.

Come fly with the Butterfly, John Mort Green.

Sprint Handicapping Explained, Jim Adams.

Picking Winners, Andrew Beyer.

Les Parker. Tel. 01743 821635 (Shrewsbury)

WANTED:

RSB professional package for jumps.

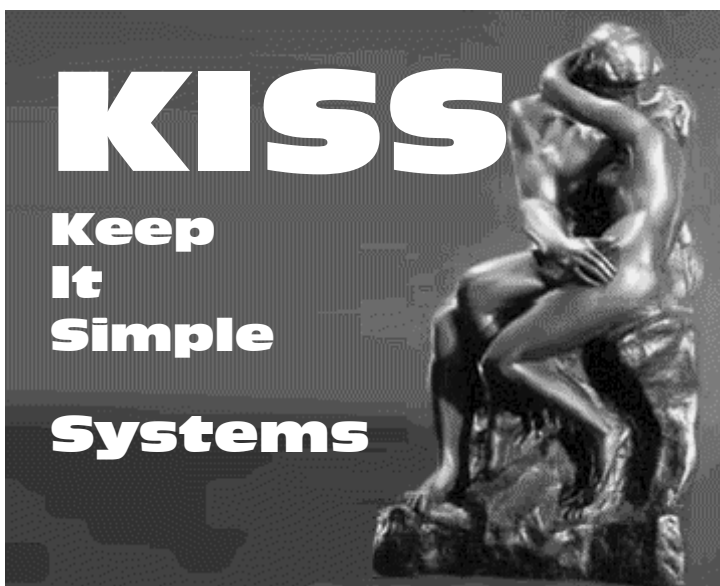
please ring Mark on 01706 82 6314 (Bury, Lancs)

or e-mail at mark@sallin.freemove.co.uk

WANTED:

Computer Racing Form and/or Computer Chasing Form books by John Whitley, Racing Research (any season)

Telephone Philip on 01709 377628 (Rotherham)



**20/1 Winner!!
(but not for Racing Post
readers)**

The first of the KISS series last month featured a method from Jim Streek which had produced some very big priced winners. The good news for followers of Jim's simple method was that the third qualifier after our publishing of the system was **Prominent Profile**, which came home first at 20/1.

But ... it's not all good news as the following e-mail points out;

From Rod Leeming:

Congratulations to all those SMARTies who followed Jim Streek's suggestion in SMARTsig Jan 1999 6.01 re: four or more previous runs listed when no other runner has more than three.

The system gave the latest 20/1 winner Prominent Profile in the 3.50 at Chepstow on Bank Holiday Monday.

However, here is a very sad tale. If, like me, you take your form figures from the Racing Post, the daily specialised racing paper that costs £1.00, then the form figures for Prominent Profile read '10'. There was no indication at all that the horse had run more than twice. Consequently - I wrote it off as a non-qualifier. All other sources displayed Prominent Profile's **true** form figures of 3421-10

Obviously, the Racing Post needs to cut-back on ink wherever possible and you can't expect them to print worthless old bits of form. I should have known that I needed to check with my non-racing daily paper to make sure that the form details were correct.

Another expensive lesson.

From Peter Howes:

I have been following, with I suppose many others, the development of the All-Weather handicap system. It seems to be a well thought-out approach, logical and highly structured, albeit a little over complex. I say **seems** because I'm not sure that I completely understand the method, and I know for sure that I couldn't use it at present. But that's my problem.

My only concern is the monthly breakdown of form figure ratios. Why is it necessary to calculate these on a monthly basis? Do they vary significantly month to month, or is any variation simply due to sample size?

The main problem with this analysis stems from the fact that months are discrete and time is continuous. Therefore a qualifier on the last day of one month may not qualify the following day.

However, since a neural network is used to **smooth** the ratios surely this could include a time input, and the resulting formula (quite possibly complex) used to determine the ratio, as opposed to several tables.

This time input could represent the number of days from some fixed starting point, say October 1, or a more appropriate date. The output of the network would at least be smooth since it would remove the discontinuities introduced by the monthly analysis. But perhaps I have completely misunderstood the system.

KISS: Simple odds/runners AW system

On a related point, yesterday, due to the absence of real racing, my thoughts cast back a few years to when I used to dabble on the AW and the system I used. At the risk of over-complicating the AW handicap method further, inclusion of this approach may improve the overall success rate of the system.

I adopted a very simple approach with AW handicaps which merely used the price each horse started in their most recent race and the number of runners in this race. For each horse this ratio was calculated as follows:

(price in last race) **divided by** (number of runners in last race)

As an example, a horse which started at 2/1 on its latest run in a race with 10 runners would have a ratio of 2/10, or 0.2.

I would bet the horse with the lowest ratio in the race. The system was further extended to bet, in dual forecasts, the two horses with the lowest ratios. I had some success but the success rate was too low for me (i.e. the losing runs were too long).

Could this be used in the AW Handicap system adopted by SMARTsig, for example to rank the horses by this ratio and include it in the method?

Unfortunately, I think I also categorised previous non-handicap races differently from handicaps for generating the ratio but can't remember how.

Something to think about possibly?

From Andy Blanchard:

In response to your comments in last months SMARTsig concerning simple to follow systems I submit the following for your consideration.

KISS: Fixed-odds soccer draws

In recent months I have become more and more interested in trying to identify football matches that have an increased likelihood of finishing as draws. Over the past few years I have read on numerous occasions in columns written by Kevin Pullein that those matches in which the away side is stronger have an increased chance of finishing as a draw. *(a fact also confirmed by Alun Parry, see this issue page 28 - Stef)*

This makes a kind of sense as the advantage of ability that the away side has may be cancelled by the advantage of home territory for the opposition. The question is, how do you decide which matches qualify as having a **stronger** away side?

Almost inevitably you fall back on ratings comparisons as the best way of doing this (although certainly not the only way) and so a while ago I researched the fate of matches where the away side were rated higher than the home according to the *Racing and Football Outlook* computer generated ratings.

Clearly anyone who comes up with their own ratings can use these instead. My database only stretches back two and a half years but does cover a reasonable number of games. Games are only considered after 10 matches have been played in a season since before this you are relying on last seasons form.

Initially, considering all these games this does not seem promising. Whereas 27% of all games have been draws over many years, all of these negative rated games have produced draws at a rate of 28.6%.

This is hardly encouraging but nevertheless I decided to split the games into English and Scottish league matches since it is clear that

less Scottish games are drawn as the bookies often quote 5/2 the draw for Scottish games but only rarely for an English match.

The result was much more encouraging:

English (1988 games)	30.7%
Scottish (829 games)	23.8%

What else might increase the percentage of draws in a rational manner?

**“ . . you can omit
Premier league
games . . “
“ . . if you want to
boost the rate to a
more satisfying
40% . . “**

What I have done is to remove those games where the away side is too strong. As a measure of this I have chosen those games where William Hills have quoted the away side as evens or odds-on and also matches where the away side is rated 15 or more points superior to the home side.

One additional filter is to positively select the weaker home sides since if you have removed the strongest away teams and you also remove the stronger home sides then you might end up with lots of draws! As a measure for this I have chosen all games where the home side rates 49 or less.

The result of all this is 38.6% draws from 171 selections.

You might consider that to be good enough since there is a clear profit to be made from this strike rate where 12/5 is almost always available somewhere but if you want to boost the rate to a satisfying 40% you can omit Premier league games.

I confess that there is no logical reason for doing this that I can think of but it works!

To recap. Qualifiers are those that satisfy the following criteria:

- *English 1st, 2nd or 3rd division matches (at least 10 matches played)*
- *RFO rating (home side) of 49 or less*
- *Rating of away side is 1-14 points superior (15+ is too good!)*
- *Away side priced at odds against by William Hill*

Over the last two and a half seasons this has resulted in 150 qualifying matches with 60 resulting in draws (53-60-37) - 40%

Reassuringly, so far this season there have been 29 selections, 11 draws (38%).

All matches can of course be covered as singles by using HT/FT double result combinations but another thing to consider might be correct score bets.

Since the result is a draw then the vast majority of games will finish 0-0, 1-1 or 2-2. Over the period of the matches I have recorded there have been 12 @ 0-0, 31 @ 1-1, 16 @ 2-2 and 1 @ 4-4. Therefore it might be worth considering splitting your stake between 1-1 (generally 11/2) and 2-2 (generally 14/1).

Over the matches covered by this system so far this would have produced a profit of 31.3% on money staked including tax.

This may or may not work out in the future since the filters applied although vaguely logical might represent back-fitting at its best, but it is very easy to check for selections each week (takes approx. 3 minutes).



A little confusion over the points raised in last months extract from The Punter's Revenge, is rather disheartening for one of our readers.

JUST HOW DO PROs MAKE IT PAY?

PJ

Dear Stef & All,
Please can you help? I feel like I'm losing it! January's (6.01) "Punter's Revenge" extract has really flattened me!

Okay, mid-winter blues compounded by the 'flu, a flood in the house and a losing run of sixteen on what I thought was my invincible system have not placed me in an optimistic frame of mind. However, can you help me make sense of this article about professional backers? Even with my far-from-brilliant mathematics, things just did not add up. Even though I read and re-read the item three times I still couldn't understand how the "two dozen" pro-punters make it pay.

As one of the millions of "wannabee" pro-gamblers, I'm sad to admit that the statistics given in the article, together with a run of 'bad luck' almost make me want to pack it all in as a bad job. (Gambling that is!). Below are some of my calculations which I hope you will disprove, for, until I get over this particular hurdle I'm too discouraged to have another go!

Here are twenty hypothetical (and perhaps unrealistic) bets based on some of the points made in the extract;

Given: [i] 50% strike rate (higher than most in my opinion)
 [ii] Losing run of 12 (too long for profitable business in my opinion)
 [iii] Odds of 13/8 acceptable (too low in my opinion)

I quote from "How the experts do it"

"A punter who can maintain a flow of 50% winners at an average price of 13/8 is doing extremely well"

"Thus, with a strike rate of 50% you must be prepared for occasional losing runs of a dozen or more"

So, off we go no allowance here for tax, betting on course aiming to win a modest £50 per bet.

Bet	Stake	Result	Odds		Balance
1	£31.00	L	13 / 8		-£31.00
2	£31.00	L	13 / 8		-£62.00
3	£31.00	L	13 / 8		-£93.00
4	£31.00	L	13 / 8		-£124.00
5	£31.00	L	13 / 8		-£155.00
6	£31.00	L	13 / 8		-£186.00
7	£31.00	L	13 / 8		-£217.00
8	£31.00	L	13 / 8		-£248.00
9	£31.00	L	13 / 8		-£279.00
10	£31.00	L	13 / 8		-£310.00
11	£31.00	L	13 / 8		-£341.00
12	£31.00	L	13 / 8		-£372.00
13	£31.00	W	13 / 8		-£321.63
14	£31.00	W	13 / 8		-£271.25
15	£31.00	W	13 / 8		-£220.88
16	£31.00	W	13 / 8		-£170.50
17	£31.00	W	13 / 8		-£120.13
18	£31.00	W	13 / 8		-£69.75
19	£31.00	W	13 / 8		-£19.38
20	£31.00	W	13 / 8		£31.00
				Final bal:	£31.00
Total:	£620.00				

My conclusions:

(a) I can't imagine anyone making a living like this.

(b) It's not good business. You could make more by putting the £620 into a building society!

(c) These 20 bets could take months to get everything right (according to the article).

(d) Those who could afford to stake £310 per bet instead of the £31 wouldn't pee about like this for a total gain of only £280 at the end of all the hassle!?!?!?

(e) I am convinced that a staking policy, based upon a "two-pronged attack" is the real answer, but my bottle has now gone for the moment.

(f) In all gambling, where there are other factors besides chance, the richest, bravest man is the winner! (learned in the Australian Bush in the 1960's)

All the best, PJ.

