

Submission to  
Productivity Commission Inquiry  
Australia's Gambling Industries

**Discrimination by the  
Australian Casino Industry  
Towards Skilled BlackJack Players**

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# Contents

<b>Introduction</b>	7
<b>Executive Summary</b>	9
<b>Part A Background</b>	21
1 House advantages on various casino games	21
2 Casino BlackJack can be beaten	22
3 Basic description of techniques involved	23
4 Fluctuation in skilled players' financial results	24
5 Skill level required to have an advantage	25
6 Historical casino response to skilled players	26
7 Restrictive rules	27
8 What it is like to be discriminated against as a skilled player	28
9 Skilled players' response to the casino restrictions	30
10 Submission to the Victorian Casino and Gaming Authority	30
<b>Part B Economic Arguments</b>	31
11 Nature of casino profits is amalgamated	31
12 The extent of skilled players in Australia	32
13 How restrictions on skilled players costs the casinos	33
14 Frequent shuffling	35
15 Skilled players contribute to casino profits	36
16 Skilled players contribute to the economy	37

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## **Part C**

<b>Ethical Arguments</b>	39
17 Reverse discrimination of the mathematically able	39
18 Casinos benefit from the skill factor in BlackJack	40
19 Casinos are in the business of providing gaming services	41
20 Natural justice and social norms	42
21 Gambling can be skilful in nature	43
22 The continuum of skill in BlackJack	44
23 Classification as a skilled player	45
24 Preferential shuffling – an unethical price increase	46
25 Misleading “advertising”	46

## **Part D**

<b>Recommendations and Suggestions</b>	47
26 Recommended changes to the rules	47
27 Uniformity of regulations nationwide	48
28 Signs to reflect accurate price information	48
29 Code of ethical practice in fair dealing with skilled and semi skilled BlackJack players	49
30 Sign maximums to indicate possibility of discrimination	49
31 Method for identifying skilled players	50
32 A compromise between skilled players and the casino industry?	50

## **Part E**

<b>Glossary of terms</b>	51
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**Part F**

**Enclosures** **57**

- 1 bJ mAsters information package
- 2 VCGA Submission
- 3 Crown restriction letter dated 7 May 1999

**LIST OF TABLES**

TABLE 1	HOUSE ADVANTAGE AT CASINO GAMES	22
TABLE 2	PRECISE HOUSE ADVANTAGE PERFECT BASIC STRATEGY PLAY AT BLACKJACK	23
TABLE 3	BELL CURVE OF FINANCIAL RESULTS	25
TABLE 4	AVERAGE NUMBER OF CARDS DEALT AFTER THE CUT CARD IS EXPOSED	36
TABLE 5	CROWN CASINO GAMING TABLES (August 1999)	40



# Introduction

This is a submission in response to the Draft Report into Australia's Gambling Industries released by the Productivity Commission in July 1999.

My name is Andrew Scott. I am the Director and founder of bJ mAsters Professional BlackJack School, a private school that teaches gamblers to play BlackJack skilfully. Skilled play substantially reduces the casino's house advantage on the game of casino BlackJack, and very skilful BlackJack players can even create a small advantage over the casino. I have been playing skilled BlackJack since 1988.

I have a great love of the casino environment as a whole, but the industry's treatment of skilled BlackJack players has to date been unfair and discriminatory. I have been either banned or my play restricted in all of Australia's casinos except the Reef casino in Cairns (which I am yet to visit), purely because of my BlackJack ability. I founded bJ mAsters because my freedom to play casino BlackJack has been restricted. Other skilled BlackJack players have suffered the same fate as I.

I am moved to make this submission to raise the issue of the current regulatory treatment of skilled players. I believe that, if applied, my recommendations outlined at the conclusion of this submission will assist in the maturing of the casino industry by the introduction of a code of ethical practice for the treatment of skilled players, without negatively impacting upon the industry's bottom line results.

I welcome comments on the issues raised in this submission, especially feedback from any of Australia's 13 casinos. Should valuable comment be forthcoming I would be happy to make a further submission. I am appearing at the public hearing in Melbourne on the morning of 26 August 1999.

This submission is as user-friendly as possible, however due to the technical nature of skilled BlackJack play there are several terms used in this submission which may be unfamiliar to the reader. A glossary of terms is provided in Part E of the submission. Should further clarification or explanation be required I am more than happy to assist. I can be contacted at bJ mAsters Professional BlackJack School.

For simplicity the use of the male pronoun has been chosen to refer to either gender throughout this submission.

Andrew Scott  
August 1999

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# Executive Summary

## A. Background

### 1 House advantages on various casino games

Most casino games have a fixed house advantage:

Roulette	2.7 per cent
Sic Bo	7.5 – 8.5 per cent
Baccarat	1.2 – 1.25 per cent
Money Wheel	7.7 per cent
Blackjack	1 – 2.5 per cent

BlackJack is totally different.

A reasonable range of house advantages for casino BlackJack is anything from say 8 per cent to -1 per cent (ie a player advantage of 1 per cent).

Most highly skilled players settle at an average advantage over the casino of around 0.5 per cent.

The reason for this large range is the wide variation in playing ability demonstrated by the general casino-going population.

### 2 Casino BlackJack can be beaten

It has been mathematically proven since the 1960s that the game of casino BlackJack can be beaten in the long run by a skilled player.

I have been such a player since 1988.

In the ACIL report (submission 155 to the Commission) on page 9 it is stated  
... there are card players and racetrack bettors that are genuine professionals...

It is clear the casino industry acknowledges that skilled gambling with a long run advantage over the house exists.

### 3 Basic description of techniques involved

In order to become a skilled player, one must learn the basic strategy of BlackJack. This involves memorising the correct strategy to the 371 different playing situations at BlackJack.

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Playing in this manner, the player will still be facing a small house advantage (approximately half a per cent).

Most casino games are a series of independent events, where the probability of winning or losing each event is fixed.

Rounds of BlackJack play are not like this. Each round of BlackJack will have a different house advantage for the casino against the basic strategy player.

In the long run, the basic strategy player has an advantage over the casino on approximately 15 per cent of the wagers, and the casino has an advantage over the basic strategist on approximately 85 per cent of the wagers.

Skilled BlackJack players are able to identify the 15 per cent of wagers during which they have an advantage over the casino. They will place larger bets during these wagers. This is how they gain their long run advantage over the casino. They do not cheat or act in a dishonest or deceptive manner.

This long run advantage is very tiny, typically in the order of 0.5 per cent.

#### **4 Fluctuation in skilled players' financial results**

The minute edge enjoyed by skilled players in no way guarantees that the skilled player will win.

It should be understood that the amount of statistical fluctuation that a skilled BlackJack player will experience is enormous.

In order to handle these large short-term fluctuations, a skilled BlackJack player requires a substantial bankroll.

#### **5 Skill level required to have an advantage**

It is relatively easy to master the basic strategy of BlackJack.

It is not an easy thing to become a highly skilled BlackJack player with a long run advantage over the house.

To acquire the necessary skills to obtain a long run advantage over the casinos takes dedicated effort for many months, and sometime years.

Many who attempt it fail.

Worse still, many who attempt it *believe* they are skilled players but are really relatively unskilled.

These include many problem gamblers.

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Because BlackJack is a game of skill there is the illusion of control, and problem gamblers often feel they can control the game of BlackJack in a way that other gambling games can not be controlled.

## **6 Historical casino response to skilled players**

The casinos seem to resent skilled players winning in their casino. The response of casinos towards skilled players is out of all proportion to the “threat” these players pose to the casino’s profits.

The States gazette the rules of BlackJack. Each set of rules includes provisions that allow the casinos to alter the rules prevailing on any individual BlackJack game.

There have been a number of instances of gamblers who happened to get lucky being incorrectly “identified” by casino management as skilled players, and then restricted!

Restrictions usually have the effect of reducing the casino’s advantage against any unskilled players at the table.

Once the skilled player is frustrated by these measures and leaves the casino, the casino will change the rules back.

These rules changes are highly discriminatory and contradict the principle of equal opportunity. It is totally wrong to assume such restrictions preserve the economic interests of casinos.

## **7 Restrictive rules**

The restrictive provisions fall into two broad categories: betting restrictions and frequent shuffling.

Typically the betting restrictions take the form of limiting the bets of skilled BlackJack players to the table minimum, whilst other players at the table are free to range their bets between the minimum and the maximum.

Frequent shuffling is achieved through the use of two cut cards, discriminatory cut card positioning or the extraordinary practice of preferential shuffling (which occurs in the Queensland casinos). Instead of the usual shuffle between 75 and 85 per cent of the way into the shoe, shuffling occurs 40 to 60 per cent of the way into the shoe.

## **8 What it is like to be discriminated against as a skilled player**

Once the casino determines that the player is skilled he becomes the enemy of the casino. Skilled BlackJack players are branded as cheats.

He is restricted and other unskilled players at the table are often outraged. From then on he is treated as an undesirable in the casino.

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Casino staff implement intimidatory practices such as standing over a skilled player, making snide comments to colleagues and other psychological techniques to distract the concentration of the skilled BlackJack player.

## **9 Skilled players' response to the casino restrictions**

Often skilled players devote many months and years to mastering the techniques involved in playing the game of casino BlackJack skilfully.

The imposition of the restrictions effectively means the end of their playing careers and all the enjoyment and potential for winning that goes along with it.

It is very unpleasant to be singled out by casino management for the imposition of the discriminatory restrictions.

Skilled players are genuinely terrified at the prospect of being subjected to the restrictive rules and countermeasures employed by the casinos against skilled players.

## **10 Submission to the Victorian Casino and Gaming Authority**

On 3 May 1999 I lodged a submission with the Victorian Casino and Gaming Authority in relation to rules 5.12 and 4.5 of the rules of casino BlackJack which operate in Victoria. In the submission I submit that rule 5.12 (which allows for discriminatory betting restrictions) should be abolished and that rule 4.5 should be amended to prohibit the practice of discriminatory shuffling.

# **B. Economic Arguments**

## **11 Nature of casino profits is amalgamated**

A casino's income represents an amalgamation of the entire gambling activity that occurs in that casino. At the end of the day the casino wins because it has an overall advantage over the gamblers *as a whole* on the games it offers.

If a gambler suddenly switches from the money wheel to a roulette wheel his "skilled decision" has just cost the casino 5 per cent. No one would ever restrict that player from the roulette wheel and force him to play the money wheel.

The majority of players play BlackJack quite badly and lose say 3 or 4 per cent on their turnover but the casino is quite prepared to accept that some players will learn basic strategy and lose only approximately 0.5 per cent. This "skilled decision" has cost the casino say 3 per cent.

If a basic strategist learns to become a highly skilled BlackJack player and turns his 0.5 per cent disadvantage into a 0.5 per cent advantage this has cost the casino a mere 1 per cent but they feel the need to restrict this player.

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The amalgamation practice is deemed acceptable when uninformed players exceed the expected house advantage yet the smaller percentage gain by the skilled sees this practise ignored.

