

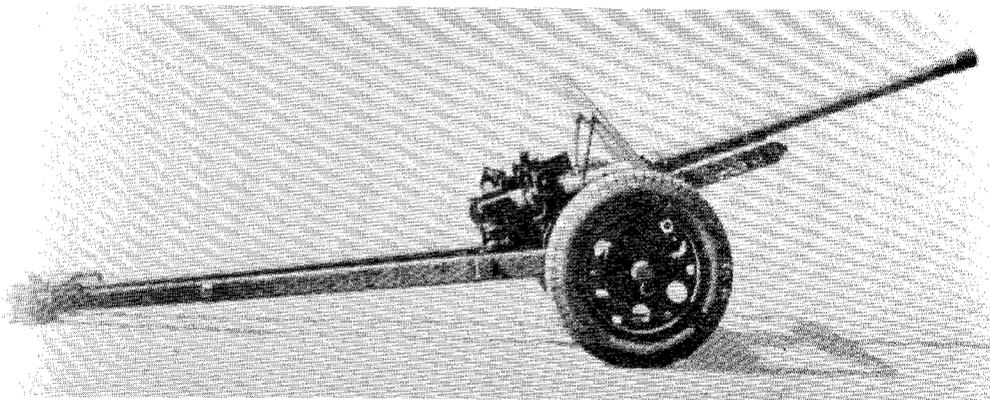
swept zone, but it made it possible. The tanks provided the Americans with a kind of instant symmetrical answer to the caves in this kind of warfare. Tanks protected by infantry were able to duel with the gunport caves, which were also protected by infantry.

In other words the basic tactical unit on each side was a pillbox and accompanying infantry. The Americans used a mobile, slightly vulnerable pillbox, the tank, against the Japanese who used invulnerable but not mobile pillboxes, the caves. The Japanese overcame the immobility of the cave pillboxes somewhat by having caves everywhere and moving among them. As in World War I, much of the combat, despite the massive artillery activity, came to involve infantry battling fluidly around machine-gun strongpoints, only on the American side the strongpoints themselves were moving. In the end, these actions featured small-arms and mortar fights at company and platoon levels, sometimes hand to hand.<sup>29</sup>

### *Japanese Antitank Tactics*

Even though Japanese antitank tactics were systematic, they were ultimately ineffective. Their failure, however, was not due to the Japanese' lack of information about American tanks. The 32d Army had anticipated the pivotal role of tanks on Okinawa: "fighting against the American land army is practically the same thing as fighting against . . . M4 tanks," 32d Army Directive No. 13 intoned.<sup>30</sup>

The Japanese forces were advised to wait until the American tanks were very close to their positions and then to open fire both on the tank with artillery and on the accompanying infantry with small arms and mortars. The Japanese antitank weapons included the 37-mm gun, which had a limited effect on the Sherman tank, and also the 47-mm antitank gun, which was effective. The 47-mm gun, designed in 1941 as a modern antitank weapon, had been distributed in limited numbers to Japanese 32d Army forces. It had a muzzle velocity of 2,700 feet per second, had rubber tires, and weighed 1,600 pounds, which meant it could be manhandled. In



IJA Model 1 (1941) 47-mm antitank gun

fact, the 47-mm guns were usually placed in cave pillboxes where they were not mobile, however.<sup>31</sup>

Even though the 47-mm gun would “perforate . . . any armor of the M4A6 tank . . . at all ranges . . . up to 800 yards,” the Japanese doctrine in all cases was to withhold fire until the foe’s tank team was quite close.<sup>32</sup> This saved the Japanese position longer from discovery and gave the 47-mm gun, if present, a surer shot. If no gun was available, the enemy tank, if allowed to approach unopposed, would be nearer to antitank infantry.<sup>33</sup>

Once the adversary tanks approached, IJA soldiers would unleash small-arms, mortar, and antitank artillery fire all at once to destroy both the tank and the infantry team. If no 47-mm guns were on hand or if the gun failed to destroy the tank, the IJA soldiers’ next tactic was to drive the U.S. infantry away from the tank using small arms and mortars. This left the tanks “blind,” as a Japanese tactical bulletin put it. The Japanese also attempted to kill the commander of an American tank if he was standing in the hatch.<sup>34</sup>

