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## RESEARCH & DEBATE

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### THE KEY TO MIDWAY CORAL SEA AND A CULTURE OF LEARNING

*Carl Cavanagh Hodge*

Was the battle of Midway won or lost? In a recent edition of the *Naval War College Review*, James Levy grappled with some of the recurrent issues found in the scholarship of the battle of Midway, all of them related to the question whether one or another aspect of the Japanese way of war led to a catastrophic defeat at the hands of the U.S. Navy.<sup>1</sup> Levy observes that an assumption common to many works is “that the Japanese did as much to lose the battle as the Americans did to win it, or more.”<sup>2</sup> He takes issue with “cultural” explanations for the outcome of 4 June 1942, specifically the extent to which Japanese war strategy and naval doctrine were descendants of Oriental philosophy and the children of a culture that valued conformity and obedience over creativity and personal initiative. Levy rightly concludes that American “diligence” more than any other single factor contributed to the total destruction of the Japanese carrier fleet sent against Midway.<sup>3</sup>

Levy devotes special attention to Jonathan Parshall and Anthony Tully’s book *Shattered Sword: The Untold Story of the Battle of Midway*, a work whose scholarly thoroughness he lauds yet one he simultaneously indicts for an obsession with debunking myths about Midway and with demonstrating that its outcome was to

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be found in Japanese practice and doctrine.<sup>4</sup> In the process he gives rather short shrift to the degree to which their account of the early episodes of the war in the Pacific supports his own argument: that the U.S. Navy applied itself diligently and thoroughly to the requirements of carrier warfare in the Pacific, in such greater measure than its adversary that the resulting triumph reversed the

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direction of the Pacific War within six months of its opening gambit at Pearl Harbor. In a careful reading of both engagements, the battle of Midway and the battle of the Coral Sea, one is struck by those specific qualities of the U.S. Navy that in the first six months of the Pacific War made it especially ripe for a major victory over the Imperial Japanese Navy (IJN).

Admittedly, Parshall and Tully level many substantive criticisms against the established scholarly myths about Midway and trace much of the IJN's thought and action to systemic factors derived as much from a way of life as from the practical challenges of modern naval warfare. Yet in this they are in the good company of other works, such as *Kaigun*, by David Evans and Mark Peattie, that locate much of the spirit of Japanese early naval thought in the mystical bent of Akiyama Saneyuki, whose most baleful impact on the IJN of World War II was, ironically, a Mahanian faith in decisive battle that the U.S. Navy no longer shared.<sup>5</sup> In Levy's effort to make the case for American diligence in preparation for Midway, however, Levy himself fails to pay sufficient attention to a factor appropriately stressed by Parshall and Tully in the introduction and conclusion of their analysis, one that cannot be excluded from any responsible treatment of Midway—the learning culture developed in the white heat of conflict between the battle of the Coral Sea and the battle of Midway. The U.S. Navy's greatest triumph was the product less of Japanese cultural pathologies than of the intellectual profit the Americans gained from the lesser engagement only a month before. For Parshall and Tully, Coral Sea was in many respects the overture to the opera, so much so that what happened at Midway is not wholly comprehensible without an understanding of the outcome of the earlier engagement, as well as of the American and Japanese reactions to it. Any study of Midway ought to acknowledge that the limited encounter of the first instance that exerted decision influence on the main event of the second is not unlike the relationship of the battle of Ligny to Waterloo.

All histories of Midway, of course, acknowledge up front the enormous contribution of the code breakers at Pearl Harbor in giving the U.S. Navy actionable information on the movements of Japanese task forces in the Pacific, along with coherent calculations of the intentions behind them. In the early months of 1942 the U.S. Navy had an emerging image of the overall operational situation in the central and western Pacific, and in the weeks leading up to Midway it was also able to sketch a plausible tactical picture of the coming clash with the IJN. As this knowledge evolved, changes to command structure were also made, the better to integrate intelligence with command. Whereas Admiral Isoroku Yamamoto sailed with the Japanese Combined Fleet to Midway, which is consistent with the custom of decentralized command common to all navies of the time, Admiral Chester Nimitz remained at Pearl Harbor to orchestrate the U.S. Navy's response to the Midway attack. Eliot Cohen and John Gooch note in their study of failure

in war that “Nimitz’s behavior at Midway suggests that the U.S. Navy did not simply refuse to change its traditional attitudes to command, painful as that might prove.”<sup>6</sup> Yamamoto’s preference for sticking with what he assumed to be the tried-and-true meant that he had all the foggier notion of what awaited him at Midway.

