

"Protect the Public by Ensuring that Gambling is Legal and Honest"

January 29, 2021

Sent via email to bo.zarach@scientificgames.com

SG Gaming Inc. 6601 S Bermuda Road Las Vegas. NV 89119 Attn: Bo Zarach

RE: Dice Ology

Dear Ms. Zarach

Thank you for requesting approval to market the game "Dice-Ology" to Washington State Tribal casinos. Dice-Ology is an additional, optional wager for the standard game of Craps. Based on our review of the documentation we received from SG Gaming Incl, the Washington State Gambling Commission will approve the game under the conditions listed below:

Tribal Casinos

- The game shall be played and operated under the terms and conditions set forth under the "Dice-Ology Rules of Play" you provided.
- Each Tribal Gaming Operation must request and obtain approval from their respective Tribal Gaming Agencies (TGA).
- Before TGA allows your game to operate, they will seek concurrence from our agency as well.
- No modifications may be made to allow the game to be played online or via the internet in Washington State.

In addition to your approved rules, the Tribal submission to us must include all supplemental information required by Tribal-State Compact Appendix A, Section 18.

• Manufacturers and distributors of graphic layouts and/or any other equipment associated with the game must be certified by the state and licensed by the Tribe prior to the sale of the equipment.

B. Zarach January 29, 2021 Page 2 of 2

Furthermore, any modifications to this game may affect this approval. Contact the Commission should you contemplate modifications. If you have any questions on Tribal implementation, please contact Kelly Main at (206) 423-4260.

Thank you for your cooperation and willingness to comply with the gambling laws of Washington State.

Sincerely,

Cathy Harvey
Agent in Charge

Tribal Gaming Unit

cc: Tina Griffin, Assistant Director Licensing Operations Division

Julie Lies, Tribal Liaison

Kelly Main, Special Agent Supervisor Tribal Gaming

File



WSGC Application

WASHINGTON STATE GAMBLING COMMISSION

LOCATION: 4565 7th Avenue SE, Lacey WA 98503 MAILING ADDRESS: P.O. Box 42400, Olympia WA 98504-2400 TELEPHONE: 360-486-3440 / FAX NUMBER: 360-486-3631 IN-STATE TOLL-FREE: 1-800-345-2529 / WEB SITE: www.wsgc.wa.gov

GAME ENDORSEMENT FORM FOR NEW PROPRIETARY GAMES

DEPOSIT REQUIRED \$1000

INSTRUCTIONS

- You must use this form to submit new proprietary table games for use in Washington State.
- All new games and related equipment must be approved and you must be licensed by us prior to marketing, selling, renting
 or otherwise supplying the game to licensed gambling operators or Class III gaming facilities in Washington State.
- The initial deposit to review each game is \$1,000.00. The commission may also assess additional amounts to cover
 associated inspection and investigative costs as required by law. These costs, which are in addition to the initial deposit,
 will be determined by our staff and are payable prior to the completion of the evaluation as prescribed by Washington
 Administrative Code (WAC) 230-06-050.
- · Please use one form for each game.
- Make check payable to the Washington State Gambling Commission.
- You must submit a different application and fees to begin the licensing process. The game review and licensing processes
 are independent of each other but both must be completed before marketing, selling, renting or otherwise supplying your
 game in Washington.

YOUR APPLICATION AND THE PUBLIC RECORDS ACT

From the moment we receive your application, it becomes a public document subject to disclosure under the Public Records Act (RCW 42.56) and other Washington laws. The Commission may disclose to the public, other state or federal agencies, or discuss at a public meeting all information set forth in this application and all supplemental information submitted.

CONDENSED RULES REGARDING GAMES AND GAME REGISTRATION REQUIREMENTS

WAC 230-15-035 Authorizing new games or changing game rules. Card game licensees must operate only the card games the director or the director's designee has specifically authorized. The director or the director's designee authorizes each new card game or changes to existing card games on an individual basis. A list of all authorized games and the rules of play are available at all commission offices and on the commission web site.

- (1) Card game licensees must submit:
- (a) Requests for authorizing new card games in the format we require; and
 - (b) Changes to an existing card game in writing.
- (2) The director or the director's designee will notify the licensee in writing if the request is denied. The notification will include reasons for the denial and provide the licensee all information necessary to file a petition to the commission for rule making.

