

Sims Salary Bonus Scheme

The Sims Salary Bonus Scheme rewards Sims for long service, in addition to pay increases from being promoted. Sims who remain at their current career level (pay grade) will receive pay rises as their days worked at that level increases.

Base and Daily Bonus

There are two parts to a Sim's salary bonus - the base bonus and the accrued bonus. The base bonus is a fixed amount (default is 0%) and the accrued bonus increases with each day worked by a daily amount (default is 2%). Bonus is accrued at the end of each working day, ie after the Sim has been paid.

A Sim with a basic salary of \$120 and the default bonus values of 0% base and 2% daily will earn

Day	Basic Pay	Base Bonus	Accrued Bonus	Total Bonus	Total Pay
1	\$120	0%	0%	0%	\$120
2	\$120	0%	2%	2%	\$122
3	\$120	0%	4%	4%	\$124
4	\$120	0%	6%	6%	\$127

While a Sim with a basic salary of \$120 and custom bonus values of 5% base and 1% daily will earn

Day	Basic Pay	Base Bonus	Accrued Bonus	Total Bonus	Total Pay
1	\$120	5%	0%	5%	\$126
2	\$120	5%	1%	6%	\$127
3	\$120	5%	2%	7%	\$128
4	\$120	5%	3%	8%	\$129

Bonus Limits

There are two limits on the total bonus a Sim can receive. One is a configurable limit (default is 20%) and one is a system limit (imposed by the limitations of signed 16-bit maths, this is 200% for salaries up to \$10k and 100% up to \$16k)

A Sim with a basic salary of \$120 and custom bonus values of 7% base and 4% daily with the default limit of 20% will earn

Day	Basic Pay	Base Bonus	Accrued Bonus	Total Bonus	Total Pay
1	\$120	7%	0%	7%	\$128
2	\$120	7%	4%	11%	\$133
3	\$120	7%	8%	15%	\$138
4	\$120	7%	12%	19%	\$142
5	\$120	7%	16%	20%	\$144
6	\$120	7%	20%	20%	\$144

Promotions/Demotions

By default, when a Sim is promoted (or demoted) their accrued bonus is lost. Promotion/Demotion is assumed to happen at the very end of the day, ie after the Sim has been paid.

A Sim with a basic salary of \$120 and the default bonus values of 0% base and 2% daily who is promoted to the next level at the end of day 2 to a basic salary of £150 will earn

Day	Basic Pay	Base Bonus	Accrued Bonus	Total Bonus	Total Pay
1	\$120	0%	0%	0%	\$120
2	\$120	0%	2%	2%	\$122
3	\$150	0%	0%	0%	\$150
4	\$150	0%	2%	2%	\$153

This behaviour can be changed, so a Sim that keeps their accrued bonus when promoted will earn

Day	Basic Pay	Base Bonus	Accrued Bonus	Total Bonus	Total Pay
1	\$120	0%	0%	0%	\$120
2	\$120	0%	2%	2%	\$122
3	\$150	0%	4%	4%	\$156
4	\$150	0%	6%	6%	\$159

Fired/Quit

A Sim who is fired, or quits their job, loses all accrued bonus. A Sim who changes job is assumed to quit their previous job.

Paid Leave (including maternity leave)

Unfortunately, there is no way to differentiate paid leave from maternity leave, so these two situations are handled identically. By default, Sims do not accrue bonus for paid leave, although this can be changed for all Sims.

A Sim with a basic salary of \$120 and the default bonus values of 0% base and 2% daily who takes the fourth day as leave will earn

Day	Basic Pay	Base Bonus	Accrued Bonus	Total Bonus	Total Pay	
1	\$120	0%	0%	0%	\$120	
2	\$120	0%	2%	2%	\$122	
3	\$120	0%	4%	4%	\$124	
4	\$120	0%	6%	6%	\$127	Paid leave
5	\$120	0%	6%	6%	\$127	
6	\$120	0%	8%	8%	\$129	

While the same Sim on maternity leave from day 3 will earn

Day	Basic Pay	Base Bonus	Accrued Bonus	Total Bonus	Total Pay	
1	\$120	0%	0%	0%	\$120	
2	\$120	0%	2%	2%	\$122	
3	\$120	0%	4%	4%	\$124	Maternity leave
4	\$120	0%	4%	4%	\$124	Maternity leave
5	\$120	0%	4%	4%	\$124	Maternity leave
6	\$120	0%	4%	4%	\$124	

Retirement

A Sim who retires will have their pension based on their total pay (ie basic salary plus bonuses) by default, although this can be changed for all Sims. In addition, a retiring Sim with unused leave (PTO) will receive a remuneration for the untaken leave.