## **12 The extent of skilled players in Australia**

Skilled BlackJack play in Australia's casinos is extremely rare.

It is quite difficult to learn the techniques involved in identifying advantage situations on the BlackJack table.

It requires great discipline to gamble in such a manner that creates a long run advantage over the house.

To handle the enormous fluctuations which occur in BlackJack play, a skilled player must be very well financed.

Even with a large bankroll, the player playing absolutely perfect skilled BlackJack is a 1 in 40 chance to lose his entire bankroll! He is most certainly gambling!

In my estimation there would only be about 100 BlackJack players in Australia sufficiently skilled, sufficiently disciplined and sufficiently bankrolled to have a reasonable chance of creating a significant long run advantage of perhaps 0.5 per cent on their turnover on BlackJack.

Compare this to the (conservatively) 28,000 regular (at least once a week) casino table games players who will be losing at an average of perhaps 5 per cent on their turnover.

## **13 How restrictions on skilled players costs the casinos**

In the 1970s and 1980s senior management at Wrest Point seemed to become threatened by skilled BlackJack players, and became highly antagonistic towards them.

As the industry grew the fear and even sometimes hatred of the casino industry toward skilled BlackJack players permeated across the country.

Casinos are now so obsessed with stopping skilled players from winning they often engage in practices that reduce the chances of the skilled players winning but at great expense to the casino as a whole.

Casinos also make grave errors in judgment in the identification of skilled players. The identification of unskilled players as skilled is very expensive from the casino's point of view, since unskilled players lose at a rate of perhaps five times the rate that highly skilled players win at.

The time and energy spent by casinos on identifying and then continually restricting skilled players is out of all proportion to the "threat" they pose to the casino's profits.

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The major way casino's cost themselves money in the ongoing discrimination against skilled players is through the practice of frequent shuffling.

#### **14 Frequent shuffling**

In the game of casino BlackJack about 75 to 85 per cent of a shoe is dealt out before shuffling occurs. When a skilled player is at the table, the casino will ensure the cards are shuffled *much* more frequently than normal (say 40 to 60 per cent into the shoe).

Frequent shuffling is achieved through the use of two cut cards, discriminatory cut card positioning or the practice of preferential shuffling (which occurs in the Queensland casinos).

While frequent shuffling reduces the skilled player's advantage over the house, it also reduces the house's advantage over the unskilled players.

#### **15 Skilled players contribute to casino profits**

The existence of skill at BlackJack actually contributes to casino profits by attracting a very large proportion of BlackJack gamblers.

Casino advertising concentrates heavily on the possibility of winning. Table 3.2 of the Draft Report identifies the "dream of winning" (66 per cent) and "beating the odds" (14 per cent) as significant motivations for gambling by gaming machine and casino gamblers.

BlackJack is universally known in the casino industry as a game of skill. BlackJack players love the fact that they have some control over the outcome of the game. The possibility of some control over one's destiny is what makes BlackJack the most popular table game in the casinos.

#### **16 Skilled players contribute to the economy**

Skilled BlackJack players make a contribution to the economy in the form of creating employment in the casino industry (dealers, supervisors, waiters, cash cage staff and so on).

### **C. Ethical Arguments**

#### **17 Reverse discrimination of the mathematically able**

Any rule that allows a casino to pick and choose who it serves is clearly discriminatory.

The rules are designed to increase the advantage of the casinos against mathematically advanced minds, without decreasing the house advantage over the common casino patron.

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If this discrimination were on the basis of sex, age, race, sexual orientation, ethnic origin or disability there would be grounds for action under Federal anti-discrimination legislation. While there are provisions in this legislation in relation to discrimination against the disabled no provisions exist for discrimination on the basis of enhanced ability.

Imagine the outrage if this sort of discrimination was extended to sports and other games. The restrictive rules are akin to telling Steve Waugh he is allowed to continue batting but he must wear a blindfold and hold the bat only using the thumb and index finger of his left hand.

Perhaps business tax rates could increase in direct proportion to the business savvy of the taxpayer? Or should clever politician's speeches in parliament be restricted to half the length of their opposition's?

Since the mathematically skilful are to be restricted should the mathematically challenged be given some special dispensation or advantage? Perhaps if the casino identifies a particularly bad BlackJack player at a table they should give him some of his chips back.

The ludicrousness of these suggestions is self-evident. By discriminating in the way that they do the casino adopts the attitude of "losers only please".

## **18 Casinos benefit from the skill factor in BlackJack**

Clearly casinos exploit the factors of skill and perceived control over the outcome in the game of BlackJack.

Casinos deceptively encourage a sense of control in other games where there is none, such as roulette and baccarat by encouraging the use of paper and pen.

Since beating the odds and the dream of winning are major motivators for many to gamble at the casino, should there not be a reasonable expectation that if a player actually does succeed in this incredibly difficult mission, that he should be allowed to win?

To most gamblers, the casino is saying "here is the game – give it your best shot. If you win we'll pay you but if you lose trying to win, then we get your money"?

Star City's slogan is ironic: "*bet with your head, not over it*".

## **19 Casinos are in the business of providing gaming services**

The casinos are in the business of providing a service, the provision of gaming, to all adult Australians.

In the Australian Casino Association Submission it is stated

It is important then to ensure that consumers continue to have the ability to consume casino products to the extent they wish

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Fair dealing with all BlackJack players in the spectrum from totally unskilled to highly skilled is part of the provision of gaming services to all.

Losing a minute amount to a minute number of BlackJack players and winning a large amount from the vast majority of BlackJack players is part of this fair opportunity for the casinos.

Is it fair that a tiny number of identified skilled players receive a lifetime sentence of ostracisation from the game that they enjoy playing with a passion?

The casinos have a social responsibility not to refuse service to any adult Australian without just cause. It is impossible and illogical to presume that using one's brain a little more than the next person can be considered just cause.

## **20 Natural justice and social norms**

Anecdotal evidence suggests that members of society vehemently disagree with the restrictions and discrimination that is meted out to skilled BlackJack players.

Here are some very common comments upon learning of the restrictions imposed by casinos:

"The casino may as well put a sign on the door saying 'losers only'"

"There should be a level playing field for all"

"They can't do that – it's against anti-discrimination laws"

Even the government inspectors and casino management often will say:

"Look, I don't agree with it, I'm just doing my job"

The plain and simple fact that the majority of individuals in our society disagree with the discriminatory rules is evidence that these provisions are against the concepts of equal opportunity, right to service, natural justice and our social norms.

## **21 Gambling can be skilful in nature**

It is clear the casino industry acknowledges that skilled gambling with a long run advantage over the house is acceptable.

There are gamblers who bet on the TAB who can create a long run advantage for themselves through skilled methods of horse selection. The TAB has no problem with such "professional punters". This is because the TAB makes a profit against the punters *as a group*. Casinos should adopt the same enlightened attitude.

Skill in poker is respected in the casino, because the skilled player's profits are at the expense of unskilled players. The casino industry condones and encourages the skilful "battle of wits" in poker yet they prohibit the skilled being pitted against themselves. Skill in BlackJack is vilified by casino industry.

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In most areas of our free society it is understood that the very best in a field of endeavour should reap financial rewards from their skill.

## **22 The continuum of skill in BlackJack**

Casinos classify all BlackJack players into two types: skilled and unskilled.

There is in fact a continuum of skill, ranging from the very unskilled to the very skilled.

On individual occasions the skilled player may be fed up with thinking too much and play in a purely unskilled manner, relying on guesswork.

Further, he might be intoxicated after a social event, or be mixing up his skilled (or semi skilled) BlackJack play with play on other casino games with a substantial house advantage.

With all these factors that give rise to an uncertainty as to a player's skill level, should a casino have the right to pass a life sentence of never being allowed to bet more than one box of the minimum?

## **23 Classification as a skilled player**

It is incredibly difficult to determine whether a BlackJack player has an advantage over the casino.

Classification is extremely time-consuming and laborious. Casinos do not pour huge resources into making an analysis of each player they suspect of being skilled.

With proving beyond reasonable doubt so difficult, is it just that there should be any "crime" in the first place?

## **24 Preferential shuffling - an unethical price increase**

The ethics of the practice of preferential shuffling in Queensland must be questioned.

Preferential shuffling is the most blatant form of frequent shuffling, akin to "stacking the deck".

Under the regime of preferential shuffling, all players at the table (skilled and unskilled alike) are forced to play the hands with a casino advantage. When one of the 15 per cent of hands with a player advantage arises the casino shuffles.

This practice increases the house advantage substantially, effectively a hidden price increase against the everyday unskilled BlackJack player in the order of 12 per cent.

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## **25 Misleading "advertising"**

The maximum on the table sign is misleading. At a \$10 table the maximum is usually \$500, and the sign indicates this.

For skilled players who have been subjected to restriction to the table minimum the table maximum is no longer \$500, it is \$10.

## **D. Recommendations and Suggestions**

It is understood that the Commission's Final Report is in the nature of an information report, and thus will make findings rather than recommendations. Nevertheless I have made some recommendations and suggestions.

### ***Recommendation 1***

The rules allowing arbitrary restriction of players to the minimum be abolished. All players within the casino should be permitted equal betting opportunity.

### ***Recommendation 2***

That only one cut card be used, and that it be placed as near as practicable to one deck from the rear of the shoe, using a device authorised for this purpose.

### ***Recommendation 3***

The regulations governing casino table games be uniform across Australia.

### ***Recommendation 4***

That on the sign at each gaming table there be an inscription as follows:

#### **GOVERNMENT WARNING**

Each time you wager \$1 on this game, you might win or lose, but this wager contributes x.x cents towards your overall loss on gambling.

### ***Suggestion to the casino industry 1***

Casinos design a short optional course for their gaming staff, to be the basis of a "code of ethical practice in fair dealing with skilled and semi skilled BlackJack players".

The following two recommendations and this suggestion would be redundant if recommendations 1 and 2 were accepted. In the event that they were not accepted I see the following as very inferior alternatives, though an improvement on the current situation.

### ***Recommendation 5***

That on the sign at each BlackJack table there be an inscription after the maximum bet stating "excepting skilled BlackJack players who may only wager the minimum bet on one box to prevent them winning".

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***Recommendation 6***

That an approved, nationally uniform method be established for determining whether a player should be (sic) subject to discriminatory restrictions. The method should be transparent and subject to an appeals and reinstatement process.

***Suggestion to the casino industry 2***

That representatives of the casino industry and skilled BlackJack players meet to negotiate a compromise position to the mutual benefit of both sides, with players being able to enjoy the mental challenge of the game while casinos are appraised of the likely financial results of the player's strategies.



## Part A

# Background

### **1 House advantages on various casino games**

Most casino games have a fixed house advantage. On page 12.26 of the Australian Gambling Industries Draft Report the house advantages for various casinos games are:

Roulette	2.7 per cent
Sic Bo	7.5 – 8.5 per cent
Baccarat	1.2 – 1.25 per cent
Money Wheel	7.7 per cent
Blackjack	1 – 2.5 per cent

The source of these figures was the Australian Casino Association submission. The variation in house advantage for baccarat is due to different house advantages for the three bets possible in that game (banker 1.17%, player 1.36% and tie 14.5%) and the mix with which players bet them. This is also the reason for the slight variation in the house advantage for sic bo.

