



DROPPING BOMBS ACCURATELY IN FSX SPECIFICALLY WITH A PLANE-DESIGN LANCASTER THAT HAS BEEN SET UP WITH AN APPROPRIATE BOMBSIGHT FOR USE IN FSX.

A system to accurately bomb targets devised by
Ross McLennan, Adelaide, South Australia
based on an idea developed in CFS1 in 2004.

1st written March 2012

Rewritten & illustrated for the Canadian Lancaster VRA - August 2014

This document provides an illustrated guide to successfully
attacking selected targets with a probably impact
error of less than 60 feet.

FSX WIDE VIEW ASPECT ONLY



DROPPING BOMBS ACCURATELY IN FLIGHT SIMULATOR X

INTRODUCTION

Any aircraft can be made to drop an object in flight when flying in FSX. The simmer must realize that a specially prepared saved flight is required to make the release possible. That's not my logic but it is what FSX logic requires.

It is easy to drop bombs in FSX but quite another to do so accurately. Here is the second item to comply with when striving to achieve consistency of impact as the outcome. The aircraft must be flown on autopilot to maintain altitude. That is no different to the reality of World War II.

NO AUTOPILOT NO ACCURATE BOMBING OUTCOMES.

The object must only be released with the aircraft flying at a constant altitude with wings level and at the correct ground speed. If the bombsight is designed to drop bombs from 14000 feet then that refers to sea level and dropping over land **MUST** include, **additionally**, the height above sea level of the target.

The third requirement is the ground speed of the aircraft at release of the bomb or object **MUST** be the same as the bombsight is designed for. In accordance with the laws of physics that will dictate the distance of release from the target.

If you are unfamiliar with any of those requirements then there is quite a learning curve involved. to hit a small target. At a speed of 165 Kts (190mph) the aircraft and bomb at release covers 28ft or 8.5 meters in every 1/10th of a second. Since it may be considered that the normal reaction time is 0.2 seconds then a 56 foot error (17 meters) in impact may occur and that can be the same as the size of the target your trying to destroy. In FSX there is no destruction, but the explosion graphics can, as you will see, be spectacular.

The bombsight used in this project is a development of what I used in CFS1 to destroy the CFS1 Tirpitz. It cannot be adjusted for drift or for wind speed so weather must have zero wind speed or the target may not be hit at all. This same system is used to "Sink the Tirpitz" in FSX.

In terms of the target **I do not support the indiscriminant bombing of targets that may appear in what would be populated areas. There must be a purpose to bomb and the target must be isolated from populated areas in the scenery.** The target should be an OBJECT that will show in any scenery including FSX default. It therefore needs to be added.

Further, **I do not support the idea of carrying a bomb load far greater than the real aircraft could carry. It's a great pity that the FSX logic does not add the weight of the bomb to the aircraft to stop the ridiculous overloading some simmers apply.** A standard Lancaster for example, could carry a 14000 lb bomb load. It is therefore ridiculous to set up and carry 50 or more 1000 pounders and therefore adding 50000 lbs that no aircraft could carry as a load.

A further limitation is that **the aircraft and bombsight are designed for use the FSX built in WIDE VIEW ASPECT.** If you are flying in "standard" view then you must re set the FSX settings for WVA as will be explained in this document.

SETTING UP

HOW DO I ACTIVATE WIDE VIEW ASPECT?

The setting for it is buried deep in the FSX structure as WideViewAspect=False. To activate the option, notepad can be used to change the setting to **"True"**

In Windows 7 the appropriate file is located in:

[Users/YOUR PC NAME/AppData/Roaming/Microsoft/FSX/fsx.CFG](#)

In Windows XP the appropriate file is located in:

[C:/Documents and Settings/Your PC Name/Application Data/Microsoft/FSX/fsx.CFG](#)

The setting in fsx.CFG is usually the **last entry under the heading [Display]**

BOMB OBJECTS – WHERE CAN I GET THEM?

It is a requirement that the **Weapons Pack by Chris Sykes** be downloaded from here:

<http://www.flightsim.com/vbfs/fslib.php?searchid=27838933>

or from this page

<http://simvation.com/1/search?submit=1&keywords=Sykes&categoryId=54>

Alternately there may be items from other providers that work in FSX

MAKE A SAVED FLIGHT PLAN – WHAT DO I NEED TO ADD?

If you make a plan and save it, the plan **DOES NOT CONTAIN THE TEXT TO ACTIVATE THE BOMB**. You must add the text in accordance with the instructions by the provider of the bomb package. Such text is to be added to the plan with Notepad and will result in the following being used by the FSX system. For example to have 1000 lb bombs available from the Sykes package:

[DroppableObjects.0] and on the next line **ObjectSet.0=1000lb GPB, X**

where X= is the numerical value for the number of bombs you wish to carry in any flight.

My view is that X should not result in exceeding the weight carried by the original aircraft.

Please note: you cannot substitute an aircraft in any plan as that will negate

the bomb being available for that aircraft. Make sure you:-

DO NOT ADD THE BOMB TEXT TO THE FLIGHT PLAN USED AT FSX START UP

instead use a flight plan that is related to a specific aircraft for each "mission" you wish to fly.

