RGS EVALUATION TESTING REPORT

Compliance testing report

Game:

"Wild Heist at Peacock Manor" – HTML5 (Desktop, Mobile)

Client Revision: 1.0.93

Engine version: 1.0.0

RNG version: 3.5.0

Reference regulation:

UK Gambling Commission - *Remote gambling and software technical standards*, June 2017

April 18, 2018

QUINEL Limited
Marina Court, Flat 8, Triq Giuseppe Cali', XBX 1421 Ta'Xbiex - Malta
info@quinel.com.mt

INTRODUCTION

The findings reported in this summary are the results of a broader set of documents and testing activities results archived in QUINEL Limited's facilities. It is intended that the requester declares that:

- Any Hardware provided or described for analysis and testing is configured identically to hardware in commercial use
- Game software/ function provided for the testing and code review is declared by the customer to have the same behaviour to the software/code in commercial use
- Functionality made by the software in automatic test mode has a realistic behaviour

and that

- all the files and modules,
- the database schemas and all the specific programming resources,
- all the parameters contained into any databases and/or configuration file

that have been subject to the audit process guarantee the same behaviour of what is going to be published/deployed according to this audit results.

The Recipient, by accepting and using this Report, declares to be aware and accept unconditionally all the terms and conditions set forth. If the Applicant and / or the Recipient does not agree on the terms and conditions set forth, QUINEL Limited reserves the right to cancel the certification provided with this Report, it follows therefore that the Recipient would have to immediately hand all copies of this Report to QUINEL Limited and would not be able to use them.

Any copy of this compliance report and calibration certificates must also include the page number and total number of pages.

Copy of this test report cannot be reproduced except in full, without written approval of the laboratory.

A) Audit ID

J18040354_G001_Wild Heist at Peacock Manor_rev.1

B) Reference regulation

UK Gambling Commission – Remote gambling and software Technical Standards, June 2017

C) Test methods

QIVI001 – Visual inspection
QISI001 – Software source inspection method
QIMT001 – Mathematical analysis
QIAF001 – Accounting functionalities

D) Auditor / Test lab

QUINEL Limited
Marina Court, Flat 8,
Triq Giuseppe Cali',
XBX 1421 Ta'Xbiex - Malta
info@quinel.com.mt

E) Audit subject / Scope

Description: Compliance of the following test items (games):

Test Item	*Game Name*	*Versions*	*Interface*
G001	Wild Heist at Peacock Manor	Client rev: 1.0.93 Engine vers: 1.0.0, RNG: 3.5.0	HTML5 (Desktop, Mobile)

Receipt date:
31/03/2017 – first submission for testing against UKGC regulation as per Section (B)

Inspection date:
16/04/2018 - 18/04/2018

Note: Compliance of the RNG used by the test items was certified through report with ID "*MDI_02-08_J16030078_RNG_rev.1_UK*" issued and signed by Quinel M. LTD, dated March 31st, 2016.

F) Requester

Thunderkick Malta LTD
Level 5, The Mall Complex,
Floriana, Malta

G) Owner/Producer of the system/software

Tabrake AB
EKBACKSVÄGEN 59 A, 184 32 Åkersberga,
Stockholms län - Sweden

H) Companies and organizations involved in the process

Producer(s): Ref. to Section G)

Requester: Ref. to Section F)

Licensee/Operator: N.A.

I) Individuals involved in the process

On the Requester side: Mr. Sven Grip, Mr. Stéphane Redon, Mr. Johnny Aspelin, Mr. Daniel Gjörwell, Ms. Jeanette Karlsson.

On the Producer(s) / Integrator(s) side: same as for Requester

On the Licensee/Operator side: N.A.

J) Processes, rules and parameters of the games / Limitation of use

Rules of the games/test items are reported with details into Annex III.
Game(s) / Test item(s) use(s) Jackpot: N
Here follows the theoretical pay-out of the test item(s):

Test Item	*Test Item / Game name*	*Theor. RTP [%]*
G001	Wild Heist at Peacock Manor	96.1%

K) Specifications of the gaming system

Both games (server-side logic) and platform are developed entirely with the Java Language.

Game was provided through the following URLs on a QA environment:
https://quinel.thunderkick.com/games/ (player's interface)
https://qa-int-backoffice.thunderkick.com (Back office / Admin interface)
http://ext-qa-gameservice.thunderkick.com (Runtime game configuration)

The QA environment used for RNG testing relies on a Linux environment hosted by Amazon's cloud services and runs on Oracle Java JDK 1.7.0_09, Apache Tomcat application server 7.0.42

Live environment is reachable at the following IPs (primary site, secondary site omitted):
Game traffic: 37.114.73.113
API: 37.114.73.114

Back office 37.114.73.115
Firewall 37.114.73.120
Live environment servers are running Linux "Ubuntu 12.04.5 LT; Precise Pangolin", with Oracle Java JDK 1.7.0_51, Apache Tomcat application server 7.0.50.

Simulation environment for game testing used a virtualized server with the same Linux distribution "Ubuntu 12.04.5 LT; Precise Pangolin" with Oracle Java JDK 1.7.0_76 – no application server was required.

The difference between the Java JDK is negligible considered the change log and that the source code inspection couldn't find any specific binding to those releases nor dependencies on system APIs. Same considerations apply with regards to differences between QA and Live environment.

The simulation tool verified ('*gp-game-s1-simulation-7.1.2-RELEASE.jar*') extracts the configurations for the games for a repository synchronized with the live production environment and uses the same Java archives subject to deployment.

L) Security of the system

N.A.

M)Critical modules

Refer to section R)

N) Evaluation performed

The test evaluation, required by the Requester, was completed against the "*Remote gambling and software Technical Standards"* - June 2017*,* to meet the requirements listed in the current "*Testing strategy for compliance with remote gambling and software technical standards*"

Refer to the Annex I for a full detailed list of requirements tested.
Refer to the Annex II for the simulation details.

O) Testing activities applied

Internal procedure followed:
Rif. "IOP 02-02 TEST METHODS". The following testing methods were used:
- Mathematical calculation of the Pay out
- Fairness of the game and associated rules
- Requirements of the player's interface
- Source code inspection
- Simulation and inspection for verification of the actual RTP

P) Additional information

None

Q) Setup and application/system architecture

Refer to section K)

R) Product Tested

The tests were performed on the files listed below:

SHA1:	*Critical*	*Test Item*	*File name*
1e5af923ae43935347bbf42568076392a4fd3399	Yes	G001	gp-game-s1-g16.json
35553c14b6122fbd52c21a1238c8908c4c2cc6dc	Yes	G001	gp-game-s1-g16-core-1.1.0-RELEASE.jar
d5e01a5f41deae3b63b46b2ccb7125278e3ebc29	Yes	All (*)	MersenneTwister32.java
ea8940a1cd7d561eb944c42f101ddfcd7cce2ec7	Yes	All (*)	RandomNumberGenerator.java
f2dcd4e8ed46eb5653d99ff54f60c4e4047ad4ec	Yes	All	gp-rng-3.5.0-RELEASE.jar
ea01386be069745202580bd50c3de32c33f3553f	Yes	All	gp-rng-api-3.5.0-RELEASE.jar

(*) RNG main source code files.

S) CERTIFICATION

Job ID: J18040354_G001_Wild Heist at Peacock Manor_rev.1
Date: April 18, 2018
Requester: Thunderkick Malta LTD
Level 5, The Mall Complex,
Floriana, Malta

Total Number of Pages: **24**

QUINEL Limited certifies that the games / test items identified at section E)

G001: **Wild Heist at Peacock Manor** HTML5 (Desktop, Mobile)

comply with the UK Gambling Commission "*Remote gambling and software Technical Standards*, June 2017" reference standard based on the current "*Testing strategy for compliance with remote gambling and software technical standards*".

