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"The Evolution of U.S. Army Tactical Doctrine, 1946–76."

United States Army Command and General Staff College, Fort Leavenworth, Kans. 66027. 58 pp. $1.00
Author: Major Robert A. Doughty, U.S. Army

The tactical doctrine of the U.S. Army changed several times during the period 1946–76 in response to various developments—improved conventional weapons, nuclear "hardware," guerrilla wars—but Army leaders and Pentagon policymakers consistently returned to a central theme: the defense of Western Europe.

After World War II, Army doctrine emphasized tactics based on recent battlefield experience, including the use of armor teamed with infantry and offensive campaigns to break the enemy's will to fight. This approach was augmented by attempts to improve coordination between ground troops and fighter-bombers ("air support") and to increase the number and firepower of tanks. The postwar threat of a Soviet invasion of Europe kept the Pentagon concerned with that continent.

Such doctrine did not help ill-equipped U.S. troops sent to fight in Korea in 1950. North Korean and Chinese infiltration tactics, the rugged terrain, and subzero weather hampered troops trained to fight on the plains of Western Europe. The Army soon responded with a mobile defense (quickly moving back to new positions when the Chinese sent waves of attackers against U.S. forces), effectively buttressed by massed artillery fire.

Although the artillery barrages depleted ammunition supplies, General Matthew B. Ridgeway asserted that "steel is cheaper than lives and much easier to obtain."

U.S. development of nuclear battlefield weapons—the first was an "atomic howitzer" unveiled in 1953—forced the Army to rethink its role. Although most military men thought an atomic war was unlikely, the Army in 1956 reorganized its combat units into "pentomic" divisions consisting of five semi-autonomous battle groups that could operate in "checkerboard" fashion on an atomic battlefield. Being able to concentrate or disperse quickly was seen as the key to success and survival.

The pentomic concept was dropped in the early 1960s, when the Army and the Kennedy administration agreed that the problem of nuclear conflict was separate from all other types of war. Another reorganization ensued. Each 15,000-man division had a "common division base to which a varying number of basic [900-man] combat maneuver battalions could be attached." The new divisions were expected to be capable of fighting a nuclear war, but the emphasis was on conventional battle.

Again, troops were trained to take the offensive (as in World War II), backed up now by new technology—e.g., mobile personnel carriers, helicopters, fighter-bombers, improved communications. But the offense, says Doughty, "was no longer considered the primary means of destroying the effectiveness of the enemy forces"; field manuals stressed that defensive actions could also effectively destroy the enemy.

The movement of the 1950s toward "dispersion" proved beneficial during the semiconventional Vietnam War.

So did the helicopter. Small U.S. units, deployed rapidly aboard "choppers," could "fix" the enemy—when he could be found. The final destruction of dug-in enemy forces was generally accomplished not by infantry assault but by lavish airstrikes and artillery fire. As in Korea, the Army's maxim in Vietnam was "Save lives, not ammunition."

Since 1972, the Army has again emphasized conventional combat against the Soviets in Western Europe. However, the 1973 Arab-Israeli War made it clear that modern weaponry—in this case, notably antitank rockets, antiaircraft missiles—can quickly inflict extremely high losses in materiel and men.

More than ever before, the Army has rejected the notion of a "ceaseless offensive spirit, untrammeled and unaffected by the realities of the new lethal weaponry." The 1976 Army manual pointed out that the attacker now needed a "combat power" ratio of 6 to 1 to defeat enemy defenders. The manual revived the idea of a Korea-style "active defense" with U.S. maneuvers to force a numerically superior foe (the Soviets) to mass his tanks and troops, making them vulnerable to counterattack, air strikes, and artillery bombardment.

However, Doughty warns as he concludes his survey, even the most sophisticated new doctrine cannot substitute for the "imagination, the inventive genius, and the will to fight of the American soldier."

"Stratospheric Ozone Depletion by Halocarbons: Chemistry and Transport."

National Academy of Sciences, 2101 Constitution Ave. N.W., Washington, D.C. 20418. 27 pp.

Scientists learned a decade ago that "trace amounts" of certain widely used industrial chemicals were depleting the earth's ozone screen, a gaseous shield against the sun's biologically harmful ultraviolet rays.

It now appears that this enveloping ozone blanket is being destroyed twice as fast as previously thought. That is the conclusion of a highly technical computer analysis conducted by the National Research Council of the National Academy of Sciences.

Ozone is depleted by high-flying aircraft, nuclear weapons testing, nitrogen fertilizers, and the release of chemicals known as halocarbons into the atmosphere. The latter pose "the greatest and most immediate threat," the Council believes. Halocarbons are commonly employed as a coolant in household refrigerators and a propellant in aerosol sprays. They are a key ingredient in industrial solvents.

As these chemicals accumulate in the stratosphere, 6 to 30 miles above the earth, they react with sunlight and release chlorine compounds that break down ozone. Reduced ozone in turn means more ultraviolet rays striking the planet's surface. Scientists fear this could spur a sharp rise in the incidence of skin cancer. Climatic patterns might be fundamentally altered.