Captain Ito Koichi of the IJA 24th Division maintained that American Sherman tanks withdrew if they were fired on by light mortars, even though the mortars would not harm a Sherman. The reason, he believed, was that the American tankers could not distinguish the mortar shell explosions from more dangerous howitzer shell explosions. In reality, Captain Ito may have been witnessing the American tanks’ efforts to stay with their infantry when the latter fell back to avoid mortar bombardment.<sup>35</sup>

Tanks that did not stay with their infantry were exposed to the IJA’s third tactical step, which was to destroy the tank with hand-carried explosives—satchel charges, reinforced grenades, and mines. Most of these devices were powerful enough to damage a tread or the bogie wheels of a tank, thereby immobilizing it, but they were not powerful enough to breach the hull. The attackers tried to remain concealed until the first volley of small-arms fire had driven off American infantry, then they assaulted the tank. Often, the tanks’ likely avenues of approach were mined so that the advancing tank might be immobilized by a preplaced mine.<sup>36</sup>

Immobilized tanks continued to be a main focus of struggle for the Japanese. Captain Ito claims that the most effective method of attack for lightly armed men against tanks was to immobilize the tank with a satchel charge or mine, then destroy it at leisure with Molotov cocktails. In fact American crews hastily abandoned stalled tanks, hoping to retrieve them after nightfall. Therefore Japanese engineers were advised to move in and blow up stalled tanks before nightfall. Sometimes the Japanese were content just to place mines around the damaged vehicle, especially in the likely direction of towing. (Japanese soldiers often laid mines in tread tracks at night, expecting the American tanks to use the same avenue again.) This gave IJA infantry a chance to ambush the expected tank towers.<sup>37</sup>

Japanese antitank tactics, in sum, involved (1) destroying the tank with an antitank gun, (2) driving off its infantry with small arms and destroying



IJA engineers sought to disable U.S. tanks using the minimal resources available

the tank with hand-carried explosives, or (3) immobilizing the tank and destroying it later. Conspicuously absent from their antitank system were bazookas. The Japanese had received some *Panzerfaust* (antitank) technology from the Germans but had not converted it into weapons. Also nearly absent was the antitank use of heavy artillery. The IJA had the artillery but did not have radio contact between the small line units in the front and the artillery in the rear that would have made attack on particular tanks possible. The lack of bazookas and radios (and the partial lack of 47-mm antitank guns) was extremely serious. The liberal presence of these items could have slowed the advance of the American tanks significantly and prolonged the Okinawa stalemate.

This Japanese failure to provide bazookas and radios was all the more serious because the modest technology and resources needed for both were available. If some of the resources devoted to well-machined field guns, howitzers, and mortars on Okinawa had been devoted instead to some humbler antitank gear, the battlefield might have been transformed. The inadequacy of IJA field equipment must be attributed in the end to doctrinal prejudice. Somehow, the IJA's conceptual approach to combat did not include or anticipate an armored adversary or an environment where a company's only possible link to the larger battlefield was by radio. These

shortcomings are the more blameworthy since the IJA had had similar problems with the Russians at Nomonhan in 1939 but had done nothing about them.<sup>38</sup>

### *American Anticave Tactics*

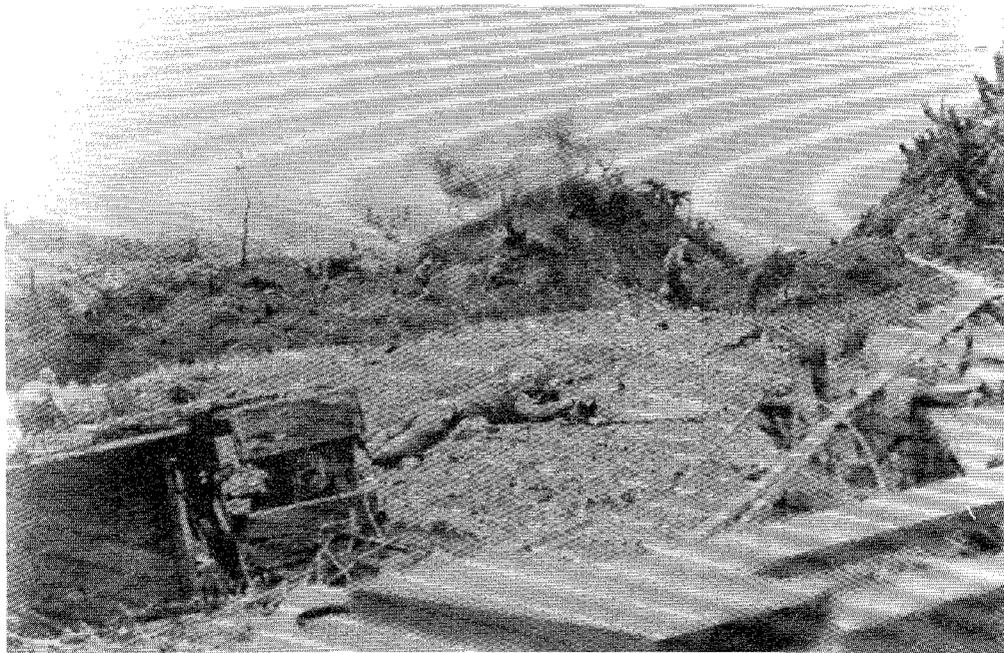
The Americans' tactics for destroying caves resembled Japanese tactics for destroying tanks. The Americans used artillery, flamethrowers, and small arms to drive in the caves' protective infantry, thus allowing friendly infantry to approach the cave and disable it so the whole cave position could then be destroyed at leisure. The result in practice was that, between bombardments, there were lethal firefights between small units of infantry to see which infantry could reach the other's hardened pillboxes, tanks, and caves.