Bonus Stepping

In the real world, people do not receive a pay rise at the end of every day! Performance is gained over a period and rises are awarded at intervals. To simulate this, the Sims Salary Bonus Scheme supports the concept of "stepping". By default, this is turned off.

There are two factors controlling "stepping" - the start step and the step delta. By default, the start step is 5% and the step delta is 5%. Rather than receiving continuous pay rises, Sims will only gain the rise when their total salary bonus equals or exceeds the next point on the stepped bonus scheme. For the default settings, these points are 5%, 10%, 15%, 20% etc. In addition to the pay increase, a notification of the bonus award is given.

Our original Sim with a basic salary of \$120 and the default bonus values of 0% base and 2% daily and the default stepping of 5% base and 5% delta, will earn

Day	Basic Pay	Base Bonus	Accrued Bonus	Next Step	Total Bonus	Total Pay	
1	\$120	0%	0%	5%	0%	\$120	
2	\$120	0%	2%	5%	0%	\$120	
3	\$120	0%	4%	5%	0%	\$120	
4	\$120	0%	6%	5%	5%	\$126	Bonus notification
5	\$120	0%	8%	10%	5%	\$126	
6	\$120	0%	10%	10%	10%	\$132	Bonus notification
7	\$120	0%	12%	15%	10%	\$132	
8	\$120	0%	14%	15%	10%	\$132	
9	\$120	0%	16%	15%	15%	\$138	Bonus notification
10	\$120	0%	18%	20%	15%	\$138	

Whereas a Sim with a basic salary of \$120 and custom bonus values of 7% base and 4% daily with a custom limit of 50% on a stepped bonus scheme with a start of 10% and a delta of 5% will earn

Day	Basic Pay	Base Bonus	Accrued Bonus	Next Step	Total Bonus	Total Pay	
1	\$120	7%	0%	10%	0%	\$120	
2	\$120	7%	4%	10%	10%	\$132	Bonus notification
3	\$120	7%	8%	15%	15%	\$138	Bonus notification
4	\$120	7%	12%	20%	15%	\$138	
5	\$120	7%	16%	20%	20%	\$144	Bonus notification
6	\$120	7%	20%	25%	25%	\$150	Bonus notification
7	\$120	7%	24%	30%	30%	\$156	Bonus notification
8	\$120	7%	28%	35%	35%	\$162	Bonus notification
9	\$120	7%	32%	40%	35%	\$162	
10	\$120	7%	36%	45%	40%	\$168	Bonus notification

Sim Interactions

Clicking on the active Sim gives an additional Pay Book menu option

- Not available while the Sim is asleep
- Get Pay Book – only available if the pay book has not been created yet for this Sim
- Find Pay Book – only available if the Sim's pay book is not in their inventory. Will pan the camera to the location of the pay book
- Review Salary – only available if the pay book is in the Sim's inventory. Identical to the pay book menu option of the same name.

Pay Book

The bonus data for a Sim is stored in their Pay Book. This object (cloned from the yellow ticket pad) is automatically created when a Sim accrues a daily bonus and is placed in their inventory. It can also be created on demand by clicking on the Sim and selecting "Pay Book -> Get My Pay Book". If the pay book has been "lost" (ie removed from their inventory and left somewhere), it can be "found" by clicking on the Sim and selecting "Pay Book -> Find My Pay Book".

General Notes

- Cannot be bought (use Sim interaction to manually create)
- Cannot be deleted (use object's Dispose interaction)
- Can only be used by the owning Sim
- Can only be placed in owning Sim's inventory
- Cannot be given as a gift
- Cannot be left behind on a non-home lot (will be automatically placed into the Sim's inventory)

Pay Book Interactions

Only the active Sim can use their pay book. Clicking on the active Sim's pay book gives the following options

- Put Away - places the pay book into the Sim's inventory
- Dispose - displays a confirmation dialog, then deletes the pay book. All pay book settings and accrued bonus are irretrievably lost!
- Salary Review - displays the Sim's current salary, bonus, days at level and total salary. This is the only way to see a Sim's total salary
- Show Values - displays various pay book data values (base bonus, daily bonus, accrued bonus, step details, etc)
- Set ... – sub-menus for setting various values (base bonus, daily bonus, days worked, step start and step delta) and options (promotion/demotion, use steps)
- Options ... – sub-menu for pausing and unpausing a Sim's promotions

Setting Values

With the exception of "Zero", all menu entries *change* the current value by the amount specified, so "+5" increases the value by five – it does not set the value to five. For example, if you know the current value is 2 and want to change it to 4, just select "+2". However, if you do not know the current value, select "Zero", then "+2" then "+2" again. Alternatively, you could select "Zero", then "+5" then "-1".

