

Jul/Aug

nr. 81

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Original Editor and Founder: Christopher Wagner

Magazine Game Component Printing: Reflex Offset, Garden City, L.I.

Printing & Binding: American Press, Inc., Gordonsville, Va.

Die Cutting: Freedman Die-Cutters, New York, N.Y.

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SIMULATIONS PUBLICATIONS, INC.

257 Park Avenue South, New York, N.Y. 10010 Telephone (212) 673-4103

Looking Ahead to Next Time

Our game in S&T 82 will be *Central Front*, an operational analysis of the Kassel/Wurzburg region in West Germany, potentially one of the most promising avenues of attack by Warsaw Pact forces. An article on the same subject by Chuck Kamps will also appear, plus our regular features.

When to Expect Nr. 82

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Big Tsimmis

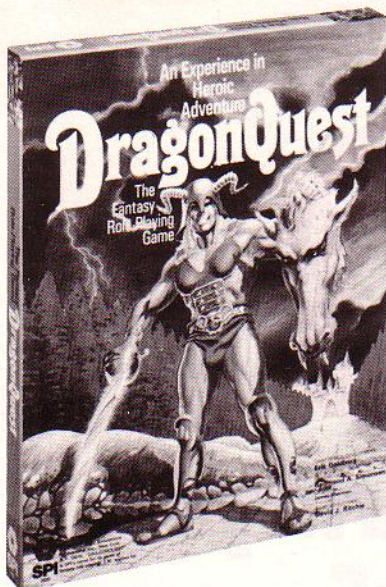
Over the last few years, many people in the hobby have speculated that the advent of fantasy and science fiction games — especially role-playing games — may be a precursor to the doom of military conflict simulations. Personally, I consider this particular hypothesis absurd and tinged with gratuitous paranoia. Of course, living in New York, one is constantly presented with absurdities of the highest quality, and survival itself hinges on a well-developed sense of paranoia. Nonetheless, my favorite scenario concerning the end of wargaming has nothing whatsoever to do with fantasy role-playing games.

Rather, I foresee the end, some ten to twenty years down the line, a few years after America's schools have bowed to the inevitable and ceased teaching children the "irrelevant" skill of reading. Today there are fewer newspapers published than there were a decade ago, and there were fewer at that time than ten years before. The literacy rate in America is actually *declining*; the average college freshman can barely write a coherent sentence and scores significantly worse on a 1920 college entrance exam than the freshmen of 60 years ago. In short, I see us being done in — along with the last of the newspaper, magazine, and book publishers — by the boob tube.

Indeed, the insidious electronic media has even now struck a resounding blow against us! As I write these words, spring is winding down and New York is heating up, but the SPI Panic Chits (wargaming's best softball team) has yet to pick up a bat in anger. This sad state of affairs is entirely due to a spectacularly successful sabotage of the ninety-team New York Publishers' League, comprised of the cream of America's print media, by — you guessed it — a radio station!

After the League magnanimously admitted rock station WNEW-FM's softball team (despite

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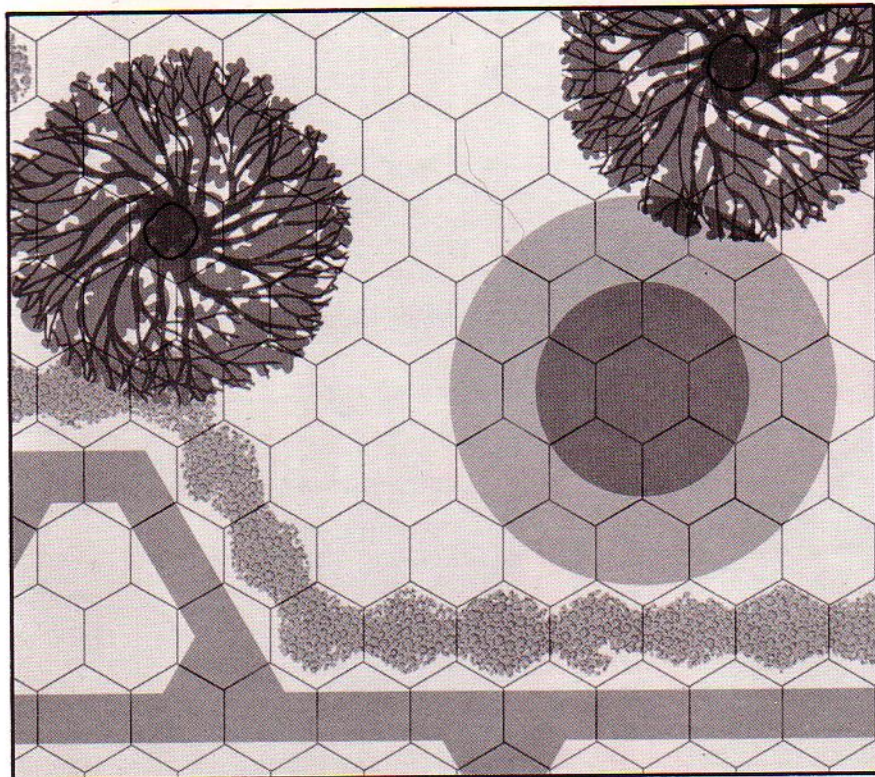
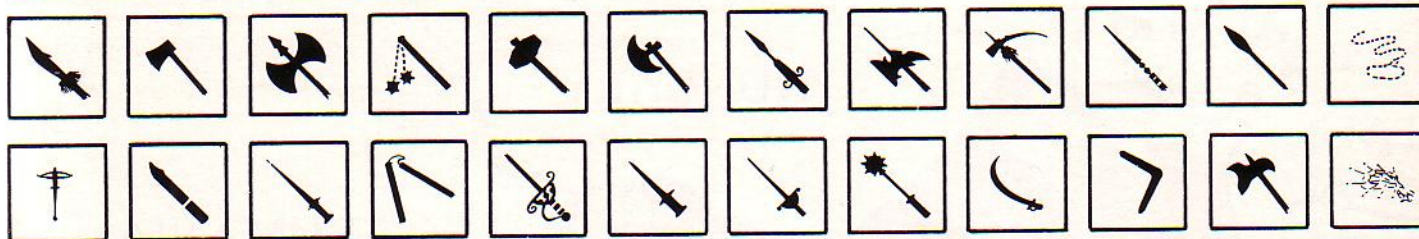
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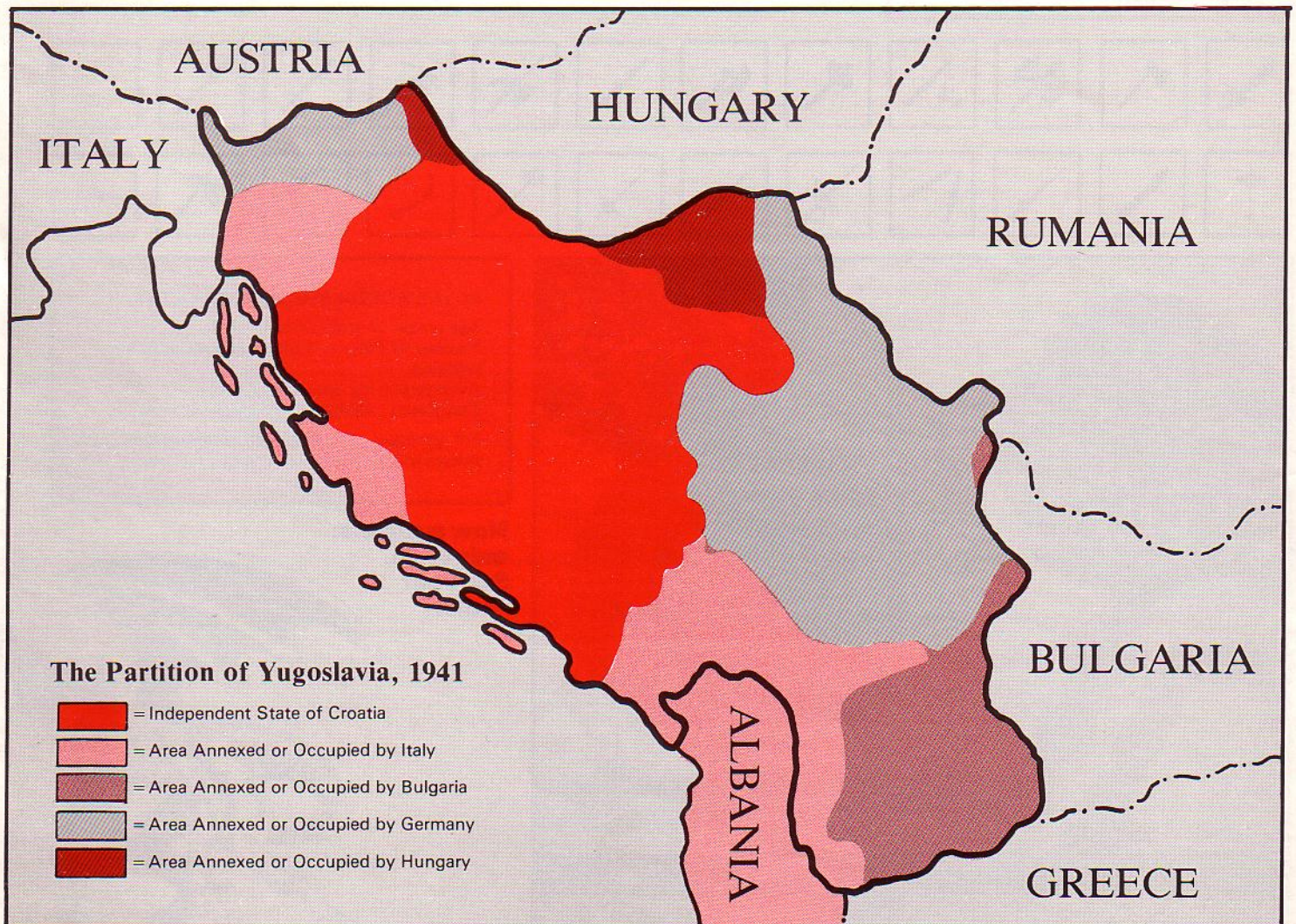