The cave positions on Okinawa were a defensive masterpiece, impervious to all fire (except a direct hit on the gunport). This gave the IJA soldiers a false sense of security, however, and in the early days of battle, false tactics. Defenders found that despite the caves' strength against fire, they could easily be breached if surrounded by infantry. The caves had a limited field of vision, like tanks, so their occupants did not even know where attackers were.

To protect infantry from the crushing American bombardments, IJA companies were advised to draw all their men into the caves, except for two or three entries. But the unhappy result of this was that, when the bombardments ceased, American tank-infantry teams rushed forward to seize cave entrances, thus trapping whole companies and their weapons helplessly inside. Holding all IJA infantry safe in the caves was not as prudent as it first appeared.<sup>39</sup>

The Japanese response was to leave ten or twelve men per company outside, even during heavy bombardment. Their job was to survive the bombardment, then hold off the advancing American infantry long enough for their comrades to emerge from the cave to help hold the ground. The mature cave positions thus had interlocking fire and were screened by a system of foxholes that were manned at all times (see figure 7). There was not enough room between the caves to deploy the entire force under cover outside, however, so only one-third of the troops would be put outside when the bombardment stopped. This meant that the two-thirds of the troops remaining in the cave always risked being trapped helplessly underground.<sup>40</sup>

The Americans' method for reducing the caves, what they called Blowtorch and Corkscrew and the Japanese called "cavalry charge," was to bombard the cave, killing surface infantry or forcing them inside. This alone did not subdue the cave-protected infantry, so the Americans then approached with tanks and infantry teams. These together drove the remaining IJA infantry away from the cave entrances. Fire from the tanks' machine guns, main guns, or flamethrowers was used to push IJA gunners away from the cave fire ports long enough for U.S. infantry to get past



U.S. troops here try to reduce a cave fire port concealed in the notch of ground right of center. But they are within the firing zone of IJA infantrymen outside the cave and cannot move freely. Note the mortar shell burst on the rise of ground in the center.

their angles of fire into what the Japanese called the “dead angle.” Actually, to increase firepower, the IJA often had riflemen fire at angles off the machine gun or cannon in the fire port. They called this “sleeve” tactics (see figure 9). In order to get into the dead spaces, the Americans had to first break through the Japanese infantry defense line. Once they had done that, though, the cave positions were completely helpless. The Japanese called this a “straddle” attack since American riflemen straddled the exits with their fire instead of standing directly in front of the exit openings where IJA soldiers could fire on them. The Americans could not fire in from these positions either, but they could shoot any Japanese trying to exit.<sup>41</sup>

Many of the caves were situated under the dome of a hill, with exits on the sides and the rear of the dome, and a fire port facing the front. The Japanese especially dreaded the Americans’ advance to the top of the dome. The summit was outside the fire port’s fire angle and often covered every exit, so that one American standing there with a machine gun could prevent all egress from the cave, despite its multiple exits. Even if no dome existed, the American infantry would sweep to the far side of the hill where the cave was and cover the rear slope exits so that inmates had no choice but to surrender. Usually the Americans tried to find the air shaft above a cave and throw in a phosphorus grenade, a smoke bomb, or other explosives. Sometimes, they would pump in large amounts of gasoline, which