In its first report four years ago, the NRC predicted that, at 1973 production rates, halocarbons would cut existing ozone levels by as much as 7.5

percent before the atmosphere reached "steady-state." Half of this eventual decrease would occur within 50 years.

Now, using more sensitive instruments and improved mathematical models, the Council has revised the figure upward—to 16.5 percent. The ozone loss will amount to 8 percent within 30 years.

That assumes 1977 "release rates." But the use of halocarbons is growing. Though banned from aerosols in the United States in 1979, they are still a mainstay of foreign manufacturers. Moreover, the Council warns, the use of halocarbon F-22 in refrigeration has increased 25 percent worldwide in the past two years. Production of the solvent methyl chloroform is doubling every five years.

The NRC recommends development of an "early warning system" to monitor changes in the ozone layer. Satellites could be parked in the stratosphere to detect minute fluctuations in chemical concentrations—something ground stations now in use cannot do.

And the sooner the better. There is a time lag, the Council points out, between halocarbon release and ozone destruction. Even if halocarbon production stopped tomorrow, it would still be 15 years before the ozone shield began to recover.

"Key Crude Oil and Products Pipelines Are Vulnerable to Disruptions."

Report to the Congress by the Comptroller General of the United States. General Accounting Office, Washington, D.C. 20548. 79 pp.

The 230,000-mile U.S. oil pipeline network pumps 7 billion barrels of gasoline, jet fuel, heating oil, and kerosene throughout the country each year. Most of these pipes could probably withstand a moderate earthquake. But investigators for the U.S. General Accounting Office (GAO) charge that "no similar attention has been given to protecting pipelines from sabotage."

Pipelines carry 75 percent of all crude oil to domestic refineries and about one-third of the refined products to local communities. Damage to a small spur line can quickly be repaired or its contents rerouted. But disruption of one of three major arteries—the Colonial (linking Texas and New Jersey), the Capline (between Louisiana and Illinois), and the Trans-Alaska (Prudhoe Bay to Port Valdez)—could bring on an energy shortage "exceeding the 1973 Arab oil embargo."

These arteries move 4.5 million barrels of oil per day, eight times the volume the United States used to import from Iran. The Colonial alone provides 50 percent or more of the refined petroleum used in Georgia, Maryland, New Jersey, North Carolina, Tennessee, and Virginia.

Mainline systems like Colonial or Capline, the GAO contends, are "attractive targets" to saboteurs. Extensive damage—to pump houses, key intersections, river crossings, or the sophisticated computers controlling the oil flow—could take at least six months to repair. And in the meantime, there would be "no adequate al-

ternatives" for moving the oil around. Barges, trucks, tankers, and railroads could not fill the gap.

Yet pipeline security is almost nonexistent. Gates are left unlocked, visitors' identification goes unchecked. Many installations are left unguarded for much of the day. Inexplicably, some standby equipment has been installed side-by-side with the machinery it would have to replace.

Why the lack of interest? One reason, the GAO suggests, is that pipelines are owned jointly by as many as 10 oil companies; the owner who tends to lose the most "usually determines the level of security." The fledgling Department of Energy, unsure of its responsibilities, has stayed away from the problem.

Historically, pipeline sabotage has been infrequent. The Trans-Alaska Pipeline is something of an exception. To curb "malevolent damage," its operator, the Alyeska Pipeline Co., spent $8 million on security measures in 1979, including armed guards, daily aerial surveillance, and closed-circuit TV.

The pipeline has been bombed twice in the last two years.

"Social Security Revisited."

American Enterprise Institute for Public Policy Research, 1150 17th St. N.W., Washington, D.C. 20036. 37 pp. $2.75
Author: J. W. Van Gorkom

The Social Security system, begun in 1935, was designed to provide a minimum income for those no longer able to work, paid for by mandatory contributions from employers and employees. Over the years, writes Van Gorkom, chairman of the board of Trans Union Corporation, it has become a kind of welfare program with several inequities. It should revert to its former role.

The present system covering 110 million workers (90 percent of the labor force) favors low-income earners. It enables them to receive higher retirement benefits in proportion to their wages (and thus the amounts they paid into the system) than those who earn considerably higher salaries.

The result: Benefits received by low-paid workers "can no longer be viewed as earned and consequently received as a matter of right." And workers not covered by Social Security (e.g., federal employees) can qualify for the minimum benefit—$122 per month—by working at a second job as little as one day a month for seven years.

The present system also discriminates against working spouses; a nonworking wife, for example, receives 50 percent of her husband's benefits after his retirement, 100 percent after his death. A working wife receives an equal share of her husband's benefits but nothing of the payroll taxes she paid during her employment. Social Security benefits are augmented today by private pension plans (about 45 percent of all workers are covered), and government programs such as Supplemental Security Income (SSI) for those over 65 and the blind or disabled, food stamps, and Aid to Families with Dependent Children (AFDC).