What awaited him, however, had to a significant extent been determined by the outcome of the Coral Sea battle only a month earlier and by the determination of the U.S. Navy to make the most of both the material balance of forces following that battle, and the lessons learned in its prosecution. The battle of the Coral Sea, the first-ever clash of aircraft-carrier fleets, had been occasioned by Japan’s efforts in the first stage of the Pacific War to establish a chain of air bases across the southwest Pacific and to seize Port Moresby on the southern coast of New Guinea, to maintain access to the Coral Sea and any potential targets in northeast Australia. These plans were short-circuited by the U.S. Navy’s Task Force (TF) 17, commanded by Rear Admiral Jack Fletcher. On 7 and 8 May 1942, attacks by Fletcher’s aircraft mauled the Japanese invasion in its opening phase sufficiently to force the postponement of any follow-through on the larger plan. Thus although the Coral Sea fight was a marginal tactical victory for the IJN, in terms of ships and tonnage sunk, it amounted to a small strategic triumph for the U.S. Navy.

However, the material knock-on effects of the Coral Sea conflict were highly significant. At the beginning of 1942 the IJN had a quantitative edge over the U.S. Navy’s carrier force. Japan had six fleet carriers—*Akagi*, *Kaga*, *Hiryū*, *Sōryū*, *Shōkaku*, and *Zuikaku*. In addition, the light carriers *Hōshō*, *Ryujo*, *Shōhō*, and *Zuihō* were available to support operations of the fleet carriers. The United States had five fleet carriers available for operations in the Pacific. The design and capabilities across all classes varied enormously; USS *Lexington* (CV 2) and USS *Saratoga* (CV 3) were converted cruisers dating to the 1920s, whereas USS *Yorktown* (CV 5), USS *Enterprise* (CV 6), and USS *Hornet* (CV 8) were the first genuinely modern fleet carriers. At Coral Sea, Japanese aircraft were able to sink *Lexington* and inflict serious damage to *Yorktown*. In return American aircraft destroyed *Shōhō*.

Parshall and Tully, as well as Craig Symonds in his book on Midway, note that the overall material damage rendered at Coral Sea to the IJN’s fighting capacity went well beyond the ships sunk outright. Although *Shōhō*’s loss was hardly a body blow, the damage to the fleet carrier *Shōkaku* was sufficient to strike it from the roster for the Midway operation, and *Zuikaku* was withdrawn as well, owing entirely to aircraft losses. In this instance a factor intervened in the aftermath of Coral Sea that might be deemed “cultural” but that was, strictly speaking, organizational in nature. Parshall and Tully point out that the IJN could have attempted to reconstitute *Zuikaku*’s air wing in time for Midway but that such a change

would have violated an organizational custom that married Japanese air units to specific carriers. If either a ship or its air wing were not in condition for operations, both were withdrawn. So Coral Sea took one light IJN carrier, *Shōhō*, out of action permanently, while two heavy carriers slated for the attack on Midway, *Shōkaku* and *Zuikaku*, would not be there.<sup>7</sup> The IJN decided to take four, not six, carriers to its showdown at Midway.

Furthermore, before Coral Sea the Japanese had a wide edge over the U.S. Navy in experienced pilots. At Coral Sea they lost many of their best pilots, while their comparatively green American adversaries gained valuable experience in the art of attacking Japanese carriers.<sup>8</sup> What Fletcher's force achieved at Coral Sea, therefore, amounted to much more than a short-term check to Japanese strategic plans; it seriously compromised the total strength the IJN could bring to bear against the American carriers at Midway. Paul Dull, in his battle history of the IJN, wonders whether these losses alone might have deprived Japan of the smashing victory at Midway.<sup>9</sup>

Even if one sets aside such speculation, Coral Sea was at the very least an installment on a future defeat. If a cornerstone of Japanese strategic doctrine was to employ overwhelming force and advantage of numbers, Coral Sea sharply reduced that advantage; "if an objective wasn't important enough to require sending all six carriers," Parshall and Tully remind us, "it wasn't worth going after at all," so that "Japan paid the ultimate price for her violation a month later at Midway."<sup>10</sup>