Refer to the Annex reports for the full list of requirements satisfied.

T) CONDITIONS

None.

U) CONCLUSIONS

The games / test items identified at section E) are compliant with the abovementioned technical standards when integrated with the RNG certified and identified into compliance Report ID "*MDI_02-08_J16030078_RNG_rev.1_UK*" issued and signed by Quinel M. LTD, dated March 31st, 2016.

Date: April 18, 2018
Signed:

Davide De Nobile – Laboratory Technical Director
(QUINEL Limited)

ANNEX I – REQUIREMENTS SATISFIED

Definitions

Compensated games or events
Games or virtual events that adjust the likelihood of winning outcomes occurring based on previous payouts or intake. Sometimes referred to as adaptive behaviour or percentage compensation.
Easily accessible
This term generally means the facilities or information is either on the screen, or can be intuitively accessed via efficient navigation or other means
Game
A game of chance as defined in section 6(2) of the Act
Gambling
The Act defines gambling as: (a) gaming (within the meaning of sec.6) (b) betting (within the meaning of sec 9), and (c) participating in a lottery (within the meaning of sec. 14 and subject to sec 15)
Gaming session
A gaming session is the playing of any of the applicable activities (e.g. bingo or casino games) and commences when a player starts playing a game for real money. A gaming session ends when a player exits a game
High frequency lottery
A lottery in which any draw takes place less than one hour after a draw in a previous lottery promoted on behalf of the same non-commercial society or local authority or as part of the same multiple lottery scheme
Instant lottery
A lottery in which the draw takes place before any of the tickets in the lottery are offered for sale.
Lottery ticket
As described by section 253 of the Act and a reference in this document to a lottery ticket includes: • a lottery ticket which is sent by post following entry by means of remote communication • a message sent or displayed to a person electronically in a manner which enables him to (a) retain the message electronically or (b) print it.
Mapping
Is the process of selecting an outcome using the result from a Random Number Generator (RNG). For example, the result from a RNG is mapped to a reel strip symbol.
Peer-to-peer gambling
A type of gambling where customers gamble against each other rather than against the house. For example, equal chance gaming such as poker or peer-to-peer betting through betting exchanges.
Play-for-free
Also known as play-for-fun. Demonstration version of a real money game where the customer is not staking or winning any money or money's worth.
Progressive or progressive jackpot
An incremental prize that increases as a result of contributions from the monies staked within a game from pre-set base value.
Random Number Generator (RNG)
Refers to any item of hardware or software which is used to generate random numbers with the intended property of statistical randomness.
Restricted display device

A device such as a mobile phone which has limited space on which to display information, when used to access gambling facilities that the operator intends a customer to use by means of such a device. We expect that a player using a restricted display device would still have the ability to use all required responsible gambling tools, such as financial limits or self-exclusion. We would not consider it acceptable to require a player to login via, for example, the desktop website version of the gambling facilities in order to access responsible gambling tools. Such an approach would create unreasonable barriers and may deter or prevent mobile users from utilising the available tools.
Scaling
Scaling is the process used to convert the output from a RNG into the format required to produce a result for a particular gambling product. To illustrate, an RNG may produce a result of between 1 and 100,000 but these possible outcomes need to be scaled to the potential game outcomes of, for example, between 1 – 52 (i.e. to correspond to a standard pack of cards).
Seeding
Refers to the process used to determine the initial state of the RNG.
Subscription lottery
A series of lotteries (other than instant lotteries) promoted on behalf of the same non-commercial society or local authority in respect of which participants pay for participation in one or more future lotteries by regular subscription over a fixed or indefinite period.
Telephone gambling
Gambling which takes place via a telephone, without the use of visual displays, by interaction with a customer service agent or an automated system, such as intelligent voice recognition systems or touch tone.
Third Party Software
Refers to software that is separately available from the core software product and is designed to add optional features. It includes additional software, supplied, or used, by the gambling operator, or player, which wasn't part of the basic package.
Virtual
As described by s353(3) of the Act. Virtual event and virtual game are to be construed accordingly.

Unless differently specified, the results are related to all the test items.

Requirements			Result
RTS	**Aim**	**Req.**	**PASS / FAIL / N.A.**
RTS 1	To provide customers with easily accessible information about their current balances and facilities that enable them to review previous gambling and account transactions.	**A**	N.A.
		B	N.A.
		C	N.A.
RTS 2	To enable the customer to understand the value and content of their transactions.	**A**	N.A.
		B	N.A.
		C	N.A.
		D	N.A.
RTS 3	To enable customers to make informed decisions about whether to gamble based on their chances of winning, the way the game, lottery or event works, the prizes or payouts on offer and the current state of multi-state games or events.	**A**	**PASS** (strictly limited to the game UI).
		B	**PASS** (strictly limited to the game UI).
		C	**PASS** (strictly limited to the game UI).
		D	**PASS** (strictly limited to the game UI).
RTS 4	To reduce the risk that customers are unfairly disadvantaged by technical factors that may affect speed of response, and to ensure customers are made aware of the risk	**A**	**PASS** (speed of response does not affect potential results)
		B	N.A.
RTS 5	To ensure that the gambling system implements the operator's rules, game rules and betting rules as they are described to the customer.	**A**	**PASS**
RTS 6	To minimise the risk that customers are misled about the likelihood of winning due to the behaviour of play-for-free games	**A**	**PASS** (strictly limited to the game UI).
RTS 7	To ensure that games and other virtual events operate fairly.	**A**	N.A. (ref. to RNG report)
		B	**PASS**
		C	**PASS**
		D	**PASS**
		E	**PASS**
RTS 8	To ensure that the customer is still in control of the gambling where auto-play functionality is provided and to minimise the risk that the functionality disadvantages a customer or that auto-play or other strategy advice is misleading.	**A**	**PASS** (strictly limited to the game UI).
		B	N.A.
RTS 9	To ensure that progressive jackpot systems operate fairly	**A**	N.A.
		B	N.A.
RTS 10	To ensure that customers are treated fairly in the event of interrupted play or betting and that they are aware of how they will be treated if interruptions occur	**A**	**PASS** (strictly limited to the game UI).
		B	**PASS** (strictly limited to the game UI).
		C	N.A.

Requirements			Result
RTS	**Aim**	**Req.**	**PASS / FAIL / N.A.**
RTS 11	To reduce the risk that cheating or collusion by players unfairly disadvantages another player and to inform customers about the risks posed	**A**	N.A.
		B	N.A.
RTS 12	To provide customers with facilities that may assist them in sticking to their personal budgets for gambling with the operator. Customers must be also be given the option to set financial limits at an account level.	**A**	N.A.
		B	N.A.
RTS 13	To provide customers with facilities to assist them to keep track of the time they spend gambling.	**A**	N.A.
		B	N.A.
RTS 14	To ensure that products are designed responsibly and to minimise the likelihood that they exploit or encourage problem gambling behaviour.	**A**	N.A.
RTS 15	To make the customer aware that they may not have the latest information available when betting on live events, and that they may be at a disadvantage to operators or other customers who have more up-to-date information	**A**	N.A.
RTS 16	To make customers in peer-to-peer gambling aware that they may be gambling against a software program (designed to automatically participate in gambling within certain parameters, sometimes referred to as a bot), or a human aided by third party software.	**A**	N.A.
		B	N.A.
		C	N.A.
RTS 17	To ensure that live dealer operations are fair	**A**	N.A.