Configuration – BCONs

Configuration of the Sims Salary Bonus Scheme is done via BCONs. Details are given below, to make changes to these values it is assumed you can use SimPE to open the WH_PayBook_A.package file and locate the BCON entries.

BCON 0x1000 – General

This BCON holds general configuration details.

The screenshot displays the SimPE interface. On the left is the Resource Tree, and on the right is the Resource List. The Resource List shows a table of BCON entries:

Instance	Offset	Size	Name	Type	Instance (high)	Group
0x00001000 (4096)	0x00004860	0x00000046	General	BCON	0x00000000	0xFFFFFFFF
0x00001001 (4097)	0x00009D26	0x0000004E	Defaults - Adults	BCON	0x00000000	0xFFFFFFFF
0x00001002 (4098)	0x00009F98	0x0000004E	Defaults - Teens	BCON	0x00000000	0xFFFFFFFF
0x00001003 (4099)	0x0000A0F8	0x0000004E	Defaults - Elders	BCON	0x00000000	0xFFFFFFFF
0x00001004 (4100)	0x0000A1A9	0x00000064	Global Flags	BCON	0x00000000	0xFFFFFFFF
0x00001005 (4101)	0x0000A3E6	0x00000064	Sim Flags	BCON	0x00000000	0xFFFFFFFF

The PJSE: Behaviour Constant Editor is open, showing the 'General' tab. The filename is 'General'. The 'Value' field is set to '0x0001' in hex and '1' in dec. The table below shows the current values:

Line	Value	Label
0x0 (0)	0x0001	Version
0x1 (1)	0x0007	GlobalFlags

The version value is used internally and can be ignored.

The GlobalFlags value uses individual bits to enable/disable features. The meanings of the bits can be found in BCON 0x1004 – Global Flags

The screenshot displays a software interface with a Resource List and a Global Flags editor. The Resource List shows the following data:

Instance	Offset	Size	Name	Type	Instance (high)	Group
0x00001000 (4096)	0x00004860	0x00000046	General	BCON	0x00000000	0xFFFFFFFF
0x00001001 (4097)	0x00009D26	0x0000004E	Defaults - Adults	BCON	0x00000000	0xFFFFFFFF
0x00001002 (4098)	0x00009F98	0x0000004E	Defaults - Teens	BCON	0x00000000	0xFFFFFFFF
0x00001003 (4099)	0x0000A0F8	0x0000004E	Defaults - Elders	BCON	0x00000000	0xFFFFFFFF
0x00001004 (4100)	0x0000A1A9	0x00000064	Global Flags	BCON	0x00000000	0xFFFFFFFF
0x00001005 (4101)	0x0000A3E6	0x00000064	Sim Flags	BCON	0x00000000	0xFFFFFFFF

The Global Flags editor shows the following table:

Line	Value	Label
0x0 (0)	0x0000	Meaning of bits in 0x1000:0x01 - GlobalFlags
0x1 (1)	0x0001	Teens
0x2 (2)	0x0002	Adults
0x3 (3)	0x0004	Elders
0x4 (4)	0x0008	Unused
0x5 (5)	0x0010	Unused
0x6 (6)	0x0020	Unused
0x7 (7)	0x0040	Unused
0x8 (8)	0x0080	Unused
0x9 (9)	0x0100	Unused
0xA (10)	0x0200	Unused
0xB (11)	0x0400	Unused
0xC (12)	0x0800	Unused
0xD (13)	0x1000	Unused
0xE (14)	0x2000	Unused
0xF (15)	0x4000	Unused
0x10 (16)	0x8000	Debug

Bits 1 through 3 control if teens, adults and/or elders receive bonuses. If you only want the SSBS to apply to adults set the value of BCON 0x1000:0x01 to 0x0002, however, if you only wanted it to apply to teens and elders, set the value to 0x0005

BCON 0x1001 – Defaults - Adults

This BCON holds configuration details that only apply when an adult is given their pay book.