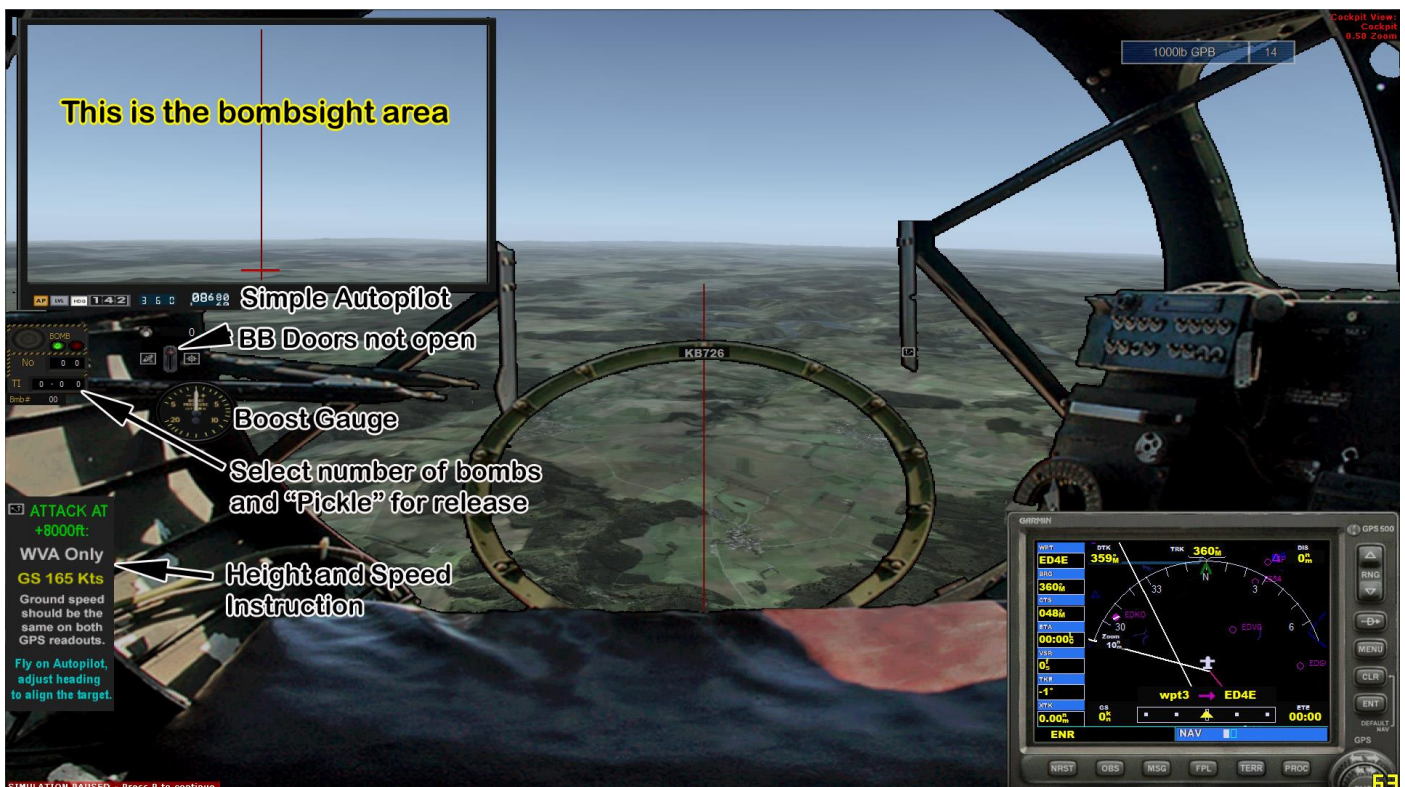
(3)

USING THE BOMBSIGHT TO ACCURATELY ATTACK A TARGET

- (01) Activate the provided saved flight and follow the instructions below for operational details.
- (02) **FOR THE VC FLYER TO NOTE:** Dropping bombs in a Lancaster will only be achieved by first using the 2D panel provided in the way a 2D simmer does. My saved flights will start in the air, ON PAUSE. Key **F10** to activate the 2D PILOTS panel.