TITO

and his Partisan Army Yugoslavia, 1941-45

by Richard Rustin

Late in March of 1941, the pro-Axis government of neutral Yugoslavia was ousted by coup and replaced by leadership sympathetic to the Allies. The development came as a rude shock to Germany, for it presented her with a potentially hostile neighbor on her southern flank at a time when she was completing final preparations for Operation Barbarossa, the surprise attack on the Soviet Union.



Accustomed to springing surprises rather than being surprised, the Germans nevertheless reacted to the political developments in Yugoslavia with devastating effectiveness. On 6 April, German, Italian, and Hungarian forces attacked, and the largest country in the Balkans was swept into World War II.

The attack on Yugoslavia was a classic example of *blitzkrieg* warfare. In a pattern that had become all too familiar to a horrified world, panzer columns quickly crushed the poorly equipped Yugoslav army, whose main mode of mobility was the ox-cart, and the capital city of Belgrade was ravaged by terror bombing that dwarfed the German raid on Rotterdam a year earlier.

It was over in a dozen days. On 17 April, Yugoslavia surrendered unconditionally. Two weeks later Greece, also a target of the Axis flank-clearing campaign, ceased to resist. The Balkans, whose name had become synonymous with small states and petty quarrels — an area which has been said to produce more history than it can consume locally — was quiet under the Axis heel.

Or so it seemed. The lightning Axis campaign, apparently so decisive, was to prove merely the opening salvo of four years of bitter warfare in Yugoslavia. The Yugoslavs were stunned, but they were not dead. Thousands of soldiers who survived the *blitzkrieg* fled to the mountains which cover 80% of the country. Within a few months, the battle flared anew in a variety of bloody forms.

There was guerrilla warfare in its most savage form against the Axis. But in a sense, there also was civil war, as the Yugoslavs, themselves deeply divided religiously, ethnically and politically, often ignored the foreign occupiers and fought one another with equal savagery. At the end, when the Allied tide of liberation rolled in, the conflict became a conventional war, with defined front lines.

When all was over, the victor was Marshal Josip Tito and his Communist-led National Army of Liberation. By defeating the Axis occupiers and his Yugoslav rivals, and by skillfully dealing with Churchill and Stalin alike to obtain military help, Tito not only won the campaign, but laid the foundation for a unified and stable post-war Yugoslavia.

Echoes of those battles in Yugoslavia's remote mountains and barren limestone plateaus still are being heard today. Although it has been said that history does not linger long in the 20th century, the era that began with Tito's political and military victory lasted 35 years to the month, ending only in May 1980 with his death at 87.

Reluctant Melting Pot

Once again the fate of the country is shrouded in uncertainty. There is concern that the Soviet Union may intervene militarily to subdue a recalcitrant former ally. With attention focused on Yugoslavia in 1980, the lessons of 1941-45 — above all the tenacious resistance of Yugoslavs to foreign domination — are as valid today as they were then.

Yugoslavia, about the size of Oregon, is a microcosm of the polyglot Balkans. The country was one of those manufactured after World War I by the Western Allies, who saw it as a melting pot for the South Slav ethnic groups, many of whom had never had a national identity. The country was created by fusing parts of the vanquished Austro-Hungarian Empire with Serbia, Montenegro and northern Macedonia. Until 1929 the country was known as the Kingdom of the Serbs, Croats, and Slovenes.

Pronounced cultural differences among the country's six major Slavic ethnic groups were accentuated by religious differences. At the risk of oversimplification, the country can be viewed as consisting of three parts. In the east, the predomi-



nant groups were the Serbs, Macedonians, and Montenegrins, all of whom embraced the Eastern Orthodox religion. In the west were the predominantly Roman Catholic Croats and Slovenes. Wedged in between were the so-called Muslim Slavs of the central provinces of Bosnia and Herzegovina who became followers of Islam during the Turkish occupation of the region in the Middle Ages. Scattered throughout Yugoslavia were about a dozen non-Slavic ethnic minorities. Even today, Yugoslavia has three officially recognized religions, three languages, and two alphabets.

True to Balkan tradition, the Yugoslav melting pot was bubbling uneasily when war descended on the country. Each of the major groups jealously guarded its own culture. Many non-Serbs viewed the country as an artificial creation and harbored dreams of independence for their own region. The Serbs were the largest group, representing about 40% of the pre-war population of 16 million, and in effect they represented the Establishment. The only group with any real experience in self-government, the Serbs dominated the pre-war government, but were looked upon with distrust and even outright enmity by other Slavs, who felt the Serbs held a disproportionate amount of power.

The Axis, after the April 1941 *blitzkrieg*, carved up the country to satisfy the territorial, political, and strategic appetites of its partners. Germany incorporated directly into the Third Reich the northwestern corner of Yugoslavia — the former Austro-Hungarian province of Carinthia, which had a significant minority of ethnic Germans. The Germans took over occupation responsibility for Serbia, to protect communications with their forces in Greece and Crete, and to safeguard the trunk railway (a stretch of the route of the peacetime Orient Express) over which Germany shipped home vital raw materials for the war effort. Rumanian oil, representing about half of Ger-

many's oil supply during the war, was shipped over this line. Moreover, Yugoslavia itself was the source of all Germany's chrome, about 60% of its bauxite, and a quarter of its copper and antimony. Sabotage against rail lines became a prime guerrilla activity as the war progressed.

Bulgaria annexed Macedonia, while Italy occupied Dalmatia, Slovenia, and Montenegro. Hungary was rewarded with a slice of northern territory populated mainly by Magyars with strong ethnic ties to Hungary.

The kingdom of Croatia was formed under Italian hegemony to encompass the pre-war provinces of Croatia, Bosnia, and Herzegovina. The Italians and Germans shared occupation responsibility for the puppet state, which also raised a national army plus a particularly vicious political militia — the Ustashi, commanded by the Croatian premier, the infamous Ante Pavelich. Pavelich was a fanatical persecutor of Serbs and members of the Orthodox church, and the depredations of the Ustashi drove thousands of Yugoslavs to the guerrilla cause. It is estimated that the Ustashi slaughtered between 350,000 and 750,000 of their countrymen. If the high side of the range is accurate, it means that the Ustashi was responsible for nearly half the 1.7 million Yugoslavian deaths in the war.

