

Gifts to Minor Races

Written by Gowron on 3 December 2006

In this topic I'm going to (more or less) complete what DCER started here. As DCER found out, there's an area in trek.exe starting at position 0x174948 that controls these mechanics. As usual, I divide the post into several sections. The positions of the individual values in trek.exe will be listed in the last section. I'll also include a section with some hints for modders.

The Influence of Tech Levels

As you most probably know, minor races advance by "jumps", gaining better technology levels. These tech levels have an influence on both the number of credits you can give to them and the effect that your gift will have.

Note that a minor race that joins an empire will still have its own advancement level. It will also advance further, but you can't see it on the F1 screen, because its population and ground combat values are now determined by the controlling empire. But its own tech levels will still be used for gift/bribe calculations (amount and effect). If the minor race leaves the empire, then its new evolution level can be much higher than at the point where it joined the empire, because it silently advanced in the meantime.

To evaluate their technology, add all their current single tech levels for each tech area (biotech, energy tech...), including "sociology" (7 areas in total) and multiply it by the [tech factor]. The [tech factor] for amounts can be different from the [tech factor] for effects (see last section).

If the result is less than 4.0, then the minor race is considered to be at low tech. If the result is equal to or more than 8.0, then the minor race is considered to be at high tech.

Example:

Tech levels: 3, 4, 5, 6, 3, 4, 3
[tech factor]: 1/7

Evaluation:

$1/7 * (3 + 4 + 5 + 6 + 3 + 4 + 3) = 4.0$
→ the minor race is neither at low tech nor at high tech.

The Amounts of Money You Can Give

For the locations and default values of all the variables, see last section. The base amount for a gift is 1000 credits. This base amount is modified as follows:

- If the race is at low tech, multiply by [low2].
- If the race is at high tech, multiply by [high2].

- If the race's personality is "warlike" or "peaceful", multiply by [high2].
- If the race's personality is "pacifist" or "deceptive", multiply by [low2].
- If the race is a member of another major empire, multiply by [emp2].
- If you are the Federation, multiply by [fed2].

After that, if they have an active "bribe resistance" building, add the output amount of that building (500 credits for the default Communication Grid). This value is only added once, even if you are giving a "multiple" gift (i.e. you press the button that doubles/triples/etc. your gift).

The Effects of Gifts

Two turns after you submit your gift, the attitude of the respective minor race towards you will rise. Also, if the minor race is a member of another major empire, its attitude towards that empire will decrease. The effect is directly proportional to the amount of money you've given them. The base effect for the attitude increase towards you is 4% of the attitude bar per 1000 credits. Thus, if the attitude bar is completely dark, you'd have to give them 25000 credits to increase it to the maximum.

If you are giving the gift to a minor race that is a member of another empire, then the base effect for the attitude decrease towards that empire is approximately 2% of the attitude bar per 1000 credits. Note that their attitude towards that empire will also recover by about 5% of the attitude bar per turn, so if you want to bribe them, give them large gifts quickly and not small gifts over a long time.

These base values are modified as follows:

- If the race is at low tech, multiply by [low1].
- If the race is at high tech, multiply by [high1].
- If the race's personality is "warlike" or "peaceful", multiply by [high1].
- If the race's personality is "pacifist" or "deceptive", multiply by [low1].
- If the race is a member of another major empire, multiply by [emp1].
- If you are the Federation, multiply by [fed1].

Gifts from AI Players

AI players always give half of the amounts that a human player would be giving (including all the modifications of section 2, except for "bribe resistance", for which the AI players will fully pay). I don't know if they get any bonus or penalty on the effect.

Why You Should Scrap Your Communication Grids

The Grid is supposed to make it harder to bribe your members. But does it really help you? Let's look at what it does. It increases the amounts of money other races can give to your members. On the other hand, the effects of their gifts are directly proportional to these amounts. So the Grid in fact makes it easier to steal your member races. See the next section for hints how to fix that.

Important Hints for Modding

Never Let Gift Amounts Be Negative

Simple but important. Negative amounts won't crash the game, but bad things happen if you give negative gifts, i.e. your treasury will experience a shift and you'll find yourself with a total of minus 2 billion credits or so (this is not exaggerated, I've seen worse results). Just keep all the values positive and be very careful with negative "bribe resistance" building outputs.

Changing Amounts and Adjusting Effects

Since effects depend on amounts, if you want to change an amount without changing the effect, you'll have to change the corresponding effect value accordingly.

Examples that won't change the "effect per gift" relation:

```
multiply [high2] by 2 and divide [high1] by 2
divide [fed2] by 1.5 and multiply [fed1] by 1.5
```

Fixing the Communication Grid

In order to make it harder to bribe member races, the Communication Grid must actually give a negative "bribe resistance", since only lower amounts will mean lower effects. Be careful, since AI empires only pay half of the normal gift amounts, but they fully pay the "bribe resistance", so if you might end up with the AI giving negative gifts (with bad consequences).

Names, Locations and Default Values for All Variables

All values are 8 bytes in size (double precision floating-point values).

```
[tech factor] for gift effects
starting position: 0x174948
default value: 1/7
```

```
[fed1]
starting position: 0x174950
default value: 1.5
```

```
[high1]
starting position: 0x174958
default value: 0.75
```

```
[low1]
starting position: 0x174960
default value: 1.25
```

```
[emp1]
starting position: 0x174968
default value: 0.5
```

```
[tech factor] for gift amounts
starting position: 0x174970
default value: 1/7
```

```
[fed2]
starting position: 0x174978
default value: 0.5
```

[high2]
starting position: 0x174980
default value: 1.33

[low2]
starting position: 0x174988
default value: 0.8

[emp2]
starting position: 0x174990
default value: 2.0

Note: There's one more value at 0x174998 (default: 1/7), but I didn't mention any difference when I changed this. Maybe it's not used.