ANNEX II– simulation details for game compliance

A) Environment used / Setup information

Simulation and verification of the correspondence of the files certified vs file deployed was completed following the information at Section K) of the compliance report.

B) Simulation outcomes

Test Item	*Test Item / Game name*	*Theor. RTP*	*Real RTP*	*No. spins*	*Absolute deviation*	*Result*
G001	Wild Heist at Peacock Manor	96.1%	96.15%	355G	0.05%	PASS

Test Item	*Test Item / Game name*	*SHA1 of simulation results log file*
G001	Wild Heist at Peacock Manor	Wild Heist at Peacock Manor - Simulation Summary.pdf - f59a4eba067600ceb661f7e316c4f06dd5b9824e

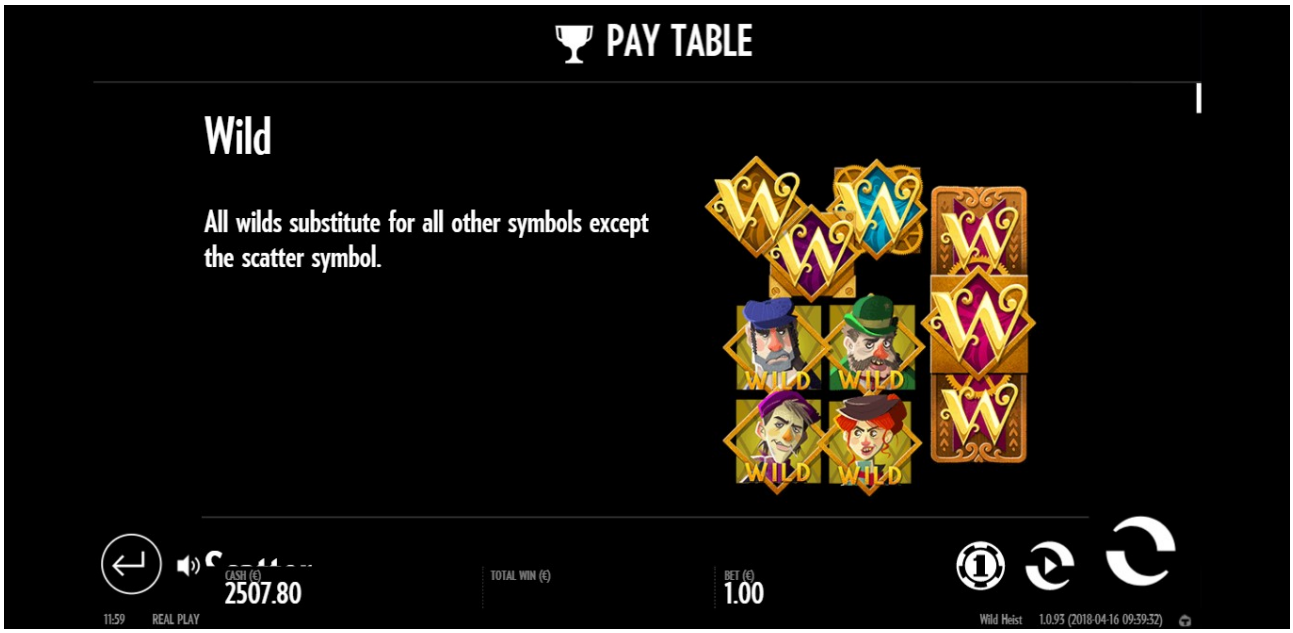
ANNEX III – Game rules and Paytables

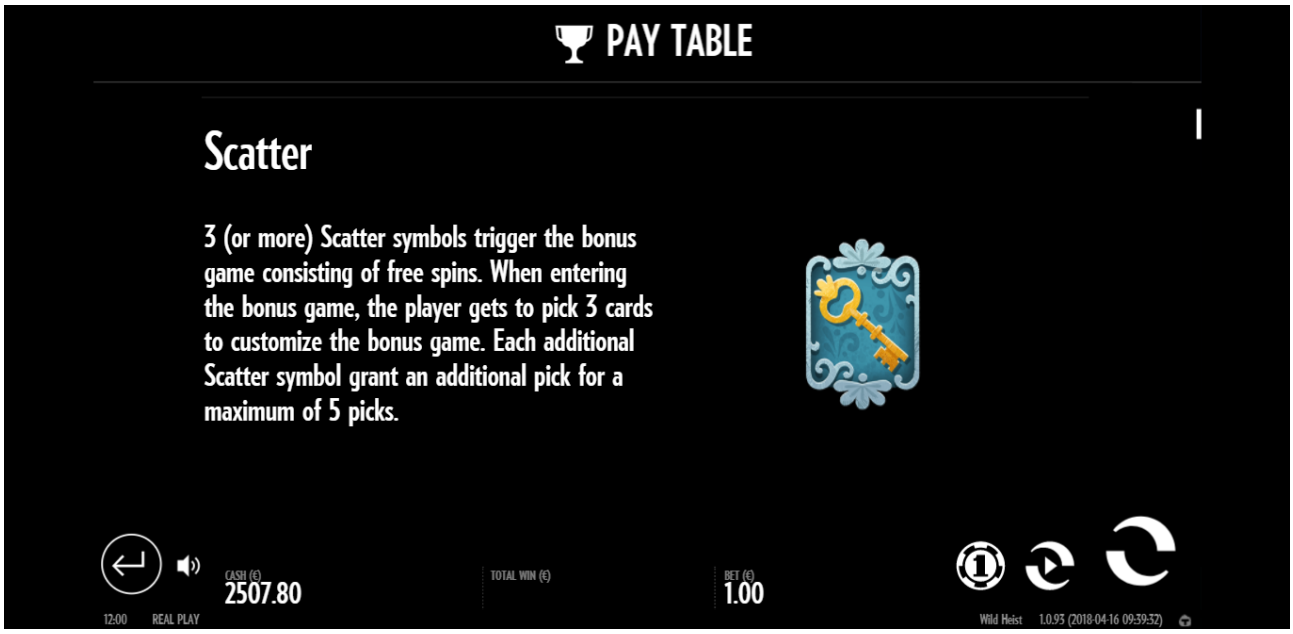
Processes, rules and parameters of the games

