APPENDIX 4.4

(referred to in paragraphs 2.31, 4.64, 4.67 and 4.90)

Making a book in the on- and off-course betting markets: based on a note by Ladbroke

General principles

1. Fixed odds betting both on- and off-course involves a process known as 'making a book', in which the bookmaker determines the likelihood of each possible outcome in a competitive event and presents this by way of odds or prices. Having begun accepting bets, the bookmaker changes the odds offered for individual runners in the period leading up to the start of the race to reflect the weight of money taken on each one. In setting the odds, bookmakers build in a margin so that over time they can expect to make a profit margin (thus, in the simplest example, if a bookmaker were to offer odds on the outcome of the toss of a coin, he might offer 4–5 heads and 4–5 tails (ie stake £5 to win £4) rather than even money).

2. Take, for example, a three-runner race where all the horses have the same theoretical chance of winning (ignoring betting duty, levy, etc, for ease of calculation): the chances of each of the three runners are 2–1, and if a punter were to have £10 on each of them at 2–1 he/she would neither win nor lose (a £10 bet at 2–1 returns £20 profit plus the original £10 stake). But this outcome would not cover the bookmaker's costs or deliver a profit margin. In this example, the actual odds offered might be 7–4 for each of the three horses. Some customers would still profit by backing the winner, but assuming that there is equal support for all three runners, the bookmaker will make a profit. If £100 in stakes is taken on each horse, the total payout would be £175 plus the £100 staked against takings of £300, giving a profit of £25.

3. The size of the bookmaker's profit margin can be translated into percentages. There are a number of ways of expressing odds as percentages, but the simplest is to work out how much needs to be staked at the given odds to return £100. At 2–1, it is £33.33 or 33.33 per cent (£66.66 profit plus £33.33 stake returned); at 7–4, it is £36.36 or 36.36 per cent and at 9–1 it is £10 or 10 per cent.

4. The most commonly used betting odds are shown expressed as percentages in Table 1. The term 'odds-on' in Table 1 means that a customer needs to stake more than the potential profit should his/her bet be successful. For example, 3–1 on (as opposed to 3–1 against) means that you would bet £30 to win £10 (plus, of course, your £30 stake) so the return on that bet would be £40. The same £30 bet at 3–1 *against* would win £90, giving a return on the bet of £120 (£90 win plus £30 stake).

TABLE 1 **Commonly used betting odds expressed as percentages**

Odds against %	*Price*	*Odds on* %
50.00	Evens	50.00
47.62	11–10	52.38
44.44	5–4	55.56
42.11	11–8	57.89
40.00	6–4	60.00
38.10	13–8	61.90
36.36	7–4	63.64
34.78	15–8	65.22
33.33	2–1	66.67
30.77	9–4	69.23
28.67	5–2	71.43
26.67	11–4	73.33
25.00	3–1	75.00
23.08	10–3	76.92
22.22	7–2	77.78
20.00	4–1	80.00
18.18	9–2	81.82
16.67	5–1	83.33
15.39	11–2	84.61
14.29	6–1	85.71
12.50	7–1	87.50
11.11	8–1	89.89
9.09	10–1	90.91
7.69	12–1	92.31
5.88	16–1	94.12
4.76	20–1	95.24
3.85	25–1	96.15
2.94	33–1	97.06
1.96	50–1	98.04
0.99	100–1	99.01

Source: Ladbroke.

5. A perfect book, like the first example above with all three horses at 2–1, comes to 100 per cent. The bookmaker's profit margin, commonly referred to as the over-round, is the amount the percentage exceeds 100 when the prices of all the horses (expressed as a percentage) are added together. In the example, with the horses all at 7–4, the book totals 109.08 per cent (ie 36.36% + 36.36% + 36.36%) and the profit margin in favour of the bookmaker in such a theoretical race would be 9.08 divided by 109.08.

6. In practice, setting a margin is a far more difficult process than might first appear. For example, suppose all three runners are 7–4 and the bookmaker takes just three bets, £200 on horse A, £100 on horse B and £20 on horse C; the bookmaker's total takings on the race are £320. Although the theoretical profit margin has not changed, the actual margin is totally dependent on the result of the race. If horse A wins, the bookmaker has lost £230 or 71.9 per cent rather than making a profit of just over 9 per cent (returns on horse A would be £350 winnings plus £200 staked).