In most casino games, the casino has a fixed house advantage over each player. Whether the player wins or loses is determined completely randomly (often referred to as luck). The player can not increase his chance of winning in the long run by employing any sort of skill or strategy.

BlackJack is totally different. There is often confusion in the literature as to what the exact house advantage on BlackJack is. This is illustrated by the Australian Casino Association's quote of "1 - 2.5 per cent". I also note that on page 2.7 of the Draft Report the house advantage on BlackJack is quoted as "0 - 1 per cent". This confusion arises because in the long run BlackJack is a game of skill (while retaining its status as a game of luck in the short term), and any individual player's probability of winning or losing in the long run is greatly effected by the strategies he employs.

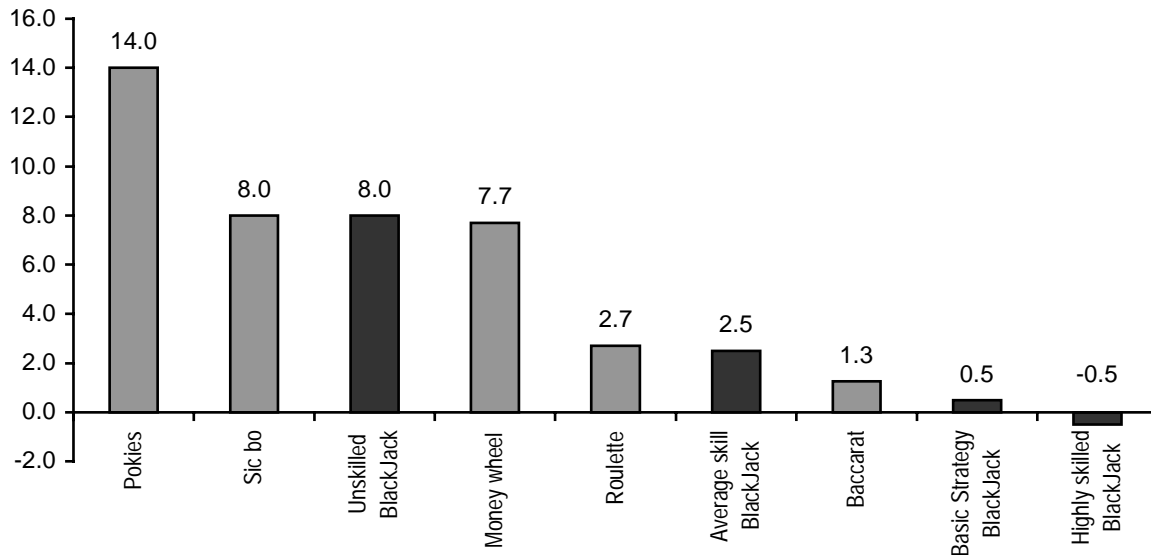
It is theoretically possible for the house advantage on BlackJack to be as high as nearly 100 per cent against an uneducated player. A reasonable range of house advantages for casino BlackJack is anything from say 8 per cent to -1 per cent (ie a player advantage over the house of 1 per cent). Most highly skilled players settle at an average advantage over the casino of around 0.5 per cent.

The reason for this large range is the wide variation in playing ability demonstrated by the general casino-going population. At one extreme you have the individual who has never played BlackJack before in his life, at the other extreme the highly skilled BlackJack player who has been playing disciplined, skilled BlackJack for many years,

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employing mathematically optimal betting and playing strategies to maximise his advantage over the casino.

**TABLE 1**  
**HOUSE ADVANTAGE AT CASINO GAMES**  
**(Per cent of turnover)**



## **2 Casino BlackJack can be beaten**

Very little is known by the general public about skilled play at casino BlackJack. In fact, most members of our society are totally unaware that it is possible to create a long run mathematical advantage on the game of casino BlackJack by playing in a manner as disciplined as that conducted by “the house”.

On page 1.5 of the Draft Report it is stated

... as a group, gamblers inevitably lose over time – it is more like consumption than investment.

Gamblers inevitably lose *as a group*, but it should be stressed that there is a *tiny minority* of gamblers who win in the long run. They include professional racetrack gamblers, sports bettors, poker players and skilled BlackJack players.

A skilled BlackJack player could be defined as a casino gambler who, through mathematically optimal (or very nearly optimal) betting and playing strategies at the game of casino BlackJack, creates a long run advantage over the house and, as a result, is more likely to win the longer he plays.

It has been mathematically proven since the 1960s that the game of casino BlackJack can be beaten in the long run by a skilled player. Such players are often referred to as

skilled BlackJack players, professional BlackJack players or card counters. I have been such a player since 1988.

At the Commission's public hearing on 30 March 1999 Mr Gary O'Neill of Crown Casino stated that

We associate ourselves very strongly, obviously, with the ACIL report...we participated in the compilation of the ACIL report.

In the ACIL report (submission 155 to the Commission) there are several references to professional gambling. For example on page xii

Outcomes can be governed by fate or influenced by skill – forms of gambling characterised by the latter can be pursued professionally.

And further, on page 9 it is stated

... there are card players and racetrack bettors that are genuine professionals...

It is clear the casino industry acknowledges that skilled gambling with a long run advantage over the house exists.

### **3 Basic description of techniques involved**

In order to become a skilled player, one must learn the basic strategy of BlackJack. This involves memorising the mathematically optimal strategy to the 371 different playing situations that can be encountered at BlackJack. Playing in this manner, the player will still be facing a small house advantage (approximately half a per cent).

The precise house advantage against a basic strategy player at Australia's casinos is shown below.

**TABLE 2  
PRECISE HOUSE ADVANTAGE  
PERFECT BASIC STRATEGY PLAY AT BLACKJACK**

Launceston casino	0.4338 per cent
Star City casino	0.4415 per cent
Wrest Point casino	0.4626 per cent
Northern Territory casinos	0.5083 per cent
Crown Casino	0.5153 per cent
Queensland casinos (6 deck games)	0.5248 per cent
Casino Canberra	0.5363 per cent
Burswood casino	0.5515 per cent
Queensland casinos (8 deck games)	0.5516 per cent
Adelaide Casino	0.6253 per cent

Most casino games are a series of independent events, where the probability of winning or losing each event is fixed. For example, a roulette player betting on any so-called "even money" bet has an 18 in 37 chance to win his bet (paid at even

money) and a 19 in 37 chance to lose his bet, resulting in the house advantage of  $(19-18)/37 = 2.7$  per cent.

Rounds of BlackJack play are not like this. As a BlackJack shoe progresses, the used cards are placed in the discard rack. As a result, each round of BlackJack begins with a different card subset in the shoe. Because of the operation of the rules of the game, certain card subsets favour the dealer and certain card subsets favour the player. Hence each round of BlackJack will have a different house advantage for the casino against the basic strategy player. Occasionally, the basic strategy player will have an advantage over the casino.

Because of this phenomenon, the house advantage the casino enjoys over a basic strategy player is not fixed at half a per cent each round. It fluctuates quite substantially. Commonly it ranges between an advantage for the house over the basic strategy player of 2.5 per cent to an advantage for the basic strategy player over the house of 1.5 per cent. In the long run, the basic strategy player has an advantage over the casino on approximately 15 per cent of the wagers, and the casino has an advantage over the basic strategist on approximately 85 per cent of the wagers.

Skilled BlackJack players are able to identify the 15 per cent of hands during which they have an advantage over the casino. They will place larger bets during these hands where they have an advantage over the casino. This is how they gain their long run advantage over the casino. They do not cheat or act in a dishonest or deceptive manner. This long run advantage is very tiny, typically in the order of 0.5 per cent.

#### **4      *Fluctuation in skilled players' financial results***

The minute edge enjoyed by skilled players in no way guarantees that the skilled player will win on any single hour, day, week, month or even year! It just means that he is slightly more likely to win than to lose. In this respect a skilled player is still very much a gambler. A skilled BlackJack player playing on a \$10 minimum table will typically lose about 48 per cent of his playing sessions at the casino, and win about 52 per cent of these sessions.

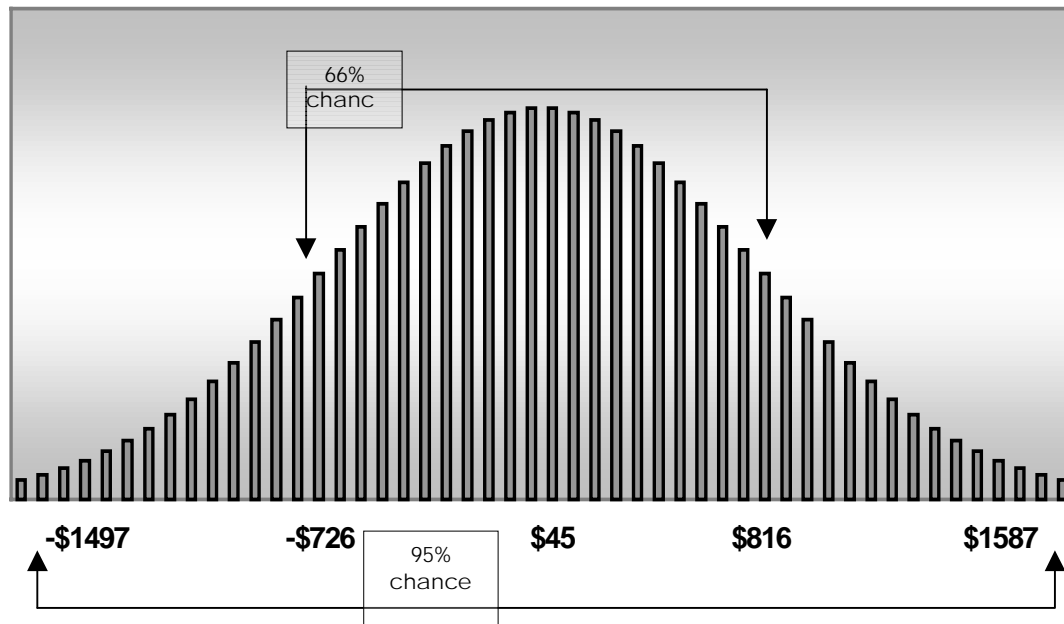
It should be understood that the amount of statistical fluctuation that a skilled BlackJack player will experience is enormous. To illustrate this I will provide an example for a particular playing method that I teach at bJ mAsters. This method is designed for play at a \$10 minimum table. The mathematically expected win for this particular method is \$45 for a five hour session at the casino (ie \$9 an hour). This of course does not mean every time a skilled player plays a five hour session he will win \$45 but that if he plays thousands of sessions the net result per session will tend towards a win of \$45.

The probability of winning on any one individual session is about 52 per cent, and the probability of losing 48 per cent. A range of possible results for any one individual session can be described by the statistical normal distribution (commonly known as a bell curve) with a mean of +\$45 and a standard deviation of \$771.

