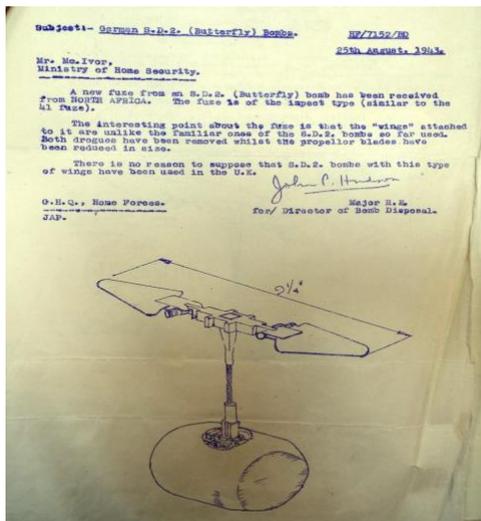


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Issue 2 - 2026

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‘Butterfly’ with a sting

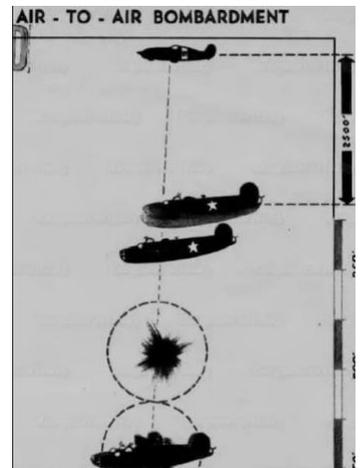
The Luftwaffe’s SD-2, or ‘Butterfly Bomb’, was an effective cluster weapon that could be set to function upon impact, after a delay or if disturbed. This weapon challenged, at a fundamental level, the ingenuity of bomb disposal sections. It was used extensively on the Eastern Front, in North Africa and on the island of Malta. In Britain, it was deployed most notably against seaports on the NE coast, during intruder attacks against aerodromes as well as augmenting other raids. The history of the SD-2 as an ‘air-to-air’ weapon is less well-known; and initial reports of *small bombs* ‘bouncing’ off B-17s, for example, were greeted with incredulity. This adaptable cluster weapon also had a life beyond WW2 . . .

Air-to-Air bombardment

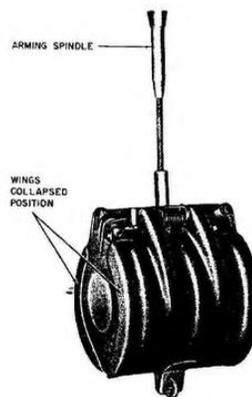
Clusters of SD-2s dropped over urban areas and troop concentrations caused intense disruption. The Nazi's failure to exploit this fully (especially in Europe), yet their willingness to use the SD-2 as a novel air-to-air weapon, seems bizarre. In this regard, research by Wolfgang Fleischer has exposed an interesting historical footnote. His work records that in 1943 '*Hitler expressed his extreme satisfaction . . . when Allied bomber streams were attacked with air-dropped SD-2 bombs.*' Despite the Fuhrer's enthusiasm for the butterfly bomb or 'Schmetterling', results seem to have been less impressive than first thought. The abstract and image below are from a US document, also from 1943, dealing with emergent *tactical and technical trends.*

The Germans have likewise been experimenting with bombs of a similar nature. Reports from two Fortresses returning from a raid on the French coast are to the effect that, when they were proceeding at about 9,000 feet, two FW-190s dived to a position about 150 feet above them, and each released a cluster of bombs. The bombs burst about 20 yards behind the Fortresses, level with them or slightly above, without doing any damage.