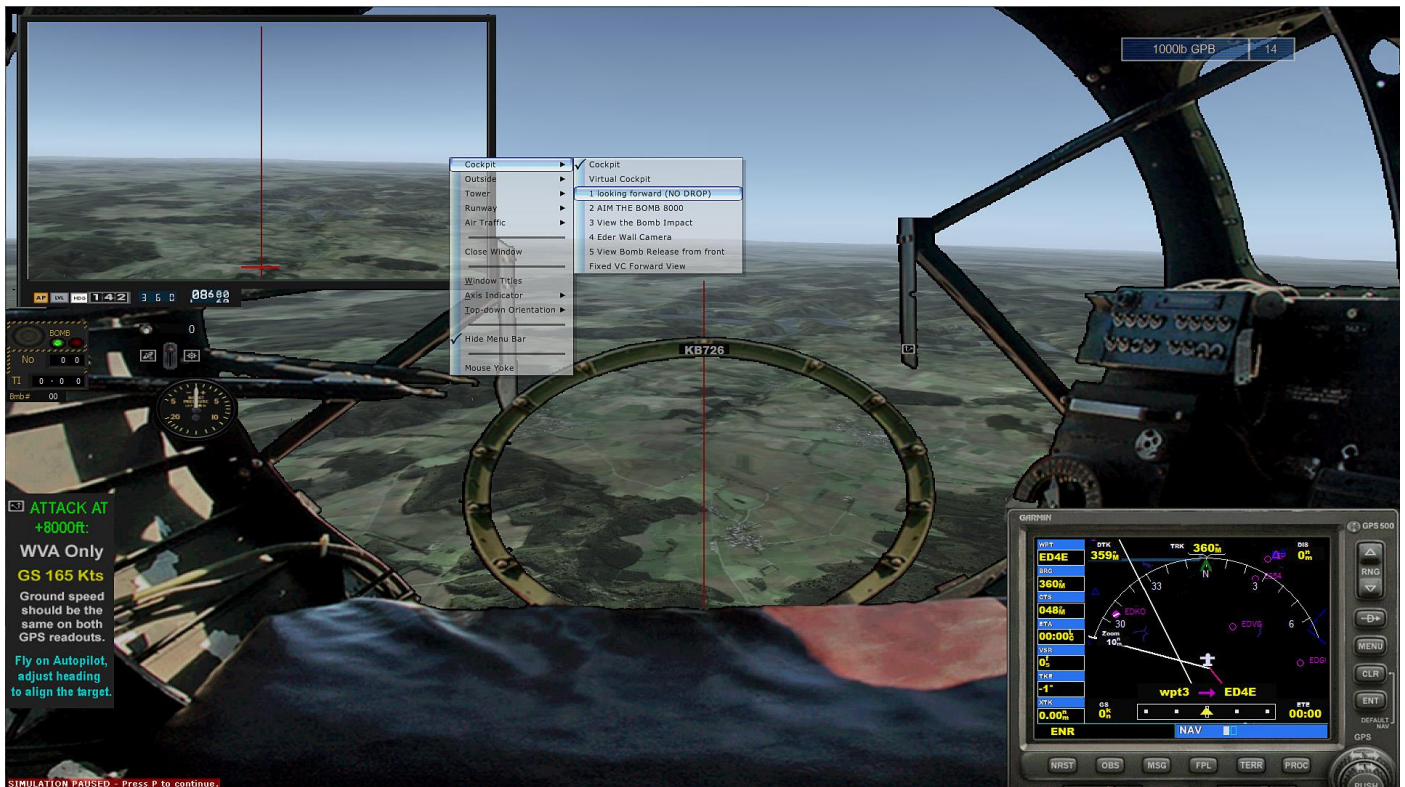


- (03) Activate the bomb aimers view and bombsight using the Icon indicated above

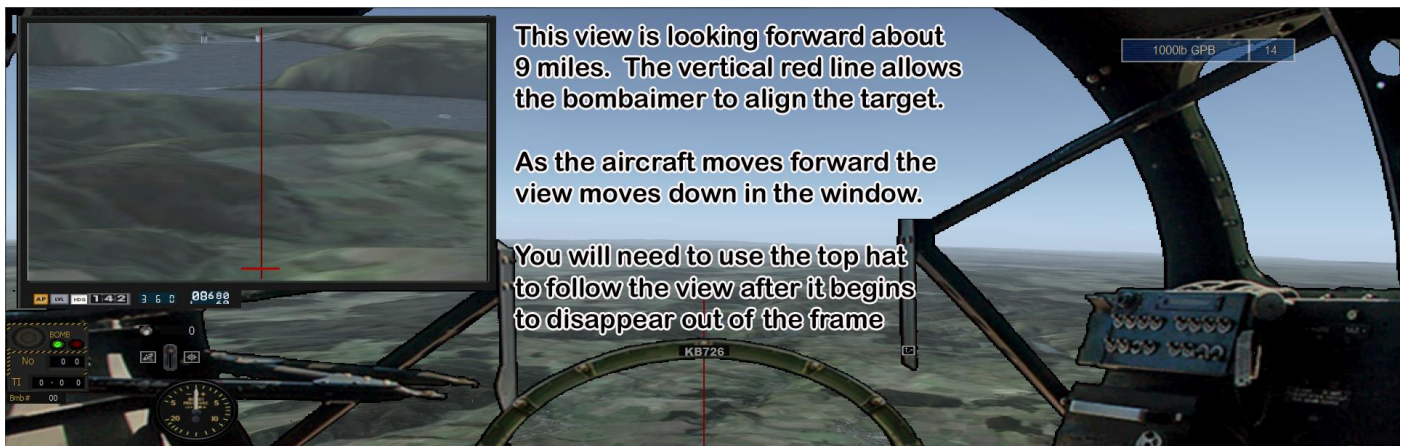


(4)

- (04) **Setting up the bombsight:** Use the Key [] to introduce a new window which initially will contain a miniaturized forward view inside the frame of the bombsight..



- (05) Now place the mouse inside the frame, right click and select the option for Cockpit and then the sub view **1 Looking Forward (NO DROP)**. Left click to activate this view within the frame. Be very careful when doing this so as not to move the view in the frame.