Ex-miner (coal, gold) & tunneller. Moderately successful self-employed contractor for 15 years. Hopeless gambler, thousands down over the years. Ex-subscriber to "The Winning Line" £1,000+ per annum and NOT the way to do it in my opinion. Researcher of literally hundreds of systems, recently buying 1,000-odd systems from Robin Lloyd. I also bought 'BetBetter' software and a computer all because I wanted to be a successful gambler! . . . sad isn't it?

PS Love SMARTsig and Odds On magazines, but I'm starting to feel so jaded that I get the impression some people are waffling around the real issues in some cases. Nice work if you can get it!!



Reply from Tony Drapkin:

Well, your correspondent has quoted figures, which I actually got from Clive Holt who claimed and still claims to be a professional backer (an over-used phrase in my view)

The writer has worked on the basis of a 50% strike rate, and then produces a sample with 12 losers and 8 winners! I'm not surprised he's depressed. I would be if a 50% strike rate produced such results all the time!

**“ . . . 20.41% profit
on turnover is
rather more than
I'm currently getting
from my building
society!”**

But if we imagine 1000 bets, with lots of losing runs, including runs of twelve, or even twenty or more, I would expect to turn in something in the region of 500 winners, assuming I was backing **genuine** even money shots.

So, £500.00 lost, £90.00 lost in the taxable element, for a total loss of £590.00 to a £1.00 stake.

But 500 winners at 13/8 yields £812.50 won, for a total profit of £222.50 which is 20.41% profit on turnover, rather more than I'm currently getting from my building society.

Now of course, the example I gave was **hypothetical**, a simple example to illustrate a basic principle. I'm not suggesting, nor have I ever suggested that it would be easy to find 1,000 genuine even-money shots priced up at 13/8 in the course of even a couple of seasons.

In fact, I personally believe, along with many others, that you can't make much of a profit at the 'front end' of the market, which means that you are obliged, in much of your betting to look for horses in the 5/1+ range for your winners.

Since the market is pretty efficient, that approach necessarily entails long losing runs, which is why you need a large bank which you can lose with equanimity, nerves of steel, and an ulcer-proof duodenum - oh and proportional, staking while we're about it,

. . .but that's the subject of the article for SMARTsig I haven't had time to write . . . yet.

 SMARTsig

QUERIES ANSWERED

SMARTsig

From time to time requests come in for answers that in themselves would not justify an article, but deserve an answer all the same. Here's a couple of them.

“I feel it is unwise to back a favourite which won its last race. Such animals are likely to be overbet by a public overly swayed by that last result. Is this a correct assumption?”

Easy one to check out using Racing System Builder (RSBFast) Over the 13 year period 1986 to 1998, the results of all flat racing favourites showed; 16,663 wins from 52,915 runs (31.49%) showing a LS loss of 4057.65 Looking only at those favourites who won last time out the figures show 4,449 wins from 13,753 runs (32.35%) with a LS loss of 1091.85. Not a great deal of difference pound for pound, but what there is shows that a favourite with a win last run actually has an *increased* chance of success.

Using RSB to check on 5 years of Jump racing (1991-95) shows all favourites to win 6,277 of 17,188 runs (36.52%) showing a loss of 1187.46. By filtering those who won their previous race we get 2,381 winners from 5,858 runs (40.65%) and 342.23 loss. The same increased strike rate therefore holds good for both codes.

“I’ve read various quotes, usually around 80%, but what exactly is the up-to-date figures for the winning chances of the first 3 in the betting?”

RSB reports for flat racing; 1st favourite won 31.49%, 2nd fav. 18.75% and 3rd fav. 12.74%. Therefore one of the first 3 in the betting have won 62.98% of all flat races over the past 13 seasons.

And for NH racing; 1st favourite 36.52%, 2nd fav. 20.75% and 3rd fav. 13.92%. The percentage of one of the 3 winning is 71.19%

 SMARTsig

*Research performed courtesy of Racedata Modelling's Racing System Builder for PC computer. 1998 flat season data is now available and remember all RSB software is discounted 10% to SMARTsig members. **Call RSB, 01432 860 864 for further details.***

On the one hand you enjoy combining your best selections in a full perm of doubles, trebles, etc., but it does get expensive. Ever stopped to think how many of these bets are wasteful?

OPTIMAL MULTIPLE BETS - Part I of II

The HanGra OptiMul formula.

Andrew Falkingbridge

Ever since the *Win £1/4 million or your money back* article was published just over a year ago in SMARTsig Confidential (Jan. '98, issue 5.01) I have been toying with the idea of using multiple bets to produce a profit.

Focussing solely on fixed-odds football results and correct scores provides plenty of selections at consistent prices which are ideal for multiple bets. It has been only recently that I have started to consider the optimal number of multiples (doubles, trebles, four-folds etc.) to place each week.

This article is the result of my research into optimising multiple bets and producing a profitable betting strategy.

It is well know that all of the pre-printed bets provided by bookmakers and shouting at us from the vivid wall displays are notoriously poor value, but they continue to be used. The only obvious reason for this is ease of use.

But how many times has the money been thrown away on bets which will never win. Or been utterly wasted on those dozens of doubles that although they come in, their pay out only covers a mere fraction of the overall stake money?

An example:

Football fixed odds, correct score, eight selections. For ease of explanation we will assume a fixed price of 6/1 for all selections.

The eight selections bet is known as a Goliath, it consists of 247 bets made up of the following multiples:

- 28 doubles
- 56 trebles
- 70 four-folds
- 56 five-folds
- 28 six-folds
- 8 seven-folds
- 1 eight-fold

A 2p stake per bet here works out to £4.94, add on the 9% tax of £0.44, and we have a total outlay of £5.38.

The 2p stake is chosen as it produces a total outlay of around a fiver, which is acceptable for a weekly 'fun bet', and the 2p stake won't break the bookmaker's prize limit if all eight selections came up one week.

In the following discussion the Goliath bet is shortened to **G-Bet** to indicate the 247 individual bets.

Let us now assume we have a strike rate of 25% (i.e. a win probability of 0.25 and a losing probability of $1 - 0.25 = 0.75$). The following probabilities show how likely we are to get a double:

For any one double to occur we need to have two win bets along with six losing bets, the probability of this happening is:

$$(0.25^2) \times (0.75^6) = 0.0111 \text{ to four decimal places}$$

There are 28 doubles in eight selections therefore the total probability of having any two wins out of eight is:

$$0.0111 \times 28 = 0.3115$$

So what do we win when the doubles come up? A 6/1 double will return 49 (7 x 7) points. As we have just seen, this will occur 31.15% of the time (or 1 in 3.21 G-Bets), so on average, per G-Bet, we will recoup $49 \times 0.3115 = 15.26$ points (30.52p in our example) using the doubles.

Looking back at the G-Bet, we have bet 28 points (56p plus tax) on doubles every time. Obviously this is uneconomical.

Let us now turn our attention to the other end of the selection list: the eight fold. Now for this bet to come up we need all eight selections to come up. The probability of this happening are:

$$0.25^8 = 0.0000153 \text{ to seven decimal places}$$

or 1 in 65,535 G-Bets (if we have one G-Bet per week, it will take, on average, just over 1260 years to hit the jackpot!). However, when we do hit the jackpot our returns will be a 6/1 eight-fold which amounts to 5,764,801 points!

If we average this out over the duration of the G-Bets, we will recoup $5,764,801 \times 0.0000153 = 87.96$ points (175.92p in our example) per G-bet.

Looking back at the G-Bet, we have bet 1 point (2p plus tax) on the eight-fold each time. Over time, this is a much better proposition. Alas, none of us will have the staying power to wait until the millennium celebrations in the year 3000.

This got me thinking. The G-Bet covers all multiples from doubles to eight-folds, using the lower multiples is uneconomic, over the long term money will drain from my betting bank to the coffers of the bookmaker.

On the other hand if I last the course there will be one hell of a pay day waiting for me as I patiently bet on eight-fold each week. There must be some optimum multiple to bet with where we are making money but don't have to wait impossibly long periods of time to make the money.

This optimal multiple will be the lowest one where a profit is being made.

Looking at the problem objectively, all the pertinent data is available: the profit factor, the tax rate, the strike rate, the average price and the number of selections. After a little mathematical juggling, I came up with the following formula to find this optimal multiple number:

$$1.09 = P^n \times R^n \times (1-R)^{(S-n)}$$

where:

1.09 is the representation of profit including tax (anything greater than 1.00 is a profit and we have to overcome tax @ 9%)

P is the average Price, expressed in decimal form (e.g. 6/1 is 7.00, 5/2 is 3.50)

R is the strike Rate, expressed in decimal form (e.g. 25% is 0.25)

S is the number of Selections

n is the number we need to solve the equation for.

Rearranging this gives:

$$n = \frac{\ln(1.09 / ((1-R)^S))}{\ln(R.P / (1-R))}$$

where ln is the natural log function. I have decided to name this the HanGra OptiMul formula for future reference.

Applying the HanGra OptiMul formula to our example data:

The tax rate is 9% so we use this as 1.09
P is 7.00
R is 0.25
S is 8

$$n = \ln(1.09 / ((1-0.25)^8)) / \ln(0.25 \times 7.00 / (1-0.25))$$

$$n = 2.82$$

Of course, we can't have fractional multiples so we have to round up to the next integer, 3. If we round down we are entering unprofitable territory.

The value 2.82 is the point at which the scales tip into our favour. Our bet now becomes:

Any 3 from 8 = 56 bets @ 9p = £5.04 plus tax.

We can add in the 2p for the eight-fold just in case, or even have 8 seven-folds @ 2p for an extra 16p.

This method will guarantee that we will make money in the long run on trebles. Of course, we will also make money on four-folds, five-folds etc., but we will have to wait longer for the pay day.

The HanGra OptiMul formula is also useful in preventing us from chasing totally wasteful bets. If n is greater than the number of selections, then there are no profitable strategies for multiples. An example here is a strike rate of 65%, 9 selections with an price of 1.50 (1/2 in traditional form) with 9% tax, n comes out at 9.31.

Caveat

This model is based only on the case where the price and strike rate are similar for all selections (such as football fixed odds betting). For horse and dog multiples all runners must have a similar chance of success and be priced similarly too.

The HanGra OptiMul and the sister formula, the HanGra Minimiser, are also implemented in a JavaScript page which can be found on the Internet at ;

<http://www.hangra.clara.net>



We follow the thought processes of one reader as he attempts to crack the secret of football results.

BUILDING A MODEL FOR SUCCESSFUL SOCCER PREDICTION

Alun Parry

Overview

Having had an initial and overly hasty dabble with Neural Networks to predict soccer results I decided to undertake a more rigorous attempt at building a soccer prediction model. This article follows, if you like, the story of my attempt to create this model. In many sense it is unfinished and looks initially at my efforts to profile the relevant data and to pinpoint the key factors in soccer prediction.

Although I have used one particular method to develop a very simple initial model (which I shall discuss at the conclusion), future articles will discuss a range of differing techniques to use the data and analyse how successfully they were able to produce accurate predictions of soccer results.

Profile Data

- Home or Away
- Match Supremacy Comparison using long-term ability ratings
- Recent Form Analysis
- Points Average Ratings
- Home / Away Record
- Moving Averages
- Last Relevant Result

Home or Away

Home teams win more than away so it is necessary to know which team is at home and which is travelling away. See this table for the 1996 and 1997 seasons.

Frequency of results 1996 & 1997 seasons.

Homes	327	45.86%
Draws	201	28.19%
Aways	185	25.95%

This will be a useful baseline too for future analysis. e.g., if my model produces a home win accuracy of 45% then I will know that it has been no more effective than choosing home teams at random.

