

Hit 6 – No. 1 Secondary Director

From the BuShips damage report:

20. The 10-pound STS splinter shield was hit at frame 74 about two feet above the house top deck. The projectile penetrated the 60-pound STS foundation of No.1 five-inch secondary battery director, severed the center column, passed out through the port side of the director foundation and the port splinter shield at frame 75 without detonating. A small electrical fire started and ignited some life jackets. It is estimated that this was an 8-inch AP projectile.³⁷

South Dakota's time line in her action report describes this hit as follows:

[From "Chronological Log of the Battle" section of Action Report]

0102 . . . Sky Control out. S.B. director 1 hit and out of commission³⁸

South Dakota's action report describes the damage as follows;

1 18" hole in ¼" STS splinter shield two feet above deck level at frame 73 starboard.
1 36" by 48" hole in ¼" STS splinter shield at frame 74 port 3' above deck level.
1 shell hole 10" by 16" through 1½" STS circular foundation plate of #1 5" director at frame 73 starboard, 6" above bottom level.
1 12" shell hole through 1½" STS circular base of #1 5" director at frame 73 port, 6" above deck level.
Center column structure and bounding angle of #1 5" director completely demolished.³⁹

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Secondary Battery Director #1 was struck by an 8" projectile which entered foundation about one foot from deck, starboard side, passing through center column and out port side. All cables were out. Roller path believed to be completely out of alignment.⁴⁰

³⁷ BuShips War Damage Report # 57, page 6

³⁸ USS *South Dakota* Action Report, page 8

³⁹ USS *South Dakota* Action Report, Enclosure D, page 6

⁴⁰ USS *South Dakota* Action Report, Enclosure D, page 14

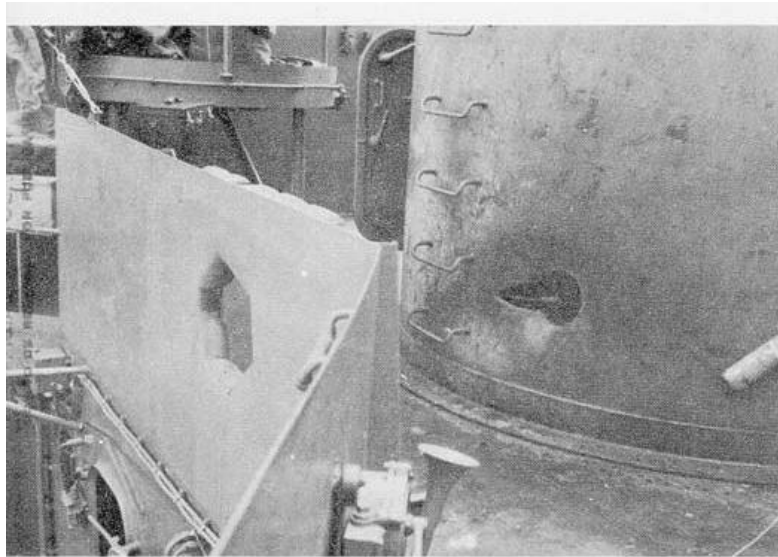


Photo 6: Hit No. 6. Projectile holes through starboard splinter shield and into 5-inch secondary battery director foundation.

Figure 18 – Hit 6 – Entry Holes

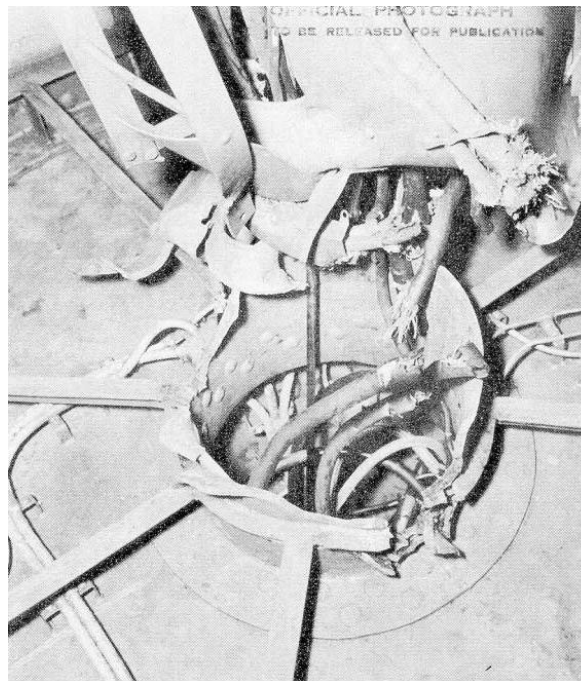


Photo 7: Center column of 5-inch secondary battery director destroyed by hit No. 6.