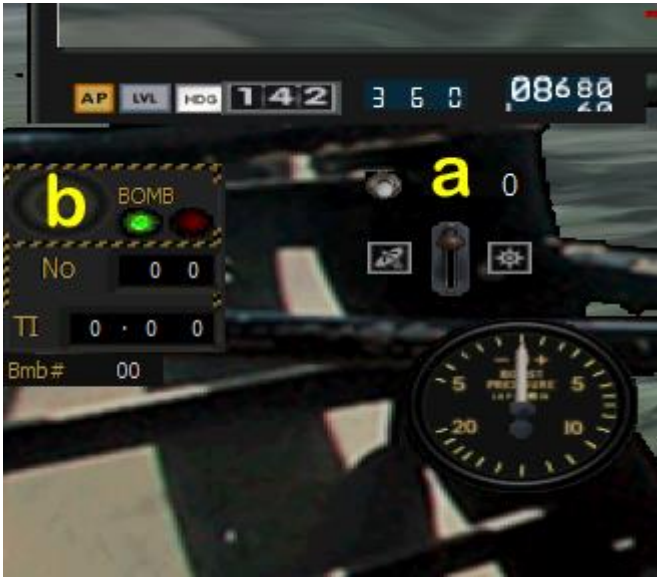
- (06) **DO NOT UNDER ANY CIRCUMSTANCES** mouse the sub window in the frame and move it from the default position. The red vertical line in the frame is separate from it and if you do move the window, you will need to **abort the flight as accuracy is lost.**

Remain on pause in these instructions until told to FLY by releasing pause

On the left of the miniature autopilot note the **yellow light - Autopilot is ON** and the white button indicates heading is activated at the value in the little window alongside. The current heading will appear in the window to the right when you start to fly. It defaults to 360 on initial pause. It will read similar to the GPS but there may be a 1degree difference. Alongside is a digital altitude window for reference. See enlarged view on the next page.

(5)

(07) Open the Bomb Bay Doors with the / key. DO NOT try to mouse it down.



(08) Description of bomb functions:

- (a) the switch on the left must be down. To the right (shown as zero) this window will give ground speed when the aircraft is moving.
- (b) this is called a “ripple switch” to activate the bombs and to allow selection of the number to drop.

Mouse the digit first and then if required the tens digit. They will not roll over automatically. The red light will come on to indicate “live”.

The TI dialogue window should be left as zero so the number of bombs selected will drop in one “gaggle”. If a time is set, the bombs will be spaced out to form a line or a “Ripple” set of bombs.

For your initial flight the number of bombs selected should read **14**. If there are two targets available in the saved flight you can then set **07**.

To drop the bombs in flight you will mouse the button under the **b** or use the keyboard short cut **shift B**. It is highly recommended that you allocate a button on your joy stick for “rotor brake” and use that to reduce the reaction time of the release.

I do not have the skills to build an object target that would relate to one of VRA's missions, I thus have compromised with one that satisfies my criteria for a sim target without bombing a concentration of persons in the area. It will also be available in FSX default scenery.

The target in this document is a Eder Dam Tower, indeed the left one. In World War II, the Eder Dam and the Moehne Dams where critical targets. The RAF considered it impossible to attack the wall from altitude as accuracy was not good enough to drop a large bomb to impact against the wall on center. A direct hit was not a requirement, the bomb had to land in the water very close to the wall. Thus the Dambusters were born to drop a 9250 lb Upkeep from +60 feet at 220mph. You can fly that raid by downloading my 70th or 71st Anniversary package from Simvation or Flightsim.

The sim target is a tower about 70 ft square and you attack it from an altitude of 8700 feet as the **extra 700 feet must be added to the bombsight setting to allow for the scenery altitude**.

Be aware also that the time from release to impact will be about 23 seconds which gives enough time to set up a view to see the result. After all I believe it is necessary for the simmer to actually see the results of an attack. Good luck in doing YOUR attack on the tower!

AT THIS POINT YOU CAN COME OFF PAUSE AN BEGIN YOUR APPROACH TO TARGET



(6)



- (08) as the image on the left instructs you must follow the target, adjusting the aircraft heading by using the autopilot HGD and level button LVL **UNTIL** the target disappears from the view in the right image. The use of these buttons will cause the target to move left or right of the red alignment line. **YOU MUST FLY THE ACTUAL DROP** with LVL active.

This does require an acquired skill to have the target either side of that line. The long run in gives the bomb aimer the chance to get it right. If your flying at an angle to the target the equivalent of drift occurs as you approach. You can do nothing about alignment once the target disappears from the main view shown in the right image above. Carefully use the **top hat** to keep the target in the bombsight.