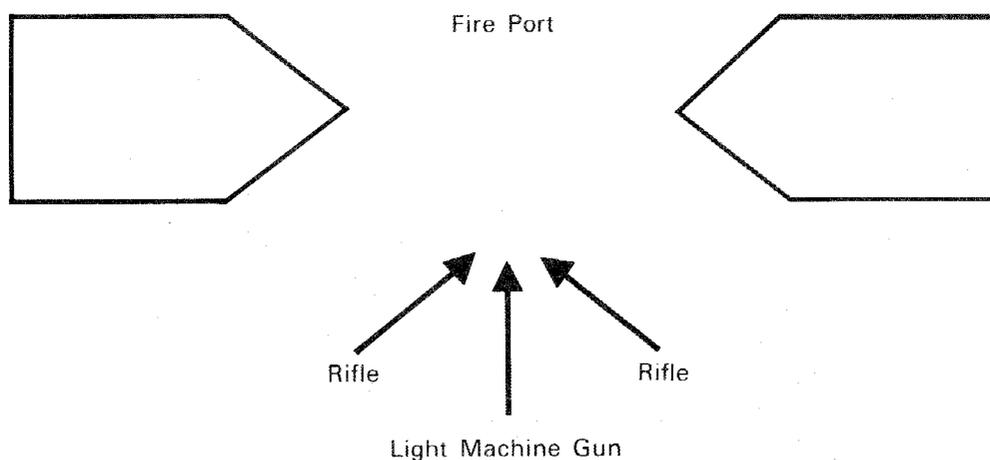


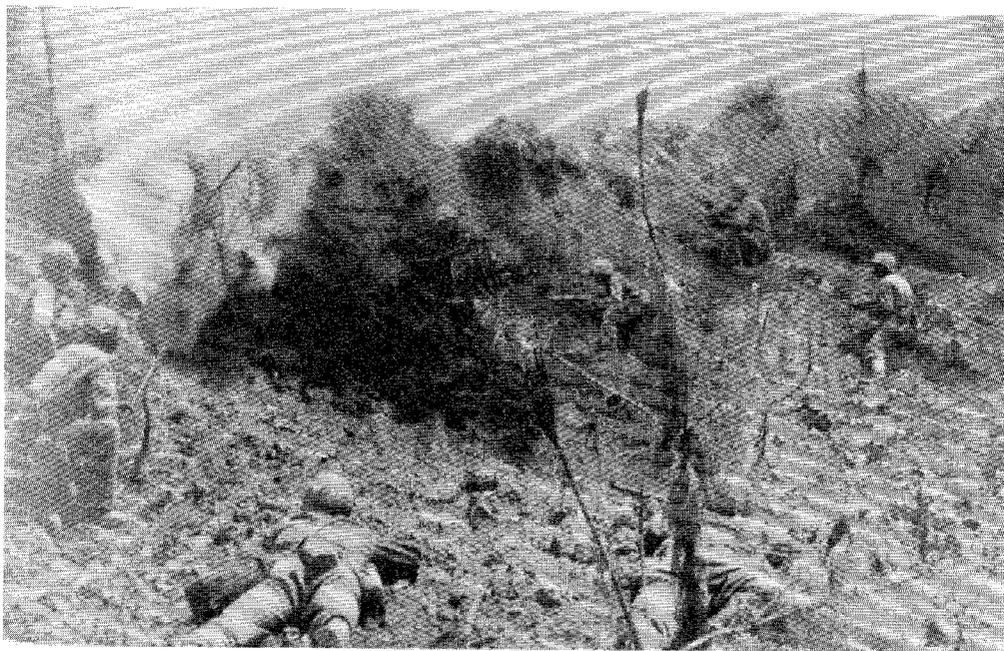
Figure 9. Sleeve-type position

they then ignited. These methods either killed the soldiers inside or forced them out. Having done this, the Americans either sealed the cave by blowing up the exits or occasionally entered it to take possession. With this, the caves were considered secure, and the Americans moved forward.<sup>42</sup>

Where caves were only haphazardly subdued, the IJA soldiers stationed inside continued to resist. The Americans' task was to seal every exit before nightfall. Often, however, they failed to find all the exits, or else they blew up an exit in a way that just widened the opening. In either case, the Japanese would escape from the exits after dark and engage in rear-area



U.S. troops preferred flame to drive off stubborn IJA defenders



Once U.S. troops got inside the angle of fire, a cave position was vulnerable. These troops have sprung a demolitions charge in a cave fire port, smoking at left.

attacks or return to their own lines. On the other hand, there were a few Japanese soldiers who dwelled quietly in their by-passed caves for months and surrendered only when Japan did, some time after the campaign in Okinawa concluded.<sup>43</sup>

In the tank-versus-cave warfare, a moving strongpoint—the tank—was pitted against a fixed strongpoint—the cave—with infantry moving fluidly to protect each.

