

Third Fleet Operations off Japan, July-August 1945:
Fast Battleship Bombardments of Honshu, Hokkaido

- 14 July: SOUTH DAKOTA, INDIANA, MASSACHUSETTS bombard Kamaishi, Honshu.
15 July: IOWA, MISSOURI, WISCONSIN bombard Muroran, Hokkaido.
18 July: NORTH CAROLINA, ALABAMA, IOWA, MISSOURI, WISCONSIN bombard Hitachi, Honshu. British fast BB KING GEORGE V attacks nearby target.
29-30 July: SOUTH DAKOTA, INDIANA, MASSACHUSETTS night bombardment of Hamamatsu, Honshu.
9 August: SOUTH DAKOTA, INDIANA, MASSACHUSETTS bombard Kamaishi.

SOUTH DAKOTA ACTION REPORT (Kamaishi, 14 July):

Fire discipline was excellent throughout. The methods used by CIC and Main Plot, employing both fire control and search radars for determining the ship's position, proved extremely satisfactory; little difficulty had been expected in view of the rugged and distinctive nature of the terrain. Gunnery communications, with the exception of the radio communications with the air spotters, were excellent.

Kamaishi proved to be an excellent bombardment target from the standpoint of radar tracking. Tracking points which appeared to be good targets were predesignated, similar to the procedure employed in SOUTH DAKOTA's previous bombardments; the ship's position was accurately fixed at all times. At close ranges the ship's track in CIC was maintained with the VF PPI almost entirely. For the early stages of the approach a plexiglass overlay with 10° bearing lines and concentric range circles was used with some success. Once the range had closed to 25 miles it was of little use, and normal tracking proved to be speedier and much more accurate. It is believed the overlay would work well at short ranges where radar is confronted with a low unbroken coast line and where sharp, distinct echoes cannot be found.

Land was first picked up on the SK at 0214...and identified as Rakko Take (4,800 feet) bearing 343°, 77 miles; no difficulty was experienced thereafter, and land contacts were made at expected ranges and times.

Director control officers and radar operators should make a complete analysis of radar tracking points from all available photos and charts and should sketch appearance of these points as they will appear on fire control radar scopes from several different bearings and ranges. It would be of material value if the OTC were to lay down the bombardment approach track in the operation order and endeavor to follow that track as closely as possible. This would facilitate the analysis and identification of tracking points by radar.

CTU 34.8.2 (COMBATDIV 7) ACTION REPORT (Muroran, 15 July):

On 15 July 1945 Commander Battleship Division 7 conducted the day bombardment of industrial targets in Muroran, Hokkaido. The timing of this bombardment was an important factor because as the bombardment progressed weather and visibility closed in and upon completion the ceiling was 1,000 feet. Spotters were hampered throughout by the reduced visibility, the low ceiling, and flames and smoke in the target area. Under these circumstances the successful control of fire was enhanced by the expeditious completion of the bombardment.

Reports of spotters immediately upon completion of the bombardment disclosed the following: In the Nihon Plant a terrific explosion, followed by fires to 300 feet in large shops, was observed in addition to considerable damage along the waterfront. In the Wanishi Iron Works, of 8 buildings with stacks observed from ships on arrival, 4 were seen to be demolished. The entire area was covered by fires, with damage to 4 blast furnaces, a storehouse, and many other buildings. Heavy smoke was also observed from what appeared to be a chemical plant. The coal liquefaction plant was heavily hit and gas tanks and all coke furnaces but one were damaged.

CTU 34.1.2 6 COMBATDIV 6) ACTION REPORT (Hitachi, 18 July):

This (bombardment of HITACHI-MITO Area, HONSHU, 17-18 July) is the first experience on a large scale, so far as is known, with night bombardment of enemy industrial targets. Conditions for accurate gunnery were about as difficult as might ever be expected. There was not complete control of the air, it was raining, and visibility was about 2 miles. It was impossible to spot, so the bombardment was completely blind and any hits obtained were entirely dependent upon an accurate fixing of the ship's position. The range was extreme, so that even had the fix been perfect the errors of ordnance and gunnery which make spotting necessary might well have caused all projectiles to miss. The speed had to be high and the duration of the bombardment short with consequent high rate of fire. None of the elements of successful destructive bombardment was present--slow speed, close range, deliberate fire, accurate fixing of the ship's position, and the spotting of each salvo. From the standpoint of maintaining pressure on the enemy it was a success. In terms of gun wear and hits per round fired it was expensive. Material damage to the enemy, as judged from the photo interpretation report and as expected, was small. In fact the damage was considerably greater than might be expected under the conditions.

