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## Executive Report

# Blue Gum™ Gaming Machine: An evaluation of responsible gambling features



Prepared for

Aristocrat Technologies Australia Pty Limited

by

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Further examination of the data set will provide extended analysis into the behavioural aspects of the Blue Gum™ Trial. These results will be made available in appropriate academic journals in the future.

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## EXECUTIVE SUMMARY

The objective of the present study was to evaluate the effectiveness of a series of innovative responsible gambling (RG) features on a Blue Gum™ electronic gaming machine (EGM). This EGM was based on the design of a Lucky 88™ machine. The specific aims of the study were to determine the use and effects of the RG features on player satisfaction and behaviour. The specific features evaluated were:

1. *Responsible gambling messages*: signs on machines advocating play within affordable limits
2. *Bank meter*: capacity to 'bank' winnings to prevent wins being re-gambled
3. *Alarm clock*: facility to draw attention to expiration of pre-set period of gambling
4. *Demo mode play*: play without investing money
5. *Charity donation*: allocation of residual funds to charity rather than continued gambling

The research design and methodology involved the placement of ten Blue Gum™ machines in five Surf Life Saving Clubs located in the Gold Coast region in Queensland. The study was conducted with the approval of the Queensland Office of Liquor, Gaming and Racing and Gaming, and in compliance with relevant legislative requirements. The investigators constructed a questionnaire designed to elicit information about the awareness, usage, effect and satisfaction of the above RG features.

Embedded within the questionnaire was the Problem Gambling Severity Index (PGSI) of the Canadian Problem Gambling Index (Ferris & Wynne, 2001), an instrument used to classify participants according to their gambling status: non-gamblers, low-risk, moderate-risk and problem-gamblers. For purposes of statistical analyses, the non-gamblers and low-risk were combined into one group (non-gambler/low-risk) as was the moderate-risk and problem-gamblers (moderate-risk/problem-gambler). This allowed greater cell size and a comparison of those with none or minimal and those with moderate or meeting criteria for gambling problems.

A number of research assistants approached patrons either playing or having played the Blue Gum™ machine to invite them to participate in the study and complete the questionnaire. Data were collected between 10.00am and 8.00pm in four-hour shifts across seven days per week. This enabled the inclusion of a representative sample of patrons attending various times of the day. For personal safety reasons, research assistants did not approach patrons attending late evening periods.

In total, 300 participants agree to participate in the study. The responses of one participant were excluded due to invalid responses being provided leaving a final sample of n = 299. The obtained

sample had an equal gender distribution with females being slightly older than males. The average age of participants was 54 years and ranged from 18 to 84 years.

The following findings were obtained:

- According to PGSI scores, 5% of the sample met criteria for problem gambling, and 15.2% for moderate risk gambling. These figures may reflect the type of patrons attending venues in this area; relatively small club membership and a larger population of occasional visitors, for example tradesmen, tourists and holiday makers.
- The average expenditure per session for the total group was \$61 with problem gamblers spending significantly more money per session (\$219) compared to non-problem gamblers (\$39). The former group spent twice as long gambling in the venue as the latter.
- Half the sample reported noticing signs displaying odds of winning.
- The majority of players, 61%, reported noticing at least one of the Blue Gum™ RG features.
- Less than a quarter (22%) reported noticing the responsible gambling messages with no differences found between subgroups of gamblers.
- Although 38% suggested that the message would make a positive difference to their gambling, only 4% indicated that the message influenced their actual behaviour.
- Overall, responsible gambling messages did not affect the enjoyment of play of non-problem and low-risk players. However, significantly more problem gamblers compared to non-problem gamblers reported a significant reduction in their enjoyment of play in response to the signs suggesting a differential response to such messages by this subgroup of gamblers.
- Although most participants noticed the bank meter, around 13% actually used it.
- Slightly less than half the sample noticed the alarm clock with only a minority (less than 6%) electing to use this feature.
- The majority of participants noticed the charity donation feature with half of those using it donating residual credits rather than continuing to play to zero credits.

**Recommendations:**

The findings of this study suggest the potential benefits of certain RG features in assisting patrons moderate their gambling behaviour. It is suggested that the effects could be enhanced with the inclusion of certain modifications to the form and presentation of each feature, and the inclusion of information and educational campaigns outlining the nature and purpose these.

- The responsible gambling messages should be placed within easy sight and frequently changed to reduce habituation to their content. From other research studies, it is

recommended that messages referring to problem gambling be separated and distinct from personal responsible gambling appraisal messages relating to the need to reflect on amount of money spent and need to take a break.

