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# Safety Of Demolition Bombs

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*Have you often wondered how safe the bombs really were? Many will recall seeing bombs dropped off the end of a bomb loader, or even a whole load being dropped from the aircraft bomb racks with a loud plunk, when a quick change in bomb load was ordered. That sound stays with ones remembrances of the war, certainly in your editor's mind. The ordnance guys would say it's perfectly safe, but sometimes with a slight doubt in their voice as if to say they were not perfectly sure either. Sure, we wanted to believe wholeheartedly that the bombs were safe, but there were always stories of aircraft suddenly blowing up while parked in a hardstand, either in our own group or in another. If the truth were known, many or all of us felt fear whenever the thudding sound of dropping bombs reached our ears. Maybe the accompanying story will ease that fear forever. Ah! But not quite, you say. . .*

Considerable doubt has been expressed many times regarding the safety of demolition bombs when exposed to fire or when struck by fragments. In order to eliminate this doubt, the following material concerning demolition bombs has been compiled.

The photograph is of a 100 lb, Amatol filled demolition bomb which was removed from a flak damaged bomber at one of the bases of the Fifteenth Air Force. A fragment had ripped into the case of this bomb, tearing the steel case open to form a rectangular opening approximately 12 x 4 inches, and gouging out the explosive filler for a depth of approximately 3 inches. This example does not prove that demolition bombs can not be detonated when struck with flak, but it does give some factual evidence as to the terrific punishment that a bomb can safely take.

An examination of the dud bombs at Ploesti revealed a large number of RDX Composition B filled bombs. The reasons for these bomb failures have been discussed in a previous article, however, the fact that RDX Composition B bombs are in Ploesti today is highly important. This should prove to all personnel that in spite of the weird and fantastic stories which are circulated concerning the sensitivity of new explosives such as RDX composition B, new explosives must be safe before they are accepted for use by the ordnance department. The fact that bombs can have their cases ripped open by steel fragments without exploding or that they can be dropped from heights exceeding 20,000 feet and then may fail to detonate unless the fuse itself functions, should prove to all the safeness of the modern American detonation bomb.

In order to get factual evidence of what happens when a demo-

lition bomb is exposed to a gasoline fire, (as would occur if a bomb loaded airplane crashed and began to burn), the Navy bureau of ordnance ran a series of extensive tests. As a result of these tests the following conclusions may be drawn.

No definite time interval can be predicted for the detonation of a 100 lb bomb fused with the AN-M103 Nose Fuse which is exposed to fire. However, the minimum detonation time of the test is outside the safety time interval of two and one-quarter (2-1/4) minutes which was the minimum time as determined in a report issued by the Chief of Naval operations.

The time necessary for the detonation of the bomb is independent of the fuse used. The AN-M103 nose fuse was placed in an empty 100 lb GP bomb requiring approximately fifteen (15) minutes before detonation when exposed to fire.

It might also be presumed that a larger bomb would not detonate as quickly as a small bomb under similar conditions since the larger bomb would require more heat to raise its temperature to the point where it will detonate.

The intensity of the fire and its proximity to the bomb are two extremely important elements in determining the detonation time of the bomb. Rescue work should therefore be governed not only by the minimum time interval of two and one-quarter (2-1/4) minutes but also by common-sense analysis of the circumstances surrounding any particular crash. It is vitally important to remember that any time limit should include the time for both rescued and rescuing party to get a safe distance from the airplane before the detonation.