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**TABLE 3**  
**BELL CURVE OF FINANCIAL RESULTS**  
**5 hours play on a \$10 minimum table**



This distribution means that the player is a 66 per cent chance of having a result somewhere between losing \$726 and winning \$816. He is a 95 per cent chance of having a result somewhere between losing \$1,497 and winning \$1,587. He is a 2.5 per cent chance of losing more than \$1,497 and a 2.5 per cent chance of winning more than \$1,587.

In order to handle these large short-term fluctuations, a skilled BlackJack player requires a substantial bankroll. For the example given above, the bankroll required to have only a 2.5 per cent chance of running out of money is \$12,000! All this to have a mathematical expectation of only \$9 per hour!

## **5 Skill level required to have an advantage**

It is relatively easy to master the basic strategy of BlackJack and therefore minimise the house's advantage on the game to approximately 0.5 per cent. The average student takes perhaps three weeks of fairly regular training, say five hours per week.

It is not an easy thing to become a highly skilled BlackJack player with a long run advantage over the house. bJ mAsters runs a ten week, two hour a week course, just to teach the basics of skilled BlackJack play. The school has more advanced courses for very proficient BlackJack players. Students undertake considerable repetitive home study.

To acquire the necessary skills to obtain a long run advantage over the casinos takes dedicated effort for many months, and sometime years. Many who attempt it fail. Worse still, many who attempt it *believe* they are skilled players but are really

relatively unskilled. These include many problem gamblers. Because BlackJack is a game of skill there is the illusion of control, and problem gamblers often feel they can control the game of BlackJack in a way that other gambling games can not be controlled.

In the past I have helped many problem gamblers channel their gambling energy into more constructive (ie less financially destructive) BlackJack play.

## **6 *Historical casino response to skilled players***

Casinos are (quite unnecessarily) very concerned about skilled BlackJack players. They acknowledge that such players exist and that they can create a long run mathematical advantage at casino BlackJack. There is somewhat of a siege mentality amongst the management of Australia's casinos toward skilled players. The casinos seem to resent skilled players winning in their casino.

The response of casinos towards skilled players is out of all proportion to the "threat" these players pose to the casino's profits. This is discussed in part B of the submission.

The rules of BlackJack are gazetted by each State or Territory jurisdiction. While these rules vary from State to State, each set of rules includes provisions that allow the casino to alter the rules prevailing on any individual BlackJack game and/or impose a restriction or restrictions upon any player arbitrarily. Should management feel there is a skilled BlackJack player playing at a table, they will implement some or all of these restrictions and rule alterations.

It is interesting to note that there is no generally accepted method for identifying skilled BlackJack players, it is purely at the discretion of casino management. There have been a number of instances of gamblers who happened to get lucky being incorrectly "identified" by casino management as skilled players, and then restricted!

While these restrictions will stop the skilled player being able to win, they usually have the concomitant effect of reducing the casino's advantage against any unskilled players at the table. Once the skilled player is frustrated by these measures and leaves the casino, the casino will change the rules back to the previous table conditions and once again enjoy its excessive mathematical advantage (compared to correct basic strategy play) against the unskilled players.

It is my contention that there is no need for these ad hoc restrictions whatsoever. Their existence is highly discriminatory and contradicts the principle of equal opportunity. It is totally wrong to assume such restrictions preserve the economic interests of casinos. It is of great interest to me to ascertain how these rules actually became in place. It is interesting to note that nowhere in the rules is there a heading "Restriction of skilled player rules" or some such equivalent. Perhaps these rules were just bullied through by the casinos at the time of their establishment? After all, governments are not well appraised as to the day to day operations of casinos, and would look to the casinos themselves to propose a set of rules.

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These restrictive provisions fall into two broad categories: betting restrictions and frequent shuffling.

### **Betting restrictions**

Typically the betting restrictions take the form of limiting the bets of skilled BlackJack players to the table minimum, whilst other players at the table are free to bet any amount from minimum to the maximum. This means the skilled player can not place sufficiently large bets during the 15 per cent of the time he has an advantage over the casino. As a result he is not able to create a long run advantage.

The imposition of these betting restrictions leads to quite ridiculous situations on the table. For example, at a \$10 minimum table at Crown Casino the table maximum is \$500. Any ordinary player may bet an amount between \$10 and \$500 per box on any number of available boxes at the table from 1 box to 7 boxes. The restricted player may only bet 1 box of \$10. However, if the restricted player starts to tell the other players how much to bet to get an advantage over the house then the ordinarily unskilled players (who are merely taking the advice of a skilled player) may well be restricted (until the restricted player leaves the table).

### **Frequent shuffling**

In the game of casino BlackJack about 75 to 85 per cent of a shoe is dealt out before shuffling occurs. When a skilled player is at the table, the casino will discriminate against this player by ensuring the cards are shuffled *much* more frequently than normal. This dramatically reduces the potential of the players to gain an advantage. For example, shuffling when about 50% of a shoe is dealt reduces the winning potential of a skilled player by about 90 per cent!

Frequent shuffling is achieved through the use of two cut cards, discriminatory cut card positioning or the extraordinary practice of preferential shuffling (which occurs in the Queensland casinos). It is interesting to note that while frequent shuffling reduces the skilled player's advantage over the house, it also reduces the house's advantage over the unskilled players by increasing the down time during which no gambling takes place.

## **7 Restrictive rules**

Each State and Territory jurisdiction has different restrictive rules.

### **VICTORIA**

Under rule 5.12 a shift manager may arbitrarily limit a player to one box of the table minimum. Under rule 4.5 the casino may place the cut card as much as half way from the back of the shoe.

### **NEW SOUTH WALES**

Under rule 5.10 and 5.11 a supervisor may arbitrarily limit a player who does not place a bet on the first round or any subsequent round of a shoe to the table minimum for the rest of the shoe. Under rule 5.12 a shift manager may arbitrarily limit a player to one box of the table minimum. Under rule 4.5 the casino may place the cut card as much as half way from the back of the shoe.

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### **QUEENSLAND AND NORTHERN TERRITORY**

The casinos are permitted to take part in the highly unfair practice of preferential shuffling. This means when a favourable card subset arises for the players, the casino shuffles the cards and begins a fresh shoe. When a situation unfavourable to the players arises, the casino lets the players play on.

### **TASMANIA**

When a skilled player is at the BlackJack table, the casino will place a sign on the table indicating that players can no more than triple their bets each round. Once the skilled player leaves the table this sign will be removed. The casino may also arbitrarily restrict a player to 1 box of the table minimum. In addition, the casino uses 2 cut cards. The first cut card is placed no more than 3 decks from the front of the shoe, while the normal cut card is placed approximately one deck from the back. When a skilled player is at the table the first cut card is used resulting in vastly more shuffling.

### **SOUTH AUSTRALIA**

The Adelaide casino is also permitted to use two cut cards. The first cut card is placed approximately half way in the shoe and the normal cut card is placed in the standard shuffling position (approximately one deck from the rear of the shoe). When a skilled BlackJack player is at the table, the casino will shuffle on the first cut card. Once again this creates vastly more shuffling.

### **AUSTRALIAN CAPITAL TERRITORY**

Casino Canberra uses two cut cards. The first cut card is placed just over three decks from the front while the normal cut card is placed in the usual position, just over one deck from the rear of the shoe. When a skilled player is at the table only three to four decks will be dealt out rather than the usual amount of nearly seven decks. Also, the casino has the power to arbitrarily restrict any player to the table minimum.

### **WESTERN AUSTRALIA**

The casino has the power to arbitrarily restrict any player to one box of the table minimum.

Why is there is no nationwide consistency? As referred to in chapter 21 of the Draft Report, the regulatory structure in Australia is fragmented. In my view casino BlackJack in Victoria is no different to casino BlackJack in Western Australia, and therefore the regulatory environment should be uniform throughout the country. This is one of the recommendations in part D of this submission.

In addition casinos have been known to use their powers of exclusion to exclude skilled BlackJack players from the casino, treating them in the same manner as known criminals. This is without any recourse to a fair hearing. The casino is judge, jury and executioner. The casino have been known to inform other Australian casinos about skilled BlackJack players, even to the extent of sending files of photos taken by surveillance equipment which is meant to be in the casino to protect the patrons from genuine criminal activity.

## **8      *What it is like to be discriminated against as a skilled player***

The Productivity Commission's report is an information paper. I would like to provide some information on what it is like to be known as a skilled player in Australia's casinos.

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Prior to being classified as a skilled player the casino staff treat the player with the courtesy afforded to the ordinary gambler, quite possibly plying him with free drinks and complimentary. As the Commissioners would be aware, casinos operate a gratuity system to encourage high stakes gambling.

Once the casino determines that the player is skilled (whether he really is or not) he becomes the “natural enemy of the casino”. Any gratuities are immediately withdrawn and if the player is a member of a VIP room (such as the Mahogany Room at Crown or the Endeavour Room at Star City) then this membership is immediately revoked.

Next, senior casino management approaches the player and informs him that he will now be restricted. Other unskilled players at the table are often outraged at the discriminatory treatment of the alleged skilled player. Casino staff will say, “I’m just doing what I’m told to do”. If the player asks to speak to the person who made the decision he will be told that this is not possible and the matter is closed. The skilled player is told that if he wishes to lodge a complaint with the Government Inspectorate he may. If this is done, the representatives of the Government will inform the player that the casino has acted within the rules of the game as gazetted by the Government (and indeed they have).

From then on he is treated as an undesirable in the casino. A photo is taken of him and he is put on a list of casino undesirables. Should surveillance spot the player in the casino again then the whole unsavoury experience will be repeated.

If the player continues to visit the casino, staff will begin to make a joke of him, asking “you know the rules that apply to you, why do you continue to come here?” Sometimes, exclusion from the casino will be threatened for “disrupting the game” by having the audacity to continually visit the casino and forcing the casino management to go to the inconvenience of imposing the restrictions over and over again.

Casino staff implement intimidatory practices such as standing over a skilled player, making snide comments to colleagues and other psychological techniques to distract the concentration of the skilled BlackJack player. It has occurred to me that their behaviour may simply be a result of jealousy of the skilled BlackJack player’s ability.

Years of experience have taught me that arguing the unfairness of this situation with casino management is futile. Skilled BlackJack players are often branded as cheats (even though they have abided by the rules at all times).

I have received a letter from Crown Casino stating that I am restricted to the minimum bet under the provisions of rule 5.12. This letter makes it clear that I am to police this restriction myself! They have advised that if I am detected within Crown betting any amount more than the table minimum (say \$15 on a \$10 minimum table) I am subject to exclusion from the casino in accordance with section 72 of the *Casino Control Act 1991*. A copy of this letter is enclosed in part F, the attachments to this submission.

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## **9      *Skilled players' response to the casino restrictions***

Often skilled players devote many months and years to mastering the techniques involved in playing the game of casino BlackJack skilfully. They love the challenge of playing the game well, and are genuinely passionate about playing casino BlackJack. I know in my 12 years of playing and studying the game I have become infatuated with its mathematical nuances and complex strategies.