- Responsible gambling messages reduce the enjoyment of problem gamblers. The potential exists for the content of messages to be reframed to maximize the potential for problem gamblers to focus more on the negative impact of their behaviour.
- Few gamblers set time limits. However, the alarm clock should be retained with clearer instructions provided informing players on their purpose and use for the minority that find it useful.
- The charity donation should be promoted as it shows a tendency for players to cease playing despite having remaining credits.
- The demo play provides an option for patrons to play with minimal risk of losing money. This feature could be promoted as an option for taking a short break from spending money yet maintaining an opportunity to have fun without the risk of losing. It may also be attractive to a few patrons wishing to participate socially with friends but not necessarily wanting to play with money.
- One potential approach that warrants further research is to improve the communication of information to target at-risk gamblers without impacting on the recreational play of patrons gambling within their limits.

## BACKGROUND

Aristocrat Technologies Pty Ltd initiated this research project to evaluate the effectiveness of specific responsible gaming features incorporated into the configuration of the Blue Gum™ standard electronic gaming machine (EGM).

A number of studies have identified potential structural characteristics such as random ratio schedules of reinforcement known to be resistant to extinction, free-spin and double-up features, near misses, losses disguised as wins, high denomination bill acceptors, payback percentages and reel spin speed as putative factors contributing to psychological processes (learning theory and cognitive distortions) that underpin impaired control (Blaszczynski et al., 2005; Brandt & Pietra, 2008; Dixon & Schreiber, 2004; Hanson & Rossow, 2010; Ladouceur & Sevigny, 2006; Linnet et al., 2010; MacLin et al, 2007). However, methodological limitations and the relatively small number studies and absence of replication preclude any conclusive statement to be made regarding the relative effectiveness of changes to machine configuration.

Current research is required to disaggregate the relative contribution of each structural characteristic either singularly or in combination that fosters impaired control. A complementary approach that warrants attention is the introduction of features that promote 'safe play', that is, features compatible with the responsible gaming objective of limiting play to affordable levels. Aristocrat Leisure Industries has introduced a new gaming machine, titled 'Blue Gum'™, that contains several putative responsible gambling (RG) features: a bank meter allowing players to set aside a proportion of wins that have to be collected, preventing winnings from being re-gambled, player-set alarm clock, charity donations, special messages and time-dependent animations.

The objective of this research project was to evaluate the effectiveness of these Blue Gum™ RG features. The specific aim was to determine the combined and individual effects of these responsible gaming features on player satisfaction, behaviour and expenditure. The specific features to be evaluated are:

1. *RG messages*: animated signs displayed on the gaming machine advocating play within affordable limits.
2. *The Bank meter*: The facility for a player to 'bank'™ winnings to prevent wins being re-gambled, that is, to deposit winnings into a quarantined credit meter that could only be collected on termination of a session of play.

3. *Alarm clock*: A facility to enable players to voluntarily pre-set a session's period of play with a notification when this is reached.
4. *Demo mode play*: A feature allowing play without inserting money.
5. *Charity donations*: The ability to allocate residual funds to a nominated charity rather than continued gambling.

## **METHOD**

### **Participants:**

The sample comprised 299 patrons drawn from five participating Surf Life Savings Club in Queensland; Southport SLSC, Coolangatta SLSC, Kurrawa SLSC, Northcliffe SLSC and Tallebudgera SLCS. Given missing and or not applicable responses to items, the majority of analyses were conducted with variable number of valid responses.

Comparable numbers of participants were recruited for each venue: Tallebudgera  $n = 52$  (17.7%); Coolangatta  $n = 47$  (16%); Kurrawa  $n = 65$  (22.1%); Northcliffe  $n = 67$  (22.8%); Southport  $n = 63$  (21.1%); and missing data  $n = 5$  (1.7%).

Age was distributed normally ( $M = 54.6$  years,  $SD = 15.2$ ) with the minimum and maximum age range for participants across all venues varying between 18 and 84 years.

There was an equal ratio of males and females with no gender differences in the distribution of participants drawn from the five locations ( $\chi^2[4] = 6.29$ ,  $p > .05$ ).

Half the sample was classified as non-problem, 23% as low-risk, 15.2% as moderate-risk, and 5% as problem-gamblers. There were no differences in the proportion of problem-gamblers found between venues ( $\chi^2[12] = 5.34$ ,  $p = .94$ ).