Another problem with the present system is its effect on capital formation. If there were no Social Security

taxes, Van Gorkom says, the $45 billion collected from workers each year could be saved or invested in stocks, bonds, and insurance.

The Social Security system should be scaled down and incorporated into a three-part "overall income replacement system."

The first component would be voluntary savings, including private pension plans, to encourage capital formation.

The second would be Social Security, reduced in scope to provide a minimum income to retirees who have worked and paid Social Security taxes full-time for a substantial period. (Van Gorkom suggests 35 years.)

For those who earn too little to put aside some savings or who are not covered by private pension plans, supplemental benefits are available through SSI, AFDC, and food stamps.

Specifically, he suggests that the $122 monthly minimum benefit be discarded because other federal programs already provide minimum incomes for those ineligible for Social Security. Elimination of the spouses' benefits and consideration of married couples as a single unit whose earned benefits are split 50-50 would remove the bias against working wives.

And the system should pay retirees only a basic minimum income; in this way, low-paid workers would bear a fairer share of the cost (but still make out somewhat better than highly paid workers) and pay lower Social Security taxes, thus strengthening "the concept that benefits . . . are received as a matter of right."

"Soviet Economy in a Time of Change. A Compendium of Papers Submitted to the Joint Economic Committee, Congress of the United States."

Government Printing Office, Washington, D.C. 20402. 1,532 pp. $7.50

The Soviet Union's "guns, butter, and growth" economic strategy is in deep trouble. Productivity is low, labor scarce, and inflation high. Military spending (a whopping 11 to 13 percent of GNP) combined with heavy investment in the lackluster agricultural sector precludes much variety in consumer goods. Shortfalls are the rule in the USSR's centrally planned economy. An economic crisis by the mid-1980s may be the only target date the Soviet Union meets on schedule.

That is the conclusion of a massive, two-volume report to the congressional Joint Economic Committee compiled by 79 scholars from the United States, Britain, Canada, Israel, and Austria. Their findings are detailed in 58 densely documented chapters dealing with everything from raw materials and computers to livestock feed, machine tools, and the merchant fleet.

Soviet planners face a painful choice, the authors believe: maintain the status quo and invite disaster; or begin changing the way the country does its business—with no guarantee of success.

Whatever the decision, the authors say, the lot of the average Russian will change little during the 1980s. Despite the "rhetoric laced with promises" of the Brezhnev regime, the average citizen's standard of living—diet, income, clothing, appliances, housing—will improve at a slower pace than it did

even during the sluggish 1970s.

Soviet citizens currently suffer from the poorest housing accommodations of any industrialized nation. Average per capita floor space today is only about 6′ by 12′ (versus 30′ by 40′ in the United States).

Rapid urbanization is one culprit. In 1926, only 19 percent of the Soviet population lived in cities or towns; the figure today is 62 percent, as millions of rural Russians have flocked to urban factories.

Factories are going up faster than public housing. Since 1964, private home construction has been illegal in cities with more than 100,000 inhabitants. The waiting period for a new apartment may be 10 years.

As a result, 30 percent of all urban Soviets live communally (in groups of singles; with unrelated families) or in crowded factory dormitories. Most newlyweds live with their parents. Although the divorce rate in the USSR has tripled over the past 20 years, many divorced couples must continue living together for sheer lack of alternatives. According to the report's estimate, 123 households compete for every 100 "housing units."

Soviet automakers cannot cope with rising demand either, despite completion in 1970 of the vast, Fiat-designed Volga Motor Vehicle Plant. Only one Russian in 46 owns a car, compared to one out of two Americans (yet, inexplicably, the annual number of highway fatalities—45,000—exceeds the U.S. death toll). The "official" waiting period for delivery is 18 to 24 months, which actually means 5 to 7 years.

And prices are high. In 1977, the cost of a Moskvich (roughly $8,600) was equivalent to 20 months' earnings for an average family with *two* income earners.

Private drivers are limited to 5.5 gallons of gasoline per week, an inconvenience mitigated by a lack of paved highways. The USSR, with a land area more than double that of the United States, has only 7 percent as many roads surfaced with cement or asphalt.

Ordinary citizens are extraordinarily adept at cutting red tape and circumventing delays and shortages. The report offers new insights into the USSR's burgeoning "illegal economy." In Moscow in 1971, for example, one out of every five gas-station attendants was arrested for black-market dealings. About one out of three private motorists drove, in part, with state-owned gasoline in his tank.

Theft of "socialist property"—from factories, clubs, farms, offices—is rife; most of the culprits go uncaught. Pilfered goods are a mainstay of outdoor flea markets.

Among the most sought-after commodities: information. One Muscovite, the congressional study reports, visited the Odessa fair and found a man offering to sell "one sentence for a ruble." When the hawker had been paid, he whispered: "Imported pantyhose will be sold at 10:00 A.M. tomorrow on the second floor of the Central Department Store."