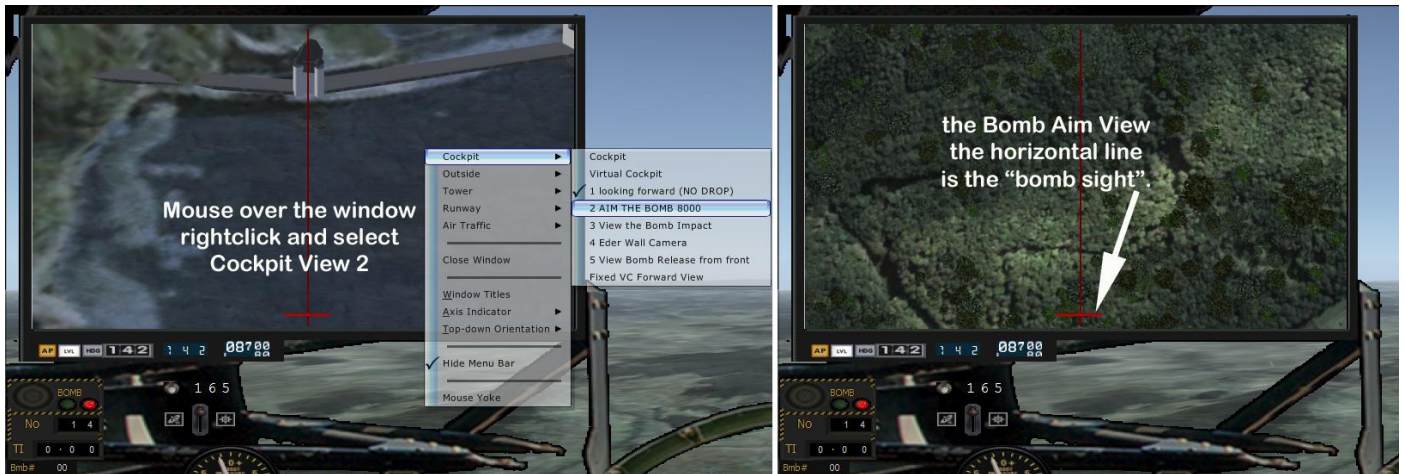
In the real world of WWII, the aircraft was vulnerable in this period of flying straight and level and many fell to fighters or flak in this part of the attack. Level and straight for 10Nm must have put a lot of stress on the crew. Particularly those getting towards the end of a "tour". Targets like the Ruhr or Berlin were particularly difficult and expensive in lives.

The GPS gives valuable information: it tells you how far from the target you are (it will disappear from view at about 2 Nm). The heading given in the GPS is not of importance as you are not attacking the center of the wall. You must keep an eye on the GPS ground speed so as to make sure it and the one in the mini autopilot are the same 165 Kts. Very small changes in boost may be required and that also is **an acquired skill** for success.

When your skills are up to it you should consider both towers as targets that must be knocked out. In that case you set only 7 bombs (almost the same explosive power as a 8000lb "cookie") and after dropping the bomb load on the left tower, fly so as to turn around and attack what is the right tower in the above left view.

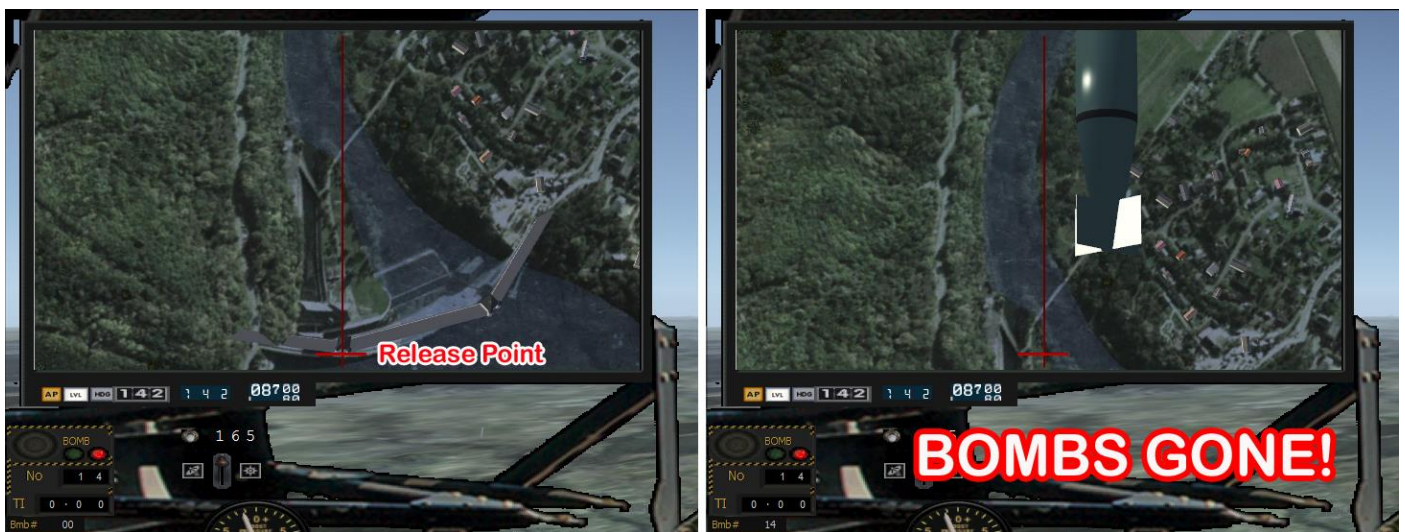


Anyone notice anything wrong with this view? Yes the front gunner has not taken up his position as the bomb aimer. **No sim Lancaster portrays things correctly.**

(09) AIM THE BOMB FROM 8000 FEET

The image gives the instruction to obtain the bomb aiming window. Because of the incorrect flight dynamics the bomb falls way behind the aircraft after it is released, further than it should and therefore we have to look a long way backwards to see the target. Indeed you will be about 2Nm beyond the target at impact, further if dropping from 14000 feet in the Tirpitz raid.