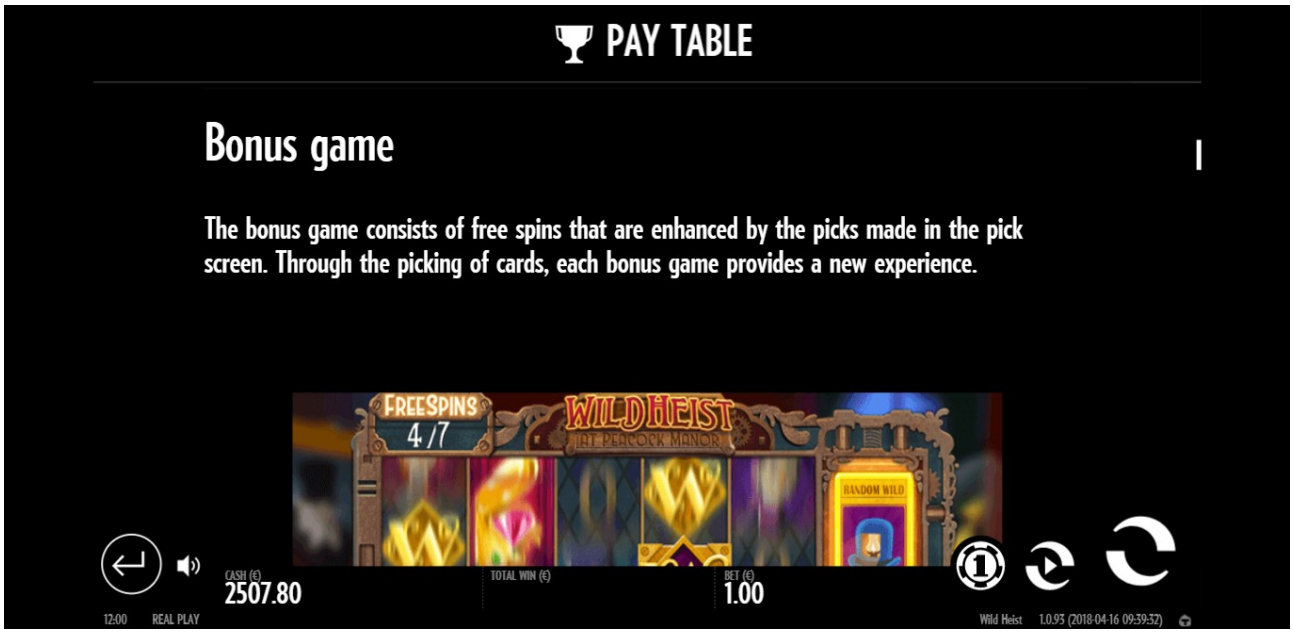
G001: Wild Heist at Peacock Manor – Desktop

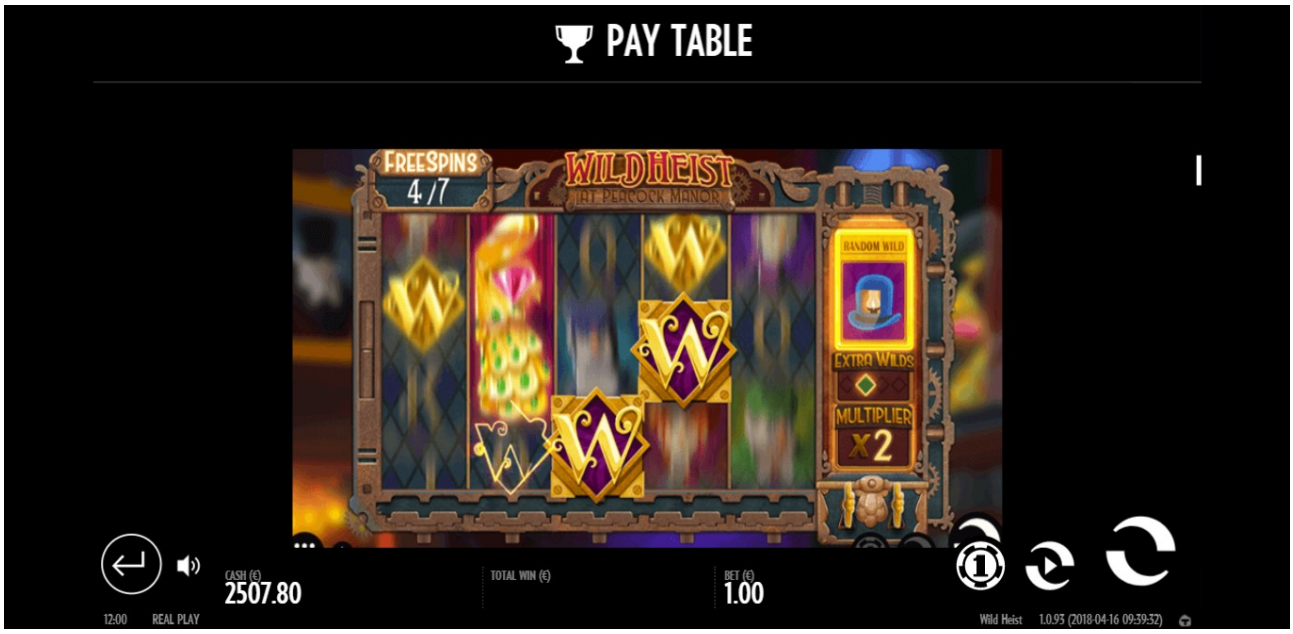
G001: Wild Heist at Peacock Manor – Mobile

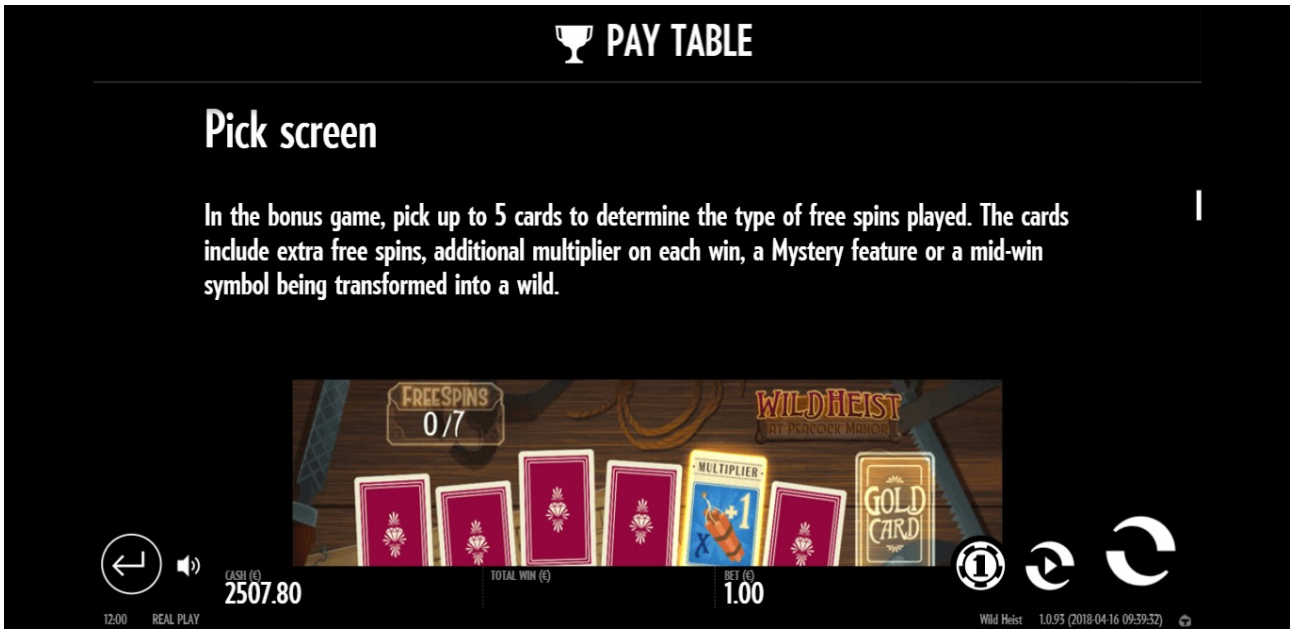
G001: Wild Heist at Peacock Manor – Pay table and rules






PAY TABLE
Bonus game
The bonus game consists of free spins that are enhanced by the picks made in the pick screen. Through the picking of cards, each bonus game provides a new experience.
FREESPINS
4 /7
WILD HEIST
AT PEACOCK MANOR
RANDOM WILD
CASH (€)
2507.80
TOTAL WIN (€)
BET (€)
1.00
12:00
REAL PLAY
Wild Heist 1.0.93 (2018-04-16 09:39:32)