The screenshot shows the 'Resource List' window with the following data:

Instance	Offset	Size	Name	Type	Instance (high)	Group
0x00001000 (4096)	0x00004860	0x00000046	General	BCON	0x00000000	0xFFFFFFFF
0x00001001 (4097)	0x00009D26	0x0000004E	Defaults - Adults	BCON	0x00000000	0xFFFFFFFF
0x00001002 (4098)	0x00009F98	0x0000004E	Defaults - Teens	BCON	0x00000000	0xFFFFFFFF
0x00001003 (4099)	0x0000A0F8	0x0000004E	Defaults - Elders	BCON	0x00000000	0xFFFFFFFF
0x00001004 (4100)	0x0000A1A9	0x00000064	Global Flags	BCON	0x00000000	0xFFFFFFFF
0x00001005 (4101)	0x0000A3E6	0x00000064	Sim Flags	BCON	0x00000000	0xFFFFFFFF

The 'PJSE: Behaviour Constant Editor' window is open for 'Defaults - Adults'. It shows the following configuration:

Filename: Defaults - Adults
Flag: Commit File

Value: 0x03EB (Hex) / 1003 (Dec)

Line	Value	Label
0x0 (0)	0x03EB	Flags (0x3EB)
0x1 (1)	0x0000	BasePercentTimes100
0x2 (2)	0x00C8	DailyPercentTimes100
0x3 (3)	0x07D0	PercentCapTimes100
0x4 (4)	0x01F4	StepStartTimes100
0x5 (5)	0x01F4	StepDeltaTimes100

With the exception of Flags, all values are stored “times 100”, so if the value you want is 20%, enter 2000. This permits fractions to two decimal places, 2.5% would be entered as 250 and 3.75% as 375. The BasePercent, DailyPercent, PercentCap (aka BonusLimit), StepStart and StepDelta are all described above.

The Flags value uses individual bits to enable/disable features for the Sim owning the pay book. The meanings of the bits can be found in BCON 0x1005 – Sim Flags. Most of these flags can be set via the Options ... menu of the pay book – the exceptions are “Send bonus notifications”, “Accrue days for paid leave”, “Bonus alters pension” and “Pay unused PTO on retire”.

Instance	Offset	Size	Name	Type	Instance (high)	Group
0x00001000 (4096)	0x00004860	0x00000046	General	BCON	0x00000000	0xFFFFFFFF
0x00001001 (4097)	0x00009D26	0x0000004E	Defaults - Adults	BCON	0x00000000	0xFFFFFFFF
0x00001002 (4098)	0x00009F98	0x0000004E	Defaults - Teens	BCON	0x00000000	0xFFFFFFFF
0x00001003 (4099)	0x0000A0F8	0x0000004E	Defaults - Elders	BCON	0x00000000	0xFFFFFFFF
0x00001004 (4100)	0x0000A1A9	0x00000064	Global Flags	BCON	0x00000000	0xFFFFFFFF
0x00001005 (4101)	0x0000A3E6	0x00000064	Sim Flags	BCON	0x00000000	0xFFFFFFFF

Line	Value	Label
0x0 (0)	0x0000	Meaning of bits in 0x1001:0x02 - Flags
0x1 (1)	0x0001	Lose accrued bonus on promotion
0x2 (2)	0x0002	Lose accrued bonus on demotion
0x3 (3)	0x0004	Using stepping
0x4 (4)	0x0008	Send bonus notifications
0x5 (5)	0x0010	Accrue days for paid leave
0x6 (6)	0x0020	Bonus alters pension
0x7 (7)	0x0040	Unused
0x8 (8)	0x0080	Unused
0x9 (9)	0x0100	Unused
0xA (10)	0x0200	Pay unused PTO on retire
0xB (11)	0x0400	No promotions
0xC (12)	0x0800	Unused
0xD (13)	0x1000	Unused
0xE (14)	0x2000	Unused
0xF (15)	0x4000	Unused
0x10 (16)	0x8000	Unused

- 0x01 – Lose accrued bonus on promotion (default set) – clearing this flag means a Sim will keep any accrued bonus after they have been promoted, see “Promotions/Demotions” above for how this affects their bonus payment
- 0x02 – Lose accrued bonus on demotion (default set) – similar to the previous flag, but applies when a Sim is demoted
- 0x03 – Using stepping (default clear) – setting this flag enables bonus stepping, see “Bonus Stepping” above for a description of how this feature works
- 0x04 – Send bonus notifications (default set) – only used when stepping is enabled, this flag controls if notifications are sent when a Sim reaches the next bonus step
- 0x05 – Accrue days for paid leave (default clear) – if this flag is set, a Sim will accrue their daily bonus for days taken as leave (either holiday or maternity leave). If a Sim starts with a negative base bonus (see “Pre-installation Maths” below), you may want to consider setting this flag.
- 0x06 – Bonus alters pension (default set) – this flag determines if a retiring Sim’s pension is calculated including their last bonus payment or not
- 0x0A – Pay unused PTO on retire (default set) – if this flag is set, when a Sim retires they will be paid a lump sum of their last bonus payment multiplied by any untaken days of leave, so a Sim with a final bonus of \$60 with three outstanding leave days, will receive a lump sum of \$180 when they retire. The calculation is performed at line 0xA in BHAV 0x1205 – “CT - PayBook - On Retired”

- 0x0B – No promotions (default clear) – setting this flag stops a Sim from receiving promotions. It should probably NOT be set in the BCON, as that will affect every Sim, it should be set on a per-Sim basis via the pay book Options ... menu.

