



**BOMBING FROM HIGH ALTITUDE
IN FSX USING A SIMULATED
SABS BOMB SIGHT**

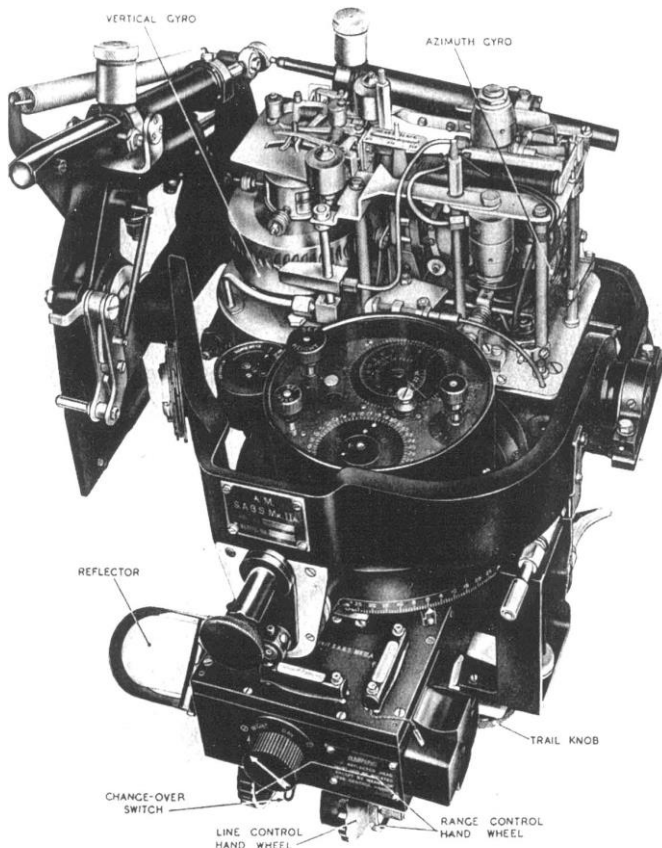
for the 617 Squadron Lancaster KC-D Package

**Concept & Copyright by Ross McLennan
Tallboy and Lancaster paint by Koos Van Menen
Special Hakoya Tirpitz by Erwin Welker**



ABS BOMB SIGHT INSTRUCTIONS

INTRODUCTION



The SABs or "Stabilized Automatic Bomb Sight" was used exclusively by 617 Squadron in WWII. Better accuracy was required to drop the 12000 lb Tallboy and the 22000 lb Grand Slam and SABs provided it.

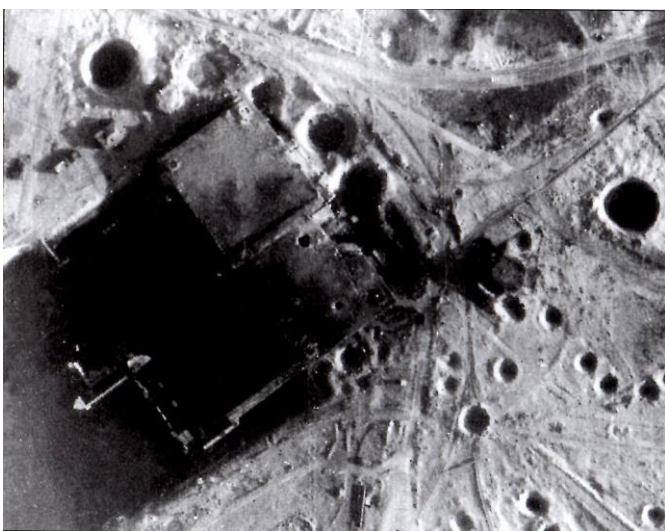
It is a highly under rated bombsight seldom mentioned in WWII articles or books on the war. Developed at Farnborough essentially because the Americans would not give the British any details of their Norden bombsight.

Only about a 1000 bombsights were constructed, all by hand and today none exist in any museum.