Figure 19 – Hit 6 – Damage to Secondary Battery Director

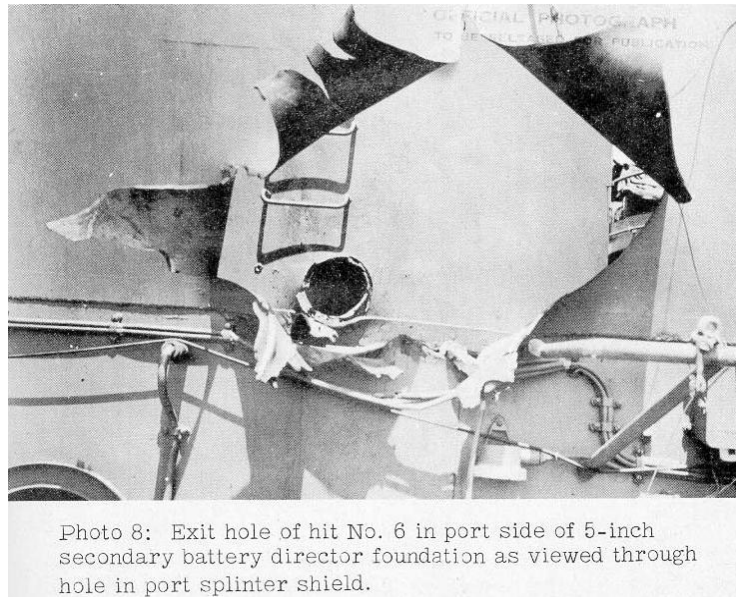


Figure 20 – Hit 6 – Exit Hole

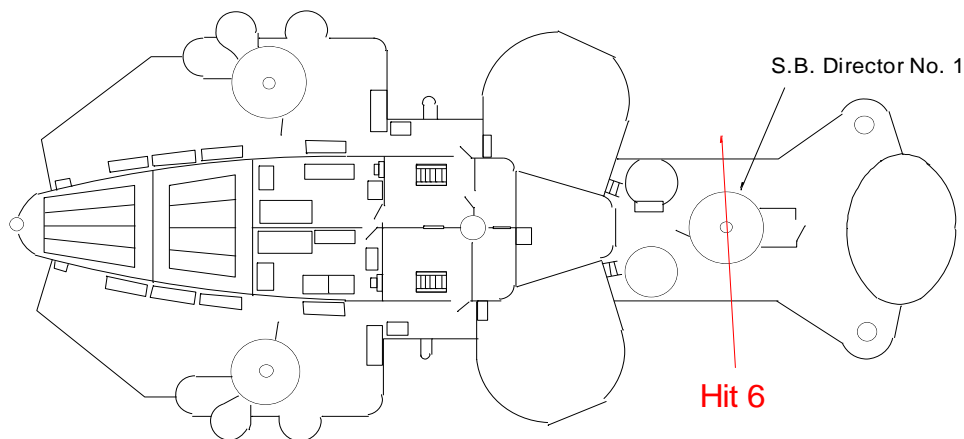


Figure 21 – Hit 6 – Path of Shell

Analysis of impact

There is not any inconsistency with this estimate of the shell being an 8-inch AP projectile. The reported 10-inch and 12-inch holes through the circular foundation eliminate any possibility this was from a larger caliber. The hit is documented in *South Dakota's* action report as occurring at 0102 and this is also the time when *Takao* opened fire.⁴¹

⁴¹ USS *South Dakota* Action Report, page 8 and *Takao* Brief Action Report JT1

Hit 7 – 1.1- inch Clipping Room

From the BuShips damage report:

21. The 30-pound STS bulkhead of the 1.1-inch clipping room was pierced by a projectile that passed through and out about 6 feet above the housetop at frame 78-1/2 and detonated over No. 4 1.1-inch quadruple mount. Three fragments penetrated the 15-pound STS splinter shield around the mount exploding the ready service ammunition on the shield and six fragments pierced the deck within the working circle of the mount. The mount itself was badly damaged by fragments. Within the 1.1-inch clipping room the centerline beam was severed, the overhead blown open, ventilation ducts crushed and insulation badly damaged. Several 1.1-inch clips exploded and ignited life jackets of dead and wounded men. The sprinkling system was cut in three places and 75 1.1-inch clips were destroyed. From the size of the hole it is estimated that this hit was an 8-inch AP projectile.⁴²

South Dakota's time line in her action report recorded this as her first hit as follows:

[From "Chronological Log of the Battle" section of Action Report]

0049 First hits sustained. (?) [sic] Probably 1.1" clipping room in foremast structure.
Increased speed to 27 knots.
WASHINGTON asked "Are you alright", replied "Everything seems okay."⁴³

South Dakota's action report describes the damage as follows:

[From list of Fire damage]

1. Passage B-319T, fire reported to Repair II as being in 5" handling room. Passage was full of smoke with a red glow. Investigation revealed two burning life jackets ignited apparently by blast through ammunition hoist from clipping room B-0502M, which had an 8" shell pass through it with the resulting explosion of 1.1" clips and fire. Passage was sprayed with fog nozzle. The Jackets were extinguished with CO2. This fire was small but potentially the most dangerous we had as it entered into the armored spaces.

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9. Clipping room B-0502M. Repair party 1. Fire was out when repair party arrived. After shell passed through this clipping room, several 1.1" clips exploded. Powder was burning in forward port corner and life jackets of deceased and wounded men burning. Jacosevich, Stephen, S2c entered the clipping room with CO2 and extinguished the fire.⁴⁴

⁴² BuShips War Damage Report # 57, page 6

⁴³ USS *South Dakota* Action Report, page 7

⁴⁴ USS *South Dakota* Action Report, page 14

[From list of damage in Enclosure D]

HOUSETOP LEVEL

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10" hole in STS structural bulkhead in 1.1" magazine and clipping room 6' above deck level at frame 78 starboard.

18"-24" shell hole in STS structural bulkhead in 1.1" magazine and clipping room 6' above deck level, frame 78 port.

1-6", 3-7" and 1-4" shrapnel holes through 3/8" STS splinter shield around 1.1" quad No. 4, frame 78 port.

6 shrapnel holes in steel deck plating within circular area of 1.1" quad No. 4. Average size of holes 4".

Battle telephone box for quad 4 demolished.

1.1" CLIPPING ROOM, B-0502M

3' section of longitudinal centerline deck overhead beam 6" by 12" severed and demolished, frame 78-79.

All sheathing and insulation demolished.

5 sections of magazine stowage racks cut, distorted, and unserviceable.

3 sections of 3/4" pipe sprinkling system severed and demolished.

Bulkhead stiffeners and beam knee severed and demolished.

Bounding angle and deck overhead blown open and all rivets sheared.

1 1/2" shrapnel hole in flame tight access door.

Vent ducts supply for B-0601L crushed and vent ducts crushed and broken frame 81 port B-103L.

1 2' square section of insulation sheathing from longitudinal bulkhead at frame 82 port destroyed.⁴⁵

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GUNNERY DAMAGE

3. Machine Gun Battery

(c) Clipping room 3 and 4

One and possibly two projectiles passed through forward end of clipping room, causing extensive structural damage. Sprinkling lines were out and 75 clips destroyed.⁴⁶