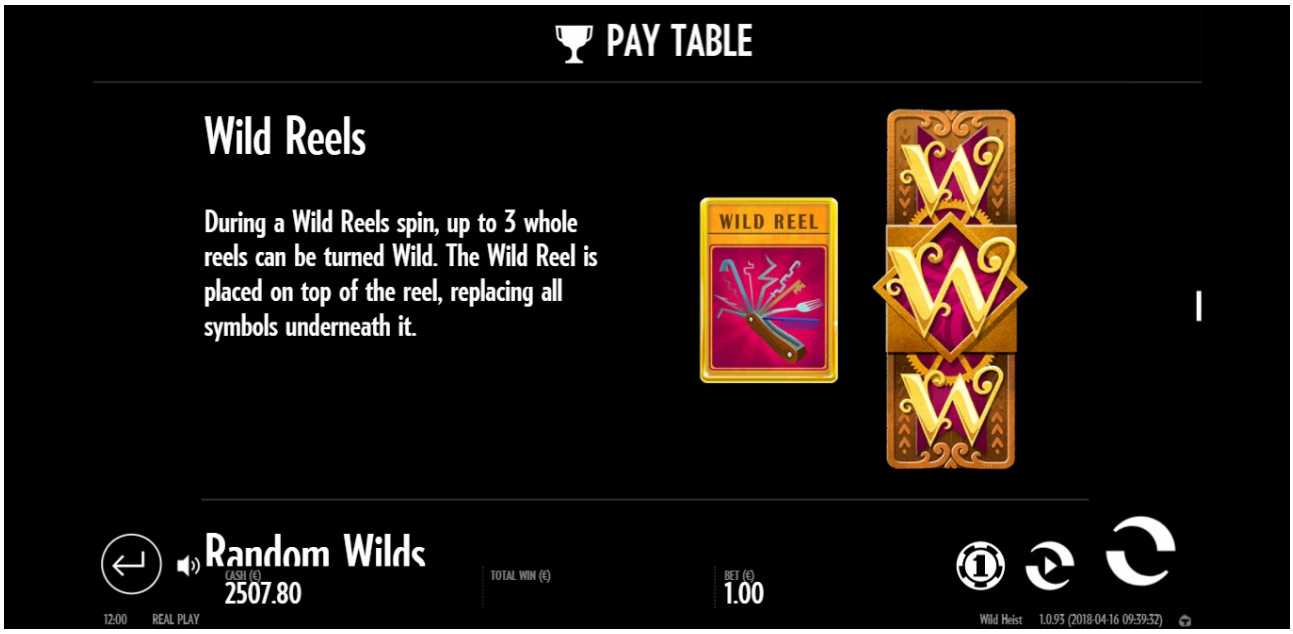

PAY TABLE
FREESPINS
4 /7
WILD HEIST
AT PEACOCK MANOR
RANDOM WILD
EXTRA WILDS
MULTIPLIER
X2
CASH (€)
2507.80
TOTAL WIN (€)
BET (€)
1.00
12:00
REAL PLAY
Wild Heist 1.0.93 (2018-04-16 09:39:32)

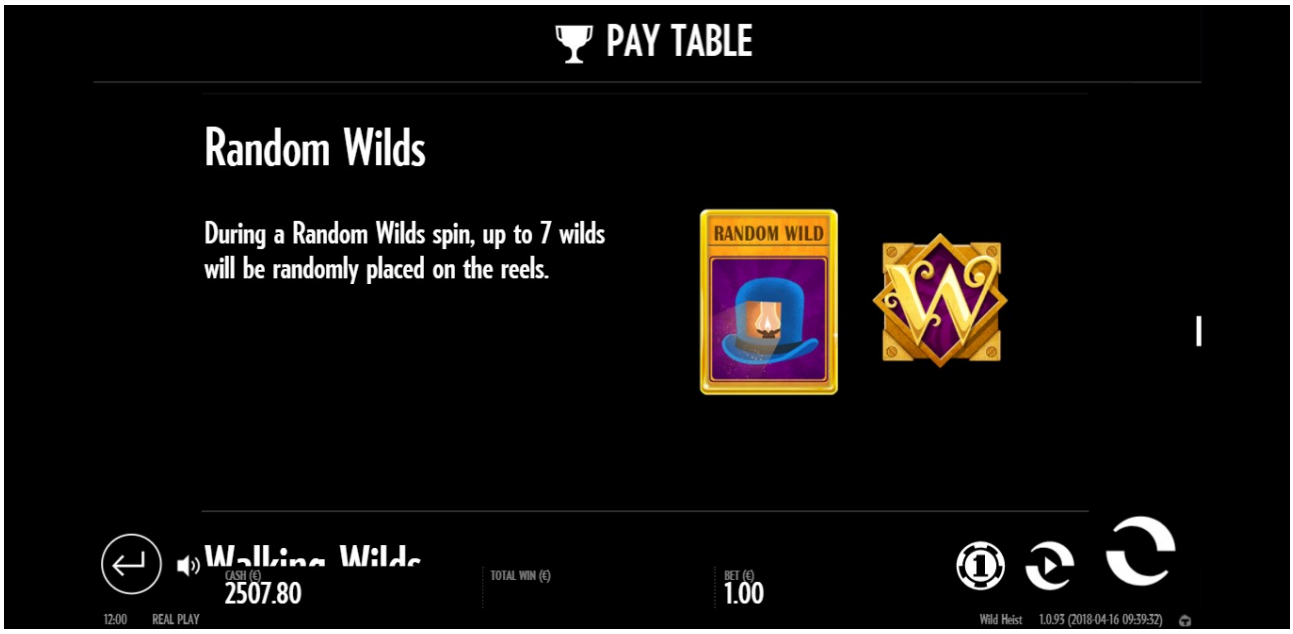

PAY TABLE
Pick screen
In the bonus game, pick up to 5 cards to determine the type of free spins played. The cards include extra free spins, additional multiplier on each win, a Mystery feature or a mid-win symbol being transformed into a wild.
FREESPINS
0/7
WILD HEIST
AT PEACOCK MANOR
MULTIPLIER
GOLD CARD
CASH (€)
2507.80
TOTAL WIN (€)
BET (€)
1.00
12:00
REAL PLAY
Wild Heist 1.0.93 (2018-04-16 09:39:32)