### **PROCEDURE**

A total of ten Blue Gum™ machines based on the Lucky 88™ EGM were utilised in the study. Two Blue Gum™ EGMs were located in each of the five participating venues in compliance with government regulatory requirements. These machines were configured in accordance with the relevant technical specifications (standard expected player return rate of 91%) and with the RG features installed.

Data collection took place in all venues for the first four-week period (two research assistants per venue). Research assistants were rostered on average in four-hour shifts in each venue. Roster shifts were arranged so that data were collected from patrons attending venues between 10.00am to 8.00pm across each day of the week (weekdays and weekends). For reasons of safety, recruitment ceased at 8.00pm.

Research assistants were instructed to approach and invite into the study patrons observed to be playing the Blue Gum™ machines, or in the venue and asked if they had played or were familiar with the installed Blue Gum™ machine. Patrons willing to participate were interviewed and asked to complete a questionnaire designed to determine awareness and knowledge of each RG feature, satisfaction of play, perceptions and attitudes held toward each RG features, socio-gambling demographic information, and an assessment of problem gambling status.

In addition, patrons were asked to rate the extent to which they used each specific RG feature. Research assistants were also asked to provide written comments on general impressions gleaned from their interaction with, and observations of, patrons and their behaviour.

## **MEASURES**

Research assistant administered a battery of questionnaires and an unstructured interview. An author developed gaming satisfaction scale, questionnaire determining the extent to which patrons utilized each RG feature and gambling demographics was used to assess gambling history and response to playing the Blue Gum™.

## **ANALYSES**

For purposes of the analysis, the non- and low-risk gamblers were combined to form one group (non-problem/low-risk), as were the moderate-risk and problem-gamblers (moderate-risk/problem-gambler). The purpose was to determine responses between those displaying sub-threshold criteria for problem gambling and those considered having low risk. The rationale was also to increase cell sizes for statistical analyses to allow valid Chi-square tests of independence and independent samples t-tests to determine whether there were significant differences between these groups on a series of variables relating to usage, satisfaction, and impact. Following this, a logistic regression model was constructed to predict problem gambling categorisation based on the combined group of variables that were found in the initial analyses to be of greatest relevance.

Where appropriate, statistics comparing the four individual categories of gambling status were also carried out.

## **RESULTS**

### *Responsible gambling features: Awareness and impact*

Participants were asked to estimate the extent to which signs displaying their chances of winning the maximum prize were informative. Less than a fifth of the total sample suggested that such information would be *effective* or *very effective*.

In Section Two of the questionnaire, participants were asked to respond to questions specifically related to their reactions playing the Blue Gum™ EGM.

Of the total sample, slightly less than two-thirds indicated that they noticed characteristics not found on other EGMs.

More moderate-risk/problem gambler group (76%) reported noticing new characteristics on the machines compared to the non-problem/low-risk group (58.6%).

### *Responsible gambling messages:*

Around 22% (n = 65) of participants noticed the RG messages with no significant difference found between the gambling subgroups.

Seven percent of all participants reported that they thought the messages made them stop and think, 14.7% reported that it would make a positive difference to their gambling behaviour, and 4.2% thought the message influenced their actual behaviour. None of these proportions were different between the two combined subgroups of gamblers.

Participants were asked to indicate the extent to which the responsible gambling messages affected their enjoyment of play. Of the total sample, 7.7% reported a slight or significant reduction in their level of enjoyment. Examining responses across the two combined subgroups revealed that the moderate-risk/problem gambling group tended to report a greater negative impact of the messages on their enjoyment.

### *Demo play*

Less than a fifth of the total sample elected to use the demo play before gambling with their money. Of those who used it, 5.9% utilized the demo play deliberately to take a break from gambling with money.

### *Bank meter*

Most participants in the sample did not notice the bank meter. Thirteen percent used the feature to lock money and 12% to lock winnings.

Participants were asked to indicate what they considered would be the expected influence of the bank meter on their expenditure if installed on all machines; 70% stated that they did not consider it would influence the amount of money spent playing.

However, the proportions were different across the two combined subgroups; 29.5% of moderate-risk/problem-gambler group believed the bank meter would influence them to leave earlier compared to 16% of the non-problem/low-risk group.

There were no differences on the remaining influencing factors between the gambling subgroups.

### *Alarm clock*

Nearly half the sample noticed the alarm clock. However, only 5.8% stated that they used it.

