

Weightlifting Motion PC ver0.3 Manual

2015/12/1
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1. Introduction

This software is for weightlifting (Olympic lifting) training. You can check the barbell path in your lifting motion with real-time display.

[Operating environment]

- > PC with web camera or USB camera
- > OS: Windows7 home edition
Windows8.1
(Not verified in other OS)

2. Set up

2-1 . Required equipment

【 Required items 】

- ① Indoor training field (Wide and bright enough)
- ② Weightlifting equipment
- ③ Target plate for tracking (※1)
- ④ PC (Recommend note type)
- ⑤ Web camera or USB camera

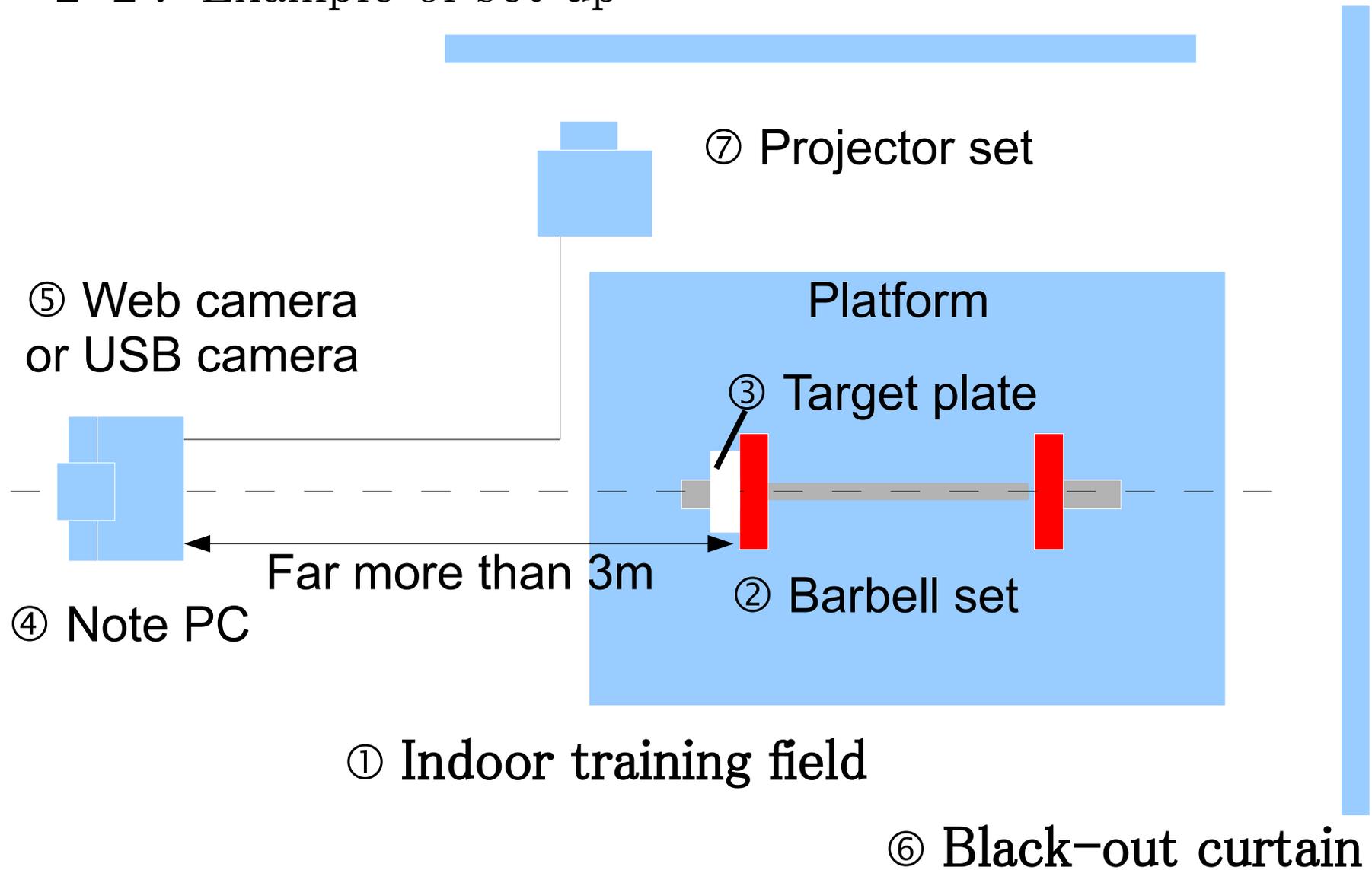
【 Option items 】

- ⑥ Black-out curtain (※2)
- ⑦ Projector + Screen

※1,2 : For more ensure tracking

2. Set up

2-2 . Example of set up



2. Set up

2-3 . Advice for set up

① Indoor training field

「 About traing area 」

It is available in a general training gym, a practice field. Please refer to an illustration of setup of the previous page for required area enough. It is necessary to put a PC in the remote place more than 3m from a barbell set. When a camera position is too near to a barbell set, a person of attempts does not occupy the camera range, and this causes worse precision of values such as a barbell position, the speed.

