REPORT ON CHEATING IN DIRTY BOMB

Research and Report By Pelle Bruinsma

This report will be about aimbotting in Dirty Bomb: **How to "paste" an aimbot** and **How to make the game more aimbot friendly.**

How to "paste" an aimbot

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1. General information

The type of aimbot this report will be about is **color detection aimbots**. Another game that's had to deal with these types of aimbot is **Overwatch**, so when you go out looking for example code I suggest you include the word "Overwatch" in your search.

Color detection aimbots are usually aimbots that **assist** the player in aiming rather than doing the task of aiming for them. This is because CDA (color detection aimbots) are not precise enough to "rage" with. CDA are however not very CPU intensive and are effective enough to provide a significant advantage over other players.

CDA also do not read/write any memory, they also aren't injected into any applications, they are fully external. This makes them hard to detect by an anticheat.

The best way to use a CDA in Dirty bomb is by tracking the **HP bar** of other players. We can grab the color of the HP bar by taking a screenshot of a player and using any program that can read a color code from an image (Gimp for example):

Here we grab the HP bar color from this bot from the assault course. The color code is 0xF05F41.

(Note: Make sure Dirty Bomb is in borderless windowed mode)

2. Sources

Since Overwatch has already suffered from a lot of hacking it is easy for us to find **sources** of overwatch aimbots and patch them. There is a lot of **Autohotkey** sources available but since those are not accurate enough we'll be using a cheat made by Jire called **Overwatchcheat(https://github.com/Jire/Overwatcheat).**

Overwatchcheat is written in **kotlin/java** and includes the following files that we'll be using:

```
Constants.kt
Overwatcheat.kt
Settings.kt
aimbot/AimBot.kt
```

Constants.kt includes the HP bar color that the aimbot will be searching for, how many shades a color can differ from the specified color in order to be accepted as a target, and some offsets. I have the following lines in my file:

```
const val HP_BAR_COLOR = 0xF0_5F_41
const val HP_BAR_COLOR_TOLERANCE = 50
const val X_OFFSET_1080p = 0
const val Y_OFFSET_1080p = 100
```

This is not all you need to start using this aimbot, I also made changes to the following files:

Overwatchcheat.kt:

```
(57) FRAME_GRABBER = FFmpegFrameGrabber("desktop").apply {
```

This changes the target window from the Overwatch window to our desktop.

AimBot.kt:

```
(39) if (keyPressed(SETTINGS.aimKey)|| keyPressed(2)) {
```

This allows us to use a specified aimKey as well as right click to start the aimbot.

3. Configuration

Aimbot can now be built by running **build.bat**, once the aimbot is built a configuration file is made named **overwatcheat.cfg**. This file contains some configuration options which are specified in the