The Croats and Muslim Slavs also supplied troops directly to the Wehrmacht. Three infantry and three SS mountain divisions, plus a number of smaller units, were raised, with most seeing action against the guerrillas. A small Serbian national militia also was formed, but this force eventually became heavily infiltrated by anti-Axis officers of the pre-war Yugoslav army.

While, to some extent, the partition of Yugoslavia had its roots in historical claims of various nations and groups, the Axis, to their infinite discomfiture, ignored certain glaring lessons of history. The region that eventually became Yugo-

slavia had lain athwart the traditional invasion route between Europe and Asia, and for centuries the South Slavs had been forced under the yoke of foreign powers, mainly the Hapsburgs and Turks. Never strong nor unified enough to repel the foreign oppressors outright, the Slavs had adopted and perfected guerrilla tactics as the principal means of battling them. In addition to usual hit-and-run tactics, the Slavs had developed a kind of go-along, get-along method known as "the uses of the enemy." This called for infiltration of the enemy political and military system, so that the occupier could be destroyed from within. Indeed, by the eve of World War II, provision for guerrilla warfare was part of the doctrine of the Yugoslav regular army — just as it is today.

Thus the stage was set for another rude surprise for the Axis when Germany, its attention once more riveted on Operation Barbarossa, left Serbia and Bosnia garrisoned with only four weak security divisions in the late spring of 1941. The Italians, at this point in the war more than content to take a back seat in the fighting, had the largest occupation responsibility, but the least appetite for it. There were 22 Italian divisions stretched across thousands of square miles of Yugoslavia and neighboring Albania.

By July, the traditionally bellicose mountaineers of Montenegro were picking off isolated Italian garrisons. A month later, attacks on police stations in Serbia were part of the daily routine. Suddenly, large parts of Yugoslavia were aflame with resistance. The Germans, who viewed the area as a strategic necessity but a military backwater, were forced to reinforce from thinly spread Soviet and Mediterranean fronts.

The Guerrilla Movement

The burgeoning guerrilla movement quickly coalesced into two distinct forces that were often more hostile to each other than to the occupiers. First into the field, but certainly not foremost, were the Chetniks. Deriving their name from "*cheta*," the Serbian word for "armed band," the Chetniks mainly were pro-monarchist Serbians and Montenegrins who owed their loyalty to the Yugoslav government-in-exile of the youthful King Peter II. They were headed by Draža Mihailovich, a colonel in the regular army. At the outset, he commanded a force of some 5,000 effectives. This force later grew to a peak of 70,000 in 1943 before the movement disintegrated.

The more potent force was the Partisans, who took their name from the *partista* guerrillas who harried Napoleon in Spain more than a century before. The identification with Spain was no accident; many of the original Partisans fought against the Fascists in the Spanish Civil War, and the Partisan leadership was composed entirely of Communists, who implanted a rigorous discipline in the ranks. At their head stood Tito, since 1937 chief of the small, outlawed Yugoslav Communist party. Because Germany and the Soviet Union were bound by the Pact of Non-Aggression of 1939 at the time of Yugoslavia's capitulation, the Communists were inactive for the first two months of the occupation. But when Germany attacked the Soviet Union on 22 June 1941, they sprang forth with a vengeance on orders from Moscow. Recognizing the problems posed by their numerical weakness, the Communists strove to form a broad-based national front of anti-fascists of all political, ethnic, and religious persuasions. In this they eventually succeeded; the Partisan ranks swelled to 800,000 by the end of the war from only 13,000 in mid-1941, but their leaders remained unwaveringly Communist.

Before examining the ebbs and flows of the guerrilla war, it is vital to recognize that both guerrilla warfare and all but the most extensive counter-insurgency operations do not lend them-

selves to set-piece battles, comprehensive after-action reports, or tidy tactical symbols on military maps. If anything, they engender a whole new branch of military cartography — for example, a symbol of a gallows, to mark where the entire male population of a town was hanged in reprisal of guerrilla raids. To carry the grim example further, the gallows becomes a sort of guerrilla replacement depot, as thousands of civilians, enraged by atrocities, flock to the rebel cause.

Moreover, it is important to recognize what the major combatants — the Germans, Partisans, and Chetniks — sought to achieve. The Germans tried to fight the campaign on the cheap, using second-line units wherever possible. But the fighting represented a continuing drain on their over-stretched resources. By the beginning of 1944, when the conflict in Yugoslavia still was a guerrilla war without defined front lines, the German commitment had grown to 20 divisions and more than 700,000 military personnel, or about 5% to 10% of the Wehrmacht's total strength.

Germany's problems were compounded by the unreliability of her allies in the occupation. The Italians dropped out of the war midway through the campaign. The Bulgarians, after ruthlessly suppressing the guerrillas in Macedonia for more than three years, bowed to Soviet pressure and switched sides in September 1944. Suddenly, the Wehrmacht faced 9 Bulgarian divisions, well-armed with German-supplied equipment, on Yugoslavia's eastern frontier. Croat and Serb pro-Axis forces were effective only against civilians.

Areas of Operations

This mix of problems had a predictable effect: major cities, communications lines, and industrial sites were kept relatively secure from guerrilla forays, but the Partisans and Chetniks ruled the countryside. Several major anti-guerrilla operations were launched during the course of the campaign, and most had devastating tactical effects on the guerrillas. Many, timed for the onset of winter, were designed to drive the guerrillas deep into the inhospitable mountains, where recruits and supplies were scarce. But none ever proved decisive; security leaks, poor coordination among Axis forces, and the general unwillingness of Germany's allies to give anything near a 100% effort allowed main guerrilla forces, though badly battered, to slip away time after time.

Tito's real goal was a unified, Communist post-war Yugoslavia. The fights against the Axis and his major potential political rivals, the Chetniks, were the means toward this end. While conducting a major military campaign, Tito simultaneously laid his political foundations. Whenever the Partisans captured a town, they destroyed all existing administrative records and set up their own local government. By the middle of the campaign, Tito was able to proclaim a revolutionary government within occupied Yugoslavia. Outwardly, it appeared broad-based and democratic; inwardly, it carried the seeds for a Communist takeover of the country once the war ended.

The Partisans were confined largely to the mountains and were buffeted by anti-guerrilla operations until the Italian surrender in September, 1943, provided the turning point in the guerrilla war. It gave the Partisans vastly greater freedom of movement and some captured equipment as well. Moreover, it brought the Western Allies to Italy, just across the Adriatic Sea, and allowed them to give Tito substantial aid by air and sea. By that time, the United States and Great Britain had identified the Partisans as the major anti-Axis force in Yugoslavia, and were willing to ignore Tito's Communist leanings.

The Chetniks feared Communism as much as Fascism, and often collaborated openly with the

Italians, even to the extent of joining in major anti-Partisan operations. Mihailovich's strategy was somewhat akin to that of the French Maquis: the systematic buildup of a force which could rise up to cooperate with the Allies when liberation was close at hand. All too fresh in his memory were the 35,000 Serbians slaughtered for guerrilla activity in World War I. But the strategy backfired on two counts. Collaboration cost the Chetniks the support and confidence of many Yugoslavs, and eventually resulted in a cutoff of Allied aid to Mihailovich's forces. Secondly, the member of the Allies who drove the Axis from the Chetniks' Serbian stronghold was the Soviet Union, which was hardly favorably disposed toward a royalist cause.

The initial Partisan-Chetnik uprisings in the summer of 1941 brought sharp reprisals from the Axis. In Montenegro, the Italians mounted a strong ground, naval and air operation. With significant Chetnik support, they eventually quelled the Partisan uprising after almost a year of hard fighting. Then, the Italians left the policing of the rugged countryside to the Chetniks, and contented themselves with occupying the population centers. This arrangement was soon to be repeated in many other Italian-occupied areas.

Confused Pursuit

In Serbia, where both Tito and Mihailovich had their headquarters, the Germans soon realized they were facing a growing and potentially serious problem. In addition to numerous minor incidents — bridge-blowing, railway sabotage and bank robberies — the guerrillas disrupted production for a month at the vital copper mines in the northeast, near the Rumanian border. In response, the Germans beefed up their forces in Serbia by two divisions and an independent infantry regiment, and launched a series of small but sharp local actions against the guerrillas. Tito was driven across the Serbian border into Bosnia, in the new Croatian kingdom, while Mihailovich retreated farther into the Serbian mountains.