Five rounds per gun--5 salvos--were fired at each of 4 targets. None of these targets was hit. Although, in this case, it was necessary to take these targets under fire, it appears that where it is not necessary, such a small number of salvos is unproductive of material damage in a night bombardment and these rounds would be more effective if added to other targets.

It is felt that the results of this bombardment were encouraging in forecasting substantial success for a night bombardment where spotting is possible. The destruction should be directly proportional to the accuracy of the spotting.

MASSACHUSETTS ACTION REPORT:

When salvos are being directed in a large area blanketed by smoke, with observations impossible, it is believed that better control of the salvos in hitting definite targets can be gained by shifting the point of aim for one or two salvos to a target that is visible to the spotter and, having checked the hitting range, returning to the blanketed area.

MISSOURI ACTION REPORT:

The bombardment of HITACHI, HONSHU, 17/18 July apparently was another

very successful bombardment. The Japanese were taken completely by surprise. The bombardment problem was a most difficult one. The coast was relatively unknown and the charts varied in presentation of the navigational points and soundings. The coast was also quite smooth, and there were practically no distinctive tracking points throughout the approach and bombardment run.

Main reliance for obtaining a fix was placed on DRT position and soundings, plus occasional radar cuts on peaks or small points along the coastline. The position was checked between ships using the interplotting-room frequency.* This was the first time this frequency was used and it proved to be of great assistance to this ship. The coordination between the navigator, Combat and Plot was satisfactory and at all times Plot had the latest and best navigational position from whence to shoot. To make the problem more difficult, the visibility was very limited and a steady drizzle of rain was present during the approach and firing. At no time was the fall of shot or land visible to the ship.

In order to check the firing data the following procedure was used: The center of the target on the second phase was about 1,000 yards from the water's edge. The forward Mark 8 radar (Spot I) was placed in automatic to track the target following the rangekeeper setup** just before opening fire on this target. The range line indicated a fall of shot 1,000 yards in from the beach on the first salvo. A down spot of 500 yards was placed on the second salvo and the range line indicated a fall of shot 500 yards from the beach. Another down 500 was placed on the third salvo and three splashes were observed on the Mark 8 scope at all stations indicating the accuracy of the original range to the target. This procedure was carried out again on the eighth and ninth salvos with the same results. It is believed that this is a good procedure to follow under similar bombardment circumstances on targets near the beach.

MASSACHUSETTS ACTION REPORT:

The success or failure of a bombardment depends entirely on the air spotter's observations. Therefore, every consideration should be given to the factors which affect the ability of the spotter to make accurate observations. First, he must be thoroughly familiar with the area, which can be brought about only through the study of low oblique and colored photographs in addition to high verticals. Second, he must be assigned a type plane or position in a plane which permits observations with ease. The rear seat of the Helldiver and Avenger is not suitable for this assignment. Third, due consideration must be given to the adverse effect of smoke in obscuring an area.

It is believed that carrier fighter pilots, after proper briefing and instructing from the firing ship, are capable of performing all the duties of a spotter, and that the slight advantage of having VOS squadrons on battleships no longer justifies the acceptance of the numerous disadvantages.

*Voice radio net connecting ships' plotting rooms.

**According to the solution generated by the rangekeeper.

Photographs of the coast line taken from seaward, at masthead height on the probable approach bearings, distributed for study, would greatly assist the problem of identifying landmarks for fixing the ship's position.

Every effort should be made to obtain low altitude photographs of a target area after the bombardment, with copies forwarded to the firing ships for study.

The use of smoke for deception and concealment by the Japanese is a definite possibility, and may be encountered in future bombardments. Spotters must be on the alert to detect this and must avoid making false reports on the extent of damage based on the quantity of smoke or fires observed.