BCON 0x1002 – Defaults - Teens

This BCON holds configuration details that only apply when a teen is given their pay book. The values have identical meaning to those in BCON 0x1001 – Defaults – Adults

The screenshot displays the PJSE: Behaviour Constant Editor. On the left is a Resource Tree with 'AllRes (167)' expanded to show various resource types. The main window shows a Resource List table with the following data:

Instance	Offset	Size	Name	Type	Instance (high)	Group
0x00001000 (4096)	0x00004860	0x00000046	General	BCON	0x00000000	0xFFFFFFFF
0x00001001 (4097)	0x00009D26	0x0000004E	Defaults - Adults	BCON	0x00000000	0xFFFFFFFF
0x00001002 (4098)	0x00009F98	0x0000004E	Defaults - Teens	BCON	0x00000000	0xFFFFFFFF
0x00001003 (4099)	0x0000A0F8	0x0000004E	Defaults - Elders	BCON	0x00000000	0xFFFFFFFF
0x00001004 (4100)	0x0000A1A9	0x00000064	Global Flags	BCON	0x00000000	0xFFFFFFFF
0x00001005 (4101)	0x0000A3E6	0x00000064	Sim Flags	BCON	0x00000000	0xFFFFFFFF

The editor window for 'Defaults - Teens' is open, showing a table of values:

Line	Value	Label
0x0 (0)	0x03EB	Flags (0x3EB)
0x1 (1)	0x0000	BasePercentTimes100
0x2 (2)	0x00C8	DailyPercentTimes100
0x3 (3)	0x07D0	PercentCapTimes100
0x4 (4)	0x01F4	StepStartTimes100
0x5 (5)	0x01F4	StepDeltaTimes100

The editor also includes input fields for 'Hex' (0x03EB) and 'Dec' (1003), and buttons for 'Add Value', 'Delete Value', 'Make Labels', 'Compare', and 'Update'.

BCON 0x1003 – Defaults - Adults

This BCON holds configuration details that only apply when an elder is given their pay book. The values have identical meaning to those in BCON 0x1001 – Defaults – Adults

The screenshot shows the Resource List window with the following data:

Instance	Offset	Size	Name	Type	Instance (high)	Group
0x00001000 (4096)	0x00004860	0x00000046	General	BCON	0x00000000	0xFFFFFFFF
0x00001001 (4097)	0x00009D26	0x0000004E	Defaults - Adults	BCON	0x00000000	0xFFFFFFFF
0x00001002 (4098)	0x00009F98	0x0000004E	Defaults - Teens	BCON	0x00000000	0xFFFFFFFF
0x00001003 (4099)	0x0000ADF8	0x0000004E	Defaults - Elders	BCON	0x00000000	0xFFFFFFFF
0x00001004 (4100)	0x0000A1A9	0x00000064	Global Flags	BCON	0x00000000	0xFFFFFFFF
0x00001005 (4101)	0x0000A3E6	0x00000064	Sim Flags	BCON	0x00000000	0xFFFFFFFF

The PJSE: Behaviour Constant Editor window is open for 'Defaults - Elders'. It shows a table of values:

Line	Value	Label
0x0 (0)	0x03EB	Flags (0x3EB)
0x1 (1)	0x0000	BasePercentTimes100
0x2 (2)	0x00C8	DailyPercentTimes100
0x3 (3)	0x07D0	PercentCapTimes100
0x4 (4)	0x01F4	StepStartTimes100
0x5 (5)	0x01F4	StepDeltaTimes100

Pre-installation Maths

The default settings assume an adult Sim has a life-span of 28 days or 4 weeks and, on average, they work five days a week and will attain the desired career level half way into their adulthood - leaving them two weeks, or ten working days, to accrue their bonus. Furthermore, it is assumed that the desired maximum bonus is 20% with no base bonus. This means a Sim needs to have a daily bonus of 2% to get to the maximum bonus by retirement.

Obviously, if you play with longer age durations or aging off, you will need to adjust these figures.

For example, if you're playing with a 3x age mod and want a maximum bonus of 25% with a base bonus of 5% and expect them to reach their desired career level in the first third of their adulthood, we would need to use $(25\% - 5\%) / (28 * 3 * 2/3 * 5/7) = 0.5\%$ as the daily bonus. As bonus values are stored "times 100" we would need to use the value 50 for the DailyBonus value.