This period was marked by a grisly series of Axis reprisals against the local populace, a practice which was to become all too common as the war progressed. The worst of the early atrocities occurred at Kraljevo and Kragujevac, both in Serbia. At Kraljevo, the Germans by their own account executed 1,700 civilians; the guerrillas put the number at 6,000. At Kragujevac the slaughter was worse. According to the Germans, 2,300 persons were executed. According to the guerrillas, 7,000 perished. The twin massacres were in reprisal for guerrilla actions which cost the Germans 40 men!

On balance, this ruthless policy boomeranged against the Axis. On one hand, it did convince Mihailovich that open warfare against the Axis should be prosecuted only with extreme caution; the Chetniks increasingly adopted "the uses of the enemy" tactics, particularly using the more pliant Italians as a source of weapons and supplies to be employed against the Partisans.

The atrocities enraged tens of thousands of Yugoslavs, many of whom had lost entire families. Painfully realizing that freedom means one has no more loved ones left to lose, they joined the more aggressive Partisan movement as the means of exacting vengeance on the Axis.

Torn from its Serbian base, the Partisan main force circulated throughout Bosnia in early 1942, gathering recruits and sabotaging the Axis war effort wherever and whenever it could. At the time, the Italians and Germans shared occupation responsibilities in the kingdom of Croatia, with the Germans overseeing the eastern portion — the former province of Bosnia.

In January 1942, two German divisions and Croat forces attacked the Partisans in Bosnia, but failed to annihilate them when Italian units which

were supposed to have blocked the Partisan retreat to the west failed to arrive in time. This was the first major example of poor coordination which was to plague Axis anti-guerrilla operations during the campaign. Inasmuch as such operations often spread over into zones of different occupiers, close coordination was vital, but rarely achieved. Even units of the same nationality operating within a few miles of each other had communications problems because Yugoslavia's mountainous terrain limited radio contact to a few miles.

As a result of the Italian failure to hold up their end of the operation, Tito's forces, though badly mauled, were able to filter farther west into Bosnia, closer to Tito's native province of Croatia, where recruits would be more plentiful and certainly more receptive to his cause than the Muslim Slavs and Serbs of eastern Bosnia.

Late in April 1942, a joint German-Italian-Croat operation was launched to clear western Bosnia. The Germans regarded it as a success because of the relatively large Partisan body count: 168 dead and 1,309 prisoners, plus large stocks of weapons and supplies. But it was merely another tactical victory, and an illusory one at that; the strategic victory was Tito's. Once again he slipped westward with his main forces into the province of Croatia, skillfully threading the demarcation line between the German and Italian spheres of influence in the puppet kingdom. The maneuver created confusion and indecisiveness among his pursuers.

Tito, sensing that sagging morale for any defeat could be recouped by striking blows, however small, at the enemy, immediately lashed out at the Croat national forces and the Ustashi as he marched deeper into Croatia. As 1942 wore on, his task was made easier by the Italian decision to withdraw their troops from the interior and leave most of the fighting to the Croats — a measure which was not very popular with the Germans, who, without authority in the Italian sphere, were nevertheless powerless to intervene.

Partisans Ascendant

In Slovenia, the Italians achieved their most effective anti-guerrilla operation of the war in July 1942. Some 7½ Italian divisions and Slovene auxiliaries dealt the Partisan cause severe blows and set back for months the rebel cause in western Yugoslavia.

By the end of 1942, Tito was firmly established in Croatia. He had begun his march that spring with five brigades and about 6,000 effectives. Now he had at least 45,000 men by German estimates and 150,000 according to his own claims. He felt strong enough to proclaim a national government based on "anti-fascist" principles, but shrewdly refrained from openly heading it himself, lest the Communist cat leap out of the bag too soon and alarm the Western Allies. Instead, an innocuous, middle-of-the-road politician was selected.

The year 1943 was the turning point in the guerrilla war. Although it would begin with another sharp tactical defeat for Tito, it would end with him in firmer control of the guerrilla war than ever before.

In January, Operation Weiss, a three-stage German-Italian effort, with Chetnik support, was launched to drive the Partisans from Croatia, where they were threatening the bauxite mines. But although three and a half German divisions inflicted 8,500 Partisan casualties, the Italians once again failed to pull their own weight. Tito escaped southeastward into the wild mountains of Montenegro, Bosnia and Herzegovina. The final stage of the withdrawal involved a perilous crossing over a single bridge of the Neretva River, where pro-Axis Chetniks lined the opposite bank. In savage fighting, the Partisans punched through the Chetnik lines and made good their escape.

Now it was the Chetniks' turn to feel the Germans' wrath. Long distrustful of the Chetniks and impatient with the Italian policy of collaboration, the Germans in May and June turned on Mihailovich's forces in Herzegovina and Montenegro. The forces employed in the drive, code-named Operation Schwarz, were indicative of the Germans' growing concern with the situation in Yugoslavia. The principal unit in the operation was the 1st Mountain Division, a member of the Wehrmacht's first team, transferred from the Russian front. Led by these combat-hardened Bavarian and Austrian mountaineers, the German forces flung the Chetniks back into Serbia after inflicting heavy casualties. It was one of the few anti-guerrilla operations in the war in which the Germans achieved complete tactical surprise.

As 1943 wore on, the Germans became increasingly apprehensive that a major fighting front might be created along Yugoslavia's 1200-mile Adriatic coastline should the Allies, fresh from their victory in Sicily that August, decide to land there. The problem was compounded when the Italians, fearing a threat to their homeland, began to transfer large numbers of troops from Yugoslavia back to Italy. With an even heavier burden thus thrown on their shoulders, the Germans sought a partial solution by fostering the reorganization of the Croat national army on a divisional basis; hitherto, the largest unit in the force was the brigade. But the revamping merely was a case of garbage in-garbage out, and the Croats fought only slightly more effectively than before.

With the Italians plainly wavering, the Germans made preparations under the code name Operation Konstantin to seize control of Italian-

occupied areas of Yugoslavia should Italy drop out of the war. In September the need arose for Operation Konstantin when Italy surrendered unconditionally to the Allies.

At the time, the Italians had 31 division-sized units and 380,000 men scattered throughout Yugoslavia, Albania, Greece, and the Mediterranean islands. Fearing retaliation from the guerrillas, most of the units in Yugoslavia allowed themselves to be disarmed by the Germans. But some 10,000 deserted to the Partisans and Chetniks, including an entire division which went over to the Partisans in Albania.

A huge spatial vacuum thus was opened up, and the guerrillas were quick to fill it. The major Adriatic port of Split was captured and held for a time by the Partisans, who seized large stocks of materiel there. The Chetniks, too, took advantage of the situation and descended on the coastal province of Dalmatia, grabbing supplies from their former Italian comrades.

In heavy fighting in the autumn of 1943, the Germans regained control of the coast and most of the offshore islands. But thanks to the captured Italian supplies and the proximity of the Allies, the Partisans were in a stronger logistical position than ever before. The Allies, finally disenchanted with Chetnik duplicity, began a growing airlift and sealift of supplies to Tito's forces. It was impossible for the Germans to police the entire coastline, and the Allies had complete control of the sea.

Many Chetniks, now deprived of their Italian protectors, either tossed in their lot with the Partisans or simply drifted back to their homes. Others operated closely with the Germans, from fear of the rapidly growing Partisan movement.



By the end of 1943, the Germans had to acknowledge the existence of 145,000 organized guerrillas, about 90,000 of them Partisans. In official reports, German field commanders soon ceased referring to the guerrillas as "bandits" or "brigands," and started recognizing them for what they had become: small but effective brigades and divisions with numerical designations.

Too Little, Too Late

Now responsible for most of the occupation of Yugoslavia, the Germans moved against the Partisans in late 1943 with three major search-and-destroy operations designed to prevent Tito's forces from consolidating their recent gains. The drives were to cost the Partisans 12,000 casualties, but always the Partisans bounced back stronger than before. Time and space were operating against the Germans. It became apparent to an increasing number of Yugoslavs that Germany was going to lose the war, and thousands started rallying to the Partisan banner. Space was a problem because the Germans never seemed to have enough men to effectively cover their enlarged occupation responsibility.