The red HORIZONTAL LINE in the right image is the aiming line.

(10) RELEASING THE BOMB

When the horizontal red line appears very near the edge of the target it is time to release.

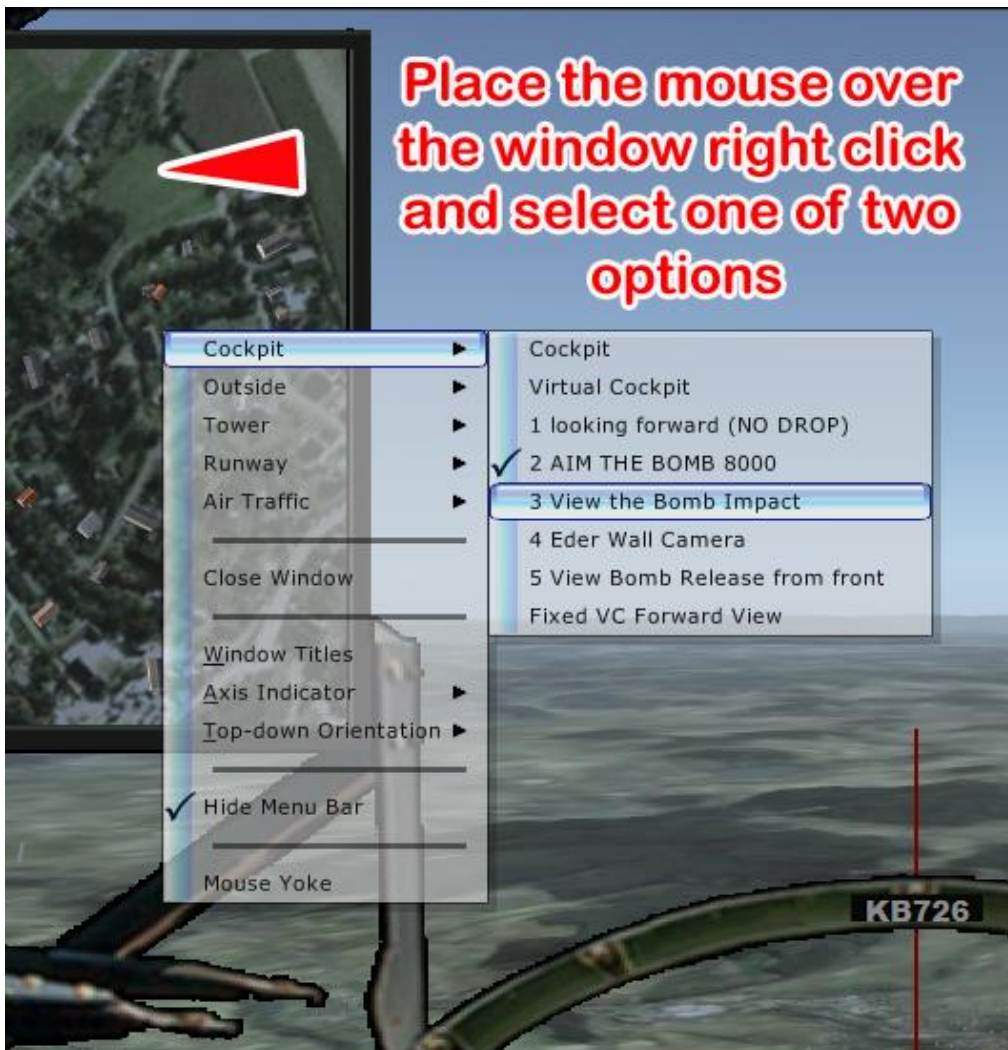
The bomb aimer in the sim releases the bomb by either of three methods. (1) Pickle it with the mouse and button on the "ripple" switch as described on page 5. (2) use keyboard **shift B** OR the better method is to use an allocated button on your stick or yoke.

It is important to note that you are looking a long way backwards at the target and there may be some parallax involved. In this release image I am just a little late in pressing my stick button. So in general you should make allowance remembering that at 165 Kts the aircraft travels 280 feet, or 93 yards, or 85meters in every second and TIME counts. Refer Addendum for notes on bombing.

YOU NOW HAVE ABOUT 22-23 seconds to impact.

(11) SEEING THE RESULTS OF YOUR ATTACK:

The Lancaster is fitted with two views that allow you to see the results of your attack, no point at all in dropping bombs unless you can see the results. From altitude that's very important.



If you select view **3 View the Bomb Impact** this is a motion relative view and the explosion will be seen but will pass quickly out of view. So when you first see the explosion **PAUSE**. If you select the option **4 Eder Wall Camera** the view is from a fixed camera placed near the left tower. However you are still advised to **PAUSE** so as to see the explosion develop as described over page . In these views, because we are looking backwards, left becomes right.



These views appear in the Bomb aimers window but as instructed over page can be made to fill the full computer screen. In both methods the Lancaster flies **safely onwards on Autopilot**.