Match Supremacy Comparison

This compares the FRAN rating of the Home side with the FRAN rating of the Away side and produces a Match Supremacy Rating (MSR - Home minus Away). For those unfamiliar with FRAN ratings see future articles by Tony Drapkin and Richard Forsyth from the serialisation of their book *The Punter's Revenge*. Current FRAN ratings can be obtained from Bill Hunter's excellent Football Yearbook Software, or by visiting Mabel's Soccer Form Guide on the World Wide Web (<http://members.aol.com/mabstabs/matches/>) where they are referred to as RateForm ratings. Alternatively, you can keep track of FRAN ratings yourself.

e.g. Arsenal 1500 Coventry 900, MSR = +600

These ratings can then be classified into Supremacy Categories

- Normal Home Supremacy = MSR of +301 or more
- Level Contest = MSR of -299 to +300
- Normal Away Supremacy = MSR of -499 to -300
- Large Away Supremacy = MSR of -500 or worse

Supremacy Comparison	Home	Draw	Away	Total	H%	D%	A%
Normal Home Supremacy	153	40	33	226	67.70%	17.70%	14.60%
Level Contest	236	100	95	431	54.76%	23.20%	22.04%
Normal Away Supremacy	124	83	102	309	40.13%	26.86%	33.01%
Large Away Supremacy	30	36	48	114	26.32%	31.58%	42.11%

(Statistics from *Punter's Revenge*, Drapkin & Forsyth)

- *Note a number of things from the supremacy comparisons. Firstly, the larger the home supremacy - the more likely a Home Win will occur. Similarly, the worse the home side is in comparison to the away side, the more likely an away win. Finally, the less supremacy a home side has increases the chances of a draw. The most likely draws are where there is a large away supremacy.*

Recent Form

Categorised into 4 classifications:

EXCELLENT recent form, GOOD recent form, FAIR recent form and POOR recent form

The last two LEAGUE results of each team is calculated as follows

6 Away Win
 5 Home Win
 4 Away Draw
 3 Home Draw
 2 Away Loss
 1 Home Loss

10pts or more	= Excellent
8 or 9pts	= Good
4 to 7pts	= Fair
0 to 3pts	= Poor

To analyse how teams perform it will be necessary to make the distinction between teams who are playing at Home in today's match and those playing Away. In essence we end up with 8 classifications:

Home Teams with Excellent recent form
 Home Teams with Good recent form
 Home Teams with Fair recent form
 Home Teams with Poor recent form
 Away Teams with Excellent recent form
 Away Teams with Good recent form
 Away Teams with Fair recent form
 Away Teams with Poor recent form

Our analysis, in terms of our 8 categories, would expect to show the following:

- a Home Teams with Excellent or Good recent form win more often than those with Fair recent form who in turn win more often than those with Poor recent form.
- b The same for Away sides.
- c A converse relationship in terms of defeats (i.e. Home with Poor should expect to see a higher number of Away Wins than Home with Good).
- d No expectations from the Draws though it will be interesting to see if there are any patterns established when the data is analysed.

Yet, the results of recent home form showed little predictive value after all.

	Total	H	D	A	H%	D%	A%
Home Exc	117	59	36	22	50.43%	30.77%	18.80%
Home Good	149	64	43	42	42.95%	28.86%	28.19%
Home Fair	377	167	105	105	44.30%	27.85%	27.85%
Home Poor	70	37	17	16	52.86%	24.29%	22.86%

(This table represents a study of 713 matches from the Premier League in the 1996/7 and 1997/8 seasons).

Keen observers of football may not be surprised that such short runs of form are not overly predictive of future performances. It is not uncommon for teams to snatch two wins before facing a hammering. Indeed, it appears to be the very nature of the inconsistent mid-table side. However, an analysis of the recent form of the away side appears to be a little more productive.

	Total	H	D	A	H%	D%	A%
Away Exc	111	36	36	39	32.43%	32.43%	35.14%
Away Good	134	63	43	28	47.01%	32.09%	20.90%
Away Fair	394	189	105	100	47.97%	26.65%	25.38%
Away Poor	74	39	17	18	52.70%	22.97%	24.32%

The recent form of the away team does appear to have an effect firstly on the likelihood of a home win, and secondly upon the likelihood of a draw. In other words, the stronger the away side, the more likelihood of an upset. This fits in with my viewpoint that the strength of the away side is often a more crucial indicator in match prediction than the strength of the home team. We can also see that an away side with excellent recent form is more likely to win the game than if its form is less impressive.

The real puzzle here is why recent form is only of value when looking at the record of the away team. There does not appear to be a ready explanation.

Points Average Rating

Each team can be rated on their current season's performance alone by averaging their points per game and multiplying by 100. For example, if Everton have 42 points from 21 matches, their Points Average Rating (PAR) would be

$(42/21) * 100 = 200$. Obviously, the maximum rating for any side would be 300.

I assigned the ratings and after some quick analysis found that 132 appeared to be the middle mark rating (more correctly known as the median). As such, any side with a rating above 132 was classified as High Rated - and any team rated below or equal to 132 was classified as Low Rated. This is a crude split but allows us to see quickly whether there is anything to this idea.

We would hope to see the HomeHi and AwayLo performing relatively similarly and the HomeLo and AwayHi producing similar results. For example, one could rationally expect that a game with a poor home side would produce a lower ratio of home wins. One would have a similar expectation should the away team be very strong.

As the table below shows, the evidence matches the expectation. Where Home Teams are poor, or away teams strong we see an increase in the number of away wins and draws - and a fall in the success rate of the home side.

Conversely, where home sides are strongest or away sides weakest, we see a rise in home wins and a fall in the number of upsets (aways and draws).

	Total	H	D	A	H%	D%	A%
HomeHi	183	99	42	42	54.10%	22.95%	22.95%
HomeLo	180	78	51	51	43.33%	28.33%	28.33%
AwayHi	179	77	49	53	43.02%	27.37%	29.61%
AwayLo	184	100	44	40	54.35%	23.91%	21.74%

(363 games from 1997/8 season)

To take this idea further, I decided to classify them in more detail, and using a larger dataset to include an extra 350 games from the 96/97 season. Rather than having High and Low, I decided that suitable classifications would be Very Strong, Strong, Weak, Very Weak.

Very Strong = 170 points +
 Strong = 133 to 169 points
 Weak = 107 to 132 points
 Very Weak = up to 106 points

	Total	H	D	A	H%	D%	A%
H1	172	91	49	32	52.91%	28.49%	18.60%
H2	169	82	42	45	48.52%	24.85%	26.63%
H3	182	67	61	54	36.81%	33.52%	29.67%
H4	190	87	49	54	45.79%	25.79%	28.42%
A1	181	59	57	65	32.60%	31.49%	35.91%
A2	162	75	42	45	46.30%	25.93%	27.78%
A3	199	104	63	32	52.26%	31.66%	16.08%
A4	171	89	39	43	52.05%	22.81%	25.15%

Key: H1 Home team very strong; H2 Home team strong; H3 Home team weak; H4 Home team very weak; A1 Away team very strong; A2 Away team strong; A3 Away team weak; A4 Away team very weak

This table shows the results of that analysis.

What is of particular interest to me once more is how much of an

effect the weakness or strength of the **away** team has on the likelihood of a Home Win. This may be stating the obvious in one sense - but the strength of the away side does appear to have a bigger influence on the probability of a Home result than the strength of the home team itself.

From the baseline we looked at earlier, simply by selecting a match with a pin and automatically going for the home team we could expect a success rate of around 45%. A decent but not spectacular away side (A2) produces similar results to the pin. However, when the away side is very strong or ordinarily weak, there is a marked effect upon the chances of a home victory.

It is my belief that for an away side to cause an upset to an extent that is significantly better than randomness, it must be a particularly strong side to overcome the overwhelming disadvantage of being away from home. Similarly, we can see that the effect of this disadvantage on already weak teams is notable too. As such, it would appear that a key element (as we have seen before) in predicting home wins is the ability of the away side to overcome the in-built home advantage.

Similar issues face away teams when analysing the effect of the strength of the home team upon the likelihood of an away win. As we can see, it broadly follows that the stronger the home team, the less likely it is that an away win shall occur.

I decided to look at whether a direct comparison between the home and away team produces something more useful.

Supremacy Comparison

	Total	H	D	A	H%	D%	A%
Above 0	363	190	100	73	52.34%	27.55%	20.11%
Below 0	350	137	101	112	39.14%	28.86%	32.00%

As we can see, those games where the home side has a supremacy of 0 or more (i.e. the home side is the stronger of the two) it is more likely that the home side will win than if the away side is strongest. The converse is also true. Let's re-classify into more detail

H++ 50 +
H+ 0 to 49
A+ -49 to -1
A++ -50 and lower

Detailed Supremacy Comparison

	Total	H	D	A	H%	D%	A%
H++	145	89	34	22	61.38%	23.45%	15.17%
H+	218	101	66	51	46.33%	30.28%	23.39%
A+	186	69	58	59	37.10%	31.18%	31.72%
A++	164	68	43	53	41.46%	26.22%	32.32%

We can see that much of the reason why the Above Zero category did so well was the remarkable performance of those sides with a very strong home supremacy. This underlines the point made earlier that the disadvantage automatically faced by away sides becomes extremely powerful in the face of additional handicaps (i.e. a home side which is vastly superior).

Weak teams, in the main, find it very difficult to win - or even draw - away from home. We can also see that the supremacy relationship seems to be an effective predictor of away success rates.

Home and Away Form

An element of analysis that may bear fruit is the difference in home and away performances that many teams have. The most glaring example recently was when Crystal Palace went almost the entire season without a home victory, despite some good performances (bizarrely enough!) away from home.

At the time of writing, the performance of George Graham's Tottenham side is notable for their poor record on their travels, despite Graham having organised them into a side who are feared at White Hart Lane.

We may well find that looking solely at the home record of the home team, and solely at the away record of the away team might provide some interesting discoveries.

Rather than use a points method again, I shall this time attempt to produce a goals-based analysis.

A throwaway book by *Statistician* entitled *Football Pools* claims that this is a fruitful area of research. I shall put him to the test.

Statistician claims that an analysis of one week's coupon demonstrates that a Home Goals minus Away Goals algorithm is a successful one. I am dubious about using this algorithm for two reasons.

Firstly, no other evidence is proffered and so I see no reason to believe one week's results - and secondly I feel sure that the differences between teams would rise as the weeks of a season go on making realistic comparisons difficult.

Consequently, I am going to operate on the basis of an average, much as I did earlier with the PAR ratings. This time, we shall work out the average number of home goals scored by the home team; divide that by the number of home games played thus far; and multiply by 100. I shall do the same with the away side, only concentrating on their away record.

The mid-point rating for home sides is 143

The mid-point rating for away sides is 100

The mid-point rating overall is 123

Those teams rated at 143 and over are considered high

Those rated at below are considered low

	Total	H	D	A	H%	D%	A%
HomeHi	181	102	39	40	56.35%	21.55%	22.10%
HomeLo	182	75	54	53	41.21%	29.67%	29.12%
AwayHi	80	34	22	24	42.50%	27.50%	30.00%
AwayLo	283	143	71	69	50.53%	25.09%	24.38%

Now in more detail using the larger data set:

	Total	H	D	A	H%	D%	A%
H Exc	191	111	44	36	58.12%	23.04%	18.85%
H Good	149	65	42	42	43.62%	28.19%	28.19%
H Fair	236	99	74	63	41.95%	31.36%	26.69%
H Poor	137	52	41	44	37.96%	29.93%	32.12%
A Exc	53	20	15	18	37.74%	28.30%	33.96%
A Good	87	40	22	25	45.98%	25.29%	28.74%
A Fair	299	134	80	85	44.82%	26.76%	28.43%
A Poor	274	133	84	57	48.54%	30.66%	20.80%

Excellent = 200 +
 Good = 143 to 199
 Fair = 100 to 142
 Poor = 99 or below

This does appear to be a highly predictive tool. The home record of the home side clearly affects the chances of a home win, as well as the chances of an away victory. The away record of the away side not only correlates with the chances of both away and home wins, but once again demonstrates how weak away sides are poor selections.

To test the supremacy differences, see the following table:

	Total	H	D	A	H%	D%	A%
Above 0	500	246	136	118	49.20%	27.20%	23.60%
Below 0	213	81	65	67	38.03%	30.52%	31.46%

Average goal supremacy alone appears to be a predictive tool. Let's look more in depth at the extent to which a more detailed advantage indicates a particular result.