The first of the late-1943 drives, Operation Kugelblitz, inflicted 9,000 Partisan casualties in eastern Bosnia. The Germans followed this up with an operation designed to scatter the guerrillas to the west. It cost the Partisans 2,000 men, but Tito's main force still remained a dangerous foe.

The third operation cut a key supply line over which the Allies were feeding materiel to the Partisans. In hard fighting, the Germans cleared the island of Korcula, off the coast of Dalmatia, and inflicted 1,000 more Partisan casualties.

But as 1944 began, the Partisans still were in control of large sections of Yugoslavia's interior. Tito was expanding the influence of the provisional government, and the Partisans continued to attack German installations and transportation lines with increasing frequency and effectiveness.

Consequently, the last major anti-guerrilla operation the Germans were to mount was directed against Tito himself, at his headquarters at Drvar, in western Croatia. Though the headquarters was well camouflaged, the Germans were able to pinpoint its location by aerial reconnaissance. On 25 May, 1944, as part of a larger armored and infantry assault against other Partisan units in the area, the 501st SS Parachute Battalion landed in Drvar by parachute and glider. The battalion, manned by toughs considered reprobates even by SS standards, captured the headquarters but narrowly missed taking Tito himself.

The Partisan leader fled to a nearby train, which was kept in readiness for just such an eventuality. Later, he was flown by the British to the Adriatic island of Vis, which the British had fortified. There, he spent most of the rest of the war.

By the middle of 1944, it was obvious to the Germans that their hold on the Balkans was precarious. They effectively had been on the strategic defensive, though on the tactical offensive, throughout the guerrilla war. But now they were thrust on the tactical defensive as well, as Soviet troops poured into Rumania and Bulgaria, and Bulgaria switched its allegiance.

Yugoslavia represented an escape hatch for tens of thousands of German troops in Greece and on Crete and Rhodes. In the late summer and early autumn of 1944, heavy fighting occurred in Macedonia as the Germans battled the Partisans and Bulgarians in what eventually proved to be a successful effort to extricate those forces.

Those clashes, though won by the Germans, marked a milestone in the development of Tito's military forces. For the first time, the Partisans felt strong enough to bring the war to the Germans on something approaching equal numerical and

qualitative terms. Thirteen Partisan divisions moved toward Macedonia, both to harass German units retreating from the southeast and to poise themselves for a thrust to liberate the capital of Belgrade.

In August, the Partisans were able to seize and hold for a time a large section of the highway and railway north of Skopje, before being driven off. A month later Partisan units were in the city itself, and it took a concerted effort by the 1st Mountain Division to drive them out.

In early October, Tito made a secret trip to Moscow and persuaded Stalin to provide a force of more than six rifle and mechanized corps to help clear Serbia and capture Belgrade. The deal Tito struck with the Soviet dictator was no mean achievement, for Tito extracted the aid from Stalin without any Soviet strings attached. Rather, it was Tito who attached strings: after the Soviets had helped take Belgrade, they were to move northward into Hungary and take the Bulgarians with them, which they did after Belgrade fell on October 20.

On his return to Yugoslavia, Tito finished settling accounts with the Chetniks, who, with their Serbian stronghold lost, fell apart completely. Mihailovich was captured, tried, and convicted of treason. After being executed by a firing squad, he was buried in an unmarked grave to deprive the royalists of a martyr's shrine.

Meantime, with Tito's army now numbering 53 divisions, the war against the Axis was transformed into a conventional, linear conflict in 1945. The Partisans methodically pushed the Germans back into the northwestern corner of the country. At war's end, they were in complete political and military control of Yugoslavia. After hostilities ceased, Tito's forces futilely asserted a claim to the Italian city of Trieste, where for a time they came eyeball-to-eyeball with the 2nd New Zealand Division, which had moved up from Italy to occupy the city. However, all the territory expropriated by the Axis was returned to Yugoslavia after the war, and she also acquired half the former Italian province of Istria (less Trieste), which was the scene of some Partisan activity during the war.

By any standard, Tito's campaign was a remarkable achievement. In its size, scope, and effect on the Axis war effort, it was by far the largest guerrilla operation of the war, and it ranks as one of the largest and most successful in history. It far outdistanced the Soviet Partisan movement, which numbered only 100,000 men at most and did not become really effective behind the German lines on the Russian front until 1944. Its success is even more striking when one considers that it was able to build momentum despite several well-planned and often well-executed major operations aimed at the destruction of the Partisans' main military force.

In the annals of guerrilla warfare, the Partisan campaign ranks alongside the American Revolution and the Vietnam War as one of the major achievements in history, and gives Tito a place among the outstanding political and military leaders of this century. ■ ■



TITO: DURABLE UNTIL DEATH

Each contributing cause of death would have been fatal in itself: heart failure, complications arising from a leg amputation, kidney and liver failure, pneumonia and diabetes. But President Tito of Yugoslavia had come to appear so durable in the eyes of the world that, when the end finally came for him at the age of 87 on 4 May 1980, it seemed necessary for death to encircle rather than merely strike him.

Durability was Tito's trademark. Whether as a soldier in the Austrian army in World War I, a wartime prisoner of czarist Russia, an undercover Communist dodging Yugoslav police between the wars, a relentless guerrilla leader, or an independent chief of state defying the monolith of Soviet Communism, Tito was always able to slip out of precarious situations, survive and grow stronger. His power and influence increased with age. Before being incapacitated by a multitude of ailments in the final year of his life, Tito was universally acknowledged to be the elder statesman of the Third World movement, which he founded in the early 1950's.

It is rare for a leader to establish one new political philosophy in a lifetime. Tito fathered two: independent Communism, free of Soviet control, and a movement of non-aligned small states trying to make their way in a world dominated by American and Soviet super-powers.

Tito was born Josip Brozovich on 7 May 1892 in Kumrovec, a small town in Croatia which was then a part of the Austro-Hungarian Empire. As a young man, he was a metal-worker who traveled widely in central Europe before joining the Austrian army in 1913, shortly before the outbreak of World War I. He rose to the rank of warrant officer in the war, was lanced in the back in a clash with Russian cavalrymen, and narrowly escaped being slaughtered by them. As a prisoner of war, he was sent to Asiatic Russia to work on construction of the Trans-Siberian Railroad.

Tito joined the Bolsheviks when the Russian Revolution broke out in 1917. In 1920, his name shortened to Josip Broz, he returned to his native land, by then the newly independent Kingdom of the Serbs, Croats and Slovenes, as a Communist party organizer and agitator. Soon afterward he took the name Tito. How he came to choose that name — or whether, instead, it was hung on him by party associates — is unclear. One version has it that Tito took the name because it is a common one in Croatia (just as Smith or Jones in the U.S.) and consequently it would make it easier for him to pursue his subversive activities. According to another story, party colleagues named him Tito because of his aggressive style of leadership; in Serbo-Croatian, *ti* means "you do this!" and *to* means "you do that!"

Tito's political activities landed him in and out of Yugoslav jails during the two decades following his return, the Communist party being outlawed in Yugoslavia in the years before World War II. By 1937 he had risen to the Number 2 post in the party. When Stalin liquidated the party chief in the great purge that year, Tito became head of a small but disciplined movement of 3,000.

When the German invasion of the Soviet Union suddenly made combatants of the Yugoslav Communists, Tito and his Partisans began attacking Yugoslavia's occupiers with a ruthless disregard for the possibility of Axis reprisals against the populace. Unlike Mihailovich, the royalist officer who headed the rival Chetnik guerrillas, Tito, a magna cum laude graduate of the school of hard knocks, was not deterred by the brutal reprisals that inevitably followed — war was war. Tito correctly assumed the Yugoslav people, with their centuries-old hatred of foreign oppressors, would rally to the guerrilla faction which fought hardest against the Axis.

The Partisan approach toward war was, in a sense, an extension of Tito's personality. Fitzroy Maclean, who later in the war was a British liaison officer with the Partisans, recalls in his book *Disputed Barricades* that Tito once told him:

"It was vital...to impress upon our men that they must never allow the fact of being surrounded to demoralize them, but must regard it as the normal situation in our kind of war. By concentrating our efforts against one point, we could always break out of any encirclement.... Finally — and this, too, is important — we were always in dangerous and difficult situations; but our men never cursed us because we were always exposed to the same dangers they were."