If we're feeling mean, we can also set negative values for the base bonus. Assuming we want to penalise our Sims and make them work their way up from the gutter, we could set a starting bonus of -28%, a daily bonus of 1% and a limit of 0%. If we also clear the "lose bonus on promotion/demotion" flags, an adult Sim that works every day of their short life will retire with no penalty!

Installation

You need to copy the three main _A, _B and _C package files into your downloads directory.

If you want to use the pay book feature to stop promotions from chance/hobby cards, you also need to copy the _D package file into your downloads directory. Do NOT copy the _D package file if you are using the JobStopinator_Chance.package file (see “Conflicts – Special” below).

Uninstallation

Delete the four package files (_A, _B, _C and _D) from your downloads directory.

Reverting to normal salaries while keeping the pay book data

Remove the _C and _D package files. When you want to start using the bonus scheme again, put them back.

Package Dependencies

Package D depends on package C, which in turn depends on package C, which itself depends on package B and they all depend on package A. The simple rule is “you must have a contiguous alphabet starting with A”, so, for example, do not install packages C and D on their own, or just package B.

Conflicts - General

Will conflict with any mod that alters the CarGlobals (0x7F4EA230) BHAV included in package A or the JobDataGlobals (group 0x7F8F4EB6) BHAVs and/or STR#s included in package C

CarGlobals (Package A)

- BHAV 0x2072 Get In - Start

JobDataGlobals (Package C)

- BHAV 0x2005 Function - Qualify for Level?
- BHAV 0x2006 CT - Offer Job
- BHAV 0x2024 CT - Use PTO
- BHAV 0x2025 CT - Lose Job
- BHAV 0x2032 CT - Retire
- BHAV 0x204A CT - Quit Job
- BHAV 0x2052 Memory - Promotion
- BHAV 0x2053 Memory - Demotion
- BHAV 0x20A0 Sub - Calculate Pay Increase
- BHAV 0x20D3 CT - PayBook - Get Salary for level P0 in T0 {Added}
- STR# 0x012F Call Named Tree prim string set

Known **NOT** to conflict with jobfixes at MATY

Known **NOT** to conflict with JobStopinator at cyjon.net

Known **NOT** to conflict with No Pet Spam Codes at Simbology

Known **NOT** to conflict with University of Life at MTS

Conflicts - Special

Package D (suppression of promotions via chance/hobby cards) will conflict with any mod that alters the JobDataGlobals (group 0x7F8F4EB6) BHAVs included within it

JobDataGlobals (Package D)

- BHAV 0x2008 Sub - Chance Card - Results
- BHAV 0x2097 CT - Hobby Card - Results

It is **known to conflict** with the chance/hobby card optional package of JobStopinator. If you are already using the CJ-JobStopinator-Chance.package to stop promotions via chance/hobby cards, delete package D, as it is just duplicating this functionality.

Conflicts – Objects and Interactions

The Pay Book (package _A) and the Sim Interactions (package _B) have their own GUID so will **NOT** conflict with any other object or interaction.

Known Issues

- 1) The displayed salary (in the career tab) does NOT include any bonus. I know of no way to fix this, so please don't report this as a bug. However, if you know the exact BHAV that needs editing to achieve this, please feel free to let me know!

Notes

- 1) Requires Apartment Life or Mansions and Gardens
- 2) Works for any career – base, expansion or custom
- 3) Only applies to teens, adults and elders in careers (applicable ages are configurable)
- 4) Young Adults who manage to get a career, will be treated as adults
- 5) Does NOT apply to pets
- 6) Bonus payments are truncated to a whole amount. Remainders do NOT accrue (so a bonus of \$20.6 results in two payments of \$20 and not one of \$20 and the next of \$21)
- 7) All default values are configurable via BCONs
- 8) Values can be adjusted on a per Sim basis via their Pay Book
- 9) Internally, percentages are held multiplied by 100, ie 1% is stored as 100. This permits fractions, ie 2.5% would be stored as 250 and 3.75% as 375

Credits

gummilutt@MTS for the initial idea and input during development.

Chris Hatch for many valuable insights into the weird and whacky world of BHAV coding.

The developers of SimPE.

Everyone at MTS and Leefish who responded to my coding queries. Any mistakes in the implementation of their suggestions are entirely my own.

InTeen for developing a mod that so nearly met my exact requirements that I felt confident enough to delve into SimPE and discover the world of BHAVs, BCONs and TTABs

All the modders who took time to write tutorials, wiki pages or explanatory forum posts – some of the answers I used dated back to 2007!

Way too many others to mention.

“It is only by standing on the shoulders of giants that the rest of us can even see the top of the learning curve and contemplate attaining it.”

