LEARNING THE NOT-SO-OBVIOUS LESSONS

Sometimes getting to real knowlege takes some digging.

By Phillip S. Meilinger

Learning lessons from combat is an essential part of the military art. Militaries anxious to avoid the old cliché of fighting the last war study carefully the conduct of previous armed conflicts, looking for new knowledge they can apply to the future.

In 1946, an officer teaching at the Army's General Staff School wrote an article for the service's flagship journal, *Military Review.* In it, Lt. Col. John H. Swenson looked at the 1944 Normandy campaign and concluded that while airpower had solved the problem of strategic maneuver, it hadn't been applied at the level of tactical maneuver.

Swenson's prescription was a "Horse Cavalry Glider Squadron," comprising three rifle troops equipped with machine guns and recoilless rifles, a weapons troop, and 800 horses. Some 100 gliders would transport this squadron. It would be flown/towed and then landed behind enemy lines. The troops would then mount up, draw sabers, and charge. Swenson believed that the appearance of such an unorthodox unit would cause panic among the enemy high command. The moral of the story: Not all lessons learned are *correct* lessons learned.

"Lessons learned" became an institutionalized effort in the US following the 1991 Gulf War. The Joint Staff's J-7 directorate was given responsibility for analyzing operations, devising solutions to thorny problems, codifying new ideas, and then disseminating them to the services. The joint lessons learned "primer" lists the four phases in this process: discovery, validation, integration, and evaluation. A seemingly simple process, but if a lessonwas not properly learned during the evaluation phase, the manual directed the unit to return to the integration phase and try again. In other words, lessons identified during the validation and integration phases were assumed to be

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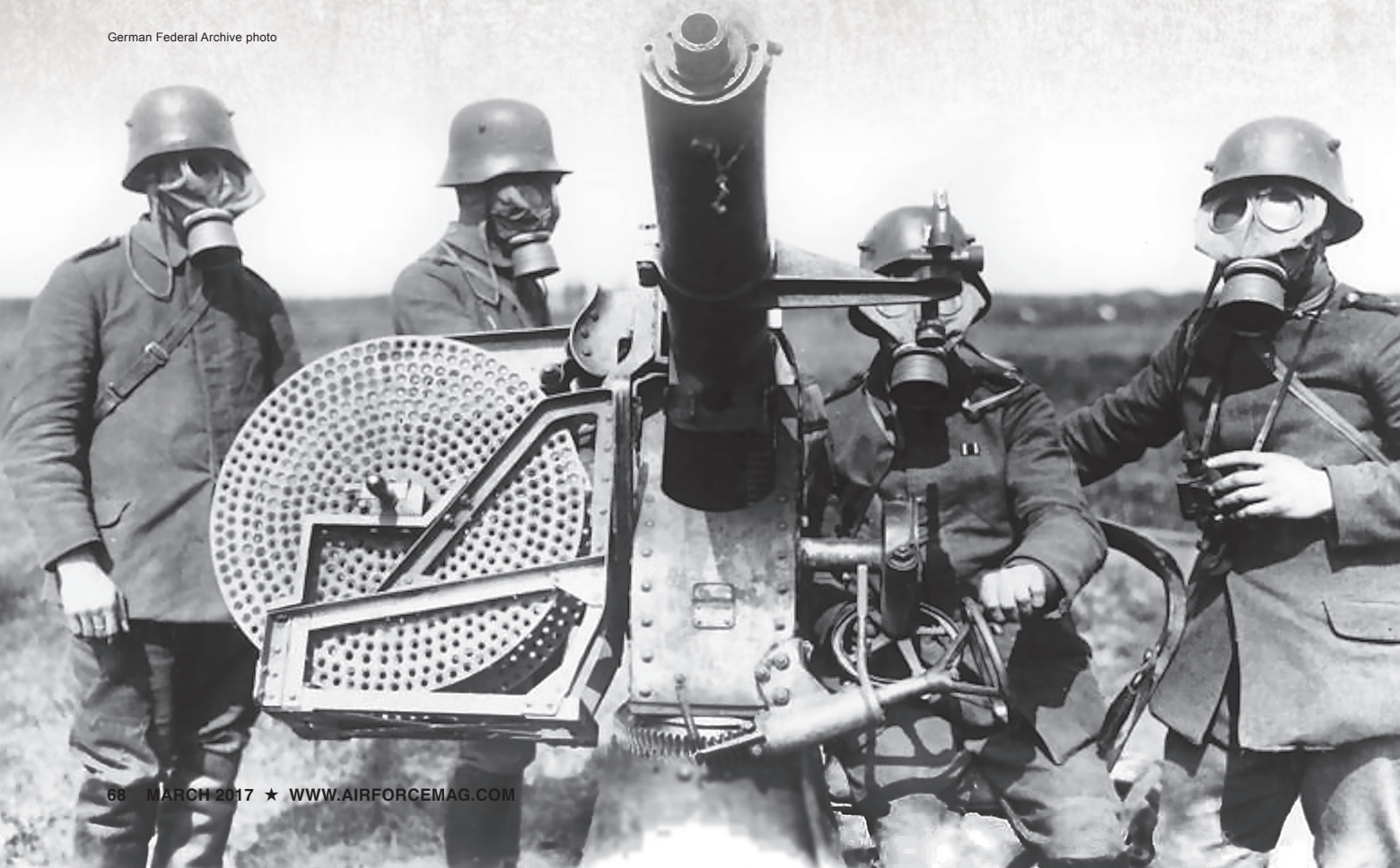