H++ = 100 points +
 H+ = 0 to 99 points
 A+ = -1 to 99 points
 A++ = -100 points or worse

Once more, we can see that this does appear to be of high predictive value.

	Total	H	D	A	H%	D%	A%
H++	157	87	38	32	55.41%	24.20%	20.38%
H+	343	159	98	86	46.36%	28.57%	25.07%
A+	171	65	56	50	38.01%	32.75%	29.24%
A++	42	16	9	17	38.10%	21.43%	40.48%

Moving Averages

The concept of moving averages may well hold some value for the model builder. Moving averages are where two sets of figures are stored for a team. The first figure is updated more slowly than the other is. The latter is designed to react more quickly to recent events. The aim is to be able to spot changing trends and catch upswings (and downswings) in form. For example, it is common after the arrival of a new manager for a team to pick up form quickly and dramatically (e.g. George Graham at Spurs, John Gregory at Aston Villa, arguably even Gerard Houllier at Liverpool).

Many of the indicators we have analysed and found to be of use so far are long or medium term indicators and so a period of time would naturally elapse before they could react to such changes. Moving averages could alert us to changes in form a lot quicker - but do they have predictive value? If they do, then one would expect that teams who have improved a great deal would be in form and ready to win more matches. Wrong! Instead, the really interesting findings are where we analyse whether the teams are performing with or against the grain of their longer-term performance indicators.

Every Premiership manager knows about the curse of the Manager of the Month award - so often presented to the managers of very

Homes	Total	H	D	A	H%	D%	A%
Up Against the Grain	146	53	36	57	36.30%	24.66%	39.04%
With Grain	456	214	135	107	46.93%	29.61%	23.46%
Down Against the Grain	114	60	33	21	52.63%	28.95%	18.42%
Aways	Total	H	D	A	H%	D%	A%
Up Against the Grain	133	76	29	28	57.14%	21.80%	21.05%
With Grain	452	194	134	124	42.92%	29.65%	27.43%
Down Against the Grain	128	57	38	33	44.53%	29.69%	25.78%

ordinary teams who have gone through a particularly impressive spell. The curse, for those who are unaware of its powers, is that no sooner has the award been presented, the same team gets beaten. The statistics above show that there is no such curse.

What we instead see is that when teams improve or deteriorate to such an extent that it can be deemed 'out of character' (or to put it another way, is well away from its longer term rating) then it is seldom a fundamental change in fortunes. Rather it is a blip.

The Manchester United on a poor run is a side that will be expected to return to winning ways rather than find themselves plunged into a relegation battle. The Charlton Athletic in a purple patch is more likely to return to type than to have turned a corner.

As we can see, home teams who are having a good run of recent form that is out of character are the least likely home victors.

Similarly, those who, despite being strong teams have recently gone through a poor spell are the most likely to resume winning ways. Those teams whose recent performances are in accordance with their long-term form do no better or worse than random.

Similarly, away sides doing well against the grain are the least likely to achieve an away win. The 'down against the grain' figures are not as impressive as with the home analysis, but this has a relatively easy explanation. Teams going through a poor patch are arguably less likely to get back on track away from home.

As such, the moving averages do indeed have a predictive use - just not in the way that many would originally imagine.

Latest Relevant Result

An analysis by Drapkin and Forsyth shows a predictive relationship between future performances and the latest relevant result. The term **relevant result** is used to denote the home team's latest home result and the away team's latest away result.

Last home of home team

	Total	H	D	A	H%	D%	A%
GD=-1 or worse	253	111	65	77	43.87%	25.69%	30.43%
GD=0 to +2	601	309	138	154	51.41%	22.96%	25.62%
GD=+3 or more	137	81	34	22	59.12%	24.82%	16.06%

Last away of away team

	Total	H	D	A	H%	D%	A%
GD=-3 or worse	133	78	31	24	58.65%	23.31%	18.05%
GD=0 to -2	595	308	143	144	51.76%	24.03%	24.20%
GD=+1	158	72	37	49	45.57%	23.42%	31.01%
GD=+2 or more	105	43	26	36	40.95%	24.76%	34.29%

Looking at the home side, we can see that the better the result in the home team's favour, the more likely a home win would follow in their next home game - and the less likely that the away team would take the spoils. The away team analysis shows a similar discovery.

Method

The initial method I used to create a very simple model utilised Certainty Factors. These are produced as follows:

Take a factor and assign a certainty factor based on the current evidence. For example, if there is a Large Away Supremacy in this game we could say of the Home Side that, according to the available evidence, we are 26.32% certain that the Home Team will win.

We then take that certainty factor and combine it with another piece of evidence. Let us assume the following: the Home team has good recent form, and home teams with good recent form win 60% of their matches (this is an assumed figure for the benefit of the example).

The formula for certainty factors is $(x+y) - xy$

So in this case we have :

$$\begin{aligned} & (0.2632 + 0.6) - (0.2632*0.6) \\ & = (0.8632)-(0.15792) \\ & = 0.70528 \end{aligned}$$

So we can be just over 70% certain that this team will win

Once we have a Certainty Factor for both teams we are then able to produce a match rating by subtracting the away team's score from the home team's score. One problem with using Certainty Factors is that if too many factors are included in the model, the Certainty Factors have a tendency towards 100%.

This is why only a few factors can be used. Also, by concentrating on those factors that have been shown to have predictive value for both home and away teams we are able to produce a useful comparison between the two. It is this comparison which forms our basis for producing a match prediction.

We already know that in reality the ratio between Home, Draw and Away results are roughly 2:1:1 - so I have attempted to set limits which will also produce a similar ratio for predictions of Home, Draw and Away.

As such:

- A match comparison of 15 points or better can be regarded as a Home Win.
- A match comparison of below 10 points can be regarded as an Away Win.
- Any other is a draw.

These limits may need to be reviewed in light of more evidence.

The factors that the current model assesses are:

- A Match Superiority Rating based on the differences between each team's FRAN rating

- The home team's Home Goals Rating (Home Goals / Home Games multiplied by 100)
- The away team's Away Goals Rating (Away Goals / Away Games multiplied by 100)
- The difference between the two Goals Ratings
- Last Home result for the Home Team
- Last Away Result for the Away Team

The Future

My next step is to run a test of this model over 10 years data. This should provide more detailed information as to how predictive the model's match comparison ratings actually are.

Additionally, I will need to test the results of my data profiling using a range of other techniques. Hopefully, this will result in an even better model.

Some of these are Reference Classes (as outlined in Peter May's book *Forecasting Methods for HorseRacing*), Neural Networks, Genetic Algorithms, and a method which I heard about from fellow SMARTsig member Peter Howes which is known as Dempster-Shafer Theory.

I will also be using these methods not only to predict Homes, Draws and Aways, but also to produce odds lines which can then be compared with the odds offered by bookmakers to pinpoint value bets.

Future articles will assess how successful the current model was over a ten-year period, as well as reporting whether the other methods mentioned are more successful in building a model, and what weaknesses are inherent in each.

Premiership Predictions So Far

28th December 1998

Home Team	Away Team	Diff	Prediction	Correct
A Villa	Sheff Wed	20.82	Home	Y
Liverpool	Newcastle	20.82	Home	Y
West Ham	Coventry	20.82	Home	Y
Leicester	Blackburn	19.34	Home	N
N Forest	So'ton	15.89	Home	N
Tottenham	Everton	15.16	Home	Y
Derby	M'Boro	11.20	Draw	N
Charlton	Arsenal	9.91	Away	Y

9th January 1999

Home Team	Away Team	Diff	Prediction	Correct
Man Utd	West Ham	27.20	Home	Y
Coventry	Nforest	19.21	Home	Y
Sheff Wed	Spurs	15.93	Home	N
So'ton	Charlton	15.93	Home	Y
Wimbledon	Derby	15.16	Home	Y
Arsenal	Liverpool	14.49	Draw	Y
M'boro	A Villa	10.89	Draw	Y
Everton	Leicester	9.95	Away	N
Blackburn	Leeds	8.76	Away	N
Newcastle	Chelsea	5.03	Away	Y

16th January 1999

Home	Away	Diff	Prediction	Correct
Liverpool	So'ton	23.91	Home	Y
Chelsea	Coventry	20.82	Home	Y
A Villa	Everton	18.96	Home	Y
Spurs	Wimbledon	17.61	Home	N
Derby	Blackburn	17.42	Home	Y
West Ham	Sheff Wed	17.08	Home	N
Leeds	M'boro	15.12	Home	Y
Charlton	Newcastle	13.79	Draw	Y
Leicester	Man Utd	9.69	Away	Y
Nforest	Arsenal	8.63	Away	Y

=20 correct forecasts from 28 predictions



***We do have a few casino players among our number.
Here is one suggestion for cracking that age old
problem of regularly coming out in front at the
roulette table.***

BEATING THE WHEEL

Rex Towers

SMARTsig has been around for about 5 years now but I have yet to see any real discussion involving methods for beating the Casinos. So I hope Stef will print this in the next magazine in the hope it will start up some ideas on winning at the tables.

To get things going, here is a system called Shower Roulette which has had considerable proven success and was formulated by someone who actually works at a casino.



RULES OF SHOWER ROULETTE

1. Record the results of 60 spins off 4 different tables, this is so that you can be certain that one wheel will qualify.
2. As the numbers come out place a mark next to each number on your scorecard wheel diagram.
3. Do your final update after 60 spins, then quickly select the wheel which you will be playing.
4. Select one of the wheels where at least 4 numbers, together on the wheel, have come out at least twice. This group must be bordered, immediately on both sides by a number that has only been out a maximum of once.

5. You may have only 4 numbers in a group like this or even 5, 6, 7, 8 or 9 numbers together.

You may also have 2 groups like this, on the same wheel. What you do is bet on all the numbers in the group, or groups, immediately, straight up for the next 30 spins.

6. Do not select a table where there are more than 2 groups.

7. Each group must include at least 1 number that has been out at least 3 times.

If you have a group of 4 or 5 numbers and they have all been out just twice, avoid this one.

8. A group that has 6 or 7 numbers must have at least 3 numbers that have been out at least 3 times. A group with 8 or 9 numbers must have at least 4 numbers that have been out at least 3 times.

9. Do not go past 30 spins, because this has been calculated so that if you are playing 4 numbers, as an example, and they each come out just once, you will still be up in profit.

Should there be a possibility of a bad run developing then this will prevent too much damage to your bank.

10. Put all your winnings back into your bank.

11. Start with a \$500 bank, with a backup of \$500 if you are starting off playing with \$5 chips.

If you are starting off playing with \$2 chips then you would need a bank of \$200, with backup of \$200. This backup is just in case you hit a poor run during your initial start-up. Later on, your ever increasing bank, should cover any slip ups.

12. Every time you double your bank double your bet. When your bank has reached \$3,000, play every game there after with \$25 chips, unless the bank drops below \$2,500 after the 30 spins have been played, in which case go back to \$20 chips.

If you have any questions, read through the rules again step by step and it should be pretty clear.

What did we find?

Only once did any of the games fail to get a winning spin. In this game 4 numbers qualified and none of them came out resulting in a 120 unit loss.

The biggest winning game was when 8 numbers qualified and we had 14 winning spins which gave us a profit of 264 units. The best winning run was more than \$10,500 profit in the first 8 games, starting with \$5 chips and increasing the bets as the bank rose.

Below are some of the results from playing the system. As you will see, they dropped off a little near the end, but we were a bit suspicious with the scoreboards and the drop in speed of the wheels that we were playing.

RESULTS OF 15 GENUINE CASINO GAMES.

Game	Numbers Chosen	Result	Units + / -	Unit Value(\$)	Profit Loss (\$)	Bank
						500
1	4	5	55	5	275	775
2	5	5	30	5	150	925
3	7	10	150	5	750	1675
4	5	7	102	10	1020	2695
5	6	5	0	20	0	2695
6	5	4	-6	20	-120	2475
7	5	8	138	20	2760	5230
8	4	4	24	25	600	5830
9	9	7	-18	25	-450	5380
10	4	6	96	25	2400	7780
11	4	4	24	25	600	8380
12	5	5	30	25	750	9130
13	6	5	0	25	0	9130
14	4	6	96	25	2400	11530
15	4	4	24	25	600	12130

RESULTS OF 24 GENUINE CASINO GAMES.