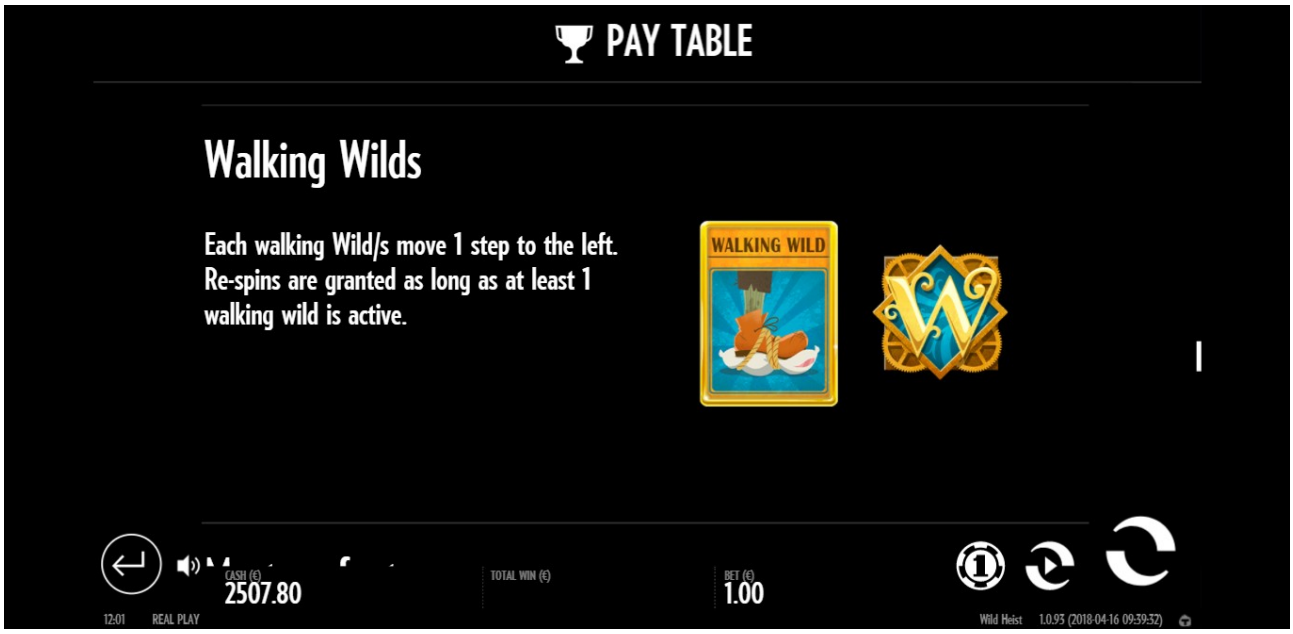
PAY TABLE
FREESPINS
0/7
WILD HEIST
AT PEACOCK MANOR
MULTIPLIER
GOLD CARD
EXTRA WILDS
MULTIPLIER
X2
WILD PURPLE
WILD
PICKS 2/3
CASH (€)
2507.80
TOTAL WIN (€)
BET (€)
1.00
12:00
REAL PLAY
Wild Heist 1.0.93 (2018-04-16 09:39:32)

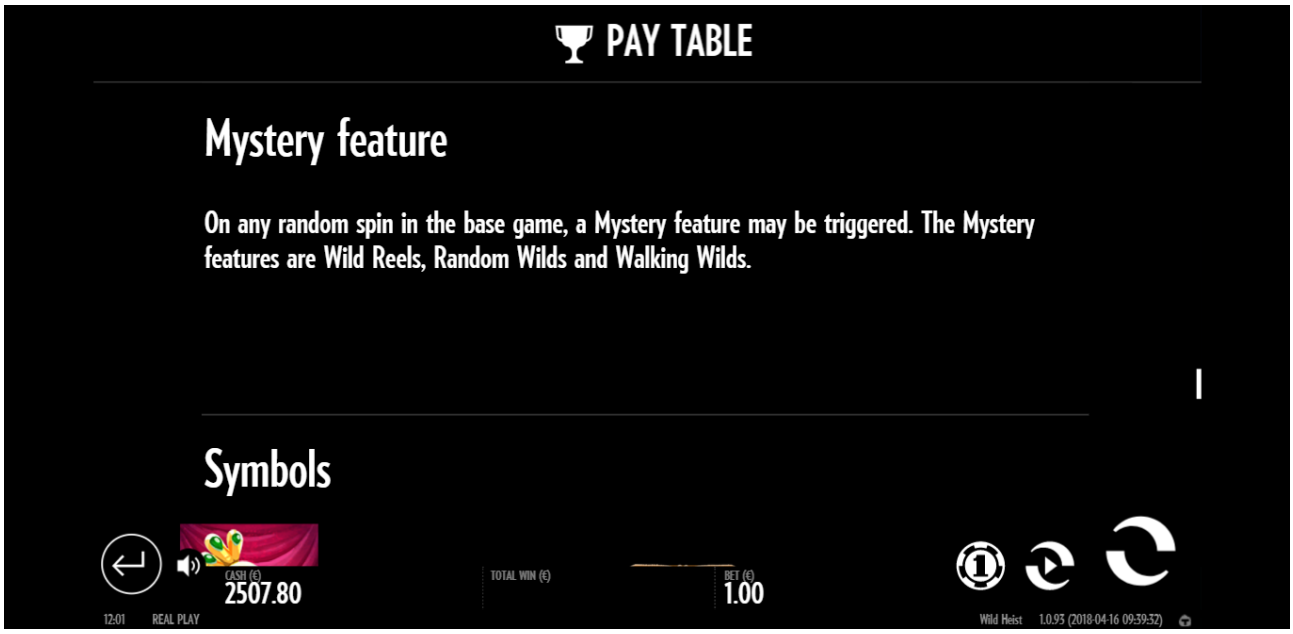
PAY TABLE
Re-pick
Get 2 (or more) Scatter symbols in the bonus game to trigger a re-pick. The re-pick grants you 1 additional pick of a card to further customize the bonus game. Each additional scatter grants an additional pick up to a maximum of 4 picks.
FREESPINS
2/10
WILD HEIST
AT PEACOCK MANOR
WILD REEL
WILD RED
WILD BLUE
CASH (€)
2507.80
TOTAL WIN (€)
BET (€)
1.00
12:00
REAL PLAY
Wild Heist 1.0.93 (2018-04-16 09:39:32)

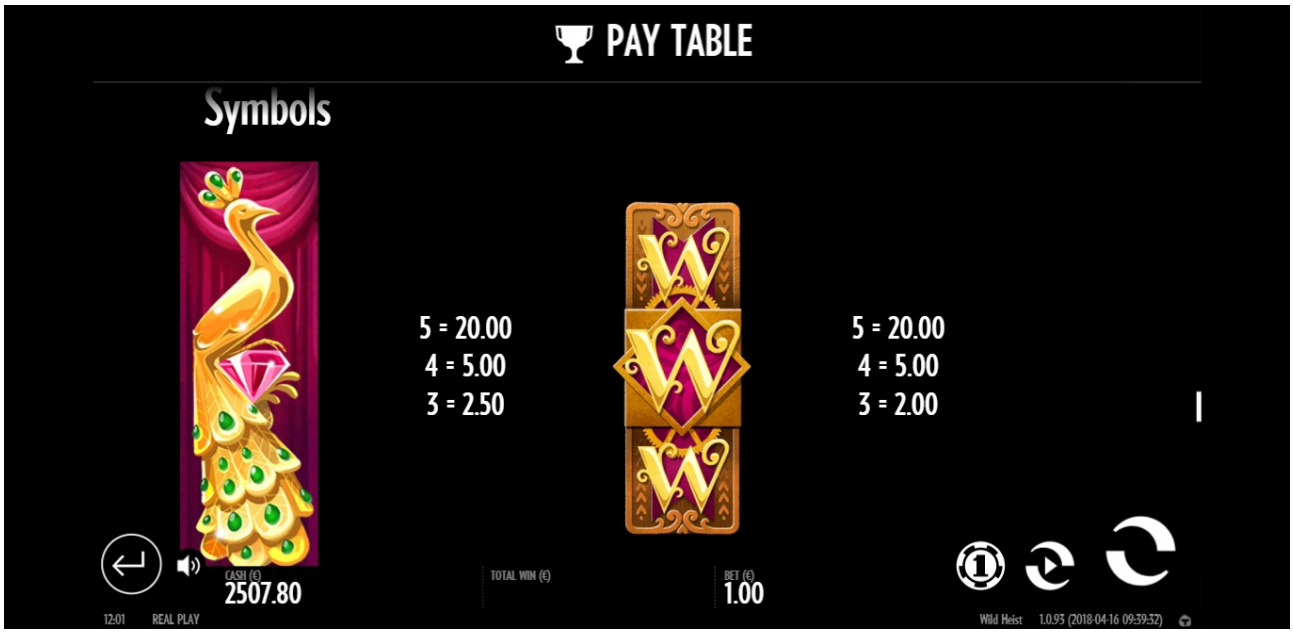
PAY TABLE
FREESPINS
2/10
WILD HEIST
AT PEACOCK MANOR
WILD REEL
WILD RED
WILD BLUE
MULTIPLIER
MULTIPLIER
FREE SPINS
EXTRA WILDS
MULTIPLIER
x2
PICKS 1/1
CASH (€)
2507.80
TOTAL WIN (€)
BET (€)
1.00
12:00
REAL PLAY
Wild Heist 1.0.93 (2018-04-16 09:39:32)