It is said that in tests, the Norden bombsight was able to generate fantastic accuracy. In practice, however, operational factors seriously upset them, to the point that pinpoint bombing using the Norden was eventually abandoned.

Yet 617 Squadron, achieved a radial accuracy of 125 yds from 16000 ft and used it to destroy tunnels, viaducts, E, R & U boat pens, V1 & V2 sites with concrete roofs of up to 7m thick.

It is said in 1945, the 8th Airforce was demonstrating accuracy of about 900 yards (820 m) circular error probable nowhere near the performance of the SABs-equipped 617 Sqd Lancasters which reached 80 yards (73 m) during this same period. It is also said that 617's accuracy was probably due to the fact that they practiced a lot more than the Americans, by day and by night, and the Lancaster was a better flying platform.



At left a reconnaissance photograph of the E & R Boat pens at IJmuiden, Holland, after the daylight raid on 15 December 1944. The pens are ringed by numerous Tall Boy craters while the roof of the west pen (lower in the photograph) has partially collapsed after two Tallboys pieced the reinforced concrete and exploded inside.

From the book by Alex Bateman:
No 617 'Dambuster' Sqd

The raid on the 8th February put these pens totally out of action and the boats were shifted to Norway.

The MkXIV was the bombsight generally in use with other RAF Squadrons. The most famous raid 617 Squadron using the SABs and 9 Squadron using the Mk XIV was of course the sinking of the Tirpitz with Tallboys. Two direct hits & several close by bringing the end of its threat to shipping.

(2)

The SABS could also be used for determining wind drift and used as an aid to navigation. It could drop bombs automatically using its mechanical computer. It was not connected to the aircraft autopilot. The link to the pilot was via a panel gauge indicating the direction to the target.

So when this sim sight is fitted to a 617 Squadron sim Lancaster it's a SABS and when fitted to another Lancaster or other RAF aircraft it becomes the Mk XIV and truly represents neither..