Previous page: A German anti-aircraft crew wears gas masks while manning their gun in 1915. The Germans and the French faced each other across trenches on the Western Front for four years.

French troops man machine guns in the ruins of a cathedral near the Marne in 1918. The French and Germans drew differing lessons from the horror of World War I.

Central News Photo Service-US War Department photo via National Archives

correct. But what if you are codifying the wrong lessons?

The classic case of learning questionable lessons came after World War I. The French and German armies had faced each other across a stagnated front for four years. Despite massive casualties, neither side was able to break the trench stalemate until the very end. Arguably, the breakthrough and eventual Allied victory were as much the result of hundreds of thousands of American reinforcements and the cumulative effects of starvation and war weariness on the German side, as it was due to new ideas or tactics.

MAGINOT AND BLITZKRIEG

In the aftermath, both countries formed cadres of top combat veterans to study the war and propose ideas to ensure such a stalemated blood bath didn't reoccur. About 500 German officers—about a quarter of them airmen—examined the issue for a year and came up with a proposed solution: lightning war, later termed blitzkrieg, that would employ tactical airpower, combined with motorized/mechanized infantry and tanks. The Germans believed the last war demonstrated that mobility must be restored to the battlefield, and blitzkrieg was the way to do it.

The French, the melancholy victors, conducted a similar exercise but came up with a different answer—one that emphasized defense rather than offense. France aimed to avoid losing another generation of young men in the next war by creating an impenetrable barrier: what became the Maginot Line. This massive trench and fortress system, consisting of heavily fortified, fixed defensive bastions—in some sectors connected by underground rail lines—would force the Germans to bleed themselves white attempting to breach it.

Both sides had faced the identical tactical situation, but after due consideration, came to diametrically opposed solutions. In 1940 it was clear the French had learned the wrong lessons.

Airmen also studied the war closely, hoping to glimpse the future. In some cases, they proved prescient, in other instances, they guessed wrong.

In his first book, *Our Air Force: The Key to National Defense,* published in 1921, Brig. Gen. Billy Mitchell argued that pursuit aircraft (today's fighter and attack aircraft) should make up the bulk of an air force because they had the most vital mission. Within a decade, he'd changed his mind, emphasizing instead the role of bombing. Mitchell's intellectual descendents in the Air Corps Tactical School (ACTS) at Maxwell Field in Montgomery, Ala., tended to agree. These bomber advocates, echoing the views of those like Giulio Douhet in Italy and Royal Flying Corps Maj. Gen. Hugh M. Trenchard in Britain, believed bombers were unstoppable, able to penetrate deep into enemy territory and destroy vital centers. They gave short shrift to the need for protective escort for bombers. In the era before radar this was not a silly notion. Even so, some pursuit advocates at ACTS disputed the ability of the bombers to defend themselves, arguing the bomber would not always get through.