FROM: CTU 34.8.2		DATE: 15 JULY 1945		
ACTION	TO: TU 34.8.2	INFORMATION	TO: COMGRD FLEET CTF 38 CTG 38.4 BON HOISE RICHARD	
			CLASSIFICATION	
			PLAIN	
			*RESTRICTED	
			*CONFIDENTIAL	
			*SECRET	
			*TOP SECRET	XXX
Special Instructions * If not encrypted by originator do not transmit by radio without thorough paraphrasing and encrypting.				RELEASE

151046

PRESENT INTENTION TO MAKE FOLLOWING MODIFICATIONS TO MY OP-ORDER 11-45 FOR 17 JULY BOMBARDMENT BASED ON EXPERIENCE OF 15 JULY X DISPOSITION 8BC6 ALL STATION

ASSIGNMENTS SAME AS 8BC1 EXCEPT ATLANTA AND DAYTON ASSIGNED STATIONS 5.5070 AND 5.5290 RESPECTIVELY X BOMBARDMENT AXIS RECIPROCAL OF GENERAL BEARING LINE X

SCREEN ORIENT TO GENERAL BEARING LINE X TARGET ASSIGNMENTS PARA 5 PAREN BAKER PAREN ANNEX BAKER MODIFIED AS FOLLOWS X PHASE ONE 5 ROUNDS PER GUN WISCONSIN

MISSOURI TARGET 2099 CMA IOWA NORTH CAROLINA TARGET 812 CMA ALABAMA TARGET P582 X PHASE TWO UNCHANGED EXCEPT ALSO ALLOWANCE TARGET 1476 INCREASED TO 5 ROUNDS PER

GUN X PHASE THREE EIGHT ROUNDS PER GUN WISCONSIN MISSOURI IOWA TARGET P458 CMA NORTH CAROLINA ALABAMA TARGET P459 CMA ATLANTA DAYTON INTERCHANGE ASSIGNMENTS X

WISCONSIN BE PREPARED TO COVER TARGET 1468 X ALL PHASES SERVICE CHARGES X COUNTER BATTERY RESPONSIBILITY MISSOURI SECTOR BETWEEN COURSE AND GENERAL BEARING LINE

ALABAMA SECTOR BETWEEN GENERAL BEARING LINE AND RECIPROCAL OF COURSE XXX

Authenticated *11 G. K. 2092*
I. G. SEEGER, Lt., USNR.
(Signature, Name & Rank)

U.S. STRATEGIC BOMBARDMENT SURVEY: SHIPS' BOMBARDMENT OF JAPAN, 1945.
REPORT OF SHIPS' BOMBARDMENT SURVEY PARTY:

Surface bombardments of Japan proper took place shortly before the Japanese surrender. It is not probable that the economic consequences ...were felt on the fighting fronts before the war ended, but there is evidence...that the attacks, in combination with other pressures..., had considerable influence in lowering the will to continue the war of the local populations which were subjected to gunfire from heavy ships.

Had the war continued, it is estimated that about 22 per cent of total Japanese pig iron production...would have been lost because of the effects of three attacks against plants of the iron and steel industry Other surface bombardments appear to have had little effect on the Japanese economic structure...except to the extent that they contributed to increased...absenteeism and reduced...productivity....

This report demonstrates the vital role which intelligence information plays in shore bombardment, and the necessity for...an organization which, among other functions, is capable of identifying key industries in the enemy's...economy, designating the most vulnerable points of attack, providing detailed information on targets selected for assault, and assessing results.

The Kamaishi Works of Japan Iron Company, ... as a result of two bombardments, incurred very considerable physical damage, and a loss of production equivalent to from eight to twelve months output. Yet no major building...was destroyed because the greatest concentration of hits did not exceed 37 per 200 yard square. In the bombardments generally the density of hits was much lower, possibly because of the technique of aiming at different buildings scattered throughout a target area, or intentionally spreading the fall of shot to cover an entire target, under the assumption that both accuracy of firing and effectiveness of ammunition would be greater than they actually proved to be. Data on the effectiveness of projectiles...indicate that about 42 direct hits by 16-inch high-capacity projectiles would be required to cause 50 per cent structural damage to a heavy steel-framed building approximately 600 feet long and 150 feet wide. ...doctrine and techniques for attacking industrial targets with ships can be considerably improved by further study based on reappraisals of weapon effectiveness and accuracy of firing under varying conditions. It also appears that, although long and medium range attacks by both day and night can inflict considerable damage, destruction of...heavy industry by such attacks is not to be expected unless either a very large amount of ammunition is allotted to the task or much greater accuracy is obtained. Experience has shown that it is possible to raise the level of accuracy at the expense of increasing the hazard to...ships by using shorter ranges and prolonging firing periods. The extent to which these measures can be adopted will therefore usually be governed by the broad strategic aspects of the war as well as the immediate tactical situation.