Game	Numbers Chosen	Result	Units + / -	Unit Value(\$)	Profit Loss (\$)	Bank
						500
1	7	9	114	5	570	1070
2	8	14	264	10	2640	3710
3	4	7	132	25	3300	7010
4	4	3	-12	25	-300	6710
5	6	8	108	25	2700	9410
6	9	6	-54	25	-1350	8060
7	4	6	96	25	2400	10460
8	10	9	24	25	600	11060
9	4	0	-120	25	-3000	8060
10	9	7	-18	25	-450	7610
11	6	4	-36	25	-900	6710
12	9	8	18	25	450	7160
13	4	3	-12	25	-300	6860
14	5	4	-6	25	-150	6710
15	4	4	24	25	600	7310
16	4	2	-48	25	-1200	6110
17	5	4	-6	25	-150	5960
18	4	2	-48	25	-1200	4760
19	5	5	30	25	750	5510
20	4	4	24	25	600	6110
21	4	2	-48	25	-1200	4910
22	4	5	60	25	1500	6410
23	7	6	6	25	150	6560
24	5	5	30	25	750	7310

Reply query from Rattan Kumar

In your roulette system there were 15 game plays. A table is selected after 60 spins for the first game of 30 spins and after this 30 spins, win or lose you stop. How do you then move to the second game?

Do you start the process of selection using 4 tables again? Do you stop and try another time, or continue on the same table now with the 90 spins results?

Response from Rex

This is not my system. But once you have found a qualifying table and you are playing you should be able to chart some numbers from an adjoining table at the same time.

When you've finished playing a game you could also re-chart say the most recent 20 or 30 numbers from that same table you have been playing and continue up to 60 spins to see if that table re-qualifies.

However, in my opinion, if you have just played a game and won, I would leave the Casino and come back another day. Even the most powerful casino system will still experience losing periods.

Further thoughts, (and a KISS) from Gareth Jones

I've seen the bit in January SMARTsig issue re the KISS articles. Is this one any good?

Since Rex's seeing 'Power Roulette' system I've been having a bit of fun with a downloaded roulette game from the internet. I may have stumbled on a simple way of winning (or am I being optimistic?).

- 1 Only bet red or black
- 2 Watch the first six spins, then start betting.
- 3 Look at the previous six spins and put your money on the colour which has come up least in those six spins. If it is 3-3 then bet the opposite of the last spin.
- 4 Bet on this colour till it wins, doubling your stake each time it loses.
- 5 When you win go back to step 3.

I don't know whether the probabilities mean this is a non-starter but every time I've played it I've ended the session up on what I started.

Looks like some popular misconceptions have crept in here that could be someone's first steps on the road to ruin Gareth.

See my 'Out Back' article on page 69 this month. - Stef

Likelihood Ratios: N Hunt all age h'caps based upon age & gender.

age	sex	runs	wins	LR	AI x LR	runs	wins	LR	AI x LR
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February

5Male	13	1	0.513	1.455	688	91	1.313	1.207
5Fem.	1	0	0.000	0.152	221	21	0.905	0.861
6Male	125	21	1.244	1.454	870	100	1.119	1.159
6Fem.	27	1	0.237	0.717	187	20	1.032	0.861
7Male	366	68	1.406	1.331	712	70	0.939	1.023
7Fem.	47	8	1.264	0.997	158	15	0.904	0.749
8Male	613	95	1.130	1.130	545	38	0.646	0.839
8Fem.	71	7	0.674	1.038	113	5	0.399	0.584
9Male	590	75	0.897	0.897	336	29	0.814	0.647
9Fem.	63	6	0.648	0.887	49	2	0.367	0.427
10Male	1102	106	0.656	0.678	381	18	0.427	0.490
10Fem.	67	6	0.606	0.588	40	2	0.453	0.340

March

5Male	23	6	2.174	1.346	914	89	0.929	1.094
5Fem.	2	0	0.000	0.082	276	25	0.858	0.830
6Male	201	30	1.081	1.389	1010	126	1.228	1.075
6Fem.	38	3	0.528	0.559	274	25	0.865	0.891
7Male	424	66	1.136	1.298	913	98	1.036	0.963
7Fem.	89	15	1.249	0.905	206	19	0.875	0.825
8Male	711	130	1.378	1.118	650	65	0.957	0.799
8Fem.	107	12	0.778	1.001	150	12	0.749	0.692
9Male	711	91	0.904	0.894	394	36	0.866	0.621
9Fem.	89	11	0.869	0.892	63	5	0.743	0.555
10Male	1361	169	0.873	0.673	422	20	0.429	0.471
10Fem.	78	11	1.011	0.625	40	2	0.453	0.474

The final instalment.

Full details of the theory behind and the use of these figures please refer to October 1998, issue 5.10 and all issues since

The modern world we live in is an ever changing place, but some cynics would argue that it is not always for the better. Picked up from the Internet recently was the following scenario.

MATHEMATICAL PROGRESS?

From Internet (Anon.)

Teaching Maths in 1950:

A logger sells a truckload of lumber for \$100. His cost of production is $\frac{4}{5}$ of the price.
What is his profit?

Teaching Maths in 1960:

A logger sells a truckload of lumber for \$100. His cost of production is $\frac{4}{5}$ of the price, or \$80.
What is his profit?

Teaching Maths in 1970:

A logger exchanges a set "L" of lumber for a set "M" of money. The cardinality of set "M" is 100. Each element is worth one dollar. Make 100 dots representing the elements of the set "M". The set "C", the cost of production, contains 20 fewer points than set "M." Represent the set "C" as a subset of set "M" and answer the following question:
What is the cardinality of the set "P" for profits?

Teaching Maths in 1980:

A logger sells a truckload of lumber for \$100. Her cost of production is \$80 and her profit is \$20. Your assignment:
Underline the number 20.

Teaching Maths in 1990:

By cutting down beautiful forest trees, the logger makes \$20. What do you think of this way of making a living?
Topic for class participation after answering the following question:

How did the forest birds and squirrels feel as the logger cut down the trees?
There are no wrong answers.

Teaching Maths in 1996:

By laying off 40% of its loggers, a company improves its stock price from \$80 to \$100.

How much capital gain per share does the CEO make by exercising his stock options at \$80? Assume capital gains are no longer taxed, because this encourages investment.

Teaching Maths in 1997:

A company out-sources all of its loggers. The firm saves on benefits, and when demand for its product is down, the logging work force can easily be cut back. The average logger employed by the company earned \$50,000., had three weeks vacation, a nice retirement plan and medical insurance. The contracted logger charges \$50 an hour.

Was outsourcing a good move?

Teaching Maths in 1998:

A laid-off logger with four kids at home and a ridiculous alimony from his first failed marriage comes into the logging company corporate offices and goes postal, mowing down 16 executives and a couple of secretaries, and gets lucky when he nails a politician on the premises collecting his kickback.

Was outsourcing the loggers a good move for the company?

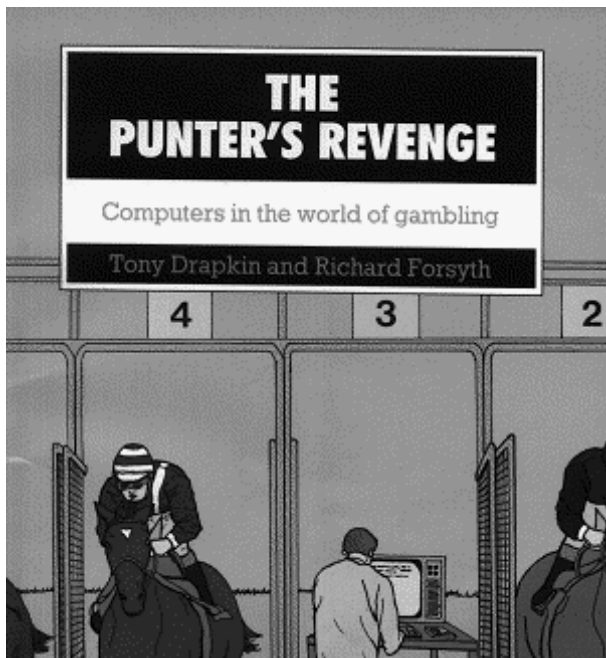
Teaching Maths in 1999:

A laid-off logger serving time in prison for blowing away several people is being trained in computer technology in order to work on Millennium projects.

What is the probability that the automatic cell doors will open on their own at precisely 00:01 am on 01/01/2000?

**Our
serialisation
of *The
Punter's
Revenge*
continues.**

**We're up to
chapter 4 of
the book,
entitled
'Professional
Backers'**



THE PUNTER'S REVENGE (Serialisation part VII – Chapter 4)

Tony Drapkin & Richard Forsyth

4 Professional backers (continued)

4.4 Inside information

The annual cost of keeping a racehorse in training in Great Britain is over £6,000. [c.1986] This sum does not include the cost of purchasing a thoroughbred at absurdly inflated prices in the first place. There are something like 3,200 flat races to be won in a normal season and there are in the region of 8,500 flat horses in training.

Apart from a minority of top class races, the level of prize money is low The Basic Daily Rate (BDR) of prize money for a top class course like Ascot is around £17,000 divided between the six races

which make up the normal racecard. The BDR for an unfashionable course like Edinburgh or Catterick is around £4,500.

You don't have to be a mathematical genius to realise that the vast majority of horses in training are no-hopers who will be lucky to make a pittance in place money, let alone actually win. In the event of a win. It is unlikely that the prize money will cover training fees, the more so because it is customary to give a 10% 'present' to the stable as well as to the winning jockey. The problem is compounded by the fact that the best horses are capable of winning two or three or even more times in the course of a season.

Given these stark facts of life, it is inevitable that being the proud possessor of a racehorse leaves the average owner with nothing more tangible than a regular hole in his or her bank account. There are intangible benefits of course. An owner may on race days enter the hallowed circle of the parade ring and rub shoulders with the titled and the wealthy on something approaching equal terms.

There is all the romance of being part of the drama and excitement of the turf, where the names change from year to year, but the rituals have a fetching timelessness. And above all, there is hope, which springs eternal on the turf as nowhere else; the hope of one day buying a potential champion for the proverbial song, and seeing one's colours carried to glory and a place in the annals of the sport of kings. In other words, many owners are incurable romantics who are quite prepared to pay the price for their dreams.

There is, however, another breed of owner with a more hard-headed approach to the racing game. Such owners believe in making the most of the limited opportunities open to them. If a horse is able to win, then the prize money should be supplemented and in many cases exceeded, by the proceeds of a substantial gamble. This is known variously in the trade as 'going for a touch' 'having a tilt at the ring', or, less elegantly, 'having it off'.

The owner who gambles expects the trainer to prepare the horse carefully for a well-planned betting coup. This means getting the horse in cherry-ripe condition for its chosen race. preferably without its ability or fitness being too obviously exposed.

The classic method for achieving this is to ensure that the horse runs on a number of occasions without getting 'in the frame', that is without being placed in the first four. This practice is known as running a horse 'down the field'.

It is easily (and legitimately) done by running a horse when it is not 100% race fit, or by running it in a race in which it is outclassed by the opposition. It could also be done by 'stopping' or 'pulling' a horse or by running it when it was patently unfit to do itself justice, but such crude practices apart from being unnecessary, would almost certainly lead to the perpetrator being hauled before the local stewards, or even before the Jockey Club itself. In this way, bookmakers and other punters are put off the scent and the horse will not start at cramped odds.

Clearly, when hundreds or even thousands of pounds are being wagered, the difference between starting at say 10/1 and starting as hot favourite can make or break a successful coup.

Keeping the horse's form dark in order to protect the odds is only half the story. Gambling owners must also ensure that information regarding the proposed coup is strictly reserved for themselves and a small circle of connections. Apart from watchers on the gallops where horses are trained, the large bookmaking chains have informants whose ears are well-attuned to racing's bush telegraph. At the slightest hint that a horse is on the job they will protect themselves through the mechanisms of the market.