The imposition of the restrictions effectively means the end of their playing careers and all the enjoyment and potential for winning that goes along with it.

As explained above, it is very unpleasant to be singled out by casino management for the imposition of the discriminatory restrictions. It is not too emotive to say skilled players are genuinely terrified at the prospect of being subjected to the restrictive rules and countermeasures employed by the casinos against skilled players.

## **10     *Submission to the Victorian Casino and Gaming Authority***

On 3 May 1999 I lodged a submission with the Victorian Casino and Gaming Authority in relation to rules 5.12 and 4.5 of the rules of casino BlackJack which operate in Victoria. In the submission I submit that rule 5.12 (which allows for discriminatory betting restrictions) should be abolished and that rule 4.5 (which allows for discriminatory shuffling) should be amended to prohibit the practice of discriminatory shuffling.

As far as I am aware this is the first submission of its kind in Australia.

My solicitors, Slater and Gordon lodged this submission. They have advised me that a pre-hearing conference in relation to the submission has been scheduled for 30 August 1999.

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## Part B

# Economic Arguments

I have stated that casinos are unnecessarily concerned about the activities of skilled players. One might argue that the casino is a large business with a profit motive and therefore needs to be protected against skilled players. There are a number of explanations as to why this is fallacious.

### **11 *Nature of casino profits is amalgamated***

A casino's income represents an amalgamation of the entire gambling activity that occurs in that casino. This activity is a huge melting pot of all sorts of action. Some players bet big, some players bet small. Some players bet on high house advantage games (eg poker machines), some players bet on low house advantage games (eg baccarat). Some players play for many hours each week, some players play very infrequently. Some players win, some players lose.

At the end of the day the casino wins because it has an overall advantage over the gamblers *as a whole* on the games it offers. Table 3.1 of the Draft Report indicates that in 1997-98 the casino industry won \$2,232 million on a total handle of \$20,942 million (11 per cent of the handle). This percentage is an amalgamation of winners and losers playing a multitude of different games.

On any particular Saturday night in the casino one can observe a gambler betting \$100 a spin on a money wheel. This game has a house advantage of 7.7 per cent. If that player suddenly comes to his senses and decides to bet his \$100 a spin on a roulette wheel he will only lose 2.7 per cent. His "skilled decision" to play a game with a lower house edge has just cost the casino 5 per cent. No one would ever restrict that player from the roulette wheel and force him to play the money wheel, although at the end of the day he has just cost the casino 5 per cent in the huge amalgamation of casino profits.

Compare this situation to that of BlackJack players. While the majority of players play BlackJack quite badly and lose say 3 or 4 per cent on their turnover, the casino is quite prepared to accept that some players will eventually learn basic strategy and lose only approximately 0.5 per cent. This "skilled decision" has again just cost the casino say 3 per cent but that is perfectly acceptable. Now if that basic strategist learns to become a highly skilled BlackJack player and turns his 0.5 per cent disadvantage into a 0.5 per cent advantage this has cost the casino a mere 1 per cent but they feel the need to restrict this player.

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The amalgamation practice is deemed acceptable when uninformed players exceed the expected house advantage yet the smaller percentage gain by the skilled sees this practise ignored.

## **12    *The extent of skilled players in Australia***

Skilled BlackJack play in Australia's casinos is extremely rare. There are a number of reasons for this.

Firstly, while it is relatively easy to learn basic strategy (perhaps 15 hours of hard work), it is quite difficult to learn the techniques involved in identifying advantage situations on the BlackJack table. This will take many months (possibly years) of consistent, repetitive practice. It is not unlike learning to become an excellent cricketer or tennis player.

Secondly, it requires great discipline to gamble in such a manner that creates a long run advantage over the house. Most players simply do not have this kind of discipline, they are in the casino to gamble and as a whole gamblers play very erratically and rely more on luck and prayer than skill! Gamblers try to impute a causal relationship between their actions and the random outcomes that occur in casinos. This is the basis of the fanciful theories that surround gambling, many of which seem entirely logical until investigated very thoroughly. To avoid these theories and commit to entirely mathematically logical play (while possibly being bombarded with ongoing losses while playing correctly) is something that most gamblers simply can not do.

Thirdly, to handle the enormous fluctuations which occur in BlackJack play, a skilled player must be very well financed. The bankroll required varies according to the denomination of the table the player plays on and the level of risk he is prepared to accept. In order to minimise his chance of losing all his bankroll to around 2.5 per cent the skilled BlackJack player requires a bankroll in the order of 1500 times his hourly expected win.

Playing *absolutely perfectly* skilled BlackJack on a \$10 table in Crown Casino nets approximately \$9 an hour, but requires a bankroll of around \$12,000. Even with this relatively large sum of money, the player playing absolutely perfectly skilled BlackJack is a 1 in 40 chance of losing his entire \$12,000! He is most certainly gambling!

The Draft Report indicates that the participation rate of adult Australians in casino table games is 10 per cent (Table 3.6). Australia's population has just reached 19 million and 73.2 per cent of Australian's are aged 18 years or over (source: ABS 1996 census). This implies 1,391,000 adult Australian's participate in casino table games. If we define regular players as those who play at least once a week, table 3.6 of the Draft Report indicates that 2 per cent of these players are regulars.

Hence in Australia there are about 28,000 regular casino table game players, and about 1,127,000 casino table game players who play less than once a week. In fact

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this estimate of 28,000 significant gamblers will be conservative, since the 1,127,000 gamblers will include gamblers who gamble less than once a week, but “binge gamble” when they do.

So how many of these players are skilled BlackJack players? This is a very hard thing to determine, but to give the Commission some idea of the extent of skilled play I will attempt to make an estimate.

I have been playing in Australia’s casinos since 1987, and have been adopting methods of skilled play since 1988. It is relatively easy for a skilled player to identify another skilled player, and whilst I have encountered other skilled players in casinos this has been a very rare thing. I have met perhaps a dozen other skilled players in casinos in the last 12 years. Perhaps two dozen more have contacted me by telephone through my involvement with skilled BlackJack play, which has been public knowledge since 1993.

I have also been teaching skilled play techniques at BlackJack since 1993. Whilst every student learns something at bJ mAsters, the vast majority of my students only lessen the house advantage already against them or learn perhaps to play a breakeven game. This is still a very valuable thing, as they can derive the enjoyment of gambling in the casino with a minimal financial cost. Only the most disciplined, hard working student can end up mastering the techniques to have a significant long run advantage over the casino.

In my estimation there would only be about 100 BlackJack players in Australia sufficiently skilled, sufficiently disciplined and sufficiently bankrolled to have a reasonable chance of creating a significant long run advantage on the game of casino BlackJack. I estimate about 70 of these would play at reasonably low stakes and about 30 of these at moderate to reasonably high stakes.

In any event whether the correct number of highly skilled players (winning at say 0.5 per cent of their turnover) is 50 or 100 or 200 is inconsequential. Compare these numbers to the (conservatively) 28,000 regular (at least once a week) casino table games players who will be losing at an average of perhaps 5 per cent on their turnover.

### **13    *How restrictions on skilled players costs the casinos***

Casino staff are very fearful of skilled play. Personally I believe there is a historical reason for this. The casino industry in this country was born in Tasmania. In the late seventies to mid eighties there were a number of skilled BlackJack players at Wrest Point Casino in Hobart. Senior management seemed to become threatened by the skill of these BlackJack players, and became highly antagonistic towards them.

As the industry grew senior casino positions across the country were awarded to industry members who originally were employed at Wrest Point. In this way the fear and even sometimes hatred of the casino industry toward skilled BlackJack players permeated across the country.

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Casinos are now so obsessed with stopping skilled players from winning they will often engage in practices that reduce the chances of the skilled players winning but at great expense to the casino as a whole. An excellent example of this is the decision by Crown Casino in April 1998 to restrict doubling in the casino to two card totals of 9, 10 and 11. Prior to this restriction players were permitted to double any two cards received on the initial deal (except a BlackJack). Throughout Las Vegas it is common practice to allow doubling on any two cards (even a BlackJack).

The ostensible reason for the change was to bring Crown into line with the other Australian casinos. This was ludicrous since 6 of the 13 casinos allowed doubling on any two cards and 7 of the 13 did not (since Crown changed 5 allow it and 8 do not). When the change was made Crown also changed the rule in relation to split Aces. Previously split Aces could be resplit (should a third Ace be received) but the rule was changed to abolish the player's freedom to resplit.

The real reason for these change was that it increased the house advantage over the basic strategy player from 0.3525 per cent to 0.5153 per cent, an increase in house advantage of 46% over the basic strategist! This is quite a substantial price rise!

However, this price rise is only over a basic strategist. Unskilled players do not know how to correctly implement the freedom of doubling on any two cards. While this freedom allows skilled players to lessen the house advantage slightly it also gives unskilled players *much* greater scope for committing basic strategy violations, thus increasing the house advantage against the unskilled.

Casinos also make grave errors in judgement in the identification of skilled players. There is no nationally accepted method for identifying skilled players. Some casinos have computer software that is designed to assist in detection but it is notoriously unsuccessful. This issue of the identification of skilled players is dealt with in item 23 in Part C of the submission.

The relevance of this point as an economic argument is that the identification of unskilled players as skilled is very expensive from the casino's point of view. Sometimes unskilled players have a lucky run of cards and the casino incorrectly concludes they are skilled. I know of quite a few instances of this occurring. Sometimes the players are "re-instated" back to their previous status of unskilled and the restrictions are lifted.

Unskilled players lose at a rate of perhaps five times the rate that highly skilled players win at. If an unskilled player is restricted this is a particularly expensive mistake for the casino.

Another way in which casinos cost themselves profit in the pursuit of skilled players is in the resources they put in to detection of such players. The time and energy spent on identifying and then continually restricting such players is out of all proportion to the "threat" they pose to the casino's profits. However, the major way casino's cost themselves money in the ongoing discrimination against skilled players is through the practice of frequent shuffling. This further reinforces my perception that the vendetta against skilled players is more for personal reasons rather than financial ones.

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## 14 *Frequent shuffling*

Many years ago at the game of casino BlackJack the cards were shuffled only once the players had run out of cards. This created the situation that a partially dealt hand of BlackJack would be on the table during a shuffle. This situation was confusing to many players so a cut card was introduced to the game. This cut card is placed towards the end of the shoe. When the cut card appears, the round of BlackJack is completed (this involves dealing more cards out of the shoe) and then all cards are shuffled. There is a need to place the cut card sufficiently back from the rear of the shoe to ensure the dealer does not run out of cards during the final round of play.

In the game of casino BlackJack about 75 to 85 per cent of a shoe is dealt out before shuffling occurs. When a skilled player is at the table, the casino will discriminate against this player by ensuring the cards are shuffled *much* more frequently than normal. This dramatically reduces the potential of the players to gain an advantage. For example, shuffling when about 50 per cent of a shoe is dealt reduces the winning potential of a skilled player by about 90 per cent!