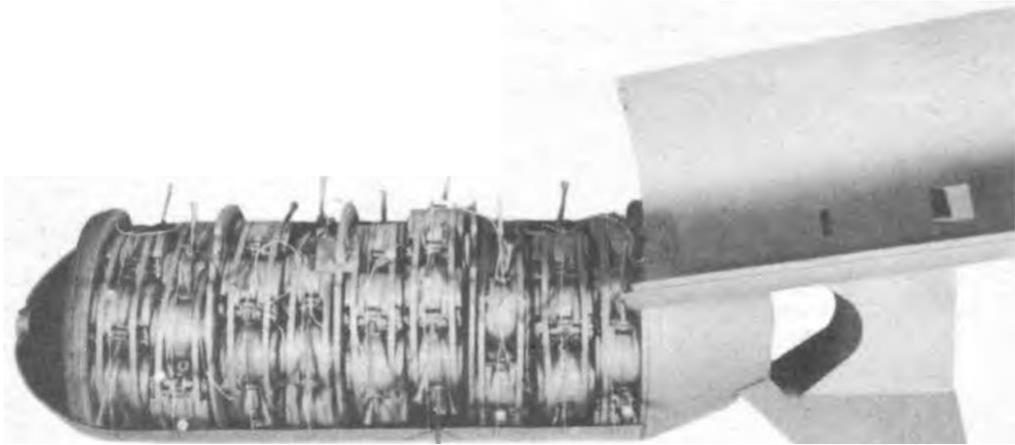
FW-190s have bombed Fortresses from 1,000 feet while 3,000 feet ahead on a left right-angle course. The explosions occurred 600 feet ahead but level with the bombers, and appeared to be from bombs 6 to 10 inches in diameter dropped from wing racks. Altitude information was apparently supplied by Ju-88s flying level with our planes. In another raid, some damage to our planes was sustained by fragments from aerial bombs which appeared to be time bombs, 18 inches long and dropped singly. Information received from North Africa indicates that German and Italian fighters are apparently dropping bombs on our B-24s, and that one may have been destroyed in this manner. Apparently without sighting, 20- to 30-pound bombs are released by the fighters at 1,500 to 3,000 feet above the bombers, after the latter's altitude has been measured by level observation. Fuzes appear to be set for detonation in a vertical line 50 feet apart. One observer reported that a formation of B-17s flying over the French coast at 23,000 feet was attacked by dive-bombers, and the right elevator of one plane was severed by a bomb explosion forcing it down out of control. Other crews have described aerial bombing by FW-190s, which approached at 6 o'clock 4,000 to 5,000 feet above and released one 100-to-500-pound bomb each. Both white-and-gray and red-and-black bursts 30 feet in diameter have been seen. However, no definite pattern to these attacks has so far been indicated.



What happened to the butterfly bomb at the end of WW2? As some will have noticed, the photograph at the top of the introductory page is actually a US-produced 'butterfly' copy. For comparison, the US M83 (shown left) and the SD-2 (shown right) are illustrated below. Both images are taken from American technical publications dated 1950 and 1946, respectively. The post-war use of 'butterfly' is discussed below.



‘Tactical trends’: the catch-up



This image shows a US M16A1 cluster ‘adapter’ packed with 90 M83s. Interestingly, within the accompanying notes is the following comment: *‘It has a third lug for suspension in British planes.’* (source: USNBD - *Bombs and Fuzes, Pyrotechnics* - dated 1945)

So, at the close of WW2, as with many other examples of Nazi innovation, the SD-2 was *appropriated* by the United States. With only minor alterations, it re-emerged as the M83 and filled a notable capability gap during the Korean War (and, reputedly, in Vietnam). In 2000, Timothy Warnock (of the USAF Historical Research Agency) published a chronology of the USAF’s ‘first war’. He cites two references to ‘cluster’ munitions, both from mid-1952, but only one mentions ‘butterfly’ bombs by that name.

The new tactics had fighter-bombers at last light to bomb highway intersections, then at first darkness B-26s dropped butterfly and delayed-action bombs on adjacent roads, and through the night individual light bombers searched the roads for stranded vehicles to attack. As a result, the B-26s destroyed greater numbers of enemy vehicles. (p.44 - as download numbering)

With the gift of hindsight, it now seems inconceivable the Luftwaffe had not exploited this tactic a decade earlier. That failure, of course, was not lost on others during future conflicts.

ASD 2026