Owners who bet must also find ways of placing substantial sums of money on their horse without sending the odds cascading downwards. Given the weakness of the on-course market they can attempt to disguise the source of the bet by operating through a third party known as a commission agent whose job it is to place the bet while the connections feign indifference.

An alternative strategy consists in placing the money away from the course in small sums which will not attract the attention of the large chains.

Occasionally a really determined coup merchant will attempt to

double bluff the bookmakers by ostentatiously betting on another horse at the track while ensuring that the real money is spread among the betting shops.

Occasionally, certain on-course bookmakers may act in collusion with the coup merchants by artificially inflating their prices about the horse concerned. This practice, known as the 'knock-out' is a source of much wrath among the boys from BOLA, and serves only to strengthen their resolve to gain a stranglehold on the on-course market.

It would be rash to assume that all these machinations give a cast-iron guarantee of success. Every season throws up its quota of attempted coups which for one reason or another, go wrong. Let us take one particularly well-documented example from the 1985 season.

George William, a four-year-old colt with plenty of ability but no previous worthwhile form, was specially prepared to land a coup for his owner. On three occasions he was run down the field in handicaps in which he was patently outclassed. The minimum weight that a horse can be set to carry in a handicap is 7 st 7 lb (105 lb).

But horses can be rated well below this weight by the handicapper if their ability is outside the range for which the race is intended. This rating is known as the long handicap weight. If a horse's long handicap weight is well below the statutory 7 st 7 lb (105lb), it has to carry overweight. This is unfortunate from the horse's point of view, but reflects the fact that it probably shouldn't be racing in such exalted company anyway.

Such was the gap between George William and his rivals on the last of his pre-coup runs (a good race at Nottingham worth £7,700) that even with 7 st 7 lb (105 lb) on his back he was carrying a massive 29 lb more than his long handicap weight. This was roughly equivalent to giving his rivals a 9 lengths start - and over the sprint distance of six furlongs at that. Not unnaturally, he was the rank outsider of the field at 100/1 and was soundly beaten.

However, George Williams performance did not escape the eagle eye of the *Timeform* race reader. When, a few days later George William appeared in the race which was his true objective, a small event at Wolverhampton over his best distance of five furlongs, and in which he was set to carry 7 st 13 lb (111 lb), Timeform rated him 18 lb clear of his rivals and made the following comment:

“ . . . best effort in £7,700 handicap in Nottingham in July on latest start when carrying 29 lb above long handicap weight, tends to race freely; worth keeping an eye on in a sprint handicap when running off proper mark.”

To the many punters and bookmakers who subscribe to Timeform publications, George William's potential was fully exposed. The result was that a horse with no obvious form was backed down to 11/4, and won going away by a neck. The owner, who had been expecting to get 10/1 about his horse, was furious and castigated the hapless trainer publicly for having destroyed all chance of a good starting price. George William was eventually moved to another yard for which he won three more races at odds of 5/2, 2/1 and 5/4.

The George William affair graphically illustrates the fact that for many smaller trainers the only way to stay in business is to engineer coups for owners (and increasingly these days owners in partnership) for whom resourceful punting is the 'name of the game' but it is a business which carries a high element of risk.

Gambles can, and frequently do go astray, either through bad luck or simply because other stables maybe attempting to go for a touch in the same race. Moreover, as we have seen, for some owners simply winning is not enough.

In an average season, approximately 380 men and women hold a licence to train on the flat. Of these around 130 will fail to train a winner. Of the remainder, a mere handful, say 10 at the most, will win more than 50 races each. Collectively they are likely to win around 600 races - one fifth of the total. They are also almost certain to take the lion's share of the prize money since most of the better class races will fall to them. These are the powerful stables run by outstandingly able trainers and patronised by oil sheikhs, American millionaires and the cream of the British racing establishment.

Hence, they are the stables to which the best horses go to be trained, paid for by owners who are not afraid to invest hundreds of thousands, and occasionally millions of pounds in a thoroughbred colt or filly. They are living proof of the adage that success breeds success.

A further 20 trainers will have between 30 and 50 winners each, while around 15 stables will manage between 20 and 30 winners. More than half of the trainers who do manage to score will have under 10 winners during the course of a typical season.

Furthermore, the North-South divide, which is a feature of economic and political life in Britain, is also reflected in racing, with the top ten stables in terms of prize money almost invariably coming from the affluent South.

These bleak facts coupled with the economics of racing mean that it is only in the most powerful stables that the 'guvnor' can afford not to bet. For the rest the occasional coup is necessary, while for some, regular gambles are the life blood of their operation.

It is difficult to distinguish the betting trainer from the non-betting trainer by observing market moves alone. Even non-betting stables can occasionally give the impression that gambles are taking place as stable lads and others connected with the yard pile money on to animals known to be fit and fancied. Furthermore, the most successful stables attract an enormous following among the general public and are therefore feared by the bookmakers. Their horses will frequently be heavily backed when not a penny of stable money is riding on them, and it is not uncommon for horses from the more fashionable yards to start at totally false prices.

Equally the activities of gambling stables, which may occasionally be reflected by dramatic moves in the betting as money is placed among the on-course bookmakers, are frequently concealed by varying degrees of elaborate subterfuge. The assiduous student of the market can begin to discern the movement of 'smart' money, but most of us are unlikely ever to know (in advance at any rate) what the betting trainer is up to.

These activities have been graphically documented in a book published in 1978 by the former trainer Ken Payne. Appropriately entitled *The Coup*, it charts the rise and fall of one of the most skilful and daring of the gambling trainers of the seventies.

Starting in a small way with what was really a sideline to his successful window-cleaning business, Ken Payne landed the odd coup for one or two owners with a handful of mediocre animals. Paradoxically, it was as his yard became more successful and he expanded that the problems began. Lacking patrons among the racing establishment, he found himself trawling London's clubland to find new owners for the hundred or so horses in his boxes.

Two things were essential to Ken Payne's operation. In order to keep his yard afloat financially, he himself had to bet in large sums and at the best odds he could possibly obtain.

By his own admission, most of his coups involved the use of massive vitamin treatments (which are legal) and anabolic steroids (which are not) in order to improve the performance of the horses in his care. One of the more hilarious episodes in his tragi-comic story involves his near exposure when a gelding being prepared for a coup developed a giant erection while walking round the parade ring at Ripon a display which prompted a passing steward to suggest that the offending beast should be gelded.

After a successful coup in 1967 which netted £20 000, Payne claims to have been a marked man as far as the large bookmakers were concerned. Descriptions of those who placed bets for him were circulated to betting shops; informants everywhere tried to pump connections for information. and he had to have a scrambler fitted to his phone. For a time he got round the problem by going to Jamaica (where it is possible to bet on English races) whenever he wanted to pull off a really good coup at generous odds. But a change of government and the imposition of exchange controls put an end to that particular stratagem.

More important than all this cloak and dagger stuff (at least from the ordinary punters point of view) were the devices he used in order to disguise a horse's form, thus deceiving bookmakers, the racing

press, and punters alike. None of these involved telling a jockey to pull a horse.

A series of unprepossessing form figures could be accumulated by running a horse on the wrong going, or over an inappropriate distance, or when it was short of a gallop, or wearing training shoes rather than the lighter racing plates. *In extremis*, a horse could always be subjected to the classic treatment by which an animal is allowed to go thirsty and then given a bucket of water before the race.

Multiple entries in the same race and switching between the stable's number one jockey and a less fashionable apprentice were other ways of keeping everyone guessing. It is quite within the bounds of possibility that such practices are used by some gambling trainers in the 1980s [and now 1990s]

Not that the Ken Payne formula was infallible. Gambles could, and frequently did go astray, but he won much more than he lost - up to £150,000 per annum, and every penny needed to cover the shortfall between training fees and the horrendous running costs of what was, at its height, one of the largest yards in the North.

In the end, the abnormally dry spring of 1976 and the accompanying rock hard going made a nonsense of his customary early season raids on the bookies. This, coupled with the stress inherent in his betting activities, the disintegration of his marriage and the tragic death of his youngest son, led to financial collapse and attempted suicide. Although Ken Payne has since picked up the pieces abroad, his tale sounds a cautionary note. Even being 'in the know' is no guarantee for coming out on top in the end.

Although inside information is not infallible, it does confer an enormous advantage upon those who are privy to it. Simply knowing that a horse is fit can sometimes make all the difference between a confident bet and one that is merely hopeful.

However, it is worth bearing in mind at this point that the credentials for inside information can vary wildly. In many cases, the trail linking the information to an authoritative source is so tenuous as to destroy

any grounds for credence. Such 'information' is at best tittle-tattle and at worst just plain garbage which can have little or no place in the professional's armoury.

Of equally dubious value is the 'inside information' sold through the columns of the sporting press. Some of this may be what it says it is. But inevitably, some of it is rubbish foisted upon a gullible public by rogues. There are countless, well-documented examples of this kind of practice.

One such case from our personal experience involved a tipster operating from an address on the south coast. This gentleman's lavish advertisements celebrating his successes in euphoric terms appeared week after week in a well-known racing publication.

On further investigation which could not have succeeded without the unofficial help of a post office employee prepared to break the rules, it transpired that this purveyor of priceless information was in fact operating under a pseudonym. Indeed, he was working under three or four different pseudonyms, and advertised a different service under each one. The addresses of the different services were simply different ways of writing the same address to which hundreds of pounds were sent weekly by hopeful punters. Incidentally, this man of many parts had managed to open accounts with one of the major clearing banks which processed cheques made out to him under all his different aliases so the fact that a tipster is prepared to accept a cheque means nothing.

The implications of all this are clear. Anyone proposing to buy inside information should not part with any money until he or she has verified the bona fides of the vendor personally. While it is true that some of those who sell information proof their tips to the papers in which they advertise by sending a copy of the advice in advance, it is also true that the sporting press regularly prints disclaimers in which it is pointed out that no guarantee can be given that the information advertised will make a level stake profit over a period of time.

For anyone who is not directly privy to the very latest intentions of the trainer or owner of a horse, the whole area of inside information

is a veritable minefield. Not that this has prevented certain professionals from seeking the company of those on the inside with a view to obtaining useful information. Occasionally, such associations may explode into scandal.

In 1978 for example the friendship between the champion National Hunt jockey John Francome and bookmaker-turned-punter John Banks became the subject of increasingly hostile speculation in certain quarters of the press. In the event, Francome was banned for five weeks by the Jockey Club and came within an ace of losing his retainer for one of the top stables on the jumping scene. Banks was warned off for three years and fined £2,500.

In both cases the punishment was for 'conduct likely to cause damage to horseracing'. The association ended there and then and was only resumed in 1985 when Francome retired as a jockey.

A much more lurid case involving gambler Harry Bardsley and rapidly rising young jockey Billy Newnes became front-page news in 1983. Bardsley, a Derbyshire property developer and big-time backer actually boasted of race-fixing in a number of articles which appeared in *The Sun*. His motives for doing this are obscure and he quickly recanted when Racecourse Security Services began to take an interest and passed on a report to the Director of Public Prosecutions.

Although no prosecution followed these events, the Jockey Club decided to set up its own hearing. It was found that Newnes had been guilty of taking a £1,000 bribe from Bardsley in return for information. Newnes claimed that Bardsley had originally asked him to stop *Valuable Witness*, a horse he was riding at the 1983 Royal Ascot meeting.

Newnes had refused to do this, but had told Bardsley that the horse was unlikely to be suited by the prevailing firm going. (Anyone subscribing to one of the better specialist racing publications would have known this; *Valuable Witness*, who is a very useful animal, has never shown his best form on going firmer than the soft side of good.) As it was, the horse finished fifth at 9/2 having drifted in the betting from 5/2.

After racing, Newnes found a £1,000 'present' on the back seat of his car. That he kept it cost him dearly. In January 1984 he was banned for three years, while Bardsley was warned off for fifteen. Thus a top jockey returned to mucking-out horses with the other stable lads and a big-time backer will not see the inside of a racecourse until 1999.