Tito was wounded twice in the war, and also narrowly escaped being killed or captured when the Germans attacked his headquarters at Drvar while he was celebrating his 52nd birthday.

When the war ended, he was both marshal of the Yugoslav army and chief of state of the country. His 25-year struggle to transform Yugoslavia into a Communist state had ended in victory.

Problems, however, still remained. Stalin distrusted Tito's rugged independence, which had been often demonstrated in their wartime dealings. In the late 1940's the Soviets began to infiltrate the Yugoslav Communist party with agents loyal to Moscow. Yugoslav-Soviet relations quickly deteriorated, and in 1948 Yugoslavia was expelled from the international Communist bloc.

The final three decades of Tito's regime were marked by his Third World diplomacy, a fitful but growing trend toward better relations with the West, and sporadic but unsuccessful efforts by Moscow to lure Yugoslavia back into the Soviet camp. During this period the Yugoslav economy enjoyed relatively good times, thanks mainly to Western trade and tourism, and the country's living standard today is vastly better than the poverty-wracked, desolate conditions which burdened Yugoslavia when she emerged from World War II.

Perhaps the ultimate tribute to Tito was paid during the war by a man who hardly will be remembered for generous statements about his enemies. He said of Tito:

"I wish we had a dozen Titos in Germany...He is an uncompromising and steadfast soldier, a steadfast commander...He was always encircled, and the man found a way out every time."

The speaker was Heinrich Himmler. ■ ■

ORGANIZATION & TACTICS

When the Partisans and Chetniks initially sprang up against the Axis occupiers of Yugoslavia in mid-1941, they were little more than armed bands. They would have been capable of doing little more than distracting the occupation troops with pinprick acts of sabotage had the Axis garrisoned the newly conquered country with anything more than the bare minimum.

However, the guerrillas achieved a relatively high level of success in 1941, despite their poor numbers, lack of equipment and haphazard organization. The Germans quickly realized that a serious problem was brewing, and by early 1942 the first major anti-guerrilla operation was launched. (There were to be a total of seven such large-scale offensives during the war).

Despite problems in security and communications, such efforts achieved significant tactical successes; guerrilla casualties often numbered in the thousands, while Axis casualties sometimes could be reckoned in two figures. Had the Germans more troops to spare, or more aggressive allies, the anti-guerrilla effort conceivably could have bottled up Tito indefinitely. But given the brutality of the occupation and Tito's dynamic leadership, it is doubtful whether the Partisan movement could have been eradicated completely. Indeed, if the campaign had been fought in a time and space vacuum, it conceivably could have equalled, in terms of time, the quarter-century struggle of the leftist guerrillas in Southeast Asia.

But the Balkan theater was at the mercy of events in the outside world; in the final analysis, the guerrilla war was settled on the Mediterranean and Russian fronts.

Yet, given the Chetniks' willingness to collaborate with the Axis, the guerrilla war might have lasted only two years and resulted in a German victory, had it not been for the military, personal and organizational leadership of Tito.

Surveying the jarring results of the early anti-guerrilla offensives, Tito quickly realized

that the loosely knit Partisan force, as then organized (or, more accurately, as then disorganized), stood little chance of surviving many more big Axis drives. Accordingly, he set about putting into effect a sweeping reorganization of the Partisan forces.

Essentially, the revamping produced a three-pronged guerrilla army: a mobile, lightly armed main force; a network of local militiamen capable of supporting main-force units whenever they operated in the militia's area; and an even more shadowy network of individual guerrillas who farmed or worked in offices by day and harried the Axis with individual acts of sabotage or espionage whenever and wherever they could.

Tito's main force was organized along standard military lines. The basic building block was the *odred*, or group, which was transformed into a brigade as recruits filled out its ranks. The first of these units, the 1st Proletarian Brigade, was formed with 1,200 men by Tito himself in January 1942; it later was expanded to become the 1st Proletarian Division.

As brigades increased in number, many were formed into divisions of two or more brigades each. Many other brigades operated independently throughout the war. As divisions proliferated, they were grouped into corps, which in turn were controlled by an area headquarters. Atop all stood Tito and his staff, roughly comparable to an army or army group command. Tito himself was the commander-in-chief of the People's Army of Liberation and de facto head of the provisional Yugoslav government.

In terms of numbers of men and amounts of equipment, Partisan brigades and divisions scarcely were the equals of regular military units with similar designations. Brigades often had only a few hundred men. Until the end of the war, when some numbered 10,000 men, divisions normally contained only between 2,500 and 3,500 effectives. However, when combined with local militia units, a brigade or division acquired greater punch.

The main-force units had few weapons heavier than mortars, light artillery or anti-tank pieces, which in themselves were quite rare,

Guerrilla Strength in Yugoslavia, World War II

Date	Partisan Brigades*	Partisan Divisions	Partisan Effectives	Chetnik Effectives
June, 1941	0	0	13,000	5,000
January, 1942	1	0	-	-
June, 1942	5	0	-	-
September, 1942	18	0	-	-
January, 1943	-	9	45,000	-
June, 1943	-	18	60,000	15,000
January, 1944	100	31	150,000	55,000
June, 1944	129	39	300,000	70,000
January, 1945	175	53	800,000	1,000

Notes: - = No definite figure is known for that period. * = Total number of brigades; some brigades

operated independently, some as part of divisions.

although there was one Partisan unit that armed itself with captured tanks. Until 1943, when the Western Allies began to supply the Partisans with a not insignificant amount of materiel, most weapons either were captured or were holdovers from the pre-war Yugoslav army. Obviously, spare parts and repairs posed constant problems.

A militia unit rarely consisted of more than a few hundred men. But a number of such units could be concentrated against a given target in a relatively short period of time, either to support a main-force operation or to mount a raid of their own. Militiamen had the advantage of intimate knowledge of local terrain and enemy dispositions. Moreover, during periods of military inactivity, they acted as the enforcement arm of Tito's government-within-a-government. They retaliated against collaborators, collected food and money from the populace and acted as an invisible reception center for new recruits.

Individual guerrillas, though small in number (the Germans estimated that there were only 8,000), were feared most by the Axis because they could strike suddenly and swiftly with terrorizing effect — here a truck would be destroyed by a camouflaged mine left by a passing shepherd, there a grenade would be dropped through a barracks window at midnight, and everywhere there would be sentries lying dead with their throats slit. The Germans called these individuals *hauspartisanen*, or home partisans, and considered that the only effective way of dealing with them was by reprisals against the local populace — a

measure that drove thousands of Yugoslavs to the guerrilla banner.

Throughout the Partisan forces was the firm influence of the movement's Communist leaders. Political indoctrination was intense, particularly in the field units. However, Tito realized that the support of the populace was vital to the Partisan cause. Consequently, he ordered his troops to avoid incidents that would alienate the average Yugoslav. Thefts and other transgressions by Partisans against the populace were dealt with severely.

Chetnik forces, because of their small numbers and on-again, off-again attitude toward the war, did not lend themselves to formation of division-sized fighting units. The largest Chetnik tactical formation was the brigade, which consisted of two combat companies and one replacement company. Three to eight brigades constituted a corps, which was under an area headquarters subordinated to Mihailovich.

Because the Chetniks spent a good part of their time acting as auxiliary police for the Axis, their tactics never developed to the extent of the Partisans'. However, they were adept at ambushing convoys and sabotaging mines, refineries and trains. After the early months of the war, however, they never mounted a threat approaching that posed by the Partisans.

On the Axis side, the most devastating weapon was, of course, the multi-division anti-guerrilla offensive, which often was accompanied by strong air support. By the end of 1943, the Balkans command structure was elevated from an occupation force to that of an

operational army group (Army Group F), to reflect Germany's growing fear of impending Allied action there following the collapse of Italy.