PAY TABLE
Wild Reels
During a Wild Reels spin, up to 3 whole reels can be turned Wild. The Wild Reel is placed on top of the reel, replacing all symbols underneath it.
WILD REEL
Random Wilds
CASH (€)
2507.80
TOTAL WIN (€)
BET (€)
1.00
12:00
REAL PLAY
Wild Heist 1.0.93 (2018-04-16 09:39:32)


PAY TABLE
Random Wilds
During a Random Wilds spin, up to 7 wilds will be randomly placed on the reels.
RANDOM WILD
CASH (€)
2507.80
TOTAL WIN (€)
BET (€)
1.00
12:00
REAL PLAY
Wild Heist 1.0.93 (2018-04-16 09:39:32)

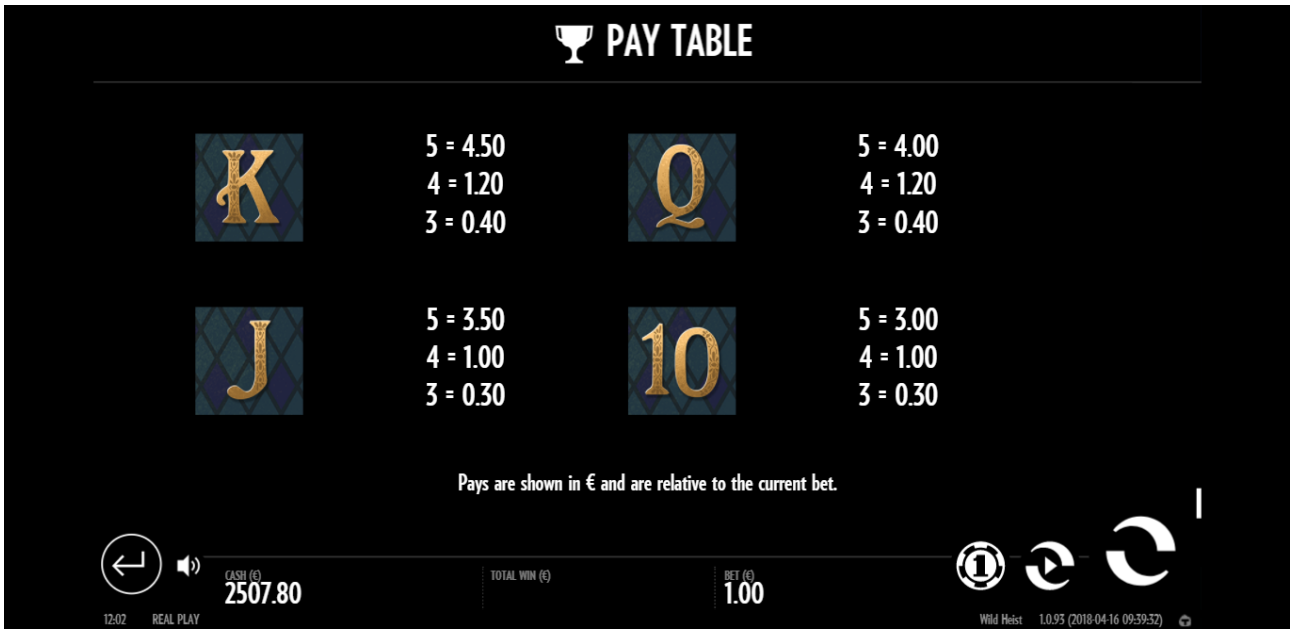

PAY TABLE
Walking Wilds
Each walking Wild/s move 1 step to the left. Re-spins are granted as long as at least 1 walking wild is active.
WALKING WILD
CASH (€)
2507.80
TOTAL WIN (€)
BET (€)
1.00
12:01
REAL PLAY
Wild Heist 1.0.93 (2018-04-16 09:39:32)

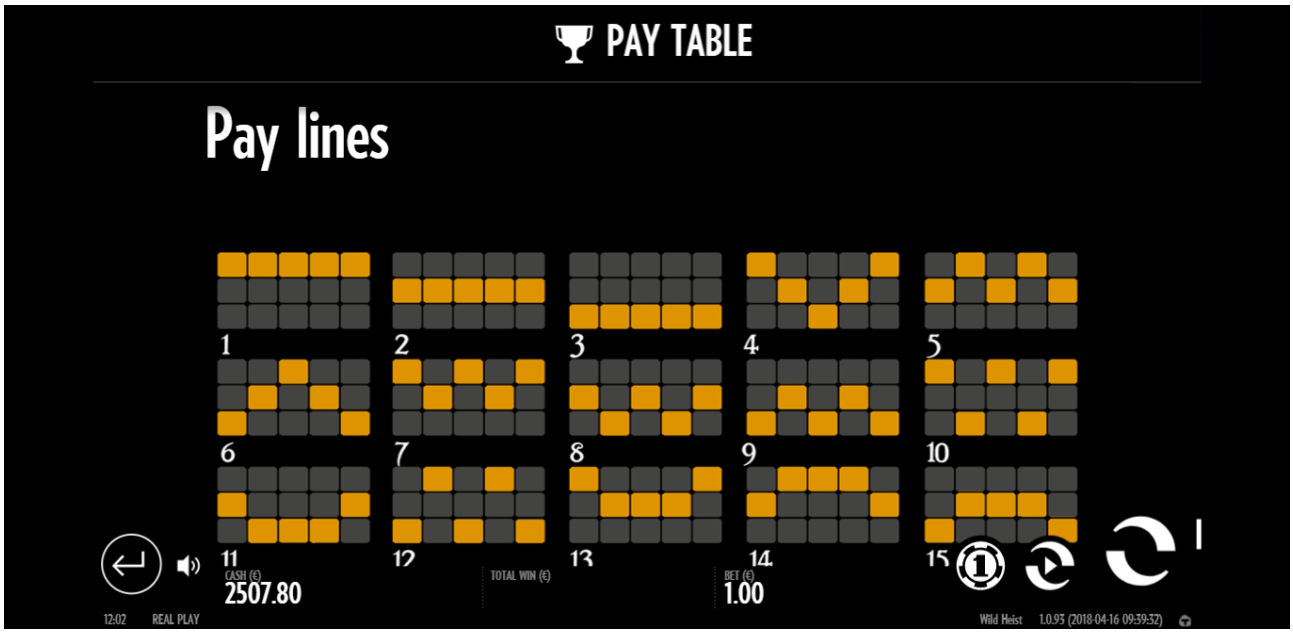

PAY TABLE
Mystery feature
On any random spin in the base game, a Mystery feature may be triggered. The Mystery features are Wild Reels, Random Wilds and Walking Wilds.
Symbols
CASH (€)
2507.80
TOTAL WIN (€)
BET (€)
1.00
12:01
REAL PLAY
Wild Heist 1.0.93 (2018-04-16 09:39:32)

