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## B-52'S PROTECTED BY 'BLACK BOXES'

Radar-Jamming Is a Primary  
Function of the Devices  
NYTimes

By RICHARD WITKIN

An Air Force spokesman said yesterday that B-52's had escaped being shot down in Vietnam until Wednesday largely because of the effectiveness of "electronic countermeasures."

The North Vietnamese have reported numerous times before that they have downed one of the huge bombers. But the Air Force insisted the record had been clear until yesterday's loss.

The spokesman, in giving credit to so-called ECM equipment, drew attention both to devices aboard the B-52's themselves and to so-called "wild weasel" missions flown by F-105 fighters armed with Shrike missiles.

He said also that the B-52's were aided by the relatively high altitude at which they conducted their raids.

As its name suggests, the basic purpose of ECM equipment is to neutralize the effectiveness of enemy radar and associated electronic devices. These may be ground-based radar being used to track incoming planes or radar carried by a missile fired from the ground or from a fighter plane and designed to guide that missile to its target.

### World War II Method

E.C.M. equipment dates backs at least to World War II, when gunners aboard bombers threw strips of metal foil out the waist windows. The enemy radar bounced off the descending foil as well as the bombers.

Aboard a B-52, the role of E.C.M. equipment is so important that one of the six crewmen devotes himself to it almost exclusively. His job is to manipulate "black boxes" to detect where enemy radar beams are coming from, and to transmit countersignals at the right frequency. The signals either jam the enemy's reception altogether, creating a meaningless blob on a radarscope, or distorting the radar return so that false information is conveyed.

Similar action can be taken to neutralize the radar aboard missiles headed in the direction of the big bomber.

These ECM tactics have been supplemented, notably since the step-up of bombing last spring, by the work of the "wild weasel" F-105's.

### Move Ahead of B-52's

These jets, dispatched ahead of the B-52's, use ECM equipment to ferret out the location and frequency of enemy radar beam and then use missiles to knock out the enemy radar installations.

The special-purpose missile used, the Shrike, homes in on enemy radar beams, without itself having to transmit any radar signal.

The Air Force would not reveal altitudes at which the B-52's operate, except to say they were "above 30,000 feet."

Other reliable sources said the bomber operated in the range of 40,000 to 45,000 feet. And the Air Force spokesman said the enemy surface-to-air missiles being used in Vietnam could "effectively reach 50,000 feet."

He said, too, that it was not known whether the B-52 had been downed by a SAM, by a conventional anti-aircraft shell, or by an enemy fighter.