In addition to the major operations, the Germans developed various tactical measures to defend themselves or to carry the war to the guerrillas. Fortified posts, manned in platoon strength and including heavy weapons and light artillery, were constructed along roads and railways, or around strategic points. They acted both as defenses for the installations and as nuclei from which offensive sweeps, by units in armored cars or aboard armored trains, could be launched against the surrounding area. Known as *stutzpunkte* (support points), they were backed by mobile, battalion-sized reserves nearby. However, they were too few and far between ever to deter the guerrillas effectively.

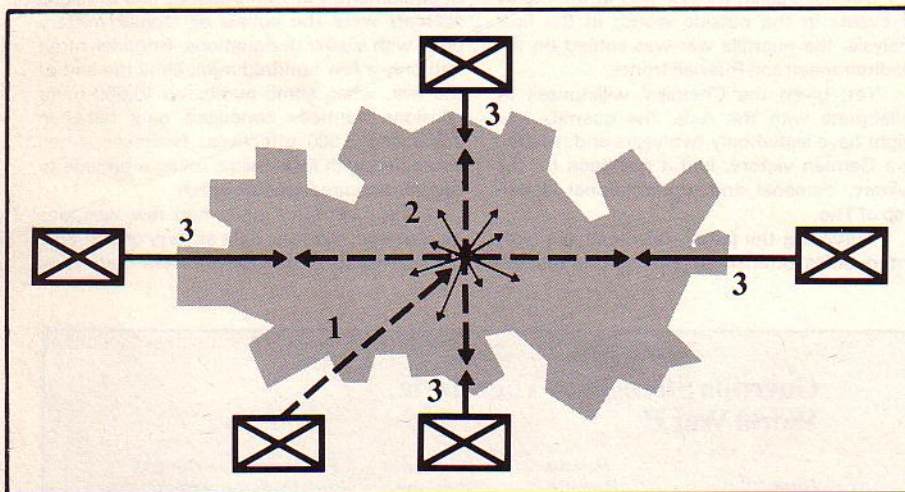
The Germans also turned the guerrillas' infiltration tactics against the enemy. Company-sized, ranger-type *jagdkommando* (literally, hunting units), operated deep in the guerrilla-infested countryside. The rangers, combat veterans transferred from other fronts, often donned civilian clothing to work themselves closer toward guerrilla units. The *jagdkommando* often engaged small guerrilla forces or gathered intelligence about the movements and strength of larger enemy units.

It is an ironic axiom that in a guerrilla war both sides are able to strike blows wherever and whenever they wish. The occupier delivers the haymakers, the guerrilla the jabs. The ultimate decision hinges on the frequency of the blows and their cumulative effect on the recipient. Yugoslavia was no exception.

Tito early perceived the importance of continuous jabbing, both to keep the enemy off balance and to keep up the morale of his troops. His admirers are quick to point out that his success was achieved despite determined German countermeasures. This observation, while quite valid, obscures the other side of the coin: the Germans, faced with guerrilla activity of varying intensity in several occupied areas of Europe, became experts in anti-guerrilla warfare, just as earlier they had perfected modern, combined-arms techniques in conventional warfare. But in the anti-guerrilla sphere, they suffered from the same shortages of resources, men and reliable allies that cost them the larger war.

Given those enemy deficiencies, the guerrilla, watching the Axis from even closer range than Allied soldiers at the front, had few illusions about his adversary; victory was only a matter of time. As the British writer, Basil Davidson, observed in his 1946 book, *Partisan Picture*:

"This nearness gave rise to contempt for the enemy; he was slow, and inferior, and frightened of the dark, and he could move in large numbers and in broad daylight but almost never by himself. He was like a huge and overfed caterpillar, obese and horrible, many-legged, abominable. In comparison with this stupid monstrosity the partisan felt himself to be a superman, alone perhaps, but self-reliant in his cunning and strong health, his existence rooted as deeply in the land as the long smooth timbers of the oaks of Fruska Gora, his survival guaranteed somehow by the very nature of things. The country belonged to him, not to the enemy." ■ ■ ■



TYPICAL GUERRILLA TACTIC: THE 1-2-3 PUNCH

Night and stealth were the guerrillas' invaluable allies, as illustrated in the accompanying diagram, which depicts a typical Partisan attack on a town.

1. As main assault units surround the town, an infiltration unit, under cover of darkness, slips into the center of town and occupies key buildings. Not a shot has been fired up to this point.

2. In possession of town center, the infiltration unit opens heavy random fire in all directions, confusing and demoralizing the enemy.

3. With the enemy distracted and disoriented, assault units launch the main attack. The infiltration unit splits up to meet assault units, and the enemy is destroyed in detail.

In later stages of the war, the Axis reacted to this tactic by fortifying town centers with bunkers commanding broad, open fields of fire. The Partisans responded by infiltrating grenade-carrying guerrillas, often agile youngsters in their early teens, to drop explosives through bunker slits. Then the main attack would go in from several directions.

Note that certain key principles are present in both methods of assault: encirclement, infiltration to capture or disrupt the enemy's center, and concentric attack.

YUGOSLAVIA: MICROCOSM OF THE BALKANS

Appropriately enough, the term "Balkan" has its roots in a Turkish word for "mountain." About 80% of Yugoslavia, the largest country in the Balkans, either is covered by spurs of the Alps or by hills or barren limestone plateaus known as karst. Much the same terrain exists in the rest of the Balkan region of Southeast Europe — Albania, Bulgaria, Greece and European Turkey.

In modern history, the term also has become synonymous with polyglot Southeast European states and ethnic groups clawing at one another to achieve some petty political goal. Because of their political involvement in the region, Hungary and Rumania, though technically not a geographical part of the Balkans, often have been included in this context.

By any standard — geographical, ethnic or by a predilection for just plain feuding and fighting — prewar Yugoslavia represented a microcosm of the Balkans. The country's six major ethnic groups, though all descended from South Slavic stock, had over the centuries developed their own cultures and political aspirations as the region had been divided and submerged by the tides of foreign conquest.

In the years between the World Wars, this diversity militated against a viable, stable government in the country, which was created by the Western Allies after World War I. The problem persisted right through World War II, and was solved only by the victory of Tito's Communist-led National Army of Liberation. The no-nonsense Communist regime brought a firm, unifying hand to postwar Yugoslavia. Now, with Tito gone, the age-old regional discontents may not be far from the surface once more.

While danger from without often tends to unify even a very diverse nation, the opposite was true when World War II descended on Yugoslavia in April, 1941. For example, the Croats, Yugoslavia's second largest ethnic group after the Serbs, were sympathetic toward the Axis. When Germany unleashed the April *blitzkrieg*, many Croat units in the Yugoslav army voiced the Balkan equivalent of "hell no, we won't go!" Other Croat units that did go to the front threw down their arms almost as soon as they got there. A few cases of outright treason occurred. A Croat officer betrayed the disposition of Yugoslavia's air force to the Germans, enabling the Luftwaffe to wipe it out early with a single blow. In another instance, Croat units seized a Yugoslav army group headquarters and held the commander and his staff prisoner until loyal units routed the Croats.

Once the brutality of the Axis occupation became evident, hundreds of thousands of Yugoslavs of all ethnic groups flashed to the anti-fascist lightning rod held out by Tito's Partisans. Tito carefully muted his Communist leanings while building a broad-front movement. His forces eventually played a major role in ousting the Germans from Yugoslavia, and they also defeated the pro-royalist Chetnik guerrillas.

But even so, large segments of the Yugoslav populace, mainly Croats, remained sympathetic to the Axis. In the case of the Croats, the Germans and Italians gave them the fiction — if not the reality — of ethnic independence by creating the puppet state of Croatia out of central Yugoslavia. The Axis occupiers then looked on, horrified but not interfering, while the Croats butchered hundreds of thousands of Serbs and other Yugoslavs, who were minorities in the new state.

There were conflicts among the occupiers as well. The result was a Marx Brothers mish-mash played out with live ammunition: Partisans, Chetniks, Croats, Serbs, Germans, Italians and Bulgarians alternately slaughtered or collaborated with one another for four bloody years.