That the price at Midway turned out to be so high was the U.S. Navy's achievement, both in making the most of the strategic opportunity that sound intelligence afforded it and in drawing tactical lessons from Coral Sea to maximize the dividend offered by the opportunity at hand. The effect of the IJN's decision to scratch off two carriers from the Midway operation following Coral Sea was compounded by the U.S. Navy's extraordinary efforts to ensure that *Yorktown*, badly damaged but able to escape destruction, would be repaired and refitted in time to rejoin the hostilities. Whereas under normal circumstances *Yorktown* would have required three months to refit, Admiral Nimitz gave the 1,400 fabricators, shipfitters, and welders at the dry-dock facility at Pearl Harbor less than three days of around-the-clock labor in which to patch and replace what they could. The effort drew so much electrical power that some districts of Honolulu suffered outages. Symonds stresses that "whereas Yamamoto assumed that the loss of *Shōkaku* and *Zuikaku* only narrowed the Kido Butai's [carrier force's] margin of superiority, Nimitz knew that if the Americans were to have any chance against the oncoming juggernaut, they would need all three of their carriers."<sup>11</sup> By using the available intelligence to contrive an ambush of the Japanese force in Midway's proximity, he improved the odds further. Along with *Enterprise* and *Hornet*, the

presence of *Yorktown* plus the use of the airstrip on Midway Island would give Nimitz four platforms from which to launch aircraft—parity with the Japanese force that at no other time and place in the opening months of the war in the Pacific had been possible.

Meanwhile, the Japanese command assumed that Coral Sea had put both *Lexington* and *Yorktown* out of action. Whether or not one indicts “victory disease” for the overconfidence in proceeding with the Midway operation, the casualness with which the IJN reduced by a third the forces it intended to employ stands in stark contrast to American effort to retrieve *Yorktown* from near death to fighting fitness. It is important to underscore, moreover, that *Yorktown*’s presence at Midway was valuable far beyond the mathematical balance of carriers. Specifically, the experience of *Yorktown*’s aviators at Midway sharpened American air-strike capabilities significantly. John Lundstrom’s study of naval air combat in the Pacific notes that Coral Sea was the first acid test of American naval carrier doctrine. Although there was little time between the Coral Sea and Midway engagements to study and apply the lessons of the former for systematic application to the latter, “the *Yorktown* aviators were the only ones in a position to profit from their hard-earned Coral Sea experiences, and their excellent performance at Midway demonstrated the value of those lessons.”<sup>12</sup> At Coral Sea, American naval fighter pilots had been introduced to the storied A6M Zero fighter, and they had appreciated the remarkable maneuverability of the Japanese fighter while learning that their own F4F-3 Wildcats were its equal in speed and climbing ability and its superior in firepower and protection.<sup>13</sup> Although *Yorktown*’s air group was reorganized prior to Midway—both to facilitate an increase in overall fighter strength in time for Midway and to integrate the new F4F-4 folding-wing Wildcats into its numbers—leaders such as Lieutenant John S. (“Jimmy”) Thach listened to the accounts of *Yorktown*’s flyers of their Coral Sea experiences. A hastily innovated version of the “Thach Weave” beam-defense position debuted at Midway under the most challenging circumstances and was remarkably effective in meeting Japanese fighter attacks.<sup>14</sup> So, not only was *Yorktown* available for action northwest of Midway Atoll on 4 June 1942, but the experience that its aviators acquired at Coral Sea was integrated into the Midway force through the American mix-and-match approach to carriers and air wings, an approach from which the IJN abstained.

There is no need to engage in discussions of cultural contrasts between American and Japanese naval traditions or to work over the latter for real or imagined strategic pathologies to acknowledge that the United States brought organizational flexibility to the engagement and extracted every ounce of innovative energy in its determination to prevail. Levy’s stress on American diligence is wholly in harmony with Parshall and Tully’s observations that with the overnight

refitting of *Yorktown* the U.S. Navy was already benefiting from superior organizational practices before the trial of strength at Midway.<sup>15</sup> In addition, it mattered a great deal not only that the U.S. Navy was to have a third carrier for Midway but that Admiral Nimitz gave tactical command of the two task forces (TF 16, with *Enterprise* and *Hornet*, and TF 17, with *Yorktown*), joined for the ambush of the Japanese force closing on Midway, to Fletcher—together, a commander and ships with more experience in combat with Japanese carriers than any other combination available.