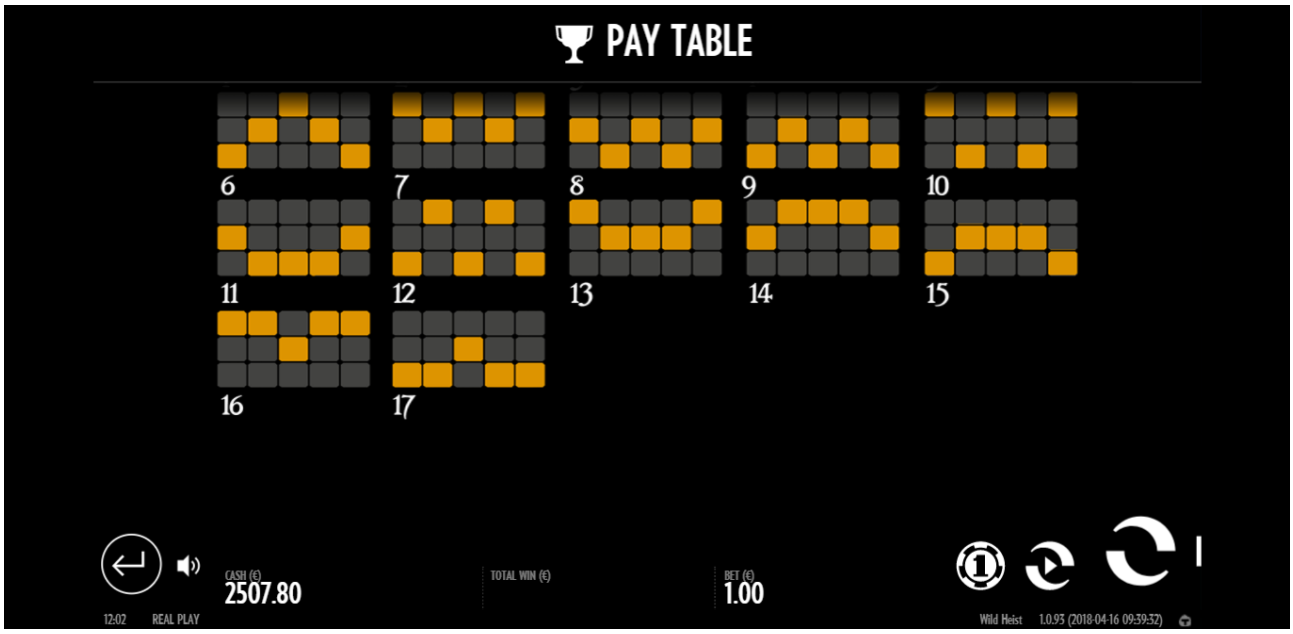

PAY TABLE
Symbols
5 = 20.00
4 = 5.00
3 = 2.50
5 = 20.00
4 = 5.00
3 = 2.00
CASH (€)
2507.80
TOTAL WIN (€)
BET (€)
1.00
12:01
REAL PLAY
Wild Heist 1.0.93 (2018-04-16 09:39:32)

PAY TABLE
5 = 20.00
4 = 5.00
3 = 2.00
5 = 20.00
4 = 5.00
3 = 2.00
5 = 20.00
4 = 5.00
3 = 2.00
5 = 20.00
4 = 5.00
3 = 2.00
WILD
5 = 20.00
4 = 5.00
3 = 2.00
5 = 20.00
4 = 5.00
3 = 2.00
WILD
WILD
CASH (€)
2507.80
TOTAL WIN (€)
BET (€)
1.00
12:01
REAL PLAY
Wild Heist 1.0.93 (2018-04-16 09:39:32)

PAY TABLE
WILD
5 = 20.00
4 = 5.00
3 = 2.00
5 = 17.50
4 = 3.50
3 = 1.50
5 = 15.00
4 = 2.50
3 = 1.00
5 = 12.50
4 = 2.50
3 = 1.00
5 = 10.00
4 = 2.50
3 = 1.00
A
5 = 5.00
4 = 1.50
3 = 0.50
CASH (€)
2507.80
TOTAL WIN (€)
BET (€)
1.00
12:01
REAL PLAY
Wild Heist 1.0.93 (2018-04-16 09:39:32)

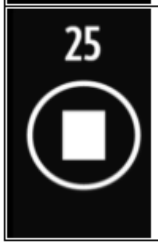

PAY TABLE
K
5 = 4.50
4 = 1.20
3 = 0.40
Q
5 = 4.00
4 = 1.20
3 = 0.40
J
5 = 3.50
4 = 1.00
3 = 0.30
10
5 = 3.00
4 = 1.00
3 = 0.30
Pays are shown in € and are relative to the current bet.
CASH (€)
2507.80
TOTAL WIN (€)
BET (€)
1.00
12:02
REAL PLAY
Wild Heist 1.0.93 (2018-04-16 09:39:32)


PAY TABLE
Pay lines
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
CASH (€)
2507.80
TOTAL WIN (€)
BET (€)
1.00
12:02
REAL PLAY
Wild Heist 1.0.93 (2018-04-16 09:39:32)


PAY TABLE
6
7
8
9
10
11
12
13
14
15
16
17
CASH (€)
2507.80
TOTAL WIN (€)
BET (€)
1.00
12:02
REAL PLAY
Wild Heist 1.0.93 (2018-04-16 09:39:32)

Game Rules (4/16/2018)

Button	Function
	Click to start a game round. On desktop you may also press the space bar on your keyboard.
	Display bet settings.
	Display autoplay settings.
	Display game rules.
	Display paytable.
	Skip presentation.
	Toggles the sound on and off.
	Exit game.
	Exit current screen.

	Start feature (e.g Free Spins).
	Stop auto play session.

1. Wild Heist at Peacock Manor is a video slot with 5 reels and 17 pay lines. The game features main game mystery features and a bonus game with free spins, symbol transformations and retriggers. The theoretical return to player is 96.1%.

2. A game round is started with the action button and plays the game with the selected bet level.

3. No bets can be altered during a game round.

4. Auto play plays the game automatically for the number of game rounds selected in the auto play page.

5. All game payout and win combinations are paid out according to the pay table.

6. Only the highest win per pay way is paid out, if in sequence from leftmost to right and in combinations according to the pay table.

7. All pay way wins during a game round are added and presented at the end of the game round.

8. All wins are presented and paid out in the selected currency.

9. The wild symbols substitutes for any other symbol except the scatter symbol.

10. 3 or more scatter symbols trigger the Bonus game consisting of free spins.

11. In the Main game, a mystery feature may be triggered randomly on any spin. The mystery feature can be either a Wild Reel spin, a Random Wild spin or a Walking Wild spin with accompanying respins.

12. When entering the Bonus game, the player gets to pick 3 cards (with an additional pick for every additional scatter) to determine the type of free spins played. The cards include extra free spins, additional multiplier on each win, a Mystery feature or a mid-win symbol being transformed into a wild. The effect of the picked card remains active throughout the bonus game with the exception of free spins which are added to the total of the remaining spins.

13. In the Bonus game, 2 or more scatters trigger a re-pick where the player may pick additional cards.

14. The Bonus game is played with the same bet as the spin that triggered the bonus game.

15. In the event of game malfunction all affected bets and pays are rendered void.

END
OF
COMPLIANCE
REPORT