### *Japanese Artillery*

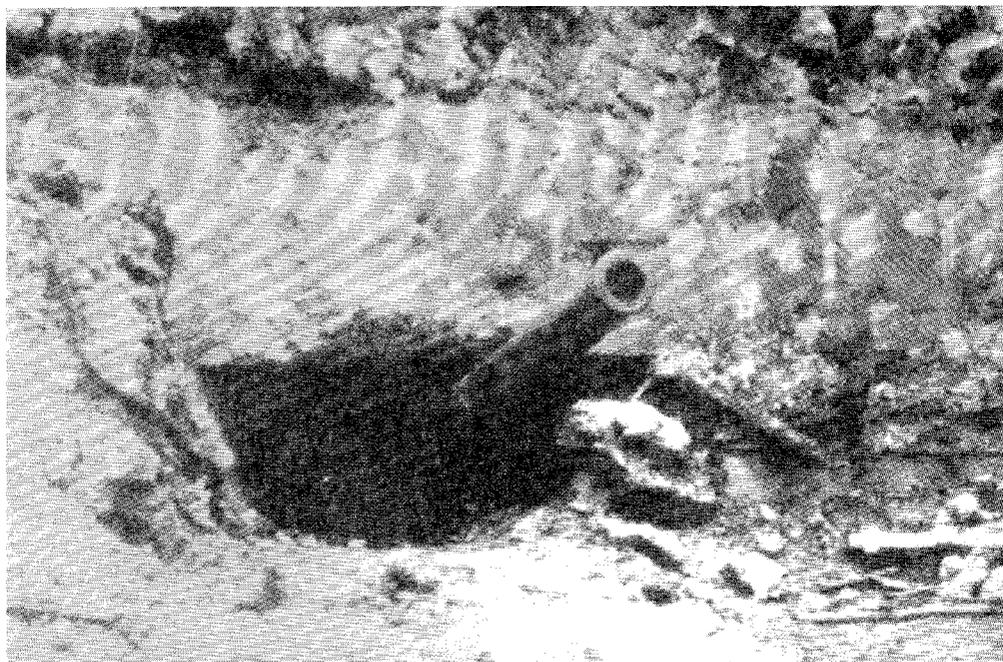
Although the Americans had firepower that greatly exceeded Japanese firepower in all categories, the Japanese 32d Army nevertheless had considerable artillery on Okinawa. The Japanese forces had confidence in their artillery, though the American experts who examined it after the battle were critical of certain features. To unify control over the artillery, it was all gathered into 32d Army's 5th Artillery Command under Lieutenant General Wada Kosuke, which included three artillery regiments, an artillery battalion, a mortar regiment, and two light mortar battalions. Besides these there were the 24th Division's artillery regiment and the 44th IMB's artillery battalion, both also placed under Wada's direction.<sup>44</sup>

All of these units together held 287 guns and 30 mortars of 70-mm bore or more for a total of 317 tubes, according to the count of U.S. Tenth Army intelligence after the battle. Inagaki Takeshi, a Japanese journalist

who has investigated the Okinawa campaign, gives a figure of 470 tubes for 32d Army, a tally that apparently includes guns of smaller caliber. Inagaki notes that, when the front confined itself to a five-mile width of the Shuri isthmus, this was the heaviest concentration of Japanese guns in any Pacific campaign. Although there were a few 200-mm naval guns, most of the guns were either 75-mm or 150-mm.<sup>45</sup>