The majority indicated that their level of enjoyment remained unchanged while less than 5% reported a slight or significant reduction. There were no significant differences across the four gambling subgroups in respect to changes in level of enjoyment.

### *Charity donation*

Interestingly, the majority of participant reported noticing the charity donation feature. However, only half stated that they understood its purpose. One research assistant observed the charity function being used approximately 30% of the time with donations generally being less than one dollar.

Of those who used it, slightly less than half used it to donate residual credits rather than continuing to play to zero credits. There were no significant differences across the gambling subgroups in the use of this feature to donate credits to charity.

#### *Predicting behaviour change*

An attempt was made to determine patterns and predictors of behavioural use of the various RG features. There were five variables that measured behaviour in the current gambling session: the effect of messages on gambling behaviour, use of the bank meter to store money, use of the bank meter to store winnings, leaving machines after the alarm clock went off, and the effect of the alarm clock on time spent gambling.

A logistic regression model predicting use of the bank meter to lock money accounted for an estimated 17.7% of variability. Those who used the demo mode before playing for money had 2.9 times the odds of using the bank meter to lock money. Similarly, those who noticed the RG messages had odds 2.3 times higher for using the bank meter, while those who understood the charity donation option had odds 3.6 times as great for using the bank meter to lock money.

When predicting the use of the bank meter to lock winnings, the model accounted for an estimated 33.6% of variability. Again, three significant predictors were retained. Those who noticed the RG messages had 5.07 times the odds of using the bank meter to lock winnings, those who donated their remaining credits to charity had 5.9 times the odds of using the bank meter to lock winnings, and greater levels of enjoyment produced by the bank meter increased the odds of using it to lock winnings.

These findings suggest that participants with a greater awareness and/or understanding of one of the optional RG features on the machine were likely to use another option in addition.

#### *General impressions of Blue Gum™*

A series of questions were administered to elicit the participant's general impressions of playing the Blue Gum™ EGM and its RG features.

Overall, approximately a quarter of the sample reported that they believed the RG option available on the Blue Gum™ EGM would prevent recreational gamblers from developing a problem. Of those that provided a response, 10% believed the effect would be significant and 30%, moderate.

## CONCLUSION

The results of the study supported the notion that a proportion of recreational gamblers will elect to use one or more of the responsible gambling features of the Blue Gum™ EGM. The data revealed that although most patrons noted one or more Blue Gum™ RG features, only a few elected to use them. The alarm clock was not found to be popular, and messages were not placed in a prominent place conducive to easily reading and absorbing its content. However, the charity donation and bank meter were utilized, as was the demo mode. The charity donation is not considered to be a substantial RG feature although it could be argued that it encourages both recreational and problem gamblers alike to break the habit of gambling until zero credits are reached. The side benefit is that it provides funds for a local charity. To enhance the use of this facility, it is recommended that more information is given as to which charity is being supported. Given that the SLSC is a non-profit organization, it is suggested that the charity donation feature is linked to supporting local SLSC activities.

The demo play mode is useful as a mechanism encouraging (a) a break in play, or (b) participation for social gamblers not wishing to lose money but participate with friends. This feature can be extended by providing more information and education on its use and encouraging patrons to limit losses by taking a break and playing in the demo mode. It also allows some patrons to participate in social gambling activities with friends without risking monetary losses. This is likely to affect only a small proportion of players but may be a useful tool to promote breaks in play.

A minority of patrons used the bank meter suggesting that this feature may be effectively used to minimize impulsive decision-making if promoted more actively. The findings indicated that a proportion of participants did not fully understand or misinterpreted the purpose of this option.

Overall, the RG features were found not to influence enjoyment of play with the exception of the RG messages. Problem gamblers found these to affect their level of enjoyment suggesting that this could be capitalized as a RG feature through targeted interventions.

It was not possible to determine if these RG features led to an overall reduction in gambling expenditure among recreational and/or problem gamblers. The design of the study did not allow tracking of individual player behaviour and expenditure over time. A longitudinal study is required to address this question in more detail. In addition, the Blue Gum™ EGM was based on a less popular

machine and this needs to be taken into account when comparing revenue per machine compared to other machines. However, it is worth while conducting a similar trial over a longer time period to track changes in revenue of this RG machine compared to a similar machine with such features absent.

It is recommended that consideration be given to continuing to extend and build upon these RG features with the aim of minimizing harm associated with excessive electronic gaming machine play.

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