The Hamamatsu and Hitachi areas were subjected to high explosive and incendiary bombing as well as...surface bombardment, and study...thus permitted a certain...comparison of the relative effectiveness of these forms of attack. Because of the highly combustible nature of the majority of...targets, fires initiated by incendiary bombing clearly

caused the greatest...damage. Although a considerable number of fires were associated with high explosive bombing and gunfire, there were many instances in which detonation...definitely did not initiate fires directly, even when occurring in structures of light wood and paper construction. It therefore seems probable that, in general, fires initiated by...explosives were caused by overturning of cooking fires, striking of volatile and inflammable liquids or gases, short circuits, etc. It appears that development of major caliber incendiary ammunition is warranted, and is a necessity if ships are to be used in the future for large-scale bombardment of industrial plants or urban areas.

It is concluded that...explosive projectiles or bombs are most efficiently used when directed against targets which are highly resistant to burning. Against heavy steel-framed buildings, individual 2,000-pound bombs seem to be approximately eight times as effective as 16-inch high capacity projectiles in producing damage when mean areas of effectiveness are compared. Serious fragment damage from bombs seems to be confined largely to the immediate vicinity of each hit, while the heavy fragments from projectiles proved capable of damaging machines at considerable distances. Both missiles showed themselves...capable of damaging the heaviest...industrial structures. Choice of weapon against such targets would seem to be governed largely by deciding whether, in specific circumstances, sufficient hits can most easily be delivered by ships or planes, and weighing the relative risk involved. Since reports of gunnery exercises indicate that at least 90 per cent of hits on individual large buildings is to be expected at short ranges, as compared to an average of something less than one per cent in these bombardments, it is apparent that this type of attack can be devastating with great economy of ammunition and effort when circumstances permit its use. It is...evident that, considering the enemy economy as a whole, only a small percentage of important targets will usually be within reach of attack by ships.

The damaging effect of individual eight-inch and smaller projectiles appears...too small to make their use profitable against...heavy industry unless a very great number of hits...can be obtained, or unless harassment and not destruction is the result desired. Incendiary ammunition in the smaller calibers, however, should produce results comparable to those obtained by incendiary bombing, if used against...inflammable targets.

GENERAL SUMMARY

Units of the Third Fleet attacked selected targets with gunfire in the areas of Kamaishi, Hamamatsu, Hitachi, Muroran, Shimizu, Shionomisa-ki and Nojima Saki. The primary task of the first four...attacks was bombardment, and the principal components of task units which executed them were, in general, fast battleships and heavy cruisers. Attacks on [the latter three] were secondary tasks carried out during antishipping sweeps...by light cruisers and destroyers....

The two bombardments of Kamaishi caused damage which, according to Japanese officials, would have required repairs costing about 65 per cent of the total value of physical assets to restore the plant....the equivalent of from eight to 12 months' production...would have been lost, because of the combined effects of gunfire and the critical

condition of the Japanese economy. Fires initiated by gunfire extensively damaged the town of Kamaishi. Refrigeration plants and other facilities of the considerable fishing industry...were destroyed....

Widespread damage had been inflicted on the Hamamatsu area by air attacks prior to the...bombardment. Gunfire damaged surviving buildings and equipment of the...Hamamatsu Locomotive Works and incapacitated [it] for about three months. Projectiles falling in the railway yards caused interruption of through traffic on the Tokaido main line for about three days. Slight damage was also inflicted on [other] plants...and on a naval barracks. Damage to dwellings, gas, electrical attacks, was considerably augmented by gunfire.

In Hitachi...ships' gunfire moderately damaged the Taga Works and Mito Works of Hitachi Manufacturing Company and slightly damaged Yamate Plant...and the copper refining section of Hitachi Mine. In addition, projectiles falling in the urban area caused considerable damage to housing and to telephone, power, water and gas facilities. Some Japanese officials considered that the effectiveness of the incendiary attack was increased by the surface bombardment, because many persons who had fled from the city were not available to fight fires. These officials were impressed by this apparent coordination between our surface and air forces.