CONSEQUENCES OF MYOPIA

Regrettably, pursuit experts who taught at the tactical school—men like Capt. Claire Lee Chennault (later of Flying Tigers fame) and 1st Lt. Hoyt S. Vandenberg (later USAF Chief of Staff)—rejected the notion of fighter escort for bombers. Both argued that the defining aspect of pursuit was

German infantry troops on Aug. 7, 1914. The French developed the Maginot Line from "lessons learned" during World War I—but the Germans developed the concept of blitzkrieg.

US War Department photo

its aggressive, offensive nature. It would be inappropriate and indeed counterproductive, they argued, to assign pursuit a defensive mission—the passive role of bomber escort.

The consequences of this myopia played out early in World War II. British bombers retreated to the safety of night to avoid decimation during unescorted daylight raids. Meanwhile, the daytime bombers of Eighth Air Force suffered severe losses over Germany through 1943, when the P-47 and P-51 arrived with drop tanks, extending the fighters' range to equal that of the bombers. Coupling this development with a new offensive doctrine—employing escorts to seek out and destroy the Luftwaffe—provided air superiority and eventual victory. Combat experience had proved the need for escort fighters, and that was a valuable lesson learned.

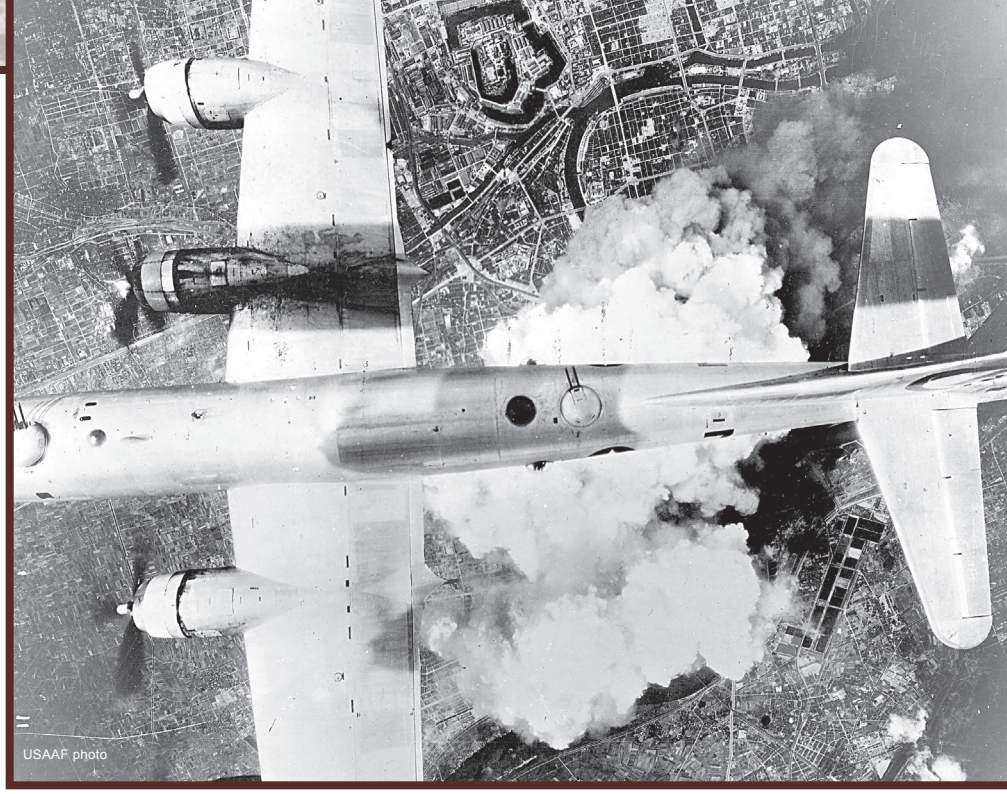
Then-1st Lt. Haywood S. Hansell Jr., a member of the faculty at the tactical school in 1934, earned a reputation in the Bombardment Section there and began, along with several others, to articulate the doctrine of high-altitude, daylight, precision, formation bombing. Hansell was selected in 1941—along with others who'd also taught bombardment at the tactical school—to devise an air war plan for the defeat of Germany. Their effort, AWPD-1, was a milestone in the development of airpower—a blueprint for a huge strategic bomber campaign to achieve victory.