WAC 230-15-040 Requirements for authorized card games. (1) In order for a card game to be authorized, it must be approved by the director or the director's designee and must:

(a) Be played with standard playing cards or with electronic card facsimiles approved by the director or the director's designee; and

- (b) Offer no more than four "separate games" with a single hand of cards and no more than three of the "separate games" may offer a wager that exceeds five dollars each.
- (i) "Separate game" means each individual objective to be achieved within a card game that requires a separate wager and results in a distinct and separate pay out based upon the outcome.
- (ii) Progressive jackpots are considered "separate games."
- (c) Identify "bonus features" to be allowed in each card game:
- (i) "Bonus feature" means an added prize and/or variation based on achieving the predetermined specific hand required to win the prize and does not require a separate wager. More than one "bonus feature" may be offered per card game. A "bonus feature" must not be combined with a progressive jackpot. Examples include, but are not limited to, "envy" and "share the wealth" "bonus features" when operated as described below.
 - (ii) A "bonus feature" is not considered a separate game.
- (d) Operate "envy" and "share the wealth" "bonus features" as follows:
- (i) If a player makes a wager that qualifies for an "envy" "bonus feature" pay out, they are entitled to receive a prize if another player's hand achieves the predetermined specific hand. If a player is playing more than one wagering area or if

- a hand they are playing is split into two or more hands and any one of their hands achieves the predetermined specific hand, their other hand with a qualifying wager is entitled to receive a prize also.
- (ii) If a player makes a wager that qualifies for a "share the wealth" pay out, they are entitled to receive a prize if their hand(s) or another player's hand(s) achieves the predetermined specific hand.
 - (e) Not allow side bets between players.
- (2) Card game licensees may use more than one deck of cards for a specific game. They also may remove cards to comply with rules of a specific game, such as Pinochle or Spanish 21.
 - (3) Players must:
- (a) Compete against all other players on an equal basis for nonhouse-banked games or against the house for house-banked games. All players must compete solely as a player in the card game, except as authorized in approved card game rules for variations of the game of Pai Gow poker where a player may bank the game every other hand; and
- (b) Receive their own hand of cards and be responsible for decisions regarding such hand, such as whether to fold, discard, draw additional cards, or raise the wager; and
- (c) Not place wagers on any other player's or the house's hand or make side wagers with other players, except for:
- (i) An insurance wager placed in the game of Blackjack; or
 - (ii) "Envy" or "share the wealth" "bonus features"; or
 - (iii) A tip wager made on behalf of a dealer.
- (4) Mini-Baccarat is authorized when operated as described in the commission approved game rules on our web site. However:
- (a) Card game licensees may make immaterial modifications to the game; and
 - (b) Subsection (3) of this section does not apply; and
- (c) The number of players is limited under WAC 230-15-055.
- (5) A player's win or loss must be determined during the course of play of a single card game, except for:
- (a) A carryover pot game. A carryover pot is an optional pot that accumulates as a dealer and participating players contribute to the pot. The winner of the pot is not necessarily determined after one game and the pot can be carried over to more than one game. Carryover pots must not carryover more than ten games. Participants must include at least one player and the dealer competing for the highest qualifying winning hand. Game rules must state how the pot is distributed. If the carryover pot has not been won by the tenth game, the dealer will divide it equally between the remaining players still participating in the pot and the house or, if allowed by game rules, only the players still participating in the pot; and

(b) In the game of Mini-Baccarat, a player may make an optional wager on the player hand winning the next three consecutive games, or the banker hand winning the next three consecutive games.

WAC 230-15-045 Withdrawing card game authorization. If the director or the director's designee withdraws authorization of a card game:

- (1) The director or the director's designee will give licensees written notice and an opportunity to object to the decision. If a licensee files an objection in writing, an administrative law judge will review the decision.
- (2) The director or the director's designee will provide written notice to impacted licensees after a final decision is made.