Owing to combat experience of Coral Sea battle and the efficient launch of torpedo planes, fighters, and dive-bombers of *Yorktown*'s air group, Fletcher's team was the only force to arrive over its target almost exactly according to navigational calculation to deliver a timely and coordinated attack. Torpedo bombers were launched first, followed by dive-bombers, and then, in turn, the fighters. The objective of this procedure, that the three groups would rendezvous before encountering the Japanese, involved a quantum of risk, but *Yorktown* had already rehearsed en route with considerable success at Coral Sea. Other American carrier aircraft formations at Midway flew in small groups and became separated, but *Yorktown*'s remained closely coordinated, "with each of the tactical elements remaining in sight of each other up until the time they initiated their attack."<sup>16</sup> Because *Yorktown*'s dive-bombers, to their own amazement, came upon the Japanese carrier *Sōryū* without the cover of any combat air patrol (CAP), their attack was devastating. Seventeen SBD Douglas Dauntless dive-bombers, under Lieutenant Commander Maxwell Leslie, scored three hits on *Sōryū* with thousand-pound bombs, destroying its flight deck and gutting its hangar below.

In combination with the destruction of *Akagi* and *Kaga* by the dive-bombers of TF 16, the IJN lost three of its four carriers (and the battle of Midway) in scarcely more than five minutes of action.<sup>17</sup> Because dive-bombers from *Enterprise* had initially been unable to locate the Japanese carriers and had arrived over them from the southwest almost at the same time as Leslie's strike force arrived from the east, the Japanese carriers were caught from two directions at the moment of maximum vulnerability, when their flight decks were covered with aircraft preparing for launch. Not only did the U.S. Navy air groups approach from separate axes at approximately the same time, but they came in at high and low altitudes, presenting the Japanese air defenses with a challenge beyond their capability. Although coincidence accounted for this (what Parshall and Tully call "a healthy dollop of bad luck"), the impression among the Japanese that the U.S. Navy had such accurate knowledge of their position that it could synchronize attacks from different directions must have been psychologically devastating.<sup>18</sup> It was certainly materially catastrophic.

Other factors, then, contributed directly or indirectly to the scale of the American triumph. Among them were the improvements made to the U.S. Navy's combat air patrol, based in part on the failure of American fighters at Coral Sea to break up Japanese strike forces before they could close in on the American carriers. Fighter direction and CAP at Midway were more effective (Task Force 16 escaped attack entirely) when the idea of a layered CAP, aircraft operating at different altitudes, was applied to carrier defense. Even after Midway, American CAP required further development, principally through multicarrier task forces with highly integrated CAPs, but the effort to learn and adapt from recent experience was very much in evidence among the American fighters on 4 June 1942. By contrast, the IJN's CAP did not improve significantly between Coral Sea and Midway and did little to compensate for Yamamoto's misty appreciation of his enemy's dispositions around Midway. Admittedly, Japanese pilots had to operate without the early-warning capabilities of radar; still, as Parshall and Tully point out, relatively simple tactical improvements could have improved the defense of the IJN's carriers.<sup>19</sup> One cannot help but be struck by the fact that the IJN's CAP in no way compensated at the tactical level for Japan's inferior operational intelligence, so that the ambush effect hoped for by the U.S. Navy's command unfolded largely as planned.

The limitations of the damage-control practices on board Japanese carriers, meanwhile, ensured that once the American dive-bombers scored major hits, the chances of recovering operational effectiveness diminished quickly. We have here another instance of contrast with the learning culture of the U.S. Navy following Coral Sea. It was at Coral Sea that Oscar Myers, *Yorktown's* Air Department fuel officer, realized that among the factors that sealed the unhappy fate of *Lexington* was the presence of aviation fuel on its hangar deck. Because the U.S. Navy thereafter drained fuel systems after usage and filled the lines with CO<sub>2</sub>, *Yorktown* was spared the ravages of a runaway fire when it absorbed a major Japanese dive-bomber assault. The patched-up *Yorktown* was actually more resilient under attack at Midway; the carrier that had contributed so much to the U.S. Navy's heroic struggle in 1942 ultimately succumbed not to bombs but to torpedoes. Fifteen aircraft from *Yorktown's* bombing group were able to participate in the retaliatory strike from *Enterprise* that began the destruction of *Hiryū*, the fourth and last IJN carrier at Midway.<sup>20</sup> Lastly, the extraordinary performance of the U.S. Navy's torpedo bombers and dive-bombers must be noted—the former sacrificed in the battle's opening phase to annihilating attacks from Japanese fighters while the latter delivered the fatal blows to the IJN's carriers when there were comparatively fewer Japanese fighters to meet them. Indeed, *Yorktown's* third bombing group was unruffled by fighters during or after its attack. After



initial misses, the American dive-bomber pilots settled into a rhythm of multiple hits with five-hundred-pound and thousand-pound bombs on such vital parts of the Japanese carriers that even appropriate damage control would have been hard pressed to save them.