Technical Details

Pay Book Attributes

Bonus values are tracked as attributes on the pay book. Most of these attributes are initialised when the pay book is created from the appropriate BCONs

Attr#	Name	Default (from BCON)	Notes
0x00	Version	1	
0x01	Owner NID	(filled in at run-time)	
0x02	Flags	0x03EB	(see below)
0x03	DaysAtLevel	0	
0x04	AccruedPercentTimes100	(same as BasePercent)	
0x05	PayPercentTimes100	(same as BasePercent)	
0x06	BasePercentTimes100	0	
0x07	DailyPercentTimes100	200	
0x08	PercentCapTimes100	2000	
0x09	StepStartTimes100	500	
0x0A	StepDeltaTimes100	500	
0x0B	StepNextTimes100	(same as StepStart)	
0x0C	unused	0	
0x0D	unused	0	
0x0E	unused	0	
0x0F	unused	0	

Adding more attributes requires changes to OBJD:Raw:NumAttributes, STR#:0x0100, BCON:0x1000 and associated TRCN entries.

Using unused attributes will require a change to the internal version number and appropriate code to convert older versions of pay books to the newer requirements.

Pay Book Attributes Min/Max Values

As bonus values are stored "times 100", 20000 here represents a value of 200%

Name	Min	Max		Notes
DaysAtLevel	0	20000		
BasePercentTimes100	-10000	20000		
DailyPercentTimes100	0	2500		Note 1
PercentCapTimes100	-10000	20000		Note 3
StepStartTimes100	-10000	20000		
StepDeltaTimes100	0	2500		Notes 2, 5
Hard Limit % x100	-10000	20000		Notes 3, 4
Notes				
1) MaxBase + MaxDaily <= 32767				
2) MaxStepStart + MaxStepDelta <= 32767				
3) For daily salaries >\$16,000 the bonus limit must be correctly capped manually				
4) For daily salary >\$10000 this is 10000				
5) If stepping is enabled, StepDelta must be >0				

Pay Book Flags

Bit values of Flags attribute (0x02) (this MUST agree with BCON 0x1005 – Sim Flags)

Flag#	Value	When Set	When Clear	Default
1	0x0001	Lose accrued bonus on promotion	Keep accrued bonus on promotion	Set
2	0x0002	Lose accrued bonus on demotion	Keep accrued bonus on demotion	Set
3	0x0004	Using stepping	Not using stepping	Clear
4	0x0008	Send bonus notifications	Omit bonus notifications	Set
5	0x0010	Accrue days for paid leave	Don't accrue days for paid leave	Clear
6	0x0020	Bonus alters pension	Bonus does not alter pension	Set
7	0x0040	unused		Set
8	0x0080	unused		Set
9	0x0100	unused		Set
10	0x0200	Pay unused PTO on retire	Don't pay unused PTO on retire	Set
11	0x0400	No promotions	Promotions	Clear
12	0x0800	unused		Clear
13	0x1000	unused		Clear
14	0x2000	unused		Clear
15	0x4000	unused		Clear
16	0x8000	Debug messages enabled	Debug messages disabled	Clear

Using unused attributes will require a change to the internal version number and appropriate code to convert older versions of pay books to the newer requirements.

Bonus Salary Calculation

The base salary plus bonus MUST NOT EXCEED \$32,767

The maximum standard career salary is \$10000 and our max bonus is 200% (which is stored as 20000) so we need to calculate at a maximum $(10000 * 20000) / 10000$ BUT we are limited to 16-bit signed maths, so no numbers bigger than +32767 – so the simple approach to this is doomed to failure. We need to perform long multiplication ...

We need to calculate

$$ABCDE * VWXYZ / 10000$$

Or

$$(A * 10000 + B * 1000 + C * 100 + D * 10 + E) * (V * 10000 + W * 1000 + X * 100 + Y * 10 + Z) / 10000$$

Which expands out to

$$AV * 10000 + AW * 1000 + AX * 100 + AY * 10 + AZ +$$

$$BV * 1000 + BW * 100 + BX * 10 + BY + BZ / 10 +$$

$$CV * 100 + CW * 10 + CX + CY / 10 + CZ / 100 +$$

$$DV * 10 + DW + DX / 10 + DY / 100 +$$

$$EV + EW / 10 + EX / 100 + \text{some other stuff that's too small to worry about!}$$

Which rearranges as

$$AV * 10000 +$$

$$(AW + BV) * 1000 +$$

$$(AX + BW + CV) * 100 +$$

$$(AY + BX + CW + DV) * 10 +$$

$$(AZ + BY + CX + DW + EV) * 1 +$$

$$(BZ + CY + DX + EW) / 10 +$$

$$(CZ + DY + EX) / 100 + \text{some other stuff that's too small to worry about!}$$

And, due to the limits imposed on ABCDE and VWXYZ (≤ 10000 and ≤ 20000 respectively), none of those expressions blow-up 16-bit maths.