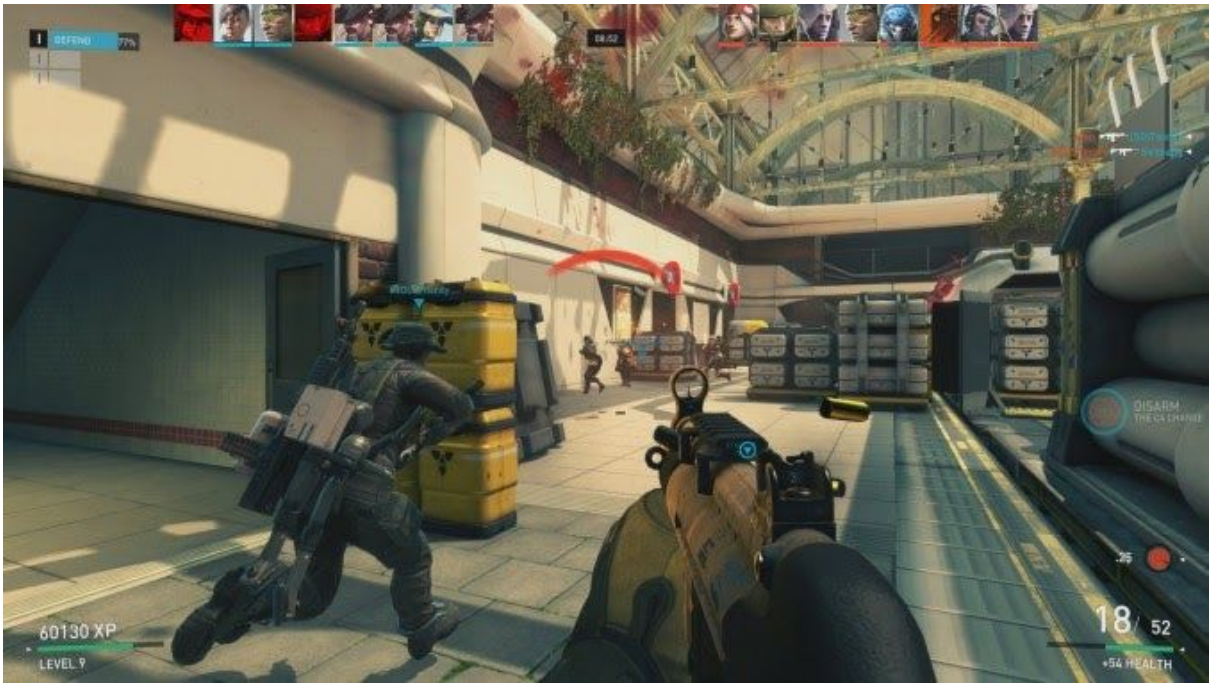
document itself. Most of the options come down to personal preference but there are three important ones I want do explain:

The Speed configuration:
At default the speed configuration is set to 4.1, this configuration decides how fast the aimbot will move to its target, **the higher speed is set the faster the aimbot will move to its target**. 4.1 is quite a nice balance between good tracking and not being too obvious about aimbotting. Different speed configurations will be shown in the videos linked at the end of the report.

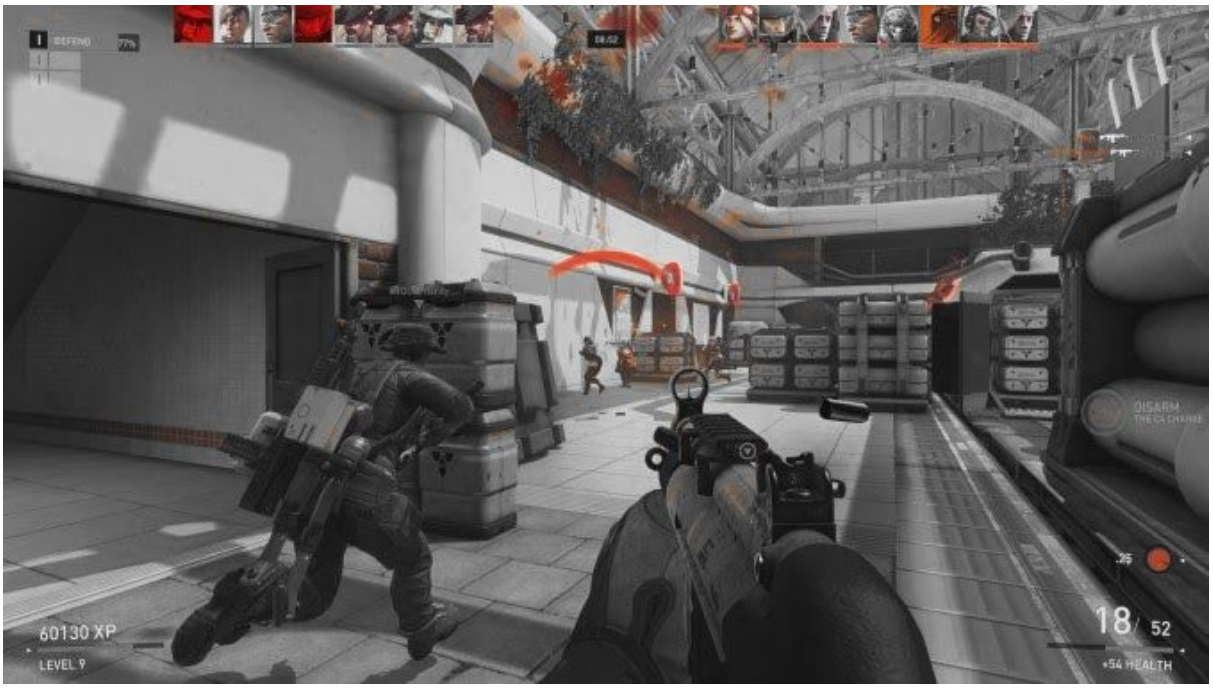
The valuebox_width_divisor/valuebox_height_divisor configuration:
These configurations are by default set to 4 for width and 2.5 for height, these configurations decide by how much the area which the aimbot will search in will be divided. If the divisor is set at 1 the area will be the whole screen. **Setting these configurations would be the same as setting an aimbot FOV**.