OPERATIONAL INSTRUCTIONS BY IMAGES

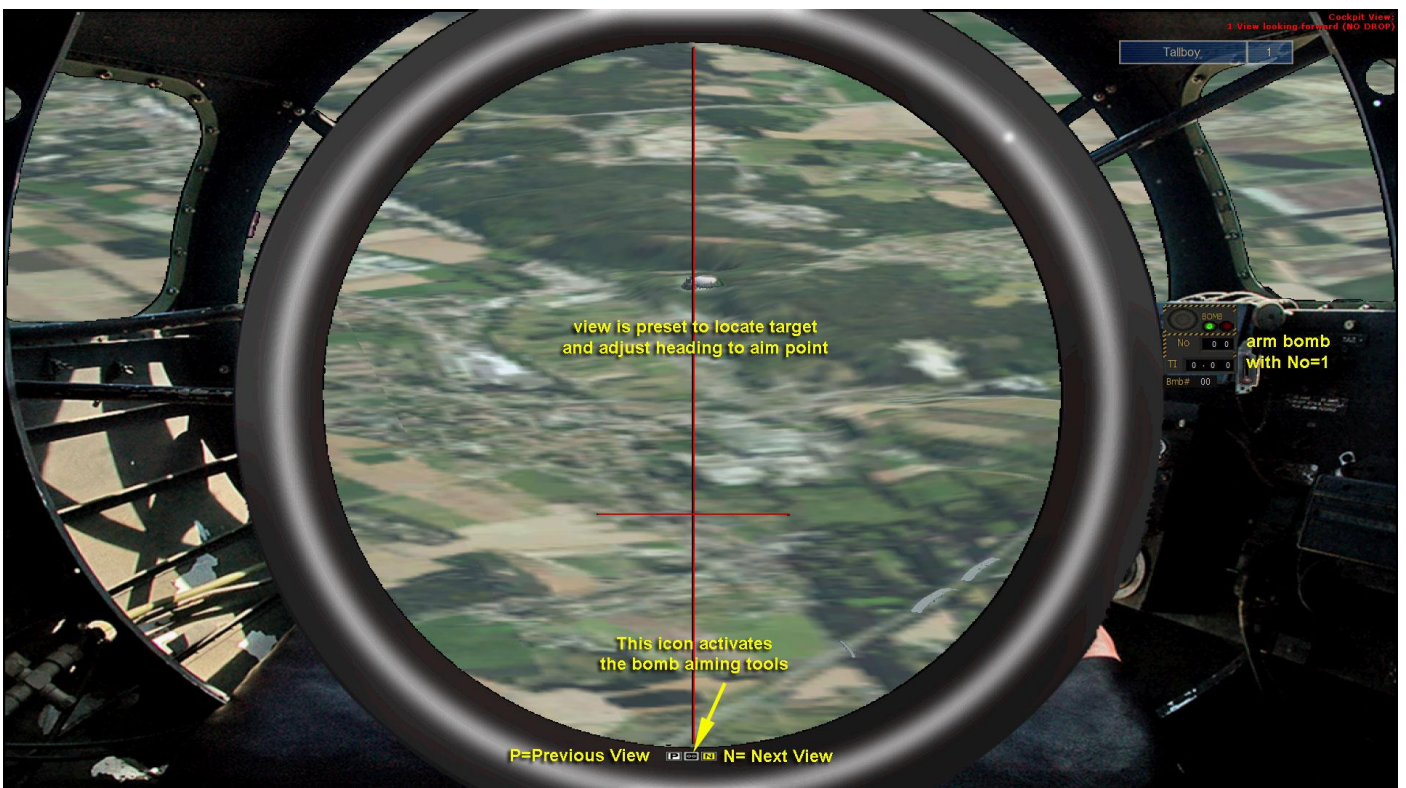


The autopilot in these aircraft has minimal options designed only to provide stability in bombing

(3)



All Bombing MUST be carried out on AUTOPILOT set for altitude



Aircraft speed is the crux of the matter, get it wrong by less than a Knot and the target will survive un-damaged. The pilot will do this manually by using the throttle. Get it right at least 4 Nm from the target.