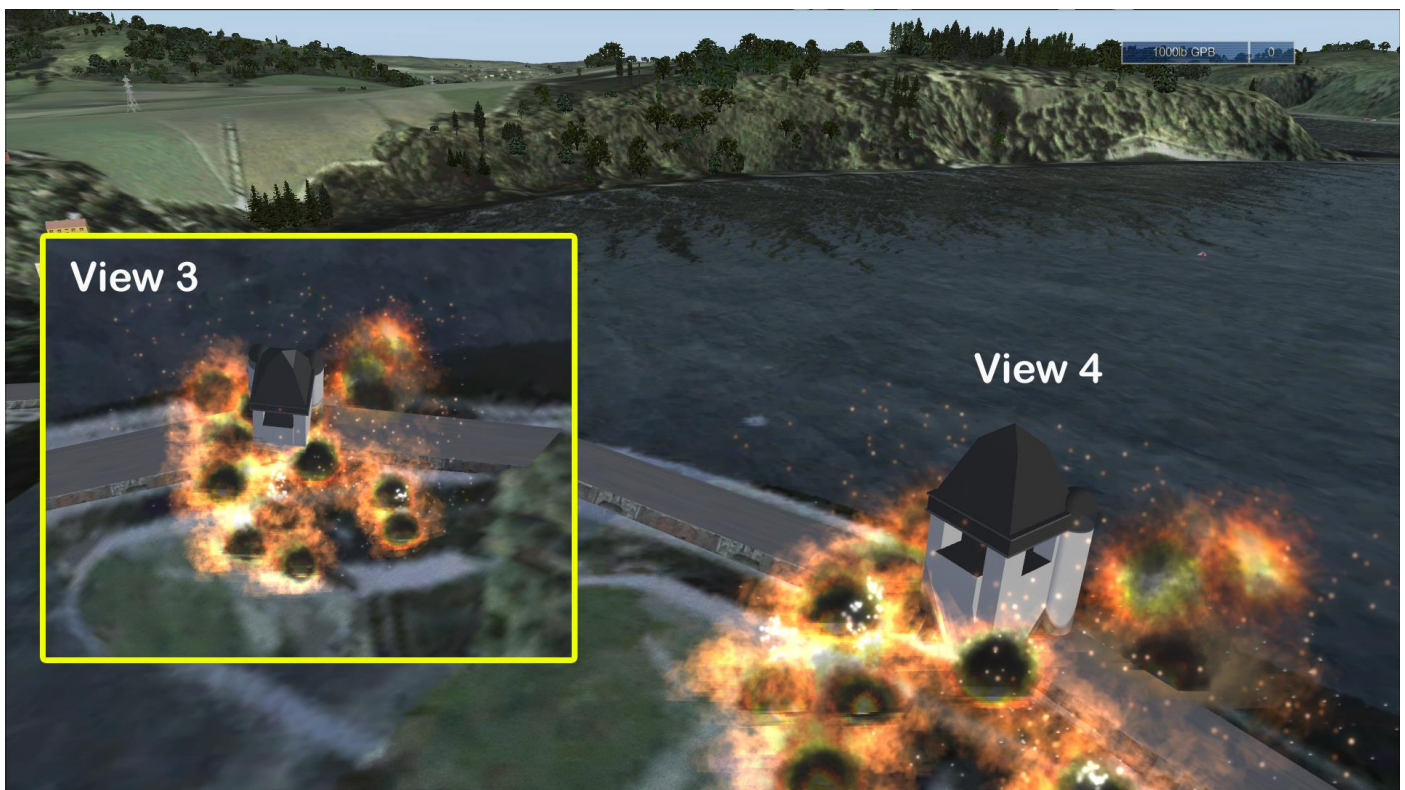
There may be an offset from center caused by how they leave the aircraft.

(12) NOW LETS GET OUT OF HERE!

- (a) Clear the bombsight window with keyboard key]
- (b) Return to your pilots cockpit. **VC simmers** using **F9**, 2D flyers with the icon provided to the right of center. Close the bomb bay doors with key /

You could simply start flying again by releasing pause and thus miss the usual spectacular graphics associated with the impact.

To see the result develop full screen, place the mouse in the forward screen, right click and select cockpit **view 3 OR 4**. Then release pause and watch the explosion develop. Here is a screen grab from the fixed camera view **4** with the View 3 inserted just before it passes from view.



The explosion will develop into a thick pall of black smoke that can be seen from a great distance. It will remain that way for as long as you wish to fly in the area.

The views are programmed into the VRA Lancaster aircraft.cfg file so trying to substitute another aircraft will not contain this aspect of the attack.

You should try this with one bomb, it's a far more difficult attack and would represent dropping a Tallboy or Grand Slam **OR** test your flying skills by dropping 7 on the left tower so that you can fly around, return to attack the other tower with 7. The graphics will of course not be as spectacular.

Thank you for downloading this package, I hope you take time to try flying it – Good Luck!

Ross McLennan, Adelaide South Australia.