Targets for surface bombardment in the Muroran area were the Wani-shi Iron Works...and the Muroran Works of Japan Steel Company.... It is estimated that...damage inflicted on the former...would have resulted in loss of...about two and one half months' output of coke, and a slightly smaller loss of pig iron. Loss in production at the latter...can be roundly stated as about 40 per cent of one month's output. In the city, ...gunfire interrupted railway service for three days, and double track service was not restored for five days. The...water supply was disrupted for about one week, electric power supply for about two days, and damage to the telephone system required about two months for repair.

Effectiveness of ammunition...indicates that the average amount of structural damage caused by a 16-inch high capacity...hit is about 1,400 square feet in heavy steel framed buildings, and about 3,200 square feet in wooden structures. Corresponding figures for eight-inch projectiles are about zero square feet and 400 square feet. The equivalent figure for heavy steel frame buildings calculated in the same manner for the average 2,000 pound GP bomb hit is 8,800 square feet. The mean area of effectiveness of a 16-inch high capacity projectile for serious damage (destroyed plus heavy damage) against machine tools is 4,900 square feet as contrasted to 8,500 square feet for a 1,000 pound bomb.

27...industrial plants or housing areas were fired on by heavy ships. Of these 22 were hit. In daylight firings by battleships the ...average target was about 1.5 million square yards, or 39.6 of the 200-yard squares used on bombardment charts. The average percentage of shots...which fell within target boundaries was 24.9, at an average range of 23,300 yards. The approximate average error of the mean point of impact of shots directed at all targets during daylight was 249 yards in range and 209 yards in deflection. During night firings by battleships, at an average range of 24,740 yards and against targets averaging half a million square yards, or 14.8 200-yard squares, in size, the aver-

age percentage of hits...was 21.6 and the average error of mean point of impact was 280 yards in range and 468 yards in deflection. The average accuracy of heavy cruiser firings was slightly less than the average... obtained by battleships.

Interrogations seemed to indicate that even...officials knew little of what was transpiring away from their own localities. For this reason surface bombardments caused people to wonder what had happened to their own ships and planes, and with the realization that our ships could approach the shores of Japan with impunity they knew..that the progress of the war was even more unfavorable than they had suspected. People... invariably stated...that gunfire was more terrifying than either HE or incendiary bombing. When asked why...the most common answer was that there was normally ample warning before major air attacks, and the duration of the danger could be judged by the arrival and departure of the planes. Surface bombardments, however, usually came without warning, the fall of projectiles was more prolonged, and people were perplexed and confused by the uncertainty of where the attack was coming from and how long they would be forced to endure it.

Commander Edward J. Mathews, USNR (Ret.), "Bombarding Japan." U.S. NAVAL INSTITUTE PROCEEDINGS, Vol. CV (February 1979), 75:

We liked Kamaishi because the main target, a big steel mill, was well removed up a deep bay from the little town. That meant that we could shoot up the mill without killing townspeople and destroying buildings. We were confident (wrongly) that any merchant vessels had by now taken refuge in the Inland Sea or on the west coast. When, in the operation order, we restricted the cruisers and destroyers of the screen to "targets of opportunity," I felt sure, on the basis of aerial reconnaissance, that no such targets would appear.

We picked up the coast of Honshu in the gray dawn of 14 July and bore down at high speed on the unsuspecting little city. Our force constituted a formidable phalanx of gray ships, with spray creaming over our bows and signal flags snapping at the halyards. As we rounded onto the bombardment track, I was surprised to see a large merchant ship... emerge from the...inner bay. She was followed by two others, then by a minuscule gunboat which had the impertinence to poop tiny shells at us that fell half way. They had sneaked in since the last photo reconnaissance.