Not just a thinker and planner, Hansell also commanded a bomb wing in Eighth Air Force, putting his ideas into practice in the skies over Germany. Hansell's success prompted Gen. Henry H. "Hap" Arnold to name him commander of the new XXI Bomber Command in the Mariana Islands, home of the formidable new B-29s. Hansell launched into planning and conducting a strategic air campaign against Japan.

DIFFERENT AND DIFFERENT

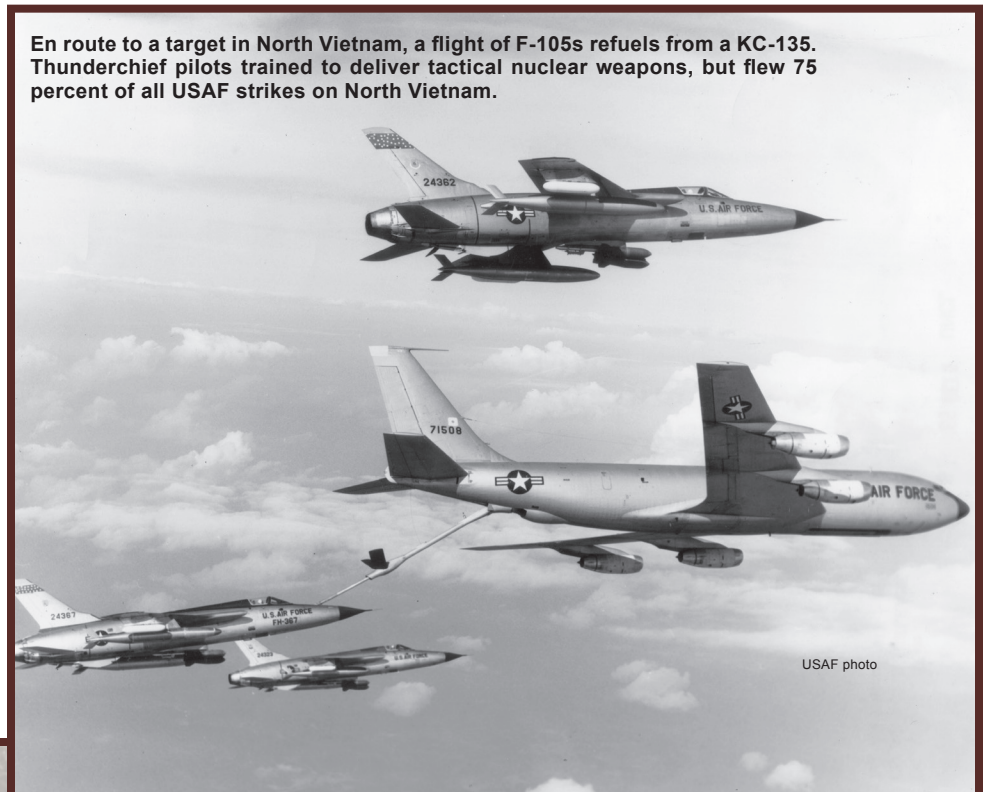
But this was a different war, in a different theater, against a different enemy, employing different aircraft. The ideas and tactics Hansell had pioneered and used so successfully against Germany simply didn't work in the Pacific. In January 1945, Arnold relieved Hansell and replaced him with the pragmatic Maj. Gen. Curtis E. LeMay. He, too, had been an innovator and commanded bombers over Europe, but was not married to past doctrines and tactics. LeMay stripped the B-29s of their guns and sent the bombers in without escort at night, using incendiaries to bomb Japan into submission. LeMay's new tactics worked. Ten years of doctrine, seemingly confirmed in the skies of Europe, were dropped at one sweep.