Above all, it is Levy's point about diligence (a point not missed, and indeed stressed, by Parshall and Tully) that needs to be underscored. A culture of learning, arising from experience rather than theory and shared in the weeks between Coral Sea and Midway at every level of the U.S. Navy's carrier task forces, meant that ultimately victory was earned by the Americans rather than thrown away by the Japanese. Levy is right to conclude that military historians are too quick to apportion blame. An almost perverse fascination with failure often seems to mark qualification for the profession. I do not share his aversion to cultural explanations for behavior in battle any more than I share the attraction of others to such explanations. Cultural factors are simply harder to measure and less satisfying as an explanation than is a careful reconstruction of what actually happened. I do share Levy's enthusiasm for Eric Grove's scholarship on the Philippine Sea, and I recommend that his stress on technology and training be applied to Midway, along with emphasis on the extraordinary application of hard-won knowledge in evidence in the U.S. Navy in the early months of the Pacific War.<sup>21</sup> This knowledge was remarkably on duty at all levels: Chester Nimitz's courage in acting on the intelligence in his possession, to toss the iron dice on a fight as big and potentially disastrous as Midway, was complemented by the decisions of Fletcher and Spruance (in a knife-edge balance of prudence with bravery) to launch air strikes before they had perfect knowledge of the enemy's position and intentions. Their commitment to tactical conviction, however, was in turn redeemed by the tenacity, skill, and personal sacrifice of the U.S. Navy's bombers, scout planes, and F4F pilots in delivering a staggering blow to Japanese carrier-borne airpower. John Keegan points out that for Midway, American cryptanalysts provided a picture "as clear as the obscurities of war will ever allow" but that a little less intuition by the pilots engaged to act on it might have compromised that advantage.<sup>22</sup> Happily, the recent experience of Coral Sea in aerial reconnaissance, tactics of aerial combat, and techniques of dive-bombing made that intuition especially acute. Whereas the years between 1909 and 1941 witnessed the rise of Japanese naval airpower, the spring of 1942 marked the beginning of its sudden and steep decline.<sup>23</sup>

Nothing in the actions of the U.S. Navy indicates that its personnel believed God was on their side at Midway and so all would simply be well; to the contrary, every fiber of arm, heart, and brain was applied to narrowing the advantage of a foe who had hitherto seemed invincible. If there was a "miracle" at work at Midway, then surely it was that the U.S. Navy, at every level, drew all the right

conclusions from one engagement for application to the next. Any familiarity with military history teaches us that this virtue is so rare as to tempt the conclusion that, if not the Almighty, then surely Sweet Reason intervened wholly to the benefit of one side.

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#### NOTES

1. James P. Levy, "Was There Something Unique to the Japanese That Lost Them the Battle of Midway?," *Naval War College Review* 67, no. 1 (Winter 2014), pp. 119–24.
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7. Craig L. Symonds, *The Battle of Midway* (New York: Oxford Univ. Press, 2011), p. 174; Parshall and Tully, *Shattered Sword*, p. 65.
8. Symonds, *Battle of Midway*, p. 175.
9. Dull, *Battle History of the Imperial Japanese Navy*, p. 129.
10. Parshall and Tully, *Shattered Sword*, pp. 422–23.
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12. John B. Lundstrom, *The First Team: Pacific Naval Air Combat from Pearl Harbor to Midway* (Annapolis, Md.: Naval Institute Press, 1984), p. 300.
13. *Ibid.*
14. *Ibid.*, pp. 317, 353–56.
15. Parshall and Tully, *Shattered Sword*, p. 94; Symonds, *Battle of Midway*, pp. 184–85.
16. Parshall and Tully, *Shattered Sword*, p. 217.
17. Lundstrom, *First Team*, pp. 340–61.
18. Parshall and Tully, *Shattered Sword*, pp. 217–18.
19. *Ibid.*, p. 407; Lundstrom, *First Team*, pp. 303–305, 323, 443.
20. Parshall and Tully, *Shattered Sword*, pp. 325–26.
21. Levy, "Was There Something Unique to the Japanese That Lost Them the Battle of Midway?," p. 123; Eric J. Grove, *Sea Battles in Close-Up* (Annapolis, Md.: Naval Institute Press, 1993).
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23. Mark Peattie, *Sunburst: The Rise of Japanese Naval Air Power, 1909–1941* (Annapolis, Md.: Naval Institute Press, 2001), p. 174.