「 About brightness of traing room 」

The brightness that is enough for shooting video is necessary. It is all right by a general fluorescent lamp. When brightness is not enough, the frame rate of the animation decreases, and it becomes the coarse animation. As a result, precision of the tracking and the speed of the barbell decreases.

2. Set up

2-3 . Advice for set up

②Weightlifting equipment

It is all right with a barbell for general weightlifting, a bumper plate. But the plate to put inward at first recommends a thing of 45cm in diameter.

③Target plate for tracking

This is necessary as a mark to follow the movement of the barbell. We recommend a plate of white less than 17cm in diameter. We understand that white is the highest in tracking performance from experience(※). Because it is 17cm in diameter, 5 kg of general plates can assume this a target play. On account of the weight set, we do not mind even the thing which is made with cardboards when we want to avoid the use of 5 kg of plates.

※When a 45cm plate is not white



2. Set up

2-3 . Advice for set up

④ PC

⑤ Web camera or USB camera

We recommend notebook PCs because we use this software in training room. There are no PC's specifications to require in particular about the performance. We confirm that even a general low price notebook PC works enough.

As for this software, a camera to acquire video becomes required, but is all right with the webcam which a recent notebook PC has built-in generally by default. Please prepare a USB camera in the case of a PC without the webcam.

2. Set up

2-3 . Advice for set up

⑥ Black-out curtain

In the background of the video range, barbell tracking becomes more certain equality. It is effective when you set blackout curtains as needed. It is desirable for the color of the curtain to be different from the color of the target plate. If a target plate is white, the curtain recommends black.

⑦ Projector + Screen

If a projector is set in the front of a person who attempts lifting and reflect the video in the PC, it is possible to practice lifting while confirming one's form.

2. Set up

2-4 . Install of software

【 Install 】

There is no installation works in particular.

After unzip (WeightliftingMotionPC_ver ~ .zip) file, please put the unzipped folder in any place of the PC of yourself.

【 Start 】

You can start by double click the .exe file in the unzipped folder.

【 Output of the video 】

The barbell tracking video is output in the [output] folder which is made in the same place with .exe file. Because it becomes the big file capacity for the long-time recording, please prepare for enough free space.

3. Operation

3-1 . Live Camera Mode

Barbell tracking is displayed for the video which is acquired with a camera in real time. The recording is also possible.

【 Summery 】

3-1-1. Start up software

3-1-2. Window view setting

3-1-3. Barbell path

3-1-4. Record video

3. Operation

3-1-1. Start up software

The software starts by double-clicking the .exe file.

When it is past an expiration date, a warning message is displayed, and the software is finished. When you hope continuation of the use , please contact us.

When an expiration date is under one month later, a warning message is displayed, and the remainder days of the use possibility are displayed. Please confirm message contents, and software starts when you push the "OK" button.

3. Operation

3-1-2. Window view setting

Please change the following setting according to environment of the training room.

- Video FPS
- View flip
- Position of text box
- Initial height of barbell center



※The screen layout may vary a little according to the version.

3. Operation

3-1-2. Window view setting

「Video FPS」

Please set FPS (the number of the frames in one second) of the video. A smoother video is provided so that FPS is big, but brighter environment is necessary. When brightness of the training room is insufficient, it is displayed with 「delay: ~ [ms]」. When [delay] is displayed, select smaller number from the menu,

「View」→「FPS」

located top-left in the window.

More than 15 FPS are necessary to follow quick barbell movement.



※The screen layout may vary a little according to the version.

3. Operation

3-1-2. Window view setting

「 View flip 」

When you want to flip horizontal the picture of camera, you can flip the view by 「 View 」 -> 「 Flip 」

「 Position of text box 」

You can change the position of the text box which shows the barbell height and speed by spin boxes (Text Box: X,Y) located the top-left in the window. Please push the Enter key after input with a number.



※The screen layout may vary a little according to the version.

3. Operation

3-1-2. Window view setting

「 Initial height of barbell center 」

Please set barbell-centered height[cm] at the time of a lifting movement start.

For example, when you use 45 cm plate and set the barbell on the floor, set the initial height as 23 [cm]. ($45 / 2 = 22.5$, rounding off the decimal $\rightarrow 23$)

When you start lifting the barbell on a rack or a box, please measure the height of the barbell center.



※The screen layout may vary a little according to the version.

3. Operation

3-1-3. Barbell path

You can start the barbell tracking by as follows.

- ① Press 「Analysis」 button below right of the window.
- ② Drag the 45 cm plate by mouse.
- ③ Press 「Apply」 button.
- ④ Drag the target plate by mouse.
- ⑤ Press 「Apply」 button.

The barbell tracking will be started.



※The screen layout may vary a little according to the version.

3. Operation

3-1-4. Record video

The recording of video will be started by activating the main window and press [R] key. The [Rec] mark is displayed while recording. The recording will be finished by press [R] key again. The recorded video will be saved at [output] folder as a file named 「 cap1_(day-time).avi 」 .
(Please be careful about capacity of HD for the long-time recording.)



※The screen layout may vary a little according to the version.