⁴⁵ USS *South Dakota* Action Report, Enclosure D, page 6

⁴⁶ USS *South Dakota* Action Report, Enclosure D, page 15

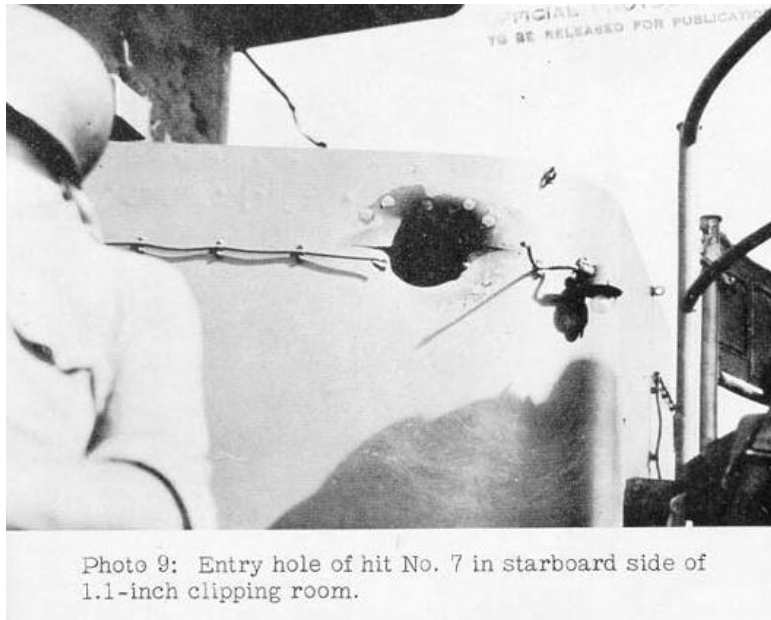


Figure 22 – Hit 7 – Entry Hole

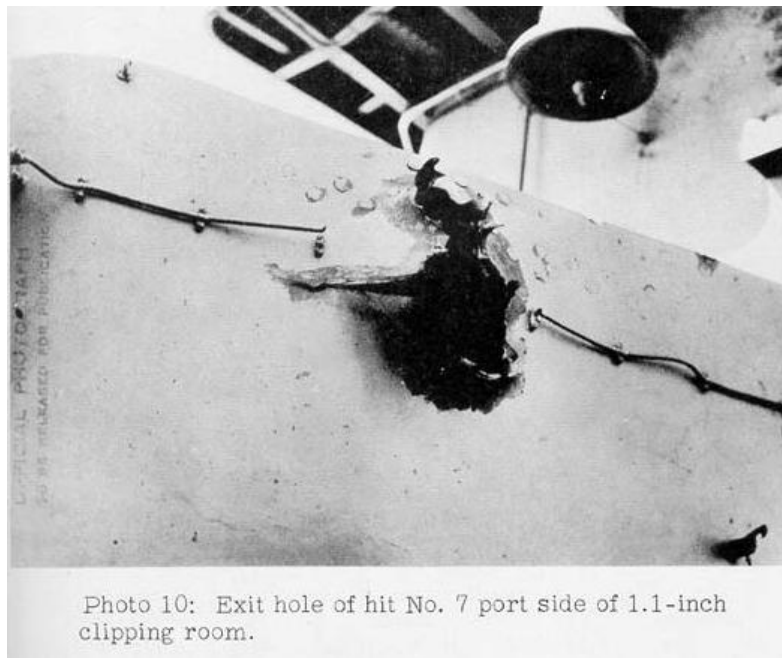


Figure 23 – Hit 7 – Exit Hole



Figure 24 – Hit 7 – Shrapnel Damage near ship's bell

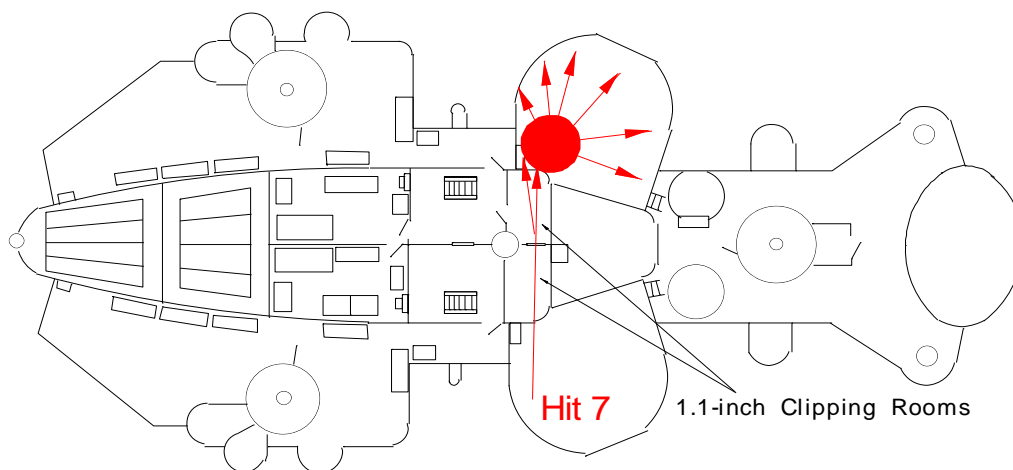


Figure 25 – Hit 7 – Path of Shell and Splinters

Analysis of impact

This hit is documented as being the first one received by *South Dakota* and occurred at 0049. At this time, the heavy cruisers are 11,000 yards off *South Dakota*'s bow heading west and have not yet even spotted *South Dakota*. This makes BuShips' estimate of an 8-inch shell impossible. It also could not have come from any of the destroyers as they were equipped with only nose-fuzed projectiles which would have exploded on impact, which this shell did not, indicating that it was a base-fuzed projectile. The light cruisers *Nagara* and *Sendai* were engaged with *South Dakota* at this time and this hit is most likely a 5.5-inch capped Common projectile or a base-fuzed 5.5 inch Type 4 Common projectile from one of them. The shell detonated as it exited the port side, blowing the larger hole in the second bulkhead. The shell trajectory being almost straight through the compartment matches *Sendai*'s position at 0049 which was abeam of *South Dakota* while *Nagara* was slightly aft of her beam.

Hit 8 – Mk. 45 1.1-inch Director

From the BuShips damage report:

22. This projectile, probably 8-inch, hit the Mk. 45 1.1-inch director on the third level above the house top at frame 79. It ripped through the director apparently without exploding.⁴⁷

South Dakota's action report describes the damage as follows:

Mark 45 1.1" director demolished.⁴⁸

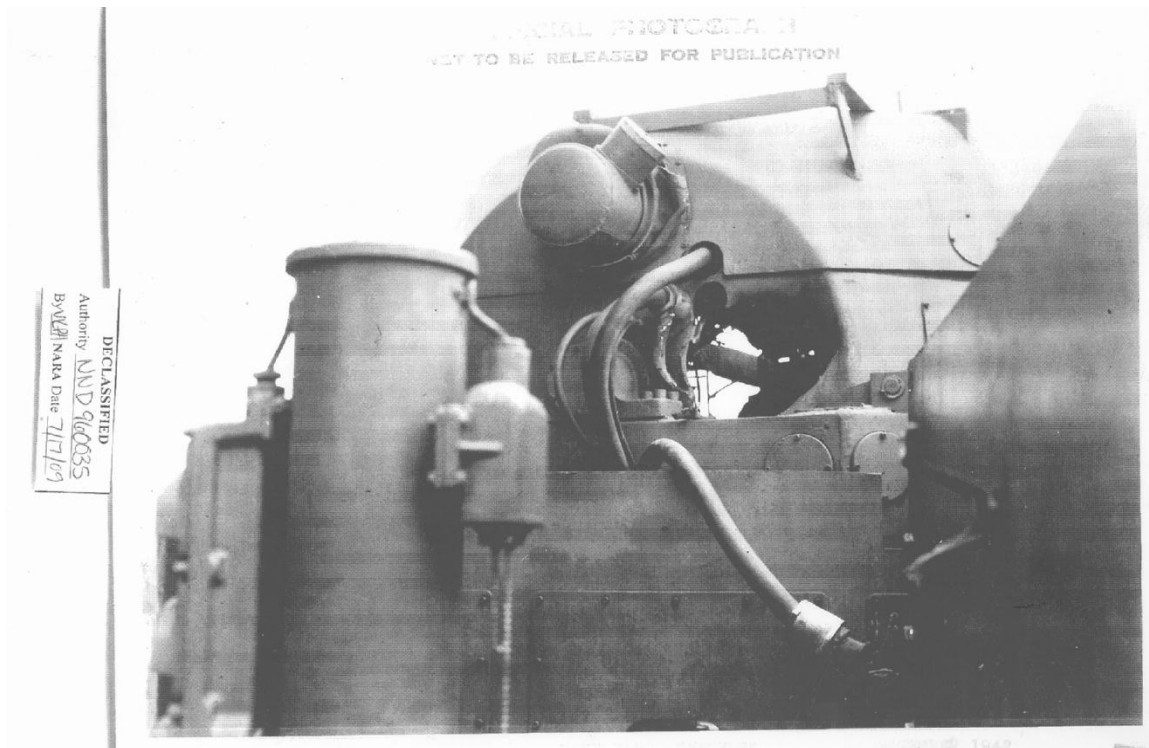


Figure 26 – Hit 8 – Mk. 45 1.1-inch Director

⁴⁷ BuShips War Damage Report # 57, page 6

⁴⁸ USS *South Dakota* Action Report, Enclosure D, page 8. This particular Director must have been a source of annoyance to the ship's crew. In the "Gunnery Damage" section on page 15 of Enclosure D, there is the following entry: "Mark 45 director received direct hit through center of director. (Three cheers)"



Figure 27 – Hit 8 – Damage to Mk. 45 Director

Analysis of impact

A 5.5-inch base-fuzed projectile fired by the light cruisers may be a better estimate for this hit. An 8-inch shell should have caused much more damage to the director due to the nose coverings flattening out on impact. This hit may have occurred at a similar time as [Hit 7](#), which struck just below this level and which would have occurred before the Japanese heavy cruisers opened fire. The dimensions of the damage for Hit 8 are not recorded, so it is difficult to make an accurate estimate for this hit.

Hit 9 – Air Defense Forward

From the BuShips damage report:

23. The wind and spray shield around air defense forward at frame 79 had one hole on the starboard side and two holes on the port side. It is possible that the two holes on the port side were caused by different projectiles. However, it appears more likely that the cap head of an 8-inch AP projectile broke off upon hitting the starboard side of the windshield and made the second hole in the port side of the windshield. Apparently the projectile or projectiles did not detonate.⁴⁹

From *South Dakota's* action report:

Forward centerline section of wind and spray shield around search radar demolished. 3-17” holes.⁵⁰