25 August 2014

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Tirpitz Bombing Video: <https://www.youtube.com/watch?v=2iSnmgwwwMA&feature=youtu.be>

ADDENDUM

(13) UNDERSTANDING THE BOMB PATTERN:



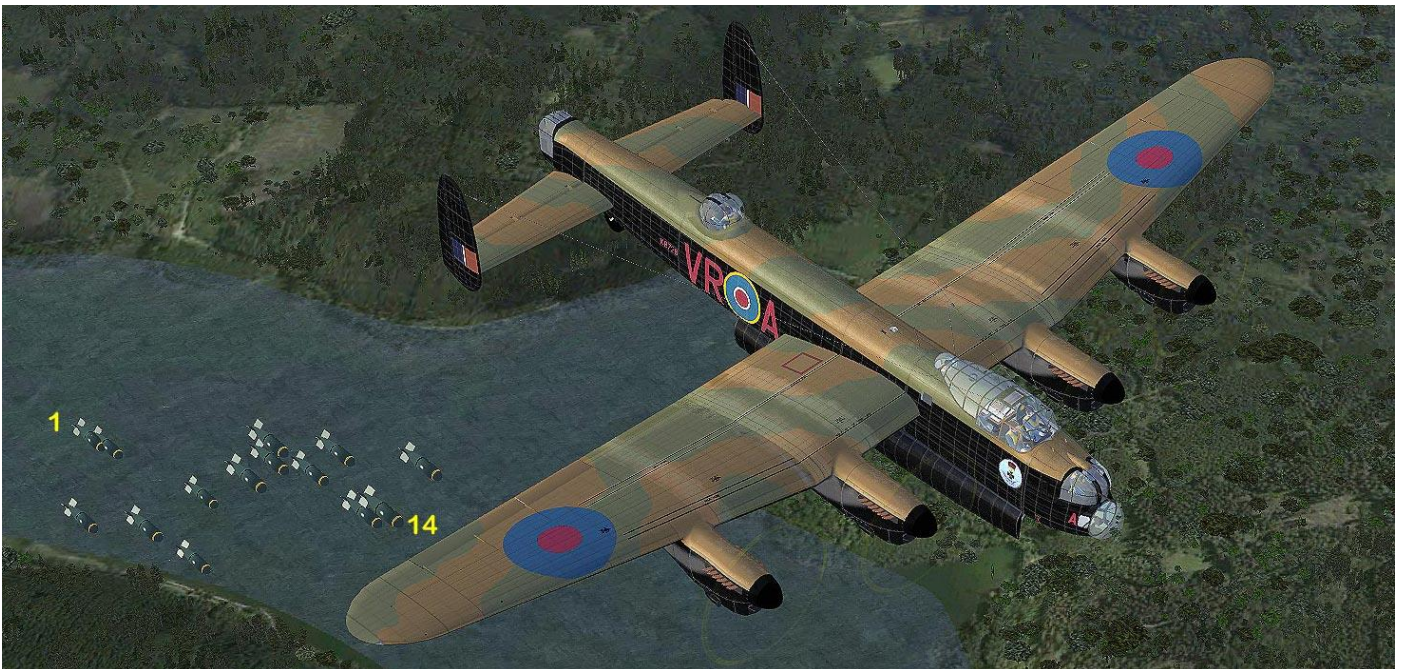
When dropping several bombs the simmer must realize he is AIMING the FIRST IN THE PACK and that the others will fall beyond where he aimed.

This is quite clearly seen in the view and shows that an allowance must be made. In other words drop a little short with a full load.

From the image one can say that my aim was ideal for about 7 bombs and that with a full load I should have dropped about 70 feet earlier.

The resulting pattern is never identical for each attack, it all depends on how well they leave the aircraft.

The next view shows the pattern as they left the aircraft in the attack on the Moehne Dam tower..



(14) THE SAVED FLIGHTS:

In this package 2 are provided that attack the Eder & Moehne Dam towers, the reasoning was given on page 5. The #6 Eder attack is considered to be a learning curve attack with a long run in so the simmer can easily set up the aircraft. #7 the Moehne attack has a shorter approach and less time to set up the aircraft. It is **unlikely** the Flak will show up at 8000 feet as it did at low level in DB71 but you should note a lot of canon fire as you get close to the release point.

- (15) **not shown in the illustrations** is a stop watch in the bombsight view which can be used to indicate the bomb impact time. I personally do not like it because it adds to the things the pilot must do when he switches to bombsight mode.

It was requested originally by a beta tester of the original system a couple of years prior to this upload. The watch is continuous running and will set to zero by mousing the button in its top left corner. It is not interconnected to operate automatically and is in my view difficult to use from zero. It can be of use if the bombaimer notes the time of release and adds 23 seconds to the value to give the approximate time of impact. Not easy!

- (16) **It should be noted** that in the bomb dropping version access to the bomb aimers general view is not automatically activated. This was to reduce the time and number of operations to get into the actual bomb sight window to aim the bombs.

The general bomb aimer view is still available from the **2D cockpit only** by using **shift 5**. There is no direct icon, as there was in the original upload, to go back to the 2D cockpit.

If the simmer uses **shift 5** again the result will be a clear window from which the 2D panel is available with **shift 1**. If the bombsight panel is activated via the provided icon the normal return will then be straight to the 2D cockpit and not via the general view shown below.



As with the original upload the bitmaps for the bombaimer views were provided by Pappi Vader, Germany.

Ripple switch by Karol Chlebowski.

Original Plane Design fs9 Lancaster upgraded for FSX
by Ross McLennan.

Dambuster attack video: <https://www.youtube.com/watch?v=7fC5QdrPzaM>

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