During the Cold War against the Soviet Union, bomber tactics were discussed anew. The intercontinental distances involved seemed to rule out the use of fighter escort. After much thought and experimentation, LeMay's Strategic Air Command would come to rely on low-level penetration, speed, decoys, and electronic warfare to survive Soviet air defenses. Fighter escort fell by the wayside.


USAAF photo

B-29 *Incendiary Journey* during a mission over Osaka, Japan, in 1945. Gen. Curtis LeMay saw that bombing tactics that had worked well over Germany would not work in Japan and scuttled years of lessons learned practically overnight.

En route to a target in North Vietnam, a flight of F-105s refuels from a KC-135. Thunderchief pilots trained to deliver tactical nuclear weapons, but flew 75 percent of all USAF strikes on North Vietnam.



USAF photo

AFMC photo

An F-15E drops four JDAMs during a developmental test at Edwards AFB, Calif., in 2002. Precision weapons have become ubiquitous for their accuracy and efficiency.

During the Korean War, hard experience showed once again that unescorted bombers—B-29s at least—couldn't survive against Soviet-built jet fighters like the MiG-15. After suffering heavy losses, the bombers resorted to night operations unless heavy jet fighter escort was provided.

By the onset of the Vietnam War a decade later, the revolutionary aspect of aerial refueling converted tactical fighters like the F-105 and F-4 into strategic bombers. These aircraft would strike North Vietnam using in-flight refueling on their way to and from the targets. Other fighters, not carrying heavy air-to-ground ordnance, would serve as escorts.

During the 1950s and '60s when SAC was ascendant, the fighters of Tactical Air Command were focused on dropping nuclear weapons. The organization feared losing resources or being marginalized, and so developed large fighters like the F-105, incorporating an internal bomb bay for carrying a nuclear weapon. By 1965, USAF fighter pilots spent as much time practicing how to drop nuclear weapons as they did employing conventional munitions for interdiction or close air support. More ominously, their air-to-air combat skills were allowed to atrophy, and USAF fighters over North Vietnam could barely hold their own against the enemy's nimble MiGs. It would take new programs and emphasis, especially Red Flag (and for the Navy, Top Gun) to refocus fighter pilots on air-to-air combat. By the end of the Vietnam War the transformation had taken place.

SUCCESS STORIES

Since the 1970s, new aircraft such as the F-15 and- F-16, combined with new weapons and sensors and realistic training, have made USAF overwhelmingly dominant in air combat. The US hasn't suffered a single loss in air-to-air combat since 1973. This success stemmed from learning the right lessons over Southeast Asia.

Precision guided munitions (PGMs) are another success story. It is difficult to exaggerate the revolutionary effect of having munitions that routinely land mere feet from their aim points. Although tested in World War II, PGMs weren't used extensively in combat until the later stages of the Vietnam War. The iconic example of this was the Thanh Hóa Bridge in North Vietnam. Hundreds of unsuccessful strikes were flown against this vital railway bridge near Hanoi, at the loss of 11 aircraft. Then, in April, 1972, a single flight of F-4s carrying laser guided bombs dropped the bridge while sustaining no losses.

Even so, the 1991 Gulf War was the first conflict in which precision weapons played a major role. Although the US used several types of PGMs—electro-optical, infrared, laser guided, and cruise missiles using ground tracking radar—it was laser guided bombs that caught the public's attention. The world saw memorable cockpit display footage of bombs flying down air shafts and through bunker doors. Nonetheless, of the more than 200,000 bombs dropped during Operation Desert Storm, only seven percent were PGMs, and only a small percentage of US aircraft were equipped to drop them.

The lesson learned was that precision weapons sharply reduce the number of aircraft needed to destroy targets. The calculus changed from aircraft per target to targets destroyed per aircraft.

The Air Force and Navy thus embarked on an aggressive program to design and develop a wide variety of PGMs and expand the number of aircraft that could employ them.

During Operation Allied Force over Serbia in 1999, PGM use increased to 32 percent of all air weapons used, and in Afghanistan the number jumped to 55 percent. In Iraq, the percentage climbed to 70 percent, and nearly all US strike aircraft are now equipped to deliver PGMs, which have only gotten better with time.