Figure 28 – Hit 9 – Sky Lookout Station

⁴⁹ BuShips War Damage Report # 57, page 6

⁵⁰ USS *South Dakota* Action Report, Enclosure D, page 8

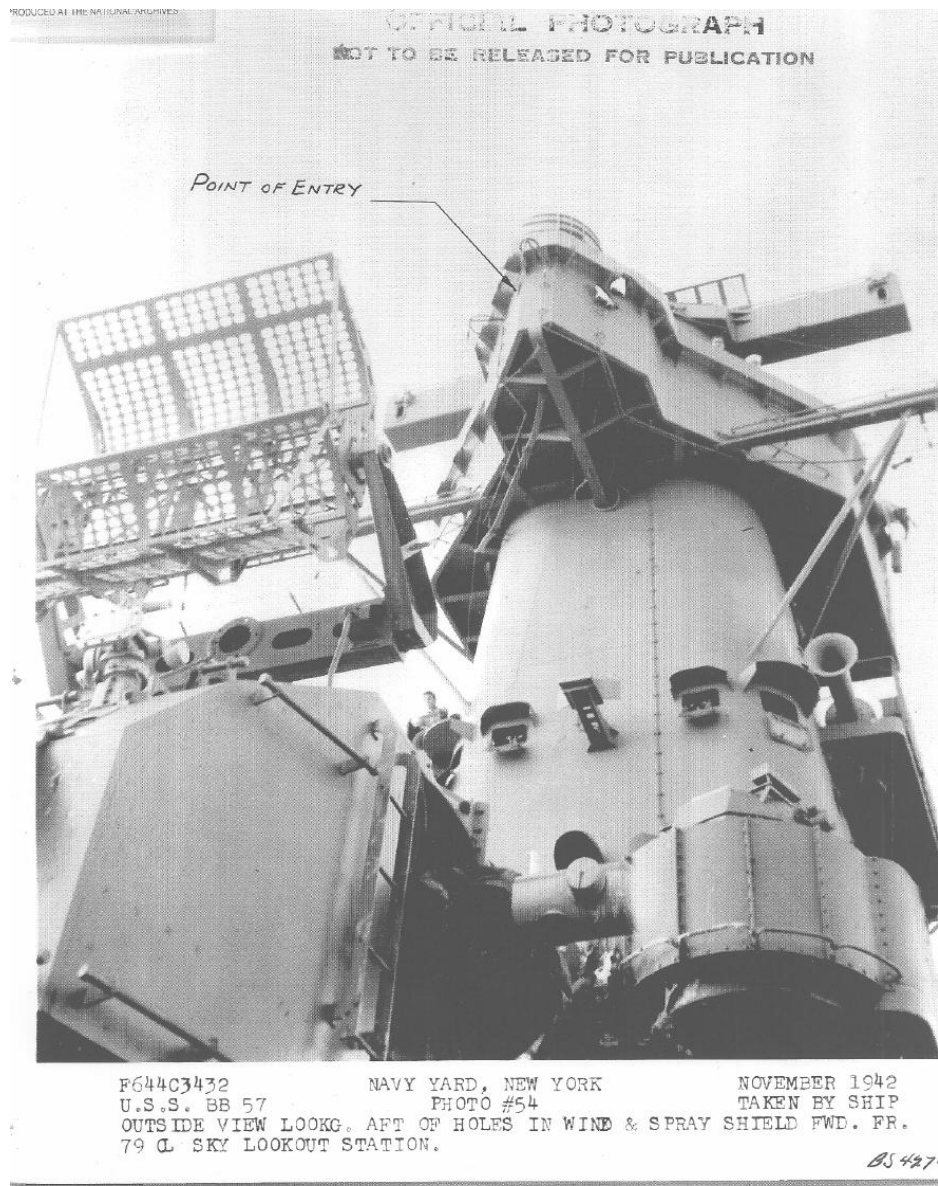


Figure 29 – Hit 9 – Entry Hole

In the left foreground of Figure 29 is the radar antenna atop Secondary Battery Director Number 1. This is not the search radar mentioned above as being damaged by Hit 9. This search radar antenna is not visible in the above two photographs.

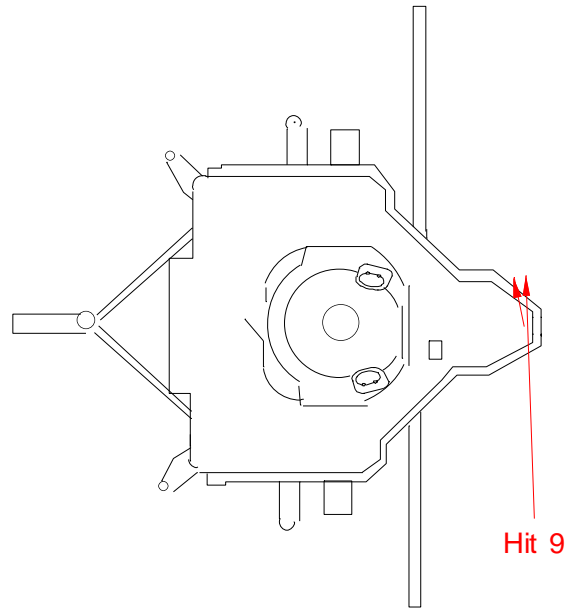


Figure 30 – Hit 9 – Path of Shell

Analysis of impact

This damage was documented in *South Dakota*'s report as occurring around 0102, so BuShips' estimate of an 8-inch AP projectile is possible. This is probably the best estimate due to the 17-inch entry and exit holes through the 0.25-inch STS plate. The cap head flying off estimate by BuShips also makes sense and accounts for the second exit hole. *Takao* opened fire at about this time, so she may be responsible for this damage.⁵¹

⁵¹ *Takao* Brief Action Report JT1