Comments from both sides after the hearing make interesting reading. Newnes' lawyer made a nice distinction worthy of Pascal's *Provincial Letters*.

There is a difference between a present and a bribe. One is for what you have done, the other is for what you are going to do. Many jockeys presumably get bought drinks by grateful punters. Billy felt that the principle was the same in this case.

Bardsley presumably following the mathematical theorem that two wrongs make a right, protested:

This penalty is draconian. I have been made a scapegoat for all the practices common in racing. Everyone knows that its going on. I'm only a little cog - the big ones are getting away with murder.

If what Bardsley said were true, some of the mild paranoia which afflict the average betting shop punter a view of racing might seem to have a basis in fact. The enemy would not for once be the bookmaker, but other punters able and willing to bend the rules in order to secure an advantage for themselves.

In the final analysis, the value of inside information is problematical. As we have seen, even owners and trainers who gamble can get things drastically wrong. Unless one is particularly well-connected to a regular and reliable source, such information, at best, can usually do little more than confirm what might be inferred from a diligent reading of the form book.

At worst, it is inaccurate rubbish which clouds the issue and saps the backer's will to rely upon his or her own resources in summing up a race. Professionals worth their salt will back their judgement when the chips are down, secure in the knowledge that if they can't make a living without being given titbits of information, they probably shouldn't be in the business anyway.

4.5 The professional backer - an endangered species?

It should by now be apparent that the professional backer living off his own wits is no magician pulling long-priced winners like rabbits out of a hat. He works hard to make his percentage and in general, the risks which he faces are far greater than those which assail the average bookmaker.

Quite apart from the normal vagaries of racing, a dreadful summer such as that of 1985 is quite enough to mean the difference between profit and loss. Rapid changes in the state of the going are the bookmaker's friend and the bane of all punters.

The professional's activities are even more vulnerable to the decisions of Westminster and Whitehall. Any further increase in betting tax will erode profit margins to the point where it becomes impossible for even the most able and disciplined backer to make a decent living.

At the time of writing, the few professionals who remain must be hoping and praying that the Government will some day heed the Jockey Club's advice, ignore the outrageous special pleading of the men from BOLA, and abolish the on-course tax.

This is vital if the market is to remain strong enough to ensure that the on-course bookmakers operate to fair profit margins, and that the influence of the off-course chains is kept within reasonable bounds. If the sort of excesses described earlier were to become generalised, the days of the full-time backer would be numbered.

In the meantime, the small band of genuine professionals continues its daily battle with the ring and with other punters. With its good days and its bad, its risks and pleasures, it is an existence that no-one could call dull. However, the aspirant should never forget that there are far easier ways of earning a living.



Next month's serialisation is from Chapter 5

A Day At The Races

We recently (December 1998, issue 5.12) featured a couple of brief reviews of the Sportsbook computer package. One member goes one step further by evaluating the performance of its ratings.

THE SPORTSBOOK PERFORMANCE

Ray Hopper

I took out a 28-day subscription to the Sportsbook on 23rd. October, and have spent many hours since the end of the subscription period analysing the ratable horseracing data. The two articles on the Sportsbook in the December magazine gave excellent descriptions of the data provided but no performance data.

This article gives some performance analyses for this brief period. If we think it's worth pursuing, there will be a further article, later in the year, covering the full 2-year database that is provided with a Sportsbook subscription. We would hope then to provide a comparison with at least one other system (unless of course Smart-proof takes over the job).

Due to the way The Sportsbook update system operates, I only received full data for the 26-day period from 23rd. October to 17th. November. This period covered 330 mid-season NH races, 120 end of season Flat races and 60 start of season All Weather races. Of these 180 NH races were handicaps, plus 60 Flat and 22 All Weather. For the purposes of these analyses I have included Claimers as handicaps.

It has been several years since I did any serious monitoring, and I made a serious initial error in failing to take proper note of joint ratings (i.e. where two horses are identically rated). I have back-corrected some of these errors, but this is one of several items needing further work.

Please also note that all performance data ignores the effect of tax.

Background Data

Let us begin with some background data looking at favourites and the top weights in handicaps.

These are a useful benchmark against which to judge an isolated selection system, and of course the selection process is free!

	Selections	Wins	% Wins	Returns	Profit	P.O.I. %
	(inc.Joint)				or Loss	
FAVOURITES @ SP - N.HUNT	355	122	34.4	401	46.0	13.0
FAVOURITES @ SP - FLAT	128	37	28.9	118	-10.0	-7.8
FAVOURITES @ SP - A/W FLAT	44	9	20.5	22	-22.0	-50.0
H'CAP TOP WEIGHT - N.HUNT	194	36	18.6	164	-30.0	-15.5
H'CAP TOP WEIGHT - FLAT	65	4	6.2	66	1.0	1.5
H'CAP TOP WEIGHT - A/W FLAT	25	4	16.0	28	3.0	12.0

Thus the period was a good one for NH favourite followers; less so on the Flat.

The relatively random selection of top weighted horses in handicaps would have given us a good run for our money.

Main Rating Systems

As reported in the descriptive articles in the December issue, there are four main ratings given for each race. These are Master Form (MF), Last Form (LF), Master Speed (MS) and Last Speed (LS).

As I understand it, the two Form ratings are a numerical description of comparative performance, corrected for weights, with the Master being an average of recent runs and Last being the actual performance rating for the previous outing. Similarly the Speed ratings are recorded speed ratings corrected for weight.

Data for many races, especially Maidens and Novices, is quite sparse. For the purposes of this initial monitor, I have simply taken the top two rated horses in each category, even if these are the only rated horses. I have also not attempted to evaluate the size of the gap between top and second top rated.

	Races	Wins	% Wins	Returns	Profit	P.O.I. %
NATIONAL HUNT						
MASTERFORM TOP RATED	330	60	18.2	266	-64.0	-19.4
MASTERFORM 2ND. RATED	330	53	16.1	310	-20.0	-6.1
LAST FORM TOP RATED	330	85	25.8	336	6.0	1.8
LAST FORM 2ND. RATED	330	57	17.3	240	-90.0	-27.3
MASTERSPEED TOP RATED	330	59	17.9	298	-32.0	-9.7
MASTERSPEED 2ND. RATED	330	60	18.2	273	-57.0	-17.3
LAST SPEED TOP RATED	330	74	22.4	324	-6.0	-1.8
LAST SPEED 2ND. RATED	330	50	15.2	211	-119.0	-36.1
FLAT						
MASTERFORM TOP RATED	120	21	17.5	103	-17.0	-14.2
MASTERFORM 2ND. RATED	120	25	20.8	168	48.0	40.0
LAST FORM TOP RATED	120	24	20.0	130	10.0	8.3
LAST FORM 2ND. RATED	120	18	15.0	109	-11.0	-9.2
MASTERSPEED TOP RATED	120	22	18.3	127	7.0	5.8
MASTERSPEED 2ND. RATED	120	10	8.3	30	-90.0	-75.0
LAST SPEED TOP RATED	120	23	19.2	105	-15.0	-12.5
LAST SPEED 2ND. RATED	120	11	9.2	86	-34.0	-28.3
A/W FLAT						
MASTERFORM TOP RATED	40	11	27.5	66	26.0	65.0
MASTERFORM 2ND. RATED	40	7	17.5	44	4.0	10.0
LAST FORM TOP RATED	40	7	17.5	36	-4.0	-10.0
LAST FORM 2ND. RATED	40	5	12.5	35	-5.0	-12.5
MASTERSPEED TOP RATED	40	4	10.0	18	-22.0	-55.0
MASTERSPEED 2ND. RATED	40	6	15.0	52	12.0	30.0
LAST SPEED TOP RATED	40	4	10.0	23	-17.0	-42.5
LAST SPEED 2ND. RATED	40	6	15.0	28	-12.0	-30.0

It must be borne in mind that this analysis includes every single race recorded during the analysis period, and various writers have noted the virtual impossibility of any selection system being able to find profits under such conditions. However, it is mildly disappointing to find performance figures that are no better than selecting the top weight in handicaps.

There would appear to be no significant difference between the four rating systems, excepting the excellent performance of the Master Form top rating in the tiny All Weather Flat sample.

On the other hand, all four rating systems, which obviously are not

mutually exclusive, would seem to have something to offer, as all are better than random selection.

I have extracted data covering handicaps only.

	Races	Wins	% Wins	Returns	Profit	P.O.I. %
NATIONAL HUNT						
MASTERFORM TOP RATED	180	32	17.8	183	3.0	1.7
MASTERFORM 2ND. RATED	180	26	14.4	120	-60.0	-33.3
LAST FORM TOP RATED	180	43	23.9	215	35.0	19.4
LAST FORM 2ND. RATED	180	31	17.2	137	-43.0	-23.9
MASTERSPEED TOP RATED	180	30	16.7	167	-13.0	-7.2
MASTERSPEED 2ND. RATED	180	37	20.6	161	-19.0	-10.6
LAST SPEED TOP RATED	180	46	25.6	206	26.0	14.4
LAST SPEED 2ND. RATED	180	24	13.3	103	-77.0	-42.8
FLAT						
MASTERFORM TOP RATED	60	5	8.3	45	-15.0	-25.0
MASTERFORM 2ND. RATED	60	10	16.7	110	50.0	83.3
LAST FORM TOP RATED	60	6	10.0	53	-7.0	-11.7
LAST FORM 2ND. RATED	60	5	8.3	35	-25.0	-41.7
MASTERSPEED TOP RATED	60	7	11.7	65	5.0	8.3
MASTERSPEED 2ND. RATED	60	1	1.7	7	-53.0	-88.3
LAST SPEED TOP RATED	60	5	8.3	34	-26.0	-43.3
LAST SPEED 2ND. RATED	60	5	8.3	59	-1.0	-1.7
A/W FLAT						
MASTERFORM TOP RATED	22	5	22.7	29	7.0	31.8
MASTERFORM 2ND. RATED	22	4	18.2	31	9.0	40.9
LAST FORM TOP RATED	22	4	18.2	25	3.0	13.6
LAST FORM 2ND. RATED	22	2	9.1	20	-2.0	-9.1
MASTERSPEED TOP RATED	22	2	9.1	9	-13.0	-59.1
MASTERSPEED 2ND. RATED	22	2	9.1	12	-10.0	-45.5
LAST SPEED TOP RATED	22	2	9.1	15	-7.0	-31.8
LAST SPEED 2ND. RATED	22	3	13.6	16	-6.0	-27.3

This has improved matters for National Hunt racing, with the Last Form and Last Speed ratings showing profits before and after tax. For Flat racing generally, it is the non-handicap performance which is superior. These statements are of course only true for this small sample.

Connections

As noted in the December articles, The Sportsbook releases a mid-day Email, containing gossip and tips from "connections", plus a note of the morning steamers. I did not have time to establish whether these noted steamers were a selection of shortening morning prices, or the full set.

	Races	Wins	% Wins	Returns	Profit or Loss	P.O.I. %
CONNECTIONS	98	17	17.3	55	-43.0	-43.9
STEAMERS	45	11	24.4	77	32.0	71.1

Thus the mid-day Connections update provided 98 tips from "connections", which had a disappointing 17% success rate on mainly short-priced horses, and a subsequent POI loss of 44%.

However, the same update noted 45 "steamers" which enjoyed a 24% success rate on longer priced horses and a 71% POI !.

Very interesting - but again a tiny sample.

The Evening Review

The Sportsbook publishes a superb Evening Review at about 4.00pm. each day, which gives the runners, weights and forecast SPs for the following day, with brief notes on some runners, plus data drawn from The Sportsbook databank showing each runner's previous performance history for the pertaining going, distance and course, plus performance and percentages of the relevant trainer/course and trainer/jockey combination for each runner.

Although initially I found this data to be merely interesting, about ten days into my subscription I began to use the print-out from the Evening Review to record rating and results data, and I was immediately struck by the high proportion of win and placed horses that had high trainer/course or trainer/jockey past performances, so I began to monitor these as well, eventually recovering the missing first ten days data.