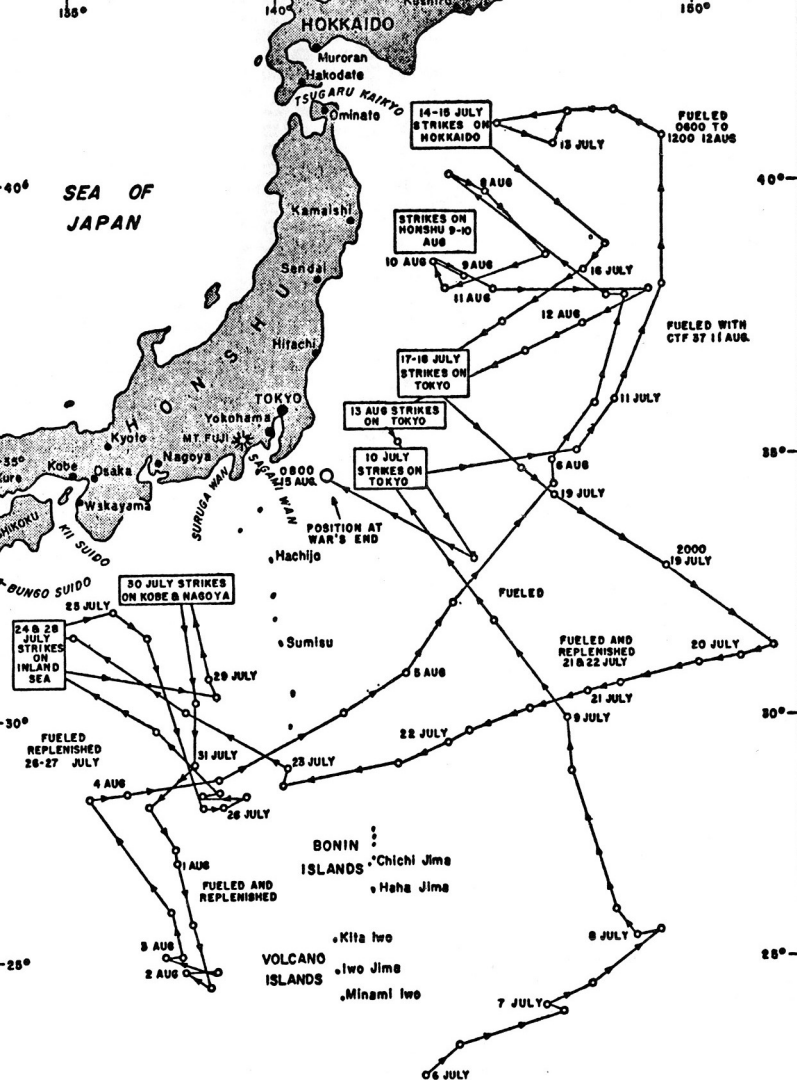
The screen was screaming for permission to release batteries. None of them had ever encountered so juicy a target. Just then we opened fire on the mill with the 16-inch guns, and either someone cut the screen loose or they just couldn't stand it any longer. At any rate, the air became solid with flying metal. The merchantmen and their escort disappeared behind curtains of spray from concentrated salvos. They were directly in line with the town, and soon red gouts of flame showed where the "overs" had ignited the little frame houses. Smoke from the burning town began to obscure the mill, but the merchantmen continued on their way and finally disappeared behind a headland, seemingly unscathed.

In the meanwhile, the battleships were throwing everything they had in the direction of the mill. Several tiny islands stood across the mouth of the big bay below the mill.

As we bellowed back and forth on our bombardment track, one small island in particular drew our attention. It was close aboard, a particularly charming one, with the conventional white paper house in which dwelt a little white-kimonoed man with a tiny white dog. ...the little dog, ...frightened by the noise, was careering around the island with the man in hot pursuit. Around...they went, and each time we repassed the island we shouted encouragement. Finally...the man caught the dog, gave him a whack, dashed into the paper house and banged the paper door behind him, obviously convinced that therein lay security. A triumphant cheer rose from our formation as we turned away.

Bombardments

	16" Shells (BB)	8" Shells (CA)	6" Shells (CL)	5" Shells (DD)
14 July 1945—KAMAISHI.....	802	728	-----	825
15 July —MURORAN.....	860	-----	-----	-----
17 July —HITACHI.....	1,207	-----	292	-----
29 July —HAMAMATSU.....	810	1,035	-----	-----
9 August —KAMAISHI.....	850	1,440	-----	2,500 Approx.
Total.....	4,529	3,203	292	3,325



TRACK CHART **TASK FORCE 38** **1 July - 15 August 1945**

100 0 100 200

SCALE IN NAUTICAL MILES

Dates are noon position unless stated otherwise
Intermediate circles are 0800 and 2000