Frequent shuffling is achieved through the use of two cut cards (when there is a skilled player at the table the casino will shuffle on the first cut card), discriminatory cut card positioning or the extraordinary practice of preferential shuffling (which occurs in the Queensland casinos).

The intent of these practices is to shuffle *much* more often when a skilled BlackJack player is at the table. At such times the casino will shuffle when perhaps 40 to 60 per cent of the shoe has been dealt out rather than the usual 75 to 85 per cent.

It is interesting to note that while frequent shuffling reduces the skilled player's advantage over the house, it also reduces the house's advantage over the unskilled players. This is because of the down time which frequent shuffling creates. I have calculated that if Crown Casino consistently used a 50 per cent shuffle point rather than a 87.5 per cent shuffle point it would result in a reduction in turnover (and thus net win and thus State taxes) for the casino of 9.2 per cent (approximately \$45,000 a day on Crown's bottom line). This data is in my submission to the Victorian Casino and Gaming Authority.

The practice of frequent shuffling is entirely unnecessary. In fact even the everyday shuffle points which the casino utilise against unskilled players are unnecessarily premature. In order to maximise the house advantage the casinos should shuffle less often than they do (ie have a deeper shuffle point in the shoe).

The average number of cards that are dealt after the cut card is exposed until the end of the final round of the shoe is dependent upon the number of boxes open on the table.

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**TABLE 4  
AVERAGE NUMBER OF CARDS DEALT  
AFTER THE CUT CARD IS EXPOSED**

<b>Boxes open On table</b>	<b>Average number of cards dealt</b>
<b>1</b>	<b>2.70</b>
<b>2</b>	<b>4.05</b>
<b>3</b>	<b>5.40</b>
<b>4</b>	<b>6.75</b>
<b>5</b>	<b>8.10</b>
<b>6</b>	<b>9.45</b>
<b>7</b>	<b>10.80</b>

This proves there is no need to place the cut card any more than say 30 cards or so from the rear of the stack.

### **15 Skilled players contribute to casino profits**

The existence of skill at BlackJack actually contributes to casino profits by attracting a very large proportion of BlackJack gamblers, ranging from the unskilled to the semi-skilled and the highly skilled.

Casino advertising concentrates heavily on the possibility of winning. Table 3.2 of the Draft Report identifies the “dream of winning” (66 per cent) and “beating the odds” (14 per cent) as significant motivations for gambling by gaming machine and casino gamblers.

BlackJack is universally known in the casino industry as a game of skill. It is quite common to hear a player referred to as a “good BlackJack player”. A gambler might be described as a “big” roulette player but not a “good” roulette player.

BlackJack players love the fact that they have some control over the outcome of the game. The possibility of some control over one’s destiny is what makes BlackJack the most popular table game in the casinos.

Casino advertising has, in the past, explored the theme of skill and “pitting one’s wits” at the casino. The emergence of gaming tournaments as a casino marketing tool further reinforces the skill factor. It is clear that casino’s benefit heavily by the fact that skill exists at BlackJack.

### **16 Skilled players contribute to the economy**

It is interesting to note the comments casinos have made in their submissions referring to the contribution they make to the economy in the form of gains in outputs and

employment. I noted with great interest the Commissioners finding that these gains are “largely illusory”.

I submit that skilled BlackJack players make a contribution to the economy in the form of creating employment in the casino industry (dealers, supervisors, waiters, cash cage staff and so on). This employment is not illusory, since when players do not play (for example when the casino imposes restrictions) they simply cease to gamble.

What alternative activity they participate in may or may not create employment, and it is unlikely that it would create as much employment as gambling at a BlackJack table does. Realistic alternatives to playing BlackJack would be playing poker or backgammon amongst friends, reading BlackJack books, watching television or perhaps a watching movie.

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## Part C

# Ethical Arguments

### **17    *Reverse discrimination of the mathematically able***

Any rule that allows a casino to pick and choose who it serves is clearly discriminatory. Both the frequent shuffling and betting restrictions provisions of the rules are designed to increase the advantage of the casinos against mathematically advanced minds, without in any way decreasing the house advantage to be had over the common casino patron.

If this discrimination were on the basis of sex, age, race, sexual orientation, ethnic origin or disability there would be grounds for action under Federal anti-discrimination legislation. While there are provisions in this legislation in relation to discrimination against the disabled no provisions exist for discrimination on the basis of enhanced ability.

Imagine the outrage if this sort of discrimination was extended to sports and other games. The restrictive rules are akin to telling Steve Waugh he is allowed to continue batting but he must wear a blindfold and hold the bat only using the thumb and index finger of his left hand. Black people would be allowed to run in the Olympics only if they gave their white competitors a head start. Tall basketballers would have to hop rather than run around the basketball court. Top chess players would be forced to play their competitors blindfolded.

These analogies can be extended beyond sport and games to other spheres of human endeavour. Perhaps business tax rates could increase in direct proportion to the business savvy of the taxpayer? Or should clever politician's speeches in parliament be restricted to half the length of their opposition's?

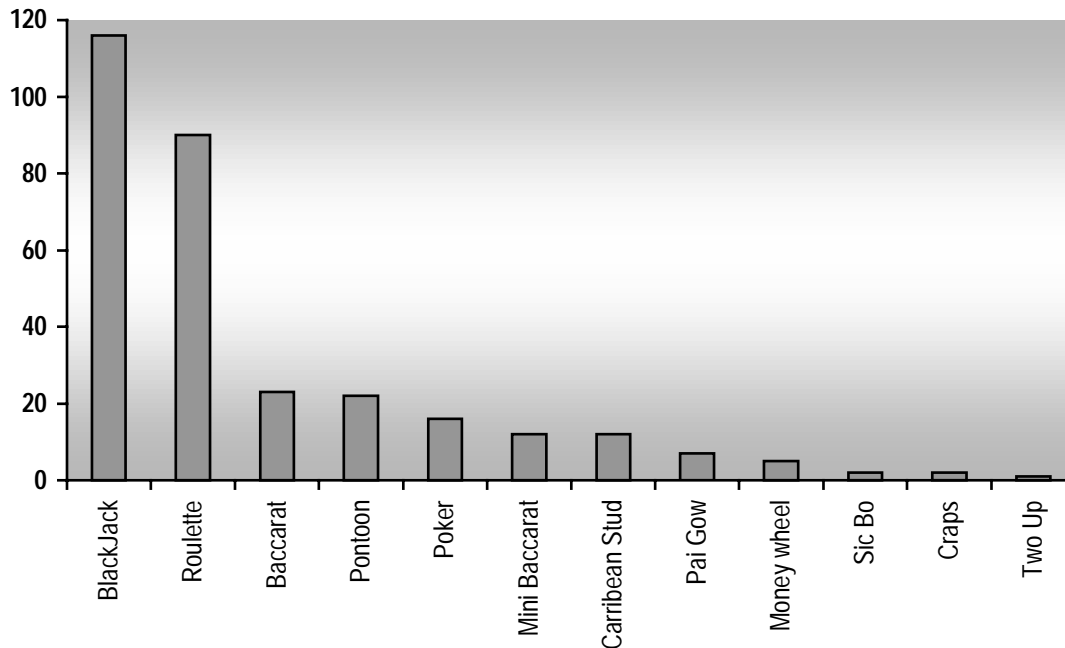
Since the mathematically skilful are to be restricted should the mathematically challenged be given some special dispensation or advantage? Perhaps if the casino identifies a particularly bad BlackJack player at a table they should give him some of his chips back, or alter the rules of the game so that he only loses 50 per cent of his bet on losing wagers? Of course this would only apply to the very bad players at the table, the average skill players would receive no such dispensation.

The ludicrousness of these suggestions is self-evident. By discriminating in the way that they do the casino adopts the attitude of "losers only please".

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18 **Casinos benefit from the skill factor in BlackJack**

TABLE 5  
CROWN CASINO GAMING TABLES  
August 1999



BlackJack is by far the most popular casino table game in the world. In August 1999 I conducted a survey of the dissection of all gaming tables at Crown Casino, including those in the Mahogany Room and in the elite Crystal Club. BlackJack and Roulette are by far the most popular games, although it must be said that Baccarat is the game of choice for the very high rollers.

It must also be noted that Crown has one of the *lowest* proportions of BlackJack tables in Australia. This is especially so because a number of their BlackJack tables have recently been converted to a new game, Crown Pontoon, in an experiment designed to increase house advantage and minimise the effects of skilled BlackJack play.

The reason for the overwhelming popularity of BlackJack throughout the world is clear. It is the belief among the general casino going population that a player has control over a BlackJack game and can exercise a degree of skill via his strategy decisions. As discussed earlier in this submission, this belief is entirely correct.

Table 7 in the summary of the draft report states that 11.1 per cent of young Victorians believe that one can “beat the system at the casino if you know how”. Certainly if the question was rephrased to “can you improve your odds on BlackJack if you know how?” the percentage would skyrocket to perhaps 80 or 90 per cent. Table 3.2 states that 14 per cent of gaming machine/casino gamblers are motivated to



play by the prospect of “beating the odds”, and in the same table the “dream of winning” motivated 66 per cent of respondents.

Clearly casinos exploit the factors of skill and perceived control over the outcome in the game of BlackJack. Casinos deceptively encourage a sense of control in other games where there is none, such as roulette and baccarat by encouraging the use of paper and pen (which are supplied by the casino free of charge for gamblers to record meaningless strings of random numbers). However, the use of these items in BlackJack is banned.

This sense of predictability of outcome is particularly reinforced in roulette by the use of electronic displays of recent results. To be convinced that these displays do their job for the casino one need only look at all the bets on Black when a string of Reds have come up in a row.

Since beating the odds and the dream of winning are major motivators for many to gamble at the casino, should there not be a reasonable expectation that if a player actually does succeed in this incredibly difficult mission, that he should be allowed to win? Isn't there a social contract between the casino and the gamblers? To most gamblers, the casino is saying “here is the game – give it your best shot. If you win we'll pay you but if you lose trying to win, then we get your money”?

The piece of casino marketing that comes from Australia's Olympic casino, Star City, is ironic: *“bet with your head, not over it”*.

## **19 Casinos are in the business of providing gaming services**

Is it right and just that skilled players should be harassed in the way they are? After all, the fact that the game can be beaten is a major drawcard for unskilled players. The casino wants to have their cake and eat it. They want to have a long run advantage over the vast majority of unskilled players (many of whom think they are more skilled than they are), whilst retaining the right to restrict the very tiny minority of skilled players who have a tiny advantage over the casino.

The casinos are in the business of providing a service, the provision of gaming, to all adult Australians. On page 24 under section 5.1 (headed Consumer Benefits) of the Australian Casino Association Submission it is stated

It is important then to ensure that consumers continue to have the ability to consume casino products to the extent they wish

On page xi of the executive summary of the ACIL Submission the very first public policy principle listed is

Individuals are generally best placed to determine which economic activities they should engage in and the extent of their engagement

It has been noted that Australian's are, per capita, the world's largest gamblers. Aren't Australia's casinos places for all adult Australians to enjoy; to have fun and partake in the recreation of one of our national pastimes, gambling?