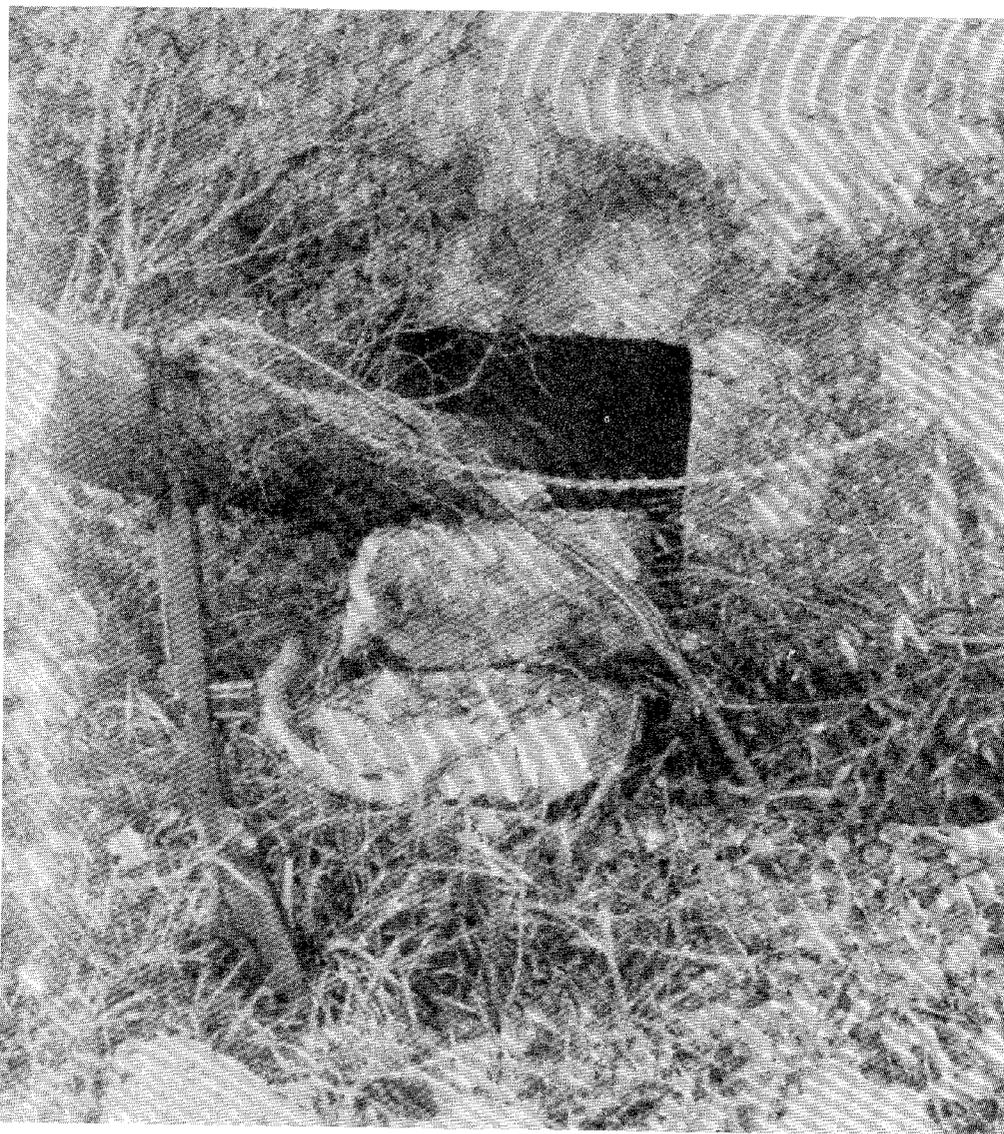
Japanese artillerists of the 1st Artillery Mortar Regiment used twenty-four 320-mm spigot mortars. These mortars, which had a range of three-quarters of a mile, fired shells that weighed 650 pounds and left a crater 15 feet wide and 8 feet deep. The Japanese staff officers believed, and with some justification, that these shells frightened the Americans. Even so, these amazing weapons produced few casualties, because they had a "terrific blast effect but practically no fragmentation." Men not quite close to the fifteen-foot crater were unharmed.<sup>46</sup>

The 32d Army's artillery, like its other branches, was constantly governed by the reality of American bombardment. Almost all the field guns were put in cave mouths, as well as its machine guns and antitank guns. The difference was that the artillery caves were larger and located in the interior of the Okinawa landmass, away from the battle line. The guns were rolled to the narrow fire port when in use and away from it when not. Some guns had steel rails or wooden planks on the cave floor to facilitate this. The gun crews lived in the rear of the caves of the guns they served, as the infantry did.<sup>47</sup>