WAC 230-03-200 Defining "gambling equipment."
"Gambling equipment" means any device, gambling-related software, expendable supply, or any other paraphernalia used as a part of gambling or to make gambling possible.
"Gambling equipment" includes, but is not limited to:

- (1) Amusement games;
- (2) Punch boards and pull-tabs;
- Devices for dispensing pull-tabs;
- (4) Electronic devices for conducting, facilitating, or accounting for the results of gambling activities, including, but not limited to:
 - (a) Components of a tribal lottery system;
- (b) Electronic devices for reading and displaying outcomes of gambling activities; and
- (c) Accounting systems that are a part of, or directly connected to, a gambling system including, but not limited to:
 - (i) Bet totalizers; or
 - (ii) Progressive jackpot meters; or
 - (iii) Keno systems;
 - (5) Bingo equipment;
- (6) Devices and supplies used to conduct card games, fund-raising events, recreational gaming activities, or Class III gaming activities, as defined in the Indian Gaming Regulatory Act at U.S.C. 25 chapter 29 § 2703 and in tribal-state compacts including, but not limited to:
 - (a) Gambling chips;
 - (b) Cards:
 - (c) Dice;
 - (d) Card shuffling devices;
 - (e) Graphical game layouts for table games;
 - (f) Ace finders or no-peek devices;
 - (g) Roulette wheels;
 - (h) Keno equipment; and
- (i) Tables manufactured exclusively for gambling purposes.



Contact List



Rules of Play



- Dice-Ology is an optional bonus wager for the standard house-banked game of craps
- Operators cannot allow wagering limits to exceed the authorized limits set out in WAC 230-15-040 and WAC 230-15-140

RULES OF PLAY

Introduction

Dice-Ology is played on an existing craps table, the base game stays the same with three additional bets: Little Ones, Big Ones, Boom or Bust. Dice-Ology wagers can only be made if the previous roll was a 7 and/or if all the required numbers have been rolled without a 7.

Little Ones

When all "Little" numbers (2, 3, 4, 5, 6) have been rolled before a seven the Little Ones bet will pay out according to the chosen paytable. The bet loses when a 7 is rolled, including a 7 on the come out roll.

Big Ones

When all "Big" numbers (8, 9, 10, 11, and 12) have been rolled before a 7, the Big Ones bet will pay out according to the chosen paytable. The bet loses when a 7 is rolled, including a 7 on the come out roll.

Boom or Bust

Boom or Bust bet must be made prior to the come out roll. Boom or Bust will pay out when all of the numbers (2,3,4,5,6,8,9,10,11,12) have been rolled before a 7. The bet loses when a 7 is rolled.

Dealing Procedures

Players must make Dice-Ology bets for Little Ones and/or Big Ones any time before a number covered by the chosen bet has been rolled. Boom or Bust bets must be placed before the come out roll. As the shooter rolls numbers, the Boxperson or Dealer will place a Dice-Ology lammer on the circle indicating the number rolled. Once all numbers covered by the bet are rolled it is up to the casinos discretion if players can re-bet during the same shooter. Once a 7 is rolled all bets lose and are cleared from the table.

Side Bet	Pay Table 1	Pay Table 2
Little Ones	34 to 1	30 to 1
Big Ones	34 to 1	30 to 1
Boom or Bust	175 to 1	150 to 1



GLI Math Analysis



GLI"

World Headquarters

600 Airport Road Lakewood, NJ 08701

Phone (732) 942-3999 Fax (732) 942-0043 www.gaminglabs.com April 6, 2020

Ms. Jacqueline Hunter
Director of Technical Compliance – Gaming Division
SG Gaming, Inc.
6601 South Bermuda Road
Las Vegas, NV 89119

Re: Mathematical Analysis of Dice-Ology (Proposal #LO-20200312-

6536 dated March 12, 2020)

REF: LO-00-SHU-20-12

Dear Ms. Hunter,

As per SG Gaming, Inc.'s request, please find **Gaming Laboratories International, LLC's (GLI)** math analysis for the table game side bet, *Dice-Ology*.

This report only verifies the mathematical aspects of this game and DOES NOT offer an opinion as to whether or not this game is currently authorized for use in any jurisdiction.