Accuracy is now usually within a couple of yards, and new weapons can see through clouds, smoke, and sandstorms and can even track and strike moving targets. Some weapons can be loaded with their targets before takeoff, while others, such as the new Small Diameter Bomb II, can have its target changed during a glide of up to 46 miles from the release point.

PARALLEL WARFARE

This new capability—the capacity to strike many targets simultaneously with precision and at range, across an entire theater—is called parallel warfare and is one of the enduring lessons from the 1991 Gulf War. More individual targets were hit in the first 24 hours of Desert Storm than Eighth Air Force had struck in all of Germany during 1942 and 1943.

The development and use of PGMs during the Vietnam War, but especially in the decades thereafter, is one of the great lessons-learned success stories.

The US has enjoyed mixed results in wars since 1945. Korea was a tie—at considerable cost—and the Vietnam War, despite more than a decade of effort, over 58,000 Americans dead, and billions of dollars spent, failed to prevent that country from falling to communism. Desert Storm, as well as operations over the Balkans in the 1990s, Libya, and the initial takedowns of the Afghan and Iraqi regimes in 2001 and 2003, can all be counted as successful, but the long-term results of the campaigns in Iraq and Afghanistan remain to be seen.

American victories have broadly been marked by the judicious use of air and space power teamed with special operations forces (SOF), augmented by indigenous ground troops (such as the Kosovar Liberation Army in the Balkans, the Northern Alliance in Afghanistan, the Kurds in northern Iraq, and forces opposed to Muammar Qaddafi in Libya). Another critical element was the large and networked US system of intelligence, surveillance, and reconnaissance (ISR) assets.

In Afghanistan, SOF troops, teamed with the indigenous Northern Alliance and backed by ubiquitous ISR and American airpower, resulted in a rapid and lopsided victory. While the Northern Alliance, even abetted by SOF troops, were outnumbered by the Taliban 5,000 to 2,000 at Mazar-e-Sharif, for example, they had airpower behind them, with targets called in and directed by SOF. Airpower proved the great equalizer.

F-16s on a flight during Red Flag at Nellis AFB, Nev. Air-to-air combat skills atrophied after Vietnam. It took ambitious training exercises, such as Red Flag, to restore fighter pilot skills in air-to-air fighting.

USAF photo by TSgt. David Salanitri

RENDERED INEFFECTIVE

The same proved true in Iraq. Airpower reduced the Iraqi Al Nida Republican Guard Division—originally numbering 13,000 men and 500 vehicles—to 2,000 troops and 50 vehicles by the time US marines engaged it. Similarly, air strikes cut the Hammurabi Division to 44 percent effectiveness and the Medina Division to only 18 percent before they were engaged by coalition ground troops.

One US Army brigade commander, Col. William F. Grimsley, later said: "We never really found any cohesive unit of any brigade of any Republican Guard division." As in Desert Storm, the bulk of the Iraqi army was rendered combat ineffective by airpower. One report states that up to 90 percent of the Iraqi army in some units deserted in 2003, driven away by the air strikes devastating their units.

The Air Force's post-Desert Storm lessons learned report—the *Gulf War Airpower Survey*—rendered all these statistics and many more for future commanders to consider, creating a template for future analysis of how the US fights. Desert Storm showed the value of stealth, for example, an attribute of modern airpower that has been applied in every major conflict since, with great success.

Lessons learned studies in the last 20 years have homed in on a few consistent points. In conflicts of choice, the US must maintain popular support both at home and abroad. Things tend to go badly when intervention costs a great deal of money or lives or produces widespread destruction in countries the US is trying to help.

In short, to best achieve its goals, the US must limit cost and risk, not only to itself, but also to its adversaries—and especially to the indigenous populations. The insertion of large numbers of ground troops greatly increases US risk while simultaneously incurring huge cost and—paradoxically—may lower the odds of success. US military experience since World War II has made these facts available.

It is time to reorient US military policy away from the use of conventional ground forces and toward more reliance on airpower (land- and sea-based) SOF, indigenous ground troops, and robust ISR. The old and traditional methods of war have not worked. It's time to change.

This is the lesson that should be learned from modern conflict. ✪

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