Once again, much of the data was sparse, and with a number of joint top-rated, but nonetheless I monitored all the top-rated horses in each category, regardless of whether this was 1% or 100%.

	Selections	Wins	% Wins	Returns	Profit	P.O.I. %
	(inc.Joint)				or Loss	
<u>NATIONAL HUNT</u>						
TRAINER/COURSE TOP RATED	379	75	19.8	315	-64.0	-16.9
TRAINER/JOCKEY TOP RATED	356	86	24.2	371	15.0	4.2
<u>FLAT</u>						
TRAINER/COURSE TOP RATED	134	20	14.9	103	-31.0	-23.1
TRAINER/JOCKEY TOP RATED	128	16	12.5	96	-32.0	-25.0
<u>A/W FLAT</u>						
TRAINER/COURSE TOP RATED	45	6	13.3	35	-10.0	-22.2
TRAINER/JOCKEY TOP RATED	43	5	11.6	14	-29.0	-67.4

Thus, again stressing the small sample sizes, the trainer/course and trainer/jockey history was as relevant to the result as any of the rating systems for National Hunt racing, but little better than random selection for Flat racing.

Finally, I thought I would investigate whether the trainer performance data reinforced the rating data, and devised the following strategy :-

- List a) The top two horses for each of the 4 main rating systems
- List b) The top rated horse for each of the Trainer histories.

Any single horse appearing in both lists is a selection (but more than one horse, no selection)

	Selections	Wins	% Wins	Returns	Profit	P.O.I. %
					or Loss	
National Hunt only	223	61	27.4	271	48	21.5

The profit performance for handicaps only is likely to be even better, but I cannot extract the required data at this stage.

Conclusions

So, is The Sportsbook worth subscribing to? Based on the ratings performance alone we have insufficient data to make any recommendation, although several areas may have potential. I have no idea how The Sportsbook compares to the selection systems covered by Smart-proof, and anyway my analysis is unlikely to be as rigorous as Dave Robert's, which may invalidate any comparison.

However, there is much more to The Sportsbook than just a Ratings system. The sheer volume of historical data provided is alone worth at least a short-term subscription, and it seems to me that here is an honest product that is dedicated to a process of continually improving itself. I shall certainly renew my subscription at some time in the future.

Meanwhile I would welcome any feedback from existing Sportsbook subscribers either through SMARTsig Confidential or direct by e-mail at Ray@rayhopper.freeserve.com.uk



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SMART

OUT BACK

The intelligent choice

Probably?

The usual Up Front item has been changed to an Out Back feature this month. A few basic misconceptions about probabilities, mentioned in correspondence and printed this issue needed addressing. Printing a response in the first few pages to matters mentioned in the later pages seemed to be the wrong way around, so here we are at the back of the book.

The question of losing runs is tackled by PJ on page 16, arguing that if a losing run of 12 could be expected from your betting, this, in his opinion, would be too high for a successful business to survive. He then goes on to give an 'example' of a 50% strike rate over 20 bets with a losing run of 12. Whereas such a losing run is probable from time to time, even with a 50% strike, the example used skewed the figures. It is impossible to analyse a 50% strike over 20 bets with a losing sequence of 12.

20 bets with 12 losers means that 8 bets were winners. The example therefore *actually* showed a 8/20 strike rate, or 40%. The example needed to give a minimum of 24 bets to illustrate a 50% strike to accommodate a losing sequence of 12. But strike rates and associated losing sequences given in isolated examples can get very messy and misleading. Let's take a closer look at probabilities, what they *really* tell us, and calculate just how likely a losing sequence are for a given strike rate.

50% has already been mentioned, so we'll take that as a starting point. Such a strike rate simply means that each event, in isolation, has a 0.5 chance of success. No more, no less than that.

Tossing a coin is an example of a 50/50 chance. A 0.5 chance of a tail, which in turn means a 0.5 chance of not a tail, (or a head). There

are only two possible outcomes for each spin. H(ead) or T(ail).

One step further, if in a sequence, a coin is spun twice, there are four possible outcomes (2×2). These must be one of the following; HH, HT, TT or TH. So, simply translate this same effect into backing two horses, each with a perceived 50%, or 0.5 chance of winning. Again, only four possible sequences will unfold; WW, WL, LL or LW.

Printed this way it is easy to see that backing 2 winners is one of the four possible outcomes. It is easy to calculate then, that our chance of backing 2 winners, given each has a 0.5 chance, is 1 in 4, or $1/4$, or 0.25 (25%). Backing 2 losers also only occurs once, so this result is a 0.25 chance also. But ending the day with 1 loser and 1 winner happens in 2 of the 4 cases (WL & LW), so a chance of 2 in 4, or 0.5.

Given then, that we are backing two horses with a 0.5 chance (50%) it is *twice as likely* that we end the day with 1 winner and 1 loser, than ending the day with 2 losers. The analysis also tells us that from any two bets on horses or events with a 0.5 chance, experiencing a losing run of 2 is a 0.25 chance. Knowing that 0.25 is the same as 25%, a losing run of two therefore will happen 25 times in 100 bets, *on average*. To save writing down *all* the possible outcomes of a particular sequence of events, there is a far simpler way.

A 0.5 chance of winning, means a 0.5 of losing (chance figures will always total to 1.0). The chance of losing one bet, (a losing sequence of 1), is 0.5. The chance of losing 2 consecutive bets is $0.5 \times 0.5 (= 0.25)$. The chance of a losing run of 3 is $0.5 \times 0.5 \times 0.5$ (can also be written as 0.5^3 , or $0.5^3 = 0.125$, and so on. The 0.125 is the same as 12.5% (multiply the chance figure by 100), which in turn means that for our given strike rate (50%) a losing run of 3 will occur, *on average* 12 and a half times in a sequence of 100 bets. (or once every 8 bets)

Taking the original point again that 12 straight losers are not uncommon with a 0.5 chance - just how uncommon is it? An accurate figure can be found by multiplying the losing chance by itself x times. (where x is the length of the sequence) Losing chance of 0.5, losing run of 12 therefore is $0.5 \times 0.5 \times 0.5 \times 0.5 \times 0.5 \times 0.5 \times 0.5 \times 0.5 \times 0.5 \times 0.5 \times 0.5 \times 0.5$, (or 0.5^{12}) which works out to be a

chance of 0.000244140625. So, a losing sequence of 12 will be encountered, on average, every 4,096 bets ($1 \div 0.000244140625 = 4,096$).

Other strike rates/losing runs can be calculated in the same way. What chance a losing run of 10, given a strike rate of 35%? Well, a 0.35 win chance means a 0.65 losing chance. So we multiply 0.65 by itself 10 times (0.65^{10}). The above losing run has a chance of 0.013463. (equal to 1.34%) This losing run of 10 will therefore, *on average*, be encountered around once in 100, or 3 times in 200.

My italicising the 'on average' is deliberate, because there is also confusion on what chance represents. In his 'Optimal Multiple Bets' article (page 23) Andrew Falkingbridge adds to the confusion for some when he tells of a multiple bet with a probability, or chance of occurring of 0.0000153. He converts this to a 1 win in 65,535 bets ($1 \div 0.0000153$). All fine so far, however, from this he mischievously asserts that at one bet per week, *"none of us will have the staying power to wait until the millennium celebrations in the year 3000"*

Anyone struggling with the concept of chance could interpret this incorrectly, 1 in x thousands does not mean you'll wait x thousands of tries before it occurs, indeed it might occur the 1st attempt, the 101st, or the 1,000,001st try, or even on all three! Another analogy you can use is this. We know that it is likely to occur once in 65,535 times, equally then, if 65,535 people all used the same strategy every week, on average **one** of these individuals would be successful **every** week. *"It could be you-ooo!"*

Step back from the *mega* numbers and fractions for a moment and relate chance to a more everyday happening that is easier to relate. The chance of throwing a double-six with a pair of dice for instance, is 1 in 36. You'll know from your own experience that you don't necessarily have to throw 36 times in order to achieve it. You may throw a double-six first time, and again the second time. Each throw is an independent event, it is not influenced by the previous throw, nor has it any effect on the next or any subsequent throws. Each and every throw has an equal chance of coming up double-six. It is for this reason I must emphasise the inherent dangers of the tactics suggested by Gareth Jones on page 46. The very common

misconception here is that based around the 'law of averages'. On many occasions there have been warnings in these pages of following this principle. Gareth's strategy had 3 fatal flaws, but flaws that many innocents have pursued in the past and will continue to do so, because they *sound* like reasonable assumptions.

A policy of checking 6 roulette wheel spins, and following the least occurring colour assumes that because the chance for both is around 0.5, every 100 spins will give an equal number of black or reds. Although that is a likely outcome, it is not guaranteed. Understand this if nothing else, although this may sound an *unreasonable* proposal, it is a truth. Because each spin of a roulette wheel is (should be?) an independent event. 1,000 spins giving a sequence of 1,000 ALL reds **is just as likely as any other sequence!** We've already said that throwing the double-six is a 1 in 36 chance, but you'll also know that in reality it may come up several times in a 36-roll sequence, on another occasion you may have 100 rolls and not get it once.

My second point looks at the very popular misconception that doubling stakes after a loser is a 'must win' strategy - this really is a policy for bankruptcy! Although the chance of each colour on a roulette wheel is slightly less than 0.5, we'll use that figure anyway for clarity. The strategy works on a premise that each sequence will end by paying for *all* previous losses and leaving the player in profit. Let's examine a typical sequence, we're betting Red and our win comes in bet number 5.

Bet number	Stake	Spin colour	Win/lose	Accumulated Profit/loss
1	1	Black	-1	-1
2	2	Black	-2	-3
3	4	Black	-4	-7
4	8	Black	-8	-15
5	16	Red	+16	+1

This illustrates, for those unaware of the fact, that the double-stakes method on even-money shots ends each game with a profit of +1. The first thing to notice is the fact that in the game above the stakes totalled 31 points, all for a return of just 1. If we use a common casino stake of £10, we're talking £310 to win a tenner!?!?

Notwithstanding the fact that not too many can be comfortable with such a high odds-on shot, things get far, far worse.

We've already discussed that 12 straight losers are not too uncommon when dealing with 0.5 chances, so how would such a losing run affect our bank balance? Well in such a game you would have staked 8,191 points once you've doubled up for the 13th bet. Or £81,910 if you're working a tenner a point. If the bet does win though, you'll be £10 up. Great!

If you've followed the chance explanations given thus far, you will also be only too well aware that even at this stage, the next colour is just as likely to be red as it is black. Nothing has changed to influence that fact. You'll also probably be interested to know that if the losing sequence gets to 19, your bank needs to be over 1 million points (£10 million at £10 per point) for you to carry on.

Okay you might say, but I'd pull the plug well before I reach the house limits, in fact well before I lose too much at all. Be that as it may, but at what point would you say enough? If your limit was just 5 losers, you'd be coming away 31 points the poorer. And with a strategy of winning 1 point per bet, that means you need the next 31 games to be successful - just to break even!

My final comment relates to the computer roulette simulation. Although computer models have their place, where a random event (which roulette *should* be) is concerned, the results should be treated with the utmost care.

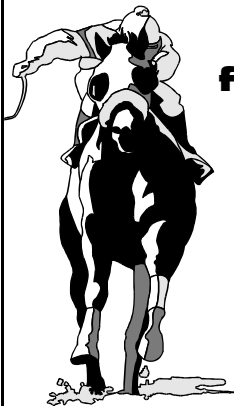
The very definition of random means it is a situation/event which is unpredictable. Anything generated artificially needs a mechanism, algorithm or device to produce it, and as such cannot be truly random. Pseudo-random (oxymoron?) numbers used in computing, as with almost any artificial coding, simply have to be predictable and probably cyclic. Record the number sequences from the computer roulette simulation and if you check for long enough you'll find the same sequence will repeat itself again and again. (Not true of course in a real-life casino - *at least I hope!*)

- Stef



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