Game Description

Dice-Ology is a side wager for Craps that can be placed after a 7 is rolled, and consists of three side bets: Little Ones, Big Ones, and Boom or Bust. The Little Ones bet wins if each of the totals 2, 3, 4, 5, and 6 are rolled before a 7 is rolled. The Big Ones bet wins if each of the totals 8, 9, 10, 11, and 12 are rolled before a 7 is rolled. The Boom or Bust bet wins in the event that each of the totals 2, 3, 4, 5, 6, 8, 9, 10, 11, and 12 are rolled before a 7 is rolled. Each of the three bets loses when a 7 is rolled, even on the come out roll. This game can be configured to use two different paytables, which can be found below in Table 1.

Table 1. Dice-Ology Paytables

Side Bet	Paytable 1	Paytable 2	
Little Ones	34 to 1	30 to 1	
Big Ones	34 to 1	30 to 1	
Boom or Bust	175 to 1	150 to 1	

Worldwide Locations

World Headquarters Lakewood, New Jersey

U.S. Regional Offices
Colorado
Nevada

International Offices

GLI Africa GLI Asia GLI Australia Pty Ltd GLI Austria GmbH GLI Europe BV GLI Italy GLI South America



Mathematical Analysis

This game was analyzed analytically using combinatorics. Each state of the game, represented by the numbers rolled so far, was represented by a separate row, and the probabilities of transitions between different states were calculated. For the Little Ones bet, rolls of 8 through 12 were ignored since they do not change the state. For the Big Ones bet, rolls of 2 through 6 were similarly ignored. The sum of the probabilities of all winning states was calculated for each bet. The probabilities were used to calculate the overall Return to Player (RTP) and House Edge (HE) for each wager and paytable. A summary of the RTP and HE can be found below in Table 2.

Table 2. Dice-Ology RTP and HE Summary

	Paytable 1		Paytable 2	
Bet	RTP	HE	RTP	HE
Little Ones	92.24%	7.76%	81.70%	18.30%
Big Ones	92.24%	7.76%	81.70%	18.30%
Boom or Bust	92.54%	7.46%	79.39%	20.61%

Summary

Players who place a *Dice-Ology* side wager will observe the greatest RTP of 92.54% when placing the Boom or Bust bet when configured to Paytable 1. The house will observe the greatest HE of 20.61% when players place the Boom or Bust bet when Paytable 2 is configured.

Please visit Gaminglabs.com to view the applicable Terms and Conditions and GLI Product Certification Scheme.

Registration Number of Accreditation applicable to	A2LA 2428.05
this Report:	



Dice-Ology LO-00-SHU-20-12-000 GLI-1/GLI-2 Page 3 of 3

Should you have any questions, please feel free to contact our office.

Sincerely,

GAMING LABORATORIES INTERNATIONAL, LLC

Christine M. Gallo

Vice President of Technical Compliance and Quality Assurance

c: Ms. Bo Zarach, SG Gaming, Inc.

ld





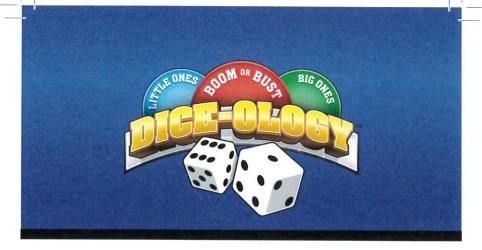
Paytables

"DICE-OLOGY" PAYTABLES

Side Bet	Pay Table 1	Pay Table 2	
Little Ones	34 to 1	30 to 1	
Big Ones	34 to 1	30 to 1	
Boom or Bust	175 to 1	150 to 1	



Sample Rack Card



 $\mathsf{Dice}\text{-}\mathsf{Ology}^{\intercal_M}$ is a bonus wager for craps that allows you to make three separate optional wagers.

GETTING STARTED

You may make one, two or all three of following Dice-Ology bonus wagers.

Little Ones: The "Little Ones" bonus wager pays, if, the dice rolls all of the "little" numbers (2,3,4,5,6) before any 7 is rolled. See layout for odds.

Big Ones: The "Big Ones" bonus wager pays, if, the dice rolls all of the "big" numbers (8,9,10,11,12) before any 7 is rolled. See layout for odds.

Boom or Bust: The "Boom or Bust" bonus wager pays, if, the dice rolls all of the numbers (2,3,4,5,6,8,9,10,11,12) before any 7 is rolled. See layout for odds.