U. S. Marine Corps

Typical artillery position



U.S. Marine Corps

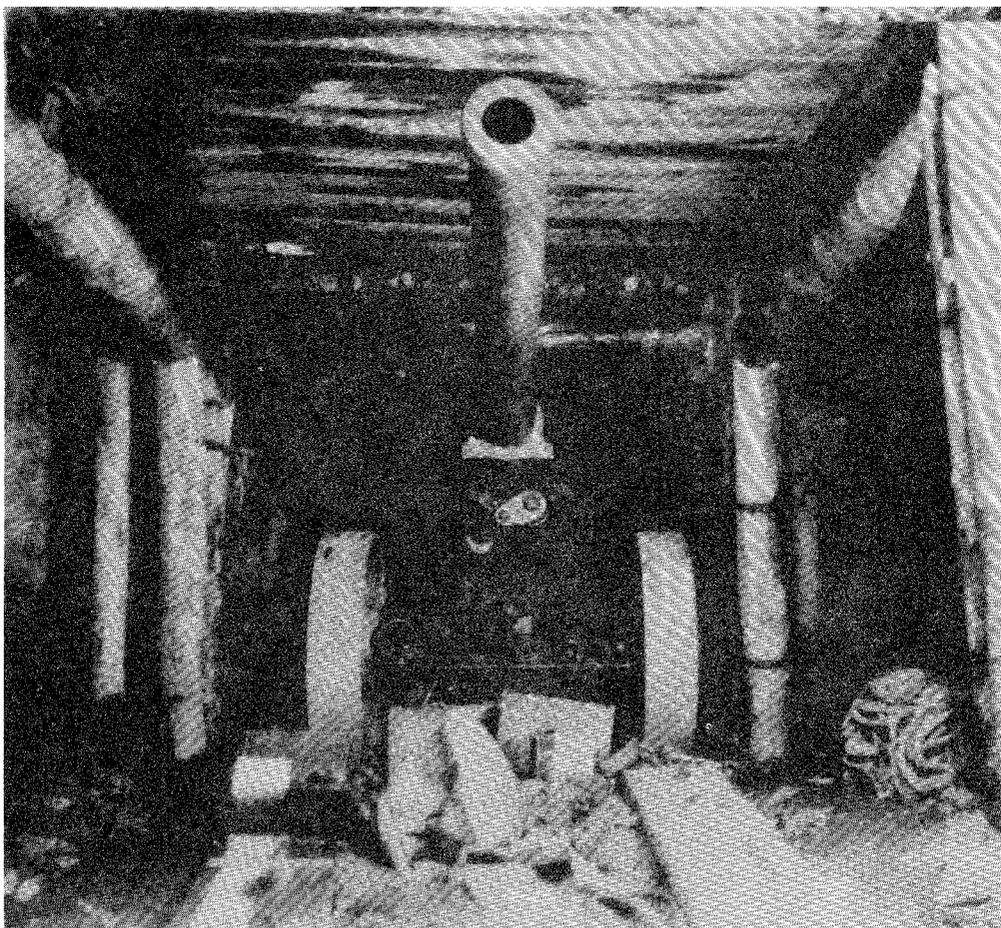
Dummy artillery position

A few rear-area guns were left in the open, and some Japanese crews preferred this because they believed casualties were less in the case of American counterfire. Crews caught in a bombarded cave mouth could not disperse and suffered heavy losses, even though the guns themselves were often dug out and reused after a direct hit.<sup>48</sup> All anti-aircraft guns had to be left in the open to preserve their field of fire, but they were then carefully camouflaged. For more protection, crews fashioned dummy guns and

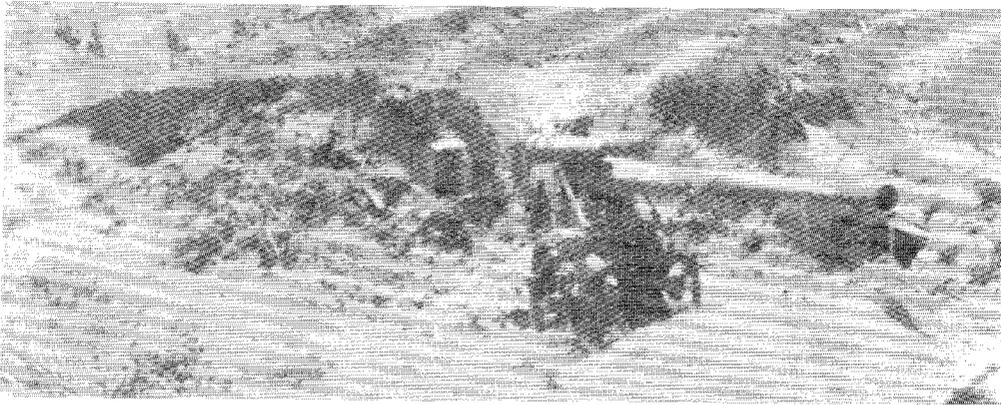
carriages of logs, and these guns were also carefully camouflaged. For American fliers, it was very difficult to tell the difference between the camouflaged real antiaircraft guns and the camouflaged wooden ones.<sup>49</sup>