How to make the game more aimbot friendly

Dirty bomb has decent graphics and visual effects, when you play dirty bomb your game will look like this most of the time:



With everything but the reds filtered out:

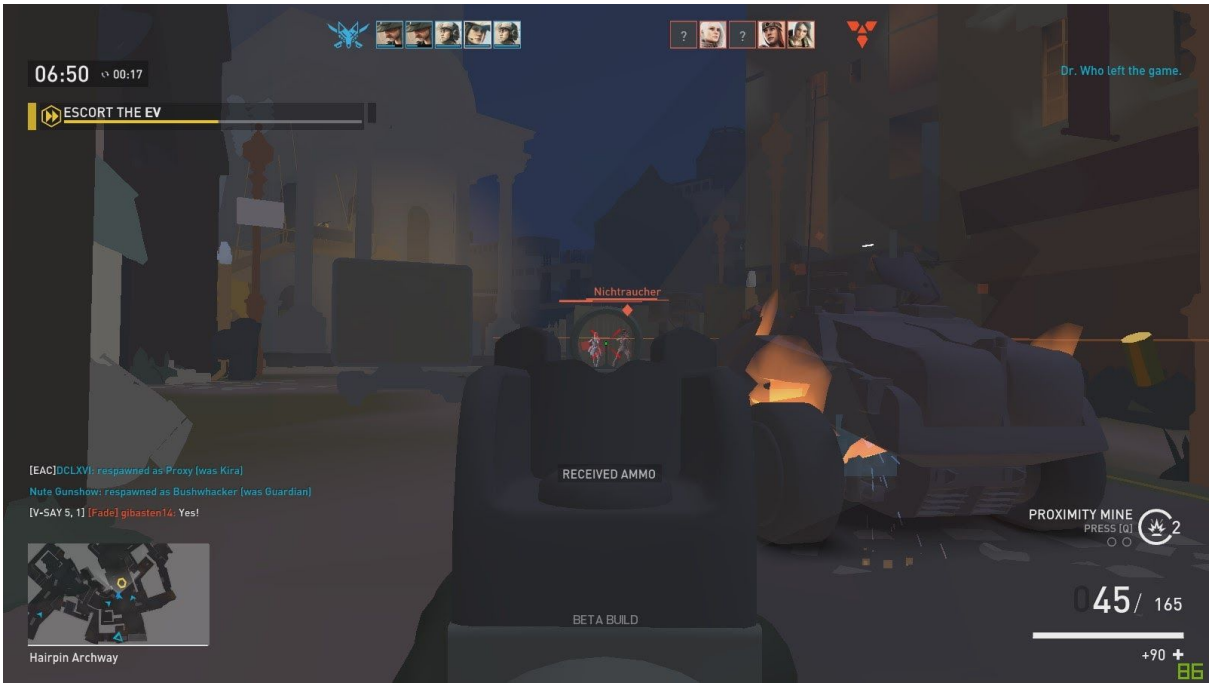


Now this is not optimal since we are looking for HP bars with a **reddish color**, and there are quite a lot of reds on screen that we are not looking for.