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Fair dealing with all BlackJack players in the spectrum from totally unskilled to highly skilled is part of the provision of gaming services to all.

Losing a minute amount to a minute number of BlackJack players and winning a large amount from the vast majority of BlackJack players is part of this fair opportunity for the casinos. For the casinos dealing with the tiny number of skilled players is simply the flipside of winning from the huge crowds drawn by the game's skill factor.

Is it fair that a tiny number of identified skilled players receive a lifetime sentence of ostracisation from the game that they enjoy playing with a passion? I submit that it isn't, and that the casinos have a social responsibility not to refuse service to any adult Australian without just cause. It is impossible and illogical to presume that using one's brain a little more than the next person can be considered just cause.

## **20 *Natural justice and social norms***

If one was to survey members of the society on various subjects one could gauge the contentiousness of the issue by the variation in response. For example if one asks "is it wrong to walk naked in public?" almost 100 per cent of respondents will respond in the affirmative. If however one asks "should Australia become a republic?" there will be a less clear cut result.

It is a social norm that public nakedness is wrong and should not occur.

Anecdotal evidence suggests that members of society vehemently disagree with the restrictions and discrimination that is meted out to skilled BlackJack players. Almost 100 per cent of members of the general population (both casino goers and non-casino goers) are genuinely astonished when they learn of the restrictive practices of Australia's casinos towards skilled players. Some people even refuse to believe that this kind of conduct can happen in Australia.

Here is a selection of very common comments upon learning of the restrictions imposed by the casinos:

"Most gamblers lose so if they (skilled players) can win good luck to them"

"The casino may as well put a sign on the door saying 'losers only'"

"That's not fair – the casino isn't acting honestly"

"There should be a level playing field for all"

"They can't do that – it's against anti-discrimination laws"

Even the government inspectors and casino management often will say:

"Look, I don't agree with it, I'm just doing my job"

The plain and simple fact that the majority of individuals in our society disagree with the existence of the discriminatory rules utilised by the casinos against skilled players

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is evidence that these provisions are against the concepts of equal opportunity, right to service, natural justice and our social norms.

## **21    *Gambling can be skilful in nature***

In the ACIL report (submission 155 to the Commission) there are several references to professional gambling. For example on page xii

Outcomes can be governed by fate or influenced by skill – forms of gambling characterised by the latter can be pursued professionally.

And further, on page 9

... there are card players and racetrack bettors that are genuine professionals...

It is clear the casino industry acknowledges that skilled gambling with a long run advantage over the house is acceptable.

Indeed, in the Draft Report on page 3.10 it is stated that

Some consumers gamble to exercise skill or accumulate knowledge. For example, racing punters study form guides and place wagers to test their skill at picking winners; some casino blackjack players develop counting systems to test their skills against the casino and professional gamblers believe that their skills will enable them to earn a living from gambling.

There are gamblers who bet on the TAB who can create a long run advantage for themselves through skilled methods of horse selection. These methods involve many hours of hard work.

The TAB has no problem with such “professional punters”. This is because the TAB makes a profit against the punters *as a group*. They accept that the skilled players will win in the long run but the net result on the game as a whole is a profit for the totaliser. I submit that casinos should adopt the same enlightened attitude.

Poker is clearly another card game of skill. Skill in poker is respected in the casino, because the skilled player’s profits are at the expense of unskilled players while the casino keeps its commission (or rake) irrespective of who wins. The casino industry condones and encourages the skilful “battle of wits” in poker yet they prohibit the skilled being pitted against themselves.

Caribbean Stud is another card game where skill effects the house advantage the casino enjoys over the player. The casino does not have a problem with the exercising of skill in this game because the skill factor will only determine whether the players loses a moderate amount or a large amount to the casino in the long run. Casinos in this respect do not seem to understand the amalgamation effect outlined in section 11 earlier. Skilled decisions in Caribbean Stud can decrease the casino’s income by more than the switch from basic strategy to a highly skilled BlackJack player, yet the former skill decisions are permitted, while the latter are demonised.

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Skill in BlackJack is vilified by casino industry. In the Hobart *Mercury* of 4 May 1999 Mr Greg Farrell, general manager of Wrest Point casino stated:

[Andrew Scott] counts cards and that goes against the rule of chance... the casino can change the style of game if we believe someone is card counting

This sort of thinly veiled accusation of cheating is something that skilled BlackJack players are constantly faced with.

In most areas of our free society it is understood that the very best in a field of endeavour should reap financial rewards from their skill.

## **22    *The continuum of skill in BlackJack***

Casinos classify all BlackJack players into two types: skilled and unskilled. This is a black and white distinction. Skilled players get restricted and unskilled players do not.

In fact skill at BlackJack is not that straightforward. This sort of dichotomy is akin to classifying cricketers as either skilful or unskilful. Of course there is in fact a continuum of skill, ranging from the very unskilled to the very skilled.

The following list is intended to provide the Commission with some idea of the range of skill:

1. Never played BlackJack before – doesn't understand rules
2. Understand most of the rules but has no strategy
3. Understands all of the rules and possesses a misguided strategy
4. An approximate basic strategy player
5. Nearly perfect basic strategy player who keeps some track of cards
6. Perfect basic strategy player who keeps some track of cards
7. Perfect basic strategy player who counts cards and approximately sizes his bets accordingly
8. Perfect basic strategy, counts cards, conducts true count conversion and approximately sizes his bets accordingly
9. Perfect basic strategy, counts cards, true count conversion, sizes bets well but with an insufficient betting spread to create a significant advantage
10. Perfect basic strategy, counts cards, true count conversion, sizes bets perfectly and implements some advanced playing strategies
11. Perfect basic strategy, counts cards, true count conversion, sizes bets perfectly and implements all advanced playing strategies
12. Perfect basic strategy, counts cards, true count conversion, sizes bets perfectly, implements all advanced playing strategies and uses further advanced techniques

While this list illustrates the range of skill levels, it doesn't take into account whether the player in question is sufficiently financed to create an advantage over the casino. It also doesn't account for the player's level of discipline (perhaps some days he goes back to bad habits), whether he is having a bad day or a multitude of other factors that will effect his potential to create a long run advantage over the casino.

For example, on individual occasions the skilled player may be fed up with thinking too much and play in a purely unskilled manner, relying on guesswork. Further, he

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might be intoxicated after a social event, or be mixing up his skilled (or semi skilled) BlackJack play with play on other casino games with a substantial house advantage.

With all these factors that give rise to uncertainty as to a player's skill level, should a casino have the right to pass a life sentence of never being allowed to bet more than one box of the minimum?

### **23    *Classification as a skilled player***

It is incredibly difficult to determine whether a BlackJack player has an advantage over the casino. If I were charged with the responsibility of determining whether a player was skilled at BlackJack, these are the steps that I would feel necessary:

1. Determine that the player was playing basic strategy. This would require seeing the *consistently* correct play on the 362 playing decisions with a choice to make. Since some of these decisions occur only once per 2,197 hands this would probably involve the rigorous observation of approximately 10,000 hands of BlackJack.
2. Determine that the player was employing a sufficient bet spread to gain an advantage over the casino. This would involve the "clocking" of say 20,000 hands in order to see *consistently* a complete range of prevailing advantages.
3. Observe any basic strategy deviations and analyse these for correlation with the prevailing card subsets at the time of the deviation. To fully analyse these would require many thousands of hands, say 20,000.

However, once I had done this I would feel the need to find out somehow how large the player's bankroll was. This is because, even with correct skilful play techniques, an insufficiently financed player will end up losing his money in the long run.

Further, I would be forced to analyse whether there were any day to day variations in his strategy away from mathematically optimal play. This quite often happens if a skilful player allows his mind to wander or if he is having an "off day". If this happened with any regularity then the player would not have an overall advantage on the game, even though the majority of the time he would be playing mathematically optimally.

As can be seen, classification is extremely time-consuming and laborious. Casinos will not and do not pour these resources into making an analysis of each player they suspect of being skilled. Frankly, it is simply not worth it and the software that some casinos use to undertake this task is lacking. Some casinos do not have any software at all! When casinos do attempt the task, their analysis necessarily must be on the surface only.

With proving beyond reasonable doubt so difficult, is it just that there should be any "crime" in the first place?

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## **24    *Preferential shuffling - an unethical price increase***

The ethics of the practice of preferential shuffling in the Queensland casinos must be questioned.

It is not too emotive to describe preferential shuffling as a form of “stacking the deck”.

Preferential shuffling is the most blatant form of frequent shuffling, which otherwise can occur by discriminatory cut card positioning or by use of the two cut card system (in Tasmania, South Australia and the Australian Capital Territory).

With preferential shuffling, the casino does not need to wait until a cut card comes out of the shoe before shuffling. They can just shuffle randomly whenever they want! How this works in practice is simple. When a skilful player is at the table the casino simply waits for the player to increase his bet (indicating that a favourable situation has arisen for all players at the table). The bet increase of the skilful player is the only way the casino knows the next hand of BlackJack is favourable to the players. In effect, the casino is using the skilful player's bet as a measuring stick to determine when to shuffle away good hands and when to continue playing through bad hands!

Effectively, under the regime of preferential shuffling, all players at the table (skilled and unskilled alike) are forced to play the hands with a casino advantage. When one of the 15 per cent of hands with a player advantage arises the casino says “that's it, game's over, let's shuffle these cards and start again”. It is like taking their bat and ball home. This practice increases the house advantage substantially, effectively a hidden price increase against the everyday unskilled BlackJack player in the order of 12 per cent.

## **25    *Misleading “advertising”***

The casino “advertises” the table minimum and maximum at each BlackJack table on a sign near the drop box that holds the cash used to purchase chips by the players. The maximum is in fact misleading. For example, at a \$10 table the maximum is usually \$500, and the sign indicates this.

However, for skilled players who have been subjected to restriction to the minimum the table maximum is no longer \$500, it is \$10. Casinos obviously consider the prevalence of skilled BlackJack play so minor that this oversight can be justified.

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## Part D

# Recommendations and Suggestions

It is understood that the Commission's Final Report is in the nature of an information report, and thus will make findings rather than recommendations. Nevertheless I have raised a number of serious issues in this submission and the natural question I would expect to be asked is "how would you deal with these problems?" Section D answers this question.

### **26    *Recommended changes to the rules***

At the Commission's Melbourne public hearing on 30 March 1999 Mr Jeffrey Rae of ACIL Consulting said

... there's got to be a demonstrable case for every rule that you want to put in place. Every rule has to be justified and to pass the test.

The casino industry has for many years complained about too much regulation. I recommend some vast simplifications in relation to the regulations that discriminate against skilled BlackJack players.

#### *Recommendation 1*

**The rules allowing arbitrary restriction of players to the minimum be abolished. All players within the casino should be permitted equal betting opportunity.**

#### *Recommendation 2*

**That only one cut card be used, and that it be placed as near as practicable to one deck from the rear of the shoe, using a device authorised for this purpose.**

The placement of the cut card one deck from the rear of the shoe still allows almost five times the average number of cards used after the cut card appears to the end of the final round on a completely full BlackJack table (refer to table 4).