SABS images from IBCC Video Project- Wizernes V2 Rocket Site Raid



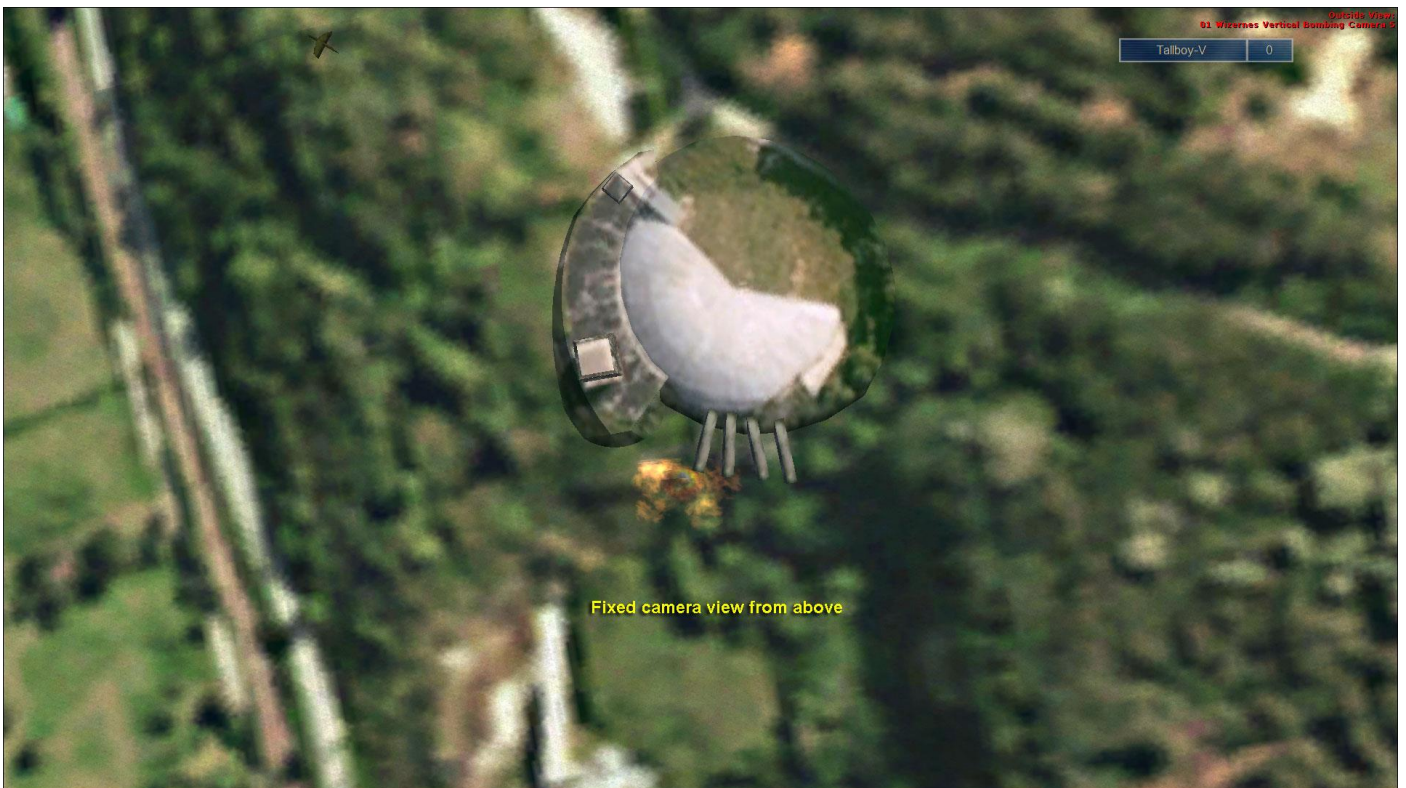
FSX must be set for WIDE ASPECT VIEW it will not be accurate in standard view



**ALL attacks in this aircraft are from +14000 feet
at a ground speed of 174-175 kts
and with zero wind.**

You can refer to larger images in the 0_Doc folder

(5)



Each attack has its own specific fixed camera views.

**THAT'S IT FOR THE CURRENT STATE OF PLAY
(all neat and tidy in concept and application)**

Bombing is a science and in the sim it's DIFFICULT.