The effect of all this artillery was nonetheless limited. The 5th Artillery Command was largely hamstrung by the weakness of its communications system. Japanese artillery relied on field telephone wire to transmit fire requests. This was the case between regimental observation posts of the 1st Medium Artillery Regiment and its gun emplacements, for example, in whose position, although the distances were not great, wires were left exposed and were not well distributed among different routes.<sup>50</sup>

Wire was also used between infantry battalion headquarters, where fire requests originated, and the 5th Artillery Command in the rear. (Units smaller than battalion had no communication system except messengers.) These wires were frequently cut by American bombardment during the day, forcing infantry needing artillery to rely on coded radio or on foot messengers. Radio transmission in code was slow, and reception was often



Large guns were moved on rails or planks



IJA 127-mm anti-aircraft gun



U.S. Marine Corps

Dummy anti-aircraft gun covered with camouflage material

impossible when senders or receivers were deep in the caves. Runners were extremely slow. The consequence was that an artillery request normally took six hours to fulfill. Therefore there was virtually no close infantry support by the field artillery. There were general bombardments preparatory to the Japanese offensives of 12 April and 4 May, however.<sup>51</sup>

Japanese gunners customarily fired only a few rounds and then pulled the guns away from the cave mouths. They did this to avoid drawing devastating American counterfire. American forces used new GR-6 sound-locator devices to find the Japanese guns. Americans called the short firing time "sniping," which frustrated their efforts to get a bearing. When the Americans got a bearing, they would blanket the area with fire or else

send in a cub reconnaissance plane to pinpoint the offending gun and try for a direct hit. The Japanese tried to ward off the cubs with anti-aircraft fire or obstruct their observation with smoke, but not always successfully.<sup>52</sup>

The Japanese ordinarily fired at dusk, night, or dawn, also to minimize counterfire. Sometimes they fired spotter rounds at dusk so they would be on target during the night.<sup>53</sup> Most of the Japanese fire, however, was "pre-arranged fire . . . delivered by . . . map data uncorrected." Most of the Japanese' targets were unobserved and unobservable. Artillery battalions sometimes sent liaison officers to the infantry regiments they were supporting, but these officers were not forward observers, and indeed, the Japanese 5th Artillery Command did not have any forward observers with the infantry. Sometimes a few artillery personnel and an officer would infiltrate American lines at night to bring back map coordinates for suitable targets, but these fires also were then delivered by uncorrected map coordinates.<sup>54</sup>

The Japanese never massed their battery fires except for a major offensive, and they were criticized by the Americans for this. There were good reasons why the Japanese did not mass fires, however. Not only did massed fires draw counterfire, they wasted the limited ammunition supply. The 5th Artillery Command had only 1,000 rounds per tube; therefore, saturation fire was out of the question. Lieutenant General Wada had imposed a reasonable working maximum of fifty shells per day per gun. Besides that, radio and visual communication between guns was limited by their physical isolation underground so that fire coordination would have been difficult in any case.<sup>55</sup>

All in all, Japanese use of artillery was efficiently parsimonious. It was nevertheless flawed by lack of responsiveness to particular needs on the front line, a shortcoming that could have been largely overcome, despite cave emplacement, with a more effective communications system. The front-line infantry needed radios below the battalion level, and the artillerists in their caves needed antennas to receive their messages. To rely on runners moving several miles in the open to relay fire requests or fire observation meant that hitting targets of opportunity was out of the question. The 5th Artillery Command gunners were given credit for thorough use of pre-registered fires. In the event that was all they were able to achieve. The Japanese amassed a large artillery force on Okinawa, but because of limited ammunition and communications, and forced segregation underground, sniping was the most it could do.

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