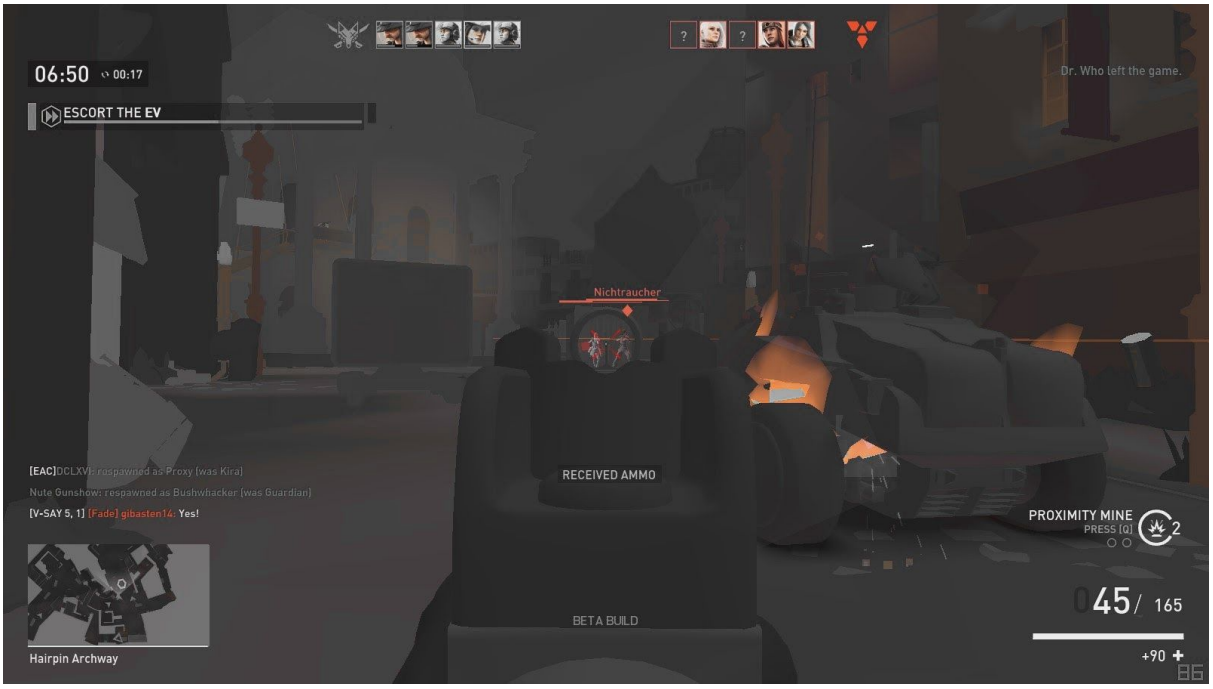
To eliminate is issue you can use the **valuebox_width_divisor and valuebox_height_divisor configuration**, this eliminates the killfeed and other potential distractions.

But more importantly we can eliminate a lot of noise using the LOD BIAS option that a lot of graphics cards can apply, Basically when we lower the LOD BIAS on games the graphics will blur out. Here is a tutorial on how to get the lowest LOD BIAS possible: https://www.youtube.com/watch?v=TcOsfjdHTAQ

After we turned the lod bias down our game will look like this:



With everything but the reds filtered out:



As you can see reds are still present but not as radically anymore, the aimbot can now focus more easily on the targets we want to hit.

Conclusion

So how good is the aimbot? Genuinely good players can easily beat a scrub using a color based aimbot, but it still isn't a fair fight and say for example I'd posted my Dirty Bomb aimbot paste online. If it were that easily available it would've caused a lot of trouble for the playerbase. I thought this issue was worth a look.

I will not spread this aimbotting method or my personal aimbot on the internet but as I'm sure you are aware it is not impossible that this method might appear in Dirty Bomb in the future.

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