CHECKLIST FOR HIGH ALTITUDE BOMBING WITH ACCURACY of 15 feet***** REQUIRES FSX IS SETUP FOR WIDE VIEW ASPECT *****

- (1) Activate the applicable saved flight. The aircraft will be on pause.
- (2) Press F10 to gain access to the 2D cockpit.
- (3) Mouse the left icon on the panel at dash level to access the BA general view.
- (4) Mouse the left icon notated as "B". This gives access to the SABS Bombsight with a clear view of the target ahead.
- (5) Mouse the middle icon at the bottom of the sight annulus. This will bring up the control panel for adjusting flying parameters. READ the placard which summarizes the criteria to be achieved. Check the aircraft speed AND note it's probably below the requirement.
- (6) Press P to release pause. **The approach for an attack will commence.** You should note the vertical heading line will kick sideways.
- (7) Mouse the LVL button to stabilize the aircraft. Once stable the vertical line will indicate your heading relative to the target.
- (8) Mouse the HDG button. The vertical line will again kick probably to the right. At its peak amplitude Mouse the LVL button again. Check the new alignment.
- (9) Repeat the process of (7) & (8) until the aircraft is aligned where you want it on the target.
- (10) Use the TOP HAT to keep the target in the sight. Be very careful to only move in a vertical direction **UNDER NO CIRCUMSTANCES PAN LEFT OR RIGHT**. If you do, the flight must be aborted as accuracy of alignment will be lost.
- (11) If you over correct the aim point heading, change the autopilot heading by mousing the digital window.
- (12) NOW control the aircraft speed by using the throttle so as to achieve that indicated on the placard. For this setup 174-175 kts as noted.
- (13) Keep an eye on the distance readout in the GPS. You should have the aircraft completely set up by 4Nm from the target. (80 seconds to target).
- (14) Re-check your aim point and if necessary adjust as necessary via (7) & (8).
- (15) Arm the bomb by setting number 1 in the bomb release gauge to the right of the annulus. This will change the light to red. NEVER change the number of bombs or timing.
- (16) AT 3NM from the target. Mouse the **Next View Icon** notated as **N** at center bottom of the screen. This will change the SABS to **AIM** mode. It will cancel the tools window which you can activate by mousing the center icon at the bottom of the annulus.
- (17) When the target appears at the top of the annulus. Watch closely as it moves down towards the horizontal cross hair. When its aligned on the target aim point, initially whilst learning to bomb, **PRESS P to pause the process**. This will show exactly where you have aimed the bomb. Later, with more experience, you can drop the bomb **LIVE** as in (18).
- (18) Key [shift D] **DROP THE BOMB**. This action should show on the bomb gauge as 1 bomb released and in the Tallboy window that no bombs are left to drop (**a Lancaster can only carry ONE**). In the learning curve, you can check the speed at release, if its faster than the placard speed then it will impact longer or if slower, impact will be shorter.
- (19) Now press P to release pause. **BOMB GONE**. You should see the bomb drop in the bombsight. It may not be on center. **FSX logic cannot always do that repeatably.**
- (20) Mouse the **Next View Icon N**. This will provide a window for you to watch the impact. From 14000 feet. It is 30 seconds away and if you noted the time on the digital clock the impact time will be calculable.
- (21) When you see the bomb impact, **press P to pause the process**. How good was your attack? **IN THE TIRPITZ ATTACK YOU MUST HIT HER ON HER PORT SIDE NEAR THE BRIDGE** as that is where KC-D hit her with the first bomb dropped in the raid.
- (22) Exit the Bombsight view by pressing the N Icon until the general view of the Bomb compartment appears. Then exit to the 2D panel with the icon to the right of center.

WITH MORE EXPERIENCE YOU CAN DROP LIVE WITHOUT PAUSING.

USING THE ADDITIONAL CAMERA VIEWS

This Lancaster is fitted with 12 views related to the bombing process, 4 are related to the SABS bombsight and are icon operated. 8 views are provided to view the result of your attack and a further 11 for general use “around and within” the Lancaster. Due to the way in which the Icon operated view functions the normal category of views, Cockpit, Outside and Aircraft are not complied with. Cockpit views are specific to the bomb sight. Outside is reserved for the Fixed Cameras at the target and Aircraft contains the general views that you probably will not use.

All views are accessible from the normal views drop down menu. However, be aware there is no need to access bombsight views in “Cockpit” as they operate from icons in the SABS.

The fixed views are intended to enhance the experience by providing a more detailed visual outcome of the attack by showing the target at different angles.



This is a view from my IBCC video showing a partly rolled Tirpitz and the outcome of the 4th bomb dropped in the raid. With training & time you also can achieve a similar result with this package.

It is an advantage if you take the time to setup 6 of the views as keyboard hot keys using Tab, Shift Tab, Shift Q, Shift F7, Shift F8 and Shift 9 in the Controls dialogue under settings in FSX.

View camera 0 (select) ●	Shift + F9	Button 10	
View camera 4 (select)	F12		
View camera 5 (select) ●	Tab		
View camera 6 (select) ●	Shift + Tab		
View camera 7 (select) ●	Shift + Q		
View camera 8 (select) ●	Shift + F7	Button 05	
View camera 9 (select) ●	Shift + F8	Button 06	
View previous (Back)	Ctrl + S		

The aircraft is provided with the appropriate text in the aircraft.cfg file. I hope this document will lead to a better understanding of what simulated high altitude accurate bombing is all about.

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