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The Australian Casino Association Submission on p 24 referred to

...concerns over so-called 'problem gambling' experienced by a few should not be the basis for excessive regulations...

While in relation to another matter, my recommendations follow this same theme, the existence of a few exceptional cases should not be the basis for excessive regulation.

## **27    *Uniformity of regulations nationwide***

One of the Commission's key finding on page XIII of the Draft Report is

Regulations are complex, fragmented and often inconsistent. This has arisen because of inadequate policy-making processes and strong incentives for governments to derive revenue from the gambling industries.

With respect to my particular area of expertise, casino table games, I could not agree more. There is no justifiable reason for any of the rules of any casino table game to vary between State and Territory jurisdictions. The fact that they do provides a better game for some Australian citizens, and a worse game for others.

### ***Recommendation 3***

**The regulations governing casino table games be uniform across Australia.**

This course of action would demand the participation of the Federal Government.

## **28    *Signs to reflect accurate price information***

On page 3.7 of the draft report the Commission notes

...for some modes of gambling [the] price is not readily apparent.

When consuming a product it is only fair that the consumer is aware of the price of that product. Clearly in a casino the vast majority of consumers are totally unaware of the price they are paying for the product (ie the provision of the gaming service).

### ***Recommendation 4***

**That on the sign at each gaming table there be an inscription as follows:**

#### **GOVERNMENT WARNING**

**Each time you wager \$1 on this game, you might win or lose, but this wager contributes x.x cents towards your overall loss on gambling.**

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The amount of x.x cents is the house advantage multiplied by \$1. In the event of varying house advantages on different bets, there should be a table listing the expected loss per \$1 spent for each bet. In this case of BlackJack there should be a range of amounts listed for different skill levels. Should this recommendation proceed, I would be happy to provide additional information in relation to the mathematically proven advantages for BlackJack.

**29      *Code of ethical practice in fair dealing with skilled and semi skilled BlackJack players***

I notice with interest that Crown Casino spends \$4 million annually on staff training. Crown Casino is to be congratulated for this investment in the industry. I especially wish to congratulate Crown Casino on their course for staff in the “Responsible Provision of Gaming Services”.

The “us and them” relationship that has arisen between casino staff and skilled BlackJack players is unnecessary. Part of ameliorating this would be the creation of a course in skilled BlackJack play for casino staff.

*Suggestion to the casino industry 1*

**Casinos design an agreed and approved short course for their gaming staff. This course is to be the basis of a “code of ethical practice in fair dealing with skilled and semi skilled BlackJack players”**

I would be delighted to assist any casino that wished to create such a course.

[The following two recommendations and this suggestion would be redundant if recommendations 1 and 2 were accepted. In the event that they were not accepted I see the following as very inferior alternatives, though an improvement on the current situation]

**30      *Sign maximums to indicate possibility of discrimination***

As discussed in section 25 earlier, currently signs on BlackJack tables indicate the table minimum and maximum that apply to unskilled players. These signs are misleading since the table maximum for a restricted player is not indicated on the sign, it is in fact the table minimum.

*Recommendation 5*

**That on the sign at each BlackJack table there be an inscription after the maximum bet stating “excepting restricted skilled BlackJack players who may only wager the minimum bet on one box to prevent them winning”.**

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### **31    *Method for identifying skilled players***

Section 23 discussed earlier highlights the difficulty in determining whether a player has a long run advantage over the house or not. The effect of such a determination is devastating to a skilled BlackJack gambler. It is effectively a life sentence of prohibition of access to gambling services. Therefore, such a sentence should not be imposed lightly.

*Recommendation 6*

**That an approved, nationally uniform method be established for determining whether a player should be (sic) subject to discriminatory restrictions. The method should be transparent and subject to an appeals and reinstatement process.**

I invite any feedback from interested parties on how this method should occur. Should this line be pursued I would be happy to provide my thoughts on the best possible method (or perhaps least worst method).

### **32    *A compromise between skilled players and the casino industry?***

At the end of the day, a lot of resources are being wasted on the attempts at identification of skilled BlackJack players by Australia's casinos. Casinos are truly ignorant of how insignificant any "threat" to their profits by skilled players is. In the event that these discriminatory restrictions remain in place, I make the following suggestion to Australia's casino industry

*Suggestion to the casino industry 2*

**That representatives of the casino industry and skilled BlackJack players meet to negotiate a compromise position to the mutual benefit of both sides, with players being able to enjoy the mental challenge of the game while casinos are appraised of the likely financial results of the player's strategies.**

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## Part E

# Glossary of Terms

### **ACTION**

*See turnover.*

### **ACTUAL**

The financial result that occurred over a certain period of time.

### **ADVANTAGE**

*See edge.*

### **BACK BETTORS**

Players who place a bet behind the player controlling a box. These back bettors leave control of the playing decisions on the hand to the owner of the box.

### **BANKROLL**

An amount of money specifically set aside in order to play BlackJack with.

### **BASIC STRATEGY**

The mathematically optimal way to play all 371 possible player BlackJack hands and possible dealer upcard scenarios given that the player has no information about the composition of the remaining cards in the shoe.

### **BASIC STRATEGY EXPECTATION**

The percentage on turnover that can be expected to be lost in the long run by a player playing basic strategy at a casino.

### **BELL CURVE**

*See normal distribution.*

### **BETTING DECISION**

The decision of how much to bet on the next round.

### **BETTING SYSTEM**

Any system which tells the user of the system how much to bet on each round.

### **BLACKJACK**

1. An ace and a ten-valued card received in the first two cards in the round (for the dealer or player)
2. The most popular game played in the world's casinos.

### **BLACKJACK DECISION**

*A betting or playing decision (see separate entries).*

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**BOX**

One of usually seven squares marked on a BlackJack layout for players to place their bets in.

**BUST**

For a player or the dealer, when the total of his cards (with any Aces being valued at 1 not 11) is greater than 21.

**CUT CARD**

A plastic card which is placed in the shoe when the cards are shuffled, normally 75 to 85 per cent of the way from the front of the shoe. When this card is dealt from the shoe, the current round of BlackJack is completed and then the entire shoe is reshuffled.

**DEALER**

The casino staff member who stands behind the BlackJack table and deals the cards to the players and makes the payoffs.

**DEPENDENT EVENTS**

A series of events where the probability of the outcomes of the events are effected by occurrences on the prior events.

**DISCARD RACK**

The L-shaped bracket that holds the discards.

**DISCARDS**

The used cards which have been taken out of play either on previous rounds or which were part of busted hands on the round currently in play.

**DROP BOX**

A metal box under the table into which the dealer puts money used to buy chips at the table.

**EDGE**

A situation which arises when one has a positive expectation on a bet or series of bets. Also can refer to the amount of that positive expectation either in a fixed dollar term or a percentage on turnover or bet (eg. "I have an edge of 0.5% on that bet").

**EXPECTATION**

The average of the possible outcomes on a betting proposition, weighted by the probabilities of those outcomes occurring. This is calculated by multiplying each possible outcome (either positive, negative or zero) by the probability of that outcome occurring and summing the products. The sum of the probabilities equals 100%.

**EXPECTED WIN**

The monetary positive expectation of a bet or a series of bets.

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### **FLUCTUATION**

The difference between the actual result for a period of time and the expected result for that period of time due to the fact that the period of time does not extend into the long run.

### **GAIN**

*See expected win.*

### **HIT**

When a player indicates to the dealer by tapping his finger on the BlackJack table next to his box that he wishes to take another card to his hand to improve his hand's total without increasing his bet.

### **INDEPENDENT EVENTS**

A series of events where the probability of the outcomes of the events are not effected by occurrence on prior events in the series.

### **INSPECTOR**

*See supervisor.*

### **LONG RUN**

A period of time, sufficient that the probability of a player's actual result being relatively close to a player's theoretically expected result is quite high.

### **MAXIMUM BET**

The largest bet that is allowed to be placed before the initial deal in any one box at the table, assuming there are no back bettors on that box.

### **MINIMUM BET**

The smallest bet that is allowed to be placed before the initial deal.

### **NORMAL DISTRIBUTION**

A symmetrical bell shaped distribution describing probabilities of various outcomes occurring which are varied from the most likely outcome (or mean).

### **PENETRATION**

The percentage of the cards which are dealt out of the shoe before the shuffle point is reached.

### **PLAYING DECISION**

A decision made by a player after he receives his cards. In Australia there are six possible playing decisions: hit, stand, double, split, take insurance or take even money.

### **RESPLIT**

After splitting a pair the splitting of another pair created by the dealer dealing a third or subsequent card of equal value to one of the cards which was originally one of the pair.

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**RETURN**

A term describing the profit expected to be made from implementing a betting system.

**RISK**

A term describing the general level of fluctuation that may occur from implementing a betting system.

**ROUND**

The entire process of betting, the initial deal, the playing of the hands by the players, the dealer's drawing on his upcard (if necessary), any interim settlement (if necessary), the final settlement and the picking up of the cards and placing them in the discard rack is considered to be one round of BlackJack.

**RUN**

A period of time where a particular occurrence is repeated, usually referring but not limited to winning or losing.

**SESSION**

A period of time at the casino specifically to play in the casino.

**SHOE**

A plastic, box-like container with an opening at one end designed to hold any number of decks of playing cards from 4 to 8, out of which cards are dealt.

**SHORT RUN**

A period of time short enough that the probability of your actual result being relatively close to your theoretically expected result is low due to random fluctuation.

**SHUFFLE POINT**

The point in the shoe at which the cards are shuffled. Can be approximated to the point at which the cut card is placed in the shoe.

**SIGN**

A small notice, usually made of plastic and standing up in a slot in the BlackJack table advising players of the table minimum and table maximum and sometimes also some other playing conditions in force at the table.

**STANDARD DEVIATION**

A statistical measure of the variation from the mean in a normal distribution.

**STRATEGY**

Any systematic way of playing or betting.

**SUPERVISOR**

A casino staff member who stands between usually four (but sometimes two or even eight) BlackJack tables, supervising the games. He is responsible for making sure that the dealers do not make any mistakes and for keeping track of how much each player is winning or losing. He is more senior than the dealers but not as senior as a pit boss.

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### **SURVEILLANCE**

A team of staff members that watch the games through both overt and covert cameras and also in plain clothes on the gaming floor. Amongst other things surveillance are responsible for detecting skilled BlackJack players.

### **TABLE MAXIMUM**

See *maximum bet*.

### **TABLE MINIMUM**

See *minimum bet*.

### **TURNOVER**

The sum of the bets placed over a specific period.

### **WIN RATE**

The positive expectation of a bet or a series of bets expressed either as a monetary amount or a percentage on turnover.





Part F

**Enclosures**

- 1 bJ mAsters information package
- 2 VCGA Submission
- 3 Crown restriction letter dated 7 May 1999