Accrued Bonus Recalculations

After a change to most PayBook variables and some flags, it is necessary to recalculate cached values.

- $\text{AccruedPercent} = \text{BasePercent} + (\text{DaysAtLevel} * \text{DailyPercent})$
- $\text{PayPercent} = \min(\text{AccruedPercent}, \text{PercentCap})$
- If not using stepping (flag 3 clear), exit
- $\text{StepNext} = \text{StepStart}$
- If $\text{PayPercent} < \text{StepNext}$, $\text{PayPercent} = 0$, exit
- While true
 - $\text{StepNext} += \text{StepDelta}$
 - If $\text{PayPercent} < \text{StepNext}$, $\text{PayPercent} = \text{StepNext} - \text{StepDelta}$, exit

Pay Book Events

Paid

Generated In: Sub - Calculate Pay Increase (semi-global 0x7F8F4EB6 JobDataGlobals)

Handled By: CT – PayBook – On Paid

Parameters: Sim Object ID in Param0, Salary in Param1

Returns: Bonus pay in Temp0

Notes:

Actions:

- Find Pay Book, if missing create
- Increment DaysAtLevel
- Add DailyPercent to AccruedPercent
- If not using stepping (flag 3 clear), PayPercent = AccruedPercent, goto end
- If AccruedPercent < StepStart, PayPercent = 0, exit
- If AccruedPercent < StepNext, PayPercent = StepNext – StepDelta, goto end
- While true
 - StepNext += StepDelta
 - If AccruedPercent < StepNext, PayPercent = StepNext – StepDelta, notify, goto end
- End: Set Temp:0 to pay adjustment

Paid Leave

Generated In: CT - Use PTO (semi-global 0x7F8F4EB6 JobDataGlobals)

Handled By: CT – PayBook – On Paid Leave

Parameters: Sim Object ID in Param0, Salary in Param1

Returns: Bonus pay in Temp0

Notes: Includes maternity leave.

Actions:

- Find Pay Book, if missing exit
- Set Temp:0 to pay adjustment

Maternity Leave

Generated In: Nowhere – appears as Paid Leave

Handled By: CT – PayBook – On Maternity Leave

Parameters: Sim Object ID in Param0, Salary in Param1

Returns: Bonus pay in Temp0

Notes: Use CT – PayBook – On Paid Leave instead

Actions:

- Nothing, not used

Promoted

Generated In: Memory - Promotion (semi-global 0x7F8F4EB6 JobDataGlobals)

Handled By: CT – PayBook – On Promotion

Parameters: Sim Object ID in Param0

Returns: Nothing

Notes: Called after paid

Actions:

- Find Pay Book, if missing exit
- If Lose accrued bonus on promotion (flag 1) set, DaysAtLevel = 0

Demoted

Generated In: Memory - Demotion (semi-global 0x7F8F4EB6 JobDataGlobals)

Handled By: CT – PayBook – On Demotion

Parameters: Sim Object ID in Param0

Returns: Nothing

Notes: Called after paid

Actions:

- Find Pay Book, if missing exit
- If Lose accrued bonus on demotion (flag 2) set, DaysAtLevel = 0

Fired

Generated In: CT - Lose Job (semi-global 0x7F8F4EB6 JobDataGlobals)

Handled By: CT – PayBook – On Fired

Parameters: Sim Object ID in Param0

Returns: Nothing

Notes: There is another CT – Lose Job in group 0x7FBE051B

Actions:

- Find Pay Book, if missing exit
- DaysAtLevel = 0

Quit

Generated In: CT - Quit Job (semi-global 0x7F8F4EB6 JobDataGlobals)

Handled By: CT – PayBook – On Quit

Parameters: Sim Object ID in Param0

Returns: Nothing

Notes:

Actions:

- Find Pay Book, if missing exit
- DaysAtLevel = 0

Retire

Generated In: CT - Retire (semi-global 0x7F8F4EB6 JobDataGlobals)

Handled By: CT – PayBook – On Retired

Parameters: Sim Object ID in Param0, Salary in Param1, Unused PTO in Param2

Returns: Bonus pay in Temp0, PTO bonus in Temp1

Notes:

Actions:

- Find Pay Book, if missing exit
- Compensate for unused leave as (BonusSalary * PTO)
- Set Temp:0 to pay adjustment
- Set Temp:1 to PTO adjustment
- DaysAtLevel = 0