WINNING AND LOSING

You must make your wagers on the "Little One", "Big Ones", and/or "Boom or Bust" bonus wagers, before the dice rolls any of the (2,3,4,5,6,8,9,10,11,12) numbers. Once a number is rolled, a button with the corresponding number of the number rolled is placed in the marked area and that specific bonus wager CANNOT be bet on again until the wager wins or any 7 is rolled.

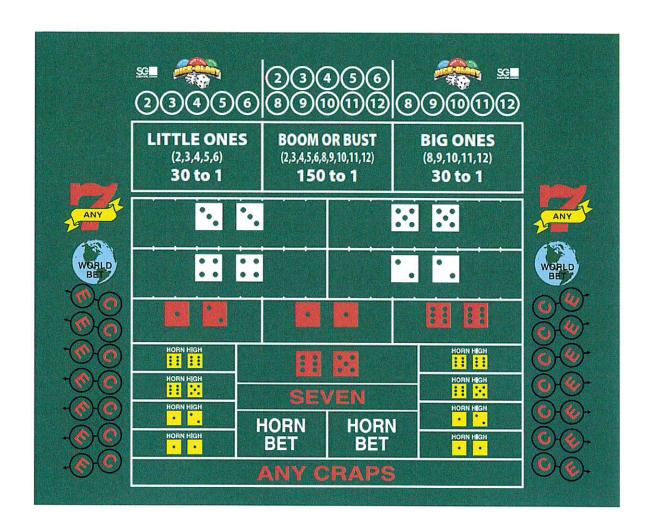
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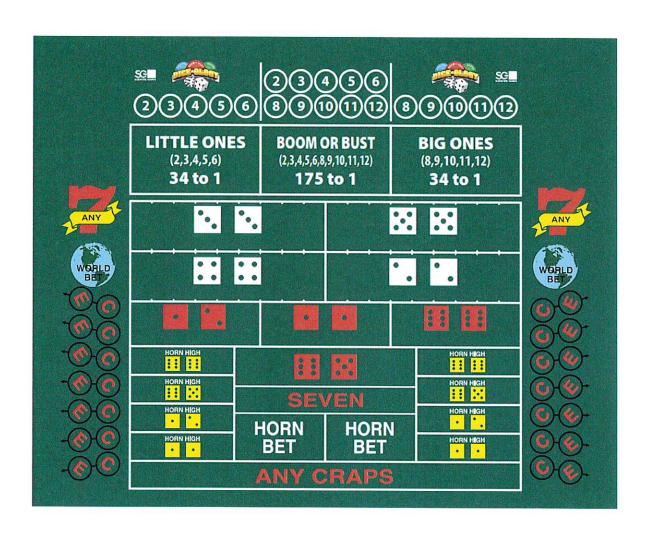
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Sample Layout







Intellectual Property (IP) Documentation



United States Patent and Trademark Office

Home Site Index Search FAQ Glossary Contacts eBusiness eBiz alerts News

Trademarks > Trademark Electronic Search System (TESS)

TESS was last updated on Fri Aug 7 03:59:23 EDT 2020

TESS HOME NEW USER STRUCTURED FREE FORM BROWSE DICT SEARCH OG BOTTOM

Logout | Please logout when you are done to release system resources allocated for you.

Record 1 out of 1

ASSIGN Status

TTAB Status

(Use the "Back" button of the Internet Browser to return to

TESS)

DICE-OLOGY

Word Mark

DICE-OLOGY

Goods and Services

IC 041. US 100 101 107. G & S: Entertainment services, namely, providing live table games of chance and

online games of chance featuring progressive jackpots, bonuses, and side bets

Standard Characters

Claimed

Mark Drawing Code

(4) STANDARD CHARACTER MARK

Serial Number

88828490

Filing Date

March 10, 2020

Current Basis

1B

Original Filing

Basis

1B

Published for Opposition

July 7, 2020

Owner

(APPLICANT) SG GAMING, INC. CORPORATION NEVADA 6601 BERMUDA ROAD LAS VEGAS NEVADA

89119

Attorney of Record

JEFFREY MICHEL

Type of Mark

SERVICE MARK

Register

PRINCIPAL

Live/Dead Indicator

LIVE

TESS HOME

NEW USER STRUCTURED FREE FORM BROWSE DICT SEARCH OG

HELP

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