7. The over-round tends to vary with the type of race and the number of runners, but will typically range from 108 to 145 per cent. As a broad generalization, the over-round averages $100 + 2n$, where 'n' is the number of runners in a horse race. Theoretical profit margins only produce the 'perfect' result when the amount of money placed on each horse is in direct proportion to its price, ie the bookmaker has balanced his books; in practice this never happens.

On- and off-course horse-race betting in practice

Ante-post betting

8. Ante-post prices are available on a race before the horses which are to run are declared at about 12 o'clock on the day before the race. There were some 7,460 horse races in the UK in 1997. Off-course bookmakers offered ante-post prices on only about 1 per cent or less of those races,

including major races such as the Grand National, Derby, Gold Cup and Champion Hurdle. A major disincentive to betting at ante-post prices is the loss of the stake should the runner on which the bet is placed be withdrawn before the race. On the other hand, the punter may benefit from the longer odds that will be available.

Advertised prices

9. Horses must be declared to run by their trainers on the morning of the day prior to the race. At lunchtime, Weatherbys[1] publishes the following day's declarations and makes them available to the press, bookmakers, etc. The major bookmaking firms employ experts who study the form and determine the chances of competing horses. For roughly 250 to 300 races each year (depending on the bookmaker), a number of the leading bookmaking companies provide their prices to the press for publication in newspapers on the day of the race. These are known as 'advertised prices'. *The Sporting Life* (which ceased publication in early May 1998) and the *Racing Post* often reproduce the advertised prices of several bookmakers in tables and highlight the bookmaker offering the best price on each horse.

Morning prices

10. For approximately a further 900 to 1,250 races each year, prices are made available on the morning of the race in LBOs and on teletext. These are known as 'morning' prices. Following the release of prices, bookmakers monitor bets struck and change their prices to reflect the weight of money. If a bookmaker was relatively generous in the price offered on a particular horse he may attract money on that horse; as the liability builds, he will shorten the price of that runner and perhaps lengthen the prices on the other runners in the race.

Board prices

11. Bookmakers on the racecourse will 'chalk up' prices on boards in the betting ring 7 minutes or so before the off (much longer for big races). The first prices are sometimes based on 'tissue' prices; this is a reference to the tissue price sheet they buy from recognized form experts who provide this service to bookmakers in the ring. When prices become available on-course they are returned to LBOs via direct satellite link to become what is called the 'opening show'. From the time of the opening show all LBOs in the UK will be showing the same prices to their customers.

12. From the time when prices are first chalked up on-course, customers in LBOs can watch the shows on text screens and gauge the weight of support for individual horses in the race. Some may try to 'get a price' before it shortens by placing a bet at the board price. When the race starts, the best generally available prices on each runner on offer at the off are determined by SP returners (see paragraph 4.75), and returned to LBOs via direct satellite link. SPs appear in the official result of the race and are the prices at which bets are settled if a board or early price was not taken by the customer.

Laying-off

13. Ladbroke told us that it had a Trading Manager who was responsible for monitoring its liabilities at each racetrack each day. The Trading Manager had a detailed form analysis for each race from Ladbroke's form experts; this information included views on the statistical probability of each horse winning the particular race in question. The Trading Manager had screen monitors that supplied real time liability information known as the 'field book'. Ladbroke's field book captured all bets placed in a representative sample of its LBOs and displayed on the screens the liability position at any point in time.

[1]Weatherbys is racing's administrative body responsible for the racing calendar, race entries and race declarations.

14. Ladbroke’s Trading Manager was also provided with information about bets which had exceeded ‘trading principles’, ie those bets for which its LBOs were required to telephone Ladbroke’s Trading Department for authorization before accepting them. The Trading Manager also had a ‘field book’ of bets taken by telephone and would be made aware if any connections or other well-informed customers had backed a particular horse.

15. All this information was used in assessing whether to hedge money back into the on-course market. When a decision is made to hedge, the Trading Manager contacted Ladbroke’s representative at the racecourse and told him the size of the bet and the price to accept. This representative then placed the bet(s) with those ring bookmakers who had accounts with Ladbroke and who were prepared to accept them at the required price. Bookmakers operating in the ring and on the rails chose whether to have an account with Ladbroke; this enabled them to accept hedging bets. Ladbroke said that most ring and rails bookmakers would have an account but this did not oblige them to accept a particular bet; the on-course bookmaker would only accept bets that suited his book.

Greyhound racing

16. The process described above happens in much the same way in greyhound racing. The main differences are that hardly any bets are placed at early prices and the time between the first show in the LBOs and the start of the race is very much shorter than it is for horse races.