Following are thumbnail sketches of Yugoslavia's six major ethnic groups. All are descended from the South Slavic tribes which emigrated to the Balkans from Eastern Europe in the Sixth and Seventh Centuries:

The Serbs: Numbering 6.5 million, or 41% of prewar Yugoslavia's population of 16 million, they were (and still are) the country's largest ethnic group. Most inhabit Serbia, Bosnia, Herzegovina and the Adriatic coast. Their main religion is the Serbian Orthodox Church, a branch of Eastern Orthodoxism, which itself is a result of the domination of the eastern Balkans by Constantinople in medieval times. In prewar Yugoslavia Serbs were the target of jealousies of other ethnic groups who charged they played an inordinately large role in the country's affairs, a feeling that was aggravated by the fact that Belgrade, the capital, is in Serbia. Yet the Serbs were the only group with any experience in governing a sizable modern state. Serbian independence gradually evolved in the 19th Century as a result of hundreds of years of struggle against the Turks, who conquered most of the Balkans in the 14th Century and held the eastern part until the 20th. It was the Serbs who were responsible for the anti-Axis coup which provoked the German-led *blitzkrieg*. During the war, Serbs formed the backbone of the Chetnik movement, although many joined Tito. The Germans formed a quisling government in Serbia, but the region was continuously occupied by the Wehrmacht until late 1944.

The Croats: With a pre-war population of 3.5 million (22%) and Western in outlook, the Croats were predominantly Roman Catholic because of their long domination by the Germanic Hapsburg Empire. In 1699 the Hapsburgs freed Croats from more than 200 years of Turkish rule and granted land to peasants in return for military service. This arrangement forged a strong bond between the Croats and the crown. Even after the Austro-Hungarian Empire disappeared in the holocaust of World War I, vestiges of those ties survived right through World War II, when many Croats allied themselves with Germans.

The Slovenes: 1.5 million (9%). The Slovenes are predominantly Roman Catholic and mainly inhabit Slovenia, in northwestern Yugoslavia. The area was under almost continuous Hapsburg rule for 650 years, until the end of World War I. Although subjected to a Germanization process for centuries, Slovenes, unlike Croats, developed a strong sense of Slavic consciousness and favored in-

dependence for themselves or a pan-Slavic movement for all of Yugoslavia. As consequence, Slovenia was the scene of much anti-Axis sentiment during war, and Partisans were active there against Italian occupiers.

The Macedonians: 900,000 (6%). Slavic settlers in Macedonia were for centuries caught up in vortex of conflicts involving Greece, Bulgaria, Serbia and Turkey, all of whom laid claims to this easternmost region of present-day Yugoslavia. Macedonia was ruled by Turkey for more than 500 years, but in the decades before World War I, it was the scene of almost constant conflict as Balkan states nibbled away at the Turkish hold. Northern Macedonia was awarded to the new Yugoslavia state in 1918. Most Macedonians are members of the Greek Orthodox or Bulgarian Orthodox Church. During World War II Bulgaria reasserted an old claim to area and brutally suppressed guerrilla activity there. It wasn't until Bulgaria switched sides late in the war that Partisans could enter Macedonia in force to meet the advancing Soviets.

The Muslim Slavs: 900,000 (6%). The Slavs reside mostly in Bosnia and Herzegovina in central Yugoslavia; actually Muslim Slavs are Serbs who embraced Islam during the Turkish period, but today are officially recognized by the state as a separate ethnic group. In the middle ages, Serbs in the region were literally caught in the middle of religious struggles between Rome and Constantinople, and for a time embraced Bogomilism, an ascetic Christian heresy imported from Bulgaria. Disenchantment with Christianity made them ripe for conversion to Islam by the Turks, who granted privileges to noble and peasant converts alike. As a consequence, Bosnian Muslims became the most conservative of all in the Turkish Empire. Bloody Muslim-Christian struggles in the area in the 19th Century led to intervention of major European powers, who wrested Bosnia and Herzegovina from Turks and turned provinces over to Austria-Hungary, which held them until the end of World War I. Muslim Slavs were divided in loyalties during World War II, but many served — with indifferent results — in the SS mountain divisions (13th, 21st, 23rd).

The Montenegrins: 500,000 (3%). A fierce mountain people hardened by centuries of successful struggle against foreign invaders of this region in southeast, many are descendants of Serbs who fled Turkish conquest in the 14th Century. Their chief religion is the Serbian Orthodox Church; they were the only Slavic group to repel the Turks. Montenegro developed from a theocracy during the Middle Ages into a secular principedom in 1851, and retained independence until incorporated in 1918 into the Kingdom of the Serbs, Croats and Slovenes, which was renamed Yugoslavia in 1929. The area became a Chetnik stronghold in World War II after significant Partisan forces were defeated by a joint Chetnik-Italian drive early in war. Most surviving Montenegrin Partisans fled the area to join Tito in central Yugoslavia. The rugged nature of area is reflected in its name, which means "black mountains" in Italian. Napoleon, during his Balkan forays, vowed to stain the area with so much mountaineers' blood that it would be called "red mountains," but he too failed to subdue the Montenegrins. ■ ■

ALLIED AID TO TITO

In trying to shore up anti-Communist outposts, the West has logged some notable failures in the decades after World War II. Supposedly strong bulwarks in Latin America, Southeast Asia and East Africa have burst with resounding crashes and have further shaken the nerves of a world living uneasily in the shadow of the atomic mushroom cloud.

For the West it has been a happy irony that one of its better and more durable deals to contain the Soviet threat was struck with a Communist nation — Marshal Tito's Yugoslavia. Whether this arrangement will last now that Tito is dead remains to be seen. No such uncertainty, however, surrounds the reasons for Tito's long history of wary but stable postwar relations with the West.

They have their roots in the substantial military aid that Great Britain, and later the United States, gave the Partisans during World War II. At the same time, Tito's political and spiritual sponsor, the Soviet Union, first was unable — and then unwilling — to lend him much support.

Western aid (weapons, food, medical supplies, advisers) started to flow in meaningful amounts in late 1943, and represented a distinct sacrifice for the U.S. and Britain. The West may have been a giant military super-market during World War II, but its products were being consumed as fast as they were put on the shelves. Moreover, aid for Yugoslavia came primarily from the shopping list of the Mediterranean theater, which by 1944 was dropping to third place in supply priority behind the European and Pacific theaters.

The decision to aid Tito, whose devotion to Communism was apparent to Churchill and Roosevelt, was a pragmatic one: the Partisans were killing Germans. Many of Mihailovich's Chetniks had effected an armed truce with the Axis or, worse, were killing Partisans.

In the early years of the war, this situation was far from clear to Western eyes. Mihailovich, with a direct line to the British via the London-based Yugoslav government-in-exile, was far able to propagandize his efforts than Tito. During that period, the British had liaison officers with the Chetniks, but not with the Partisans; for a time these officers helped reinforce the erroneous impression that the Chetniks were carrying the brunt of the guerrilla war to the Axis. But soon they were warning London that Chetnik claims were grossly exaggerated.

By the beginning of 1943, British-Chetnik relations were becoming strained. The Allied geographical position in the Mediterranean was such that only a few tons of supplies could be sent Mihailovich by submarine and air. The impatient Chetnik leader increasingly turned to the Italians for arms with which to battle his Partisan rivals. Early in 1943 the Chetniks went so far as to contribute 12,000 men to Operation Weiss, a major German-Italian offensive against the Partisans in Croatia.

As a consequence, the British sent a military mission to the Partisan camp, with the intent of backing both rivals against the Germans. Soon the British had on-the-spot evidence of what both factions were — or were not — doing. By the end of 1943, it

became clear that Tito's efforts far outweighed those of Mihailovich, and Churchill decided to supply the Partisans exclusively.

By this time the Allies were strongly lodged in Italy and in an excellent geographical position to deliver materiel to Yugoslavia. With the U.S. now contributing the lion's share, the aid for the Partisans began to arrive in meaningful amounts by 1944.

Without Allied support, Chetnik strength declined in inverse proportion to the Partisans' growth. In September 1944 this disparity was widened even further by a political bombshell: King Peter II of Yugoslavia, under British prodding, urged all Yugoslavia to rally around Tito.

Thus, when the Partisans moved in force into Serbia in late 1944 for a showdown with the Chetniks, they found a demoralized and disintegrating foe whose days clearly were numbered.

In contrast to the Western Allies, the Soviets gave Tito little more than verbal encouragement throughout the war. They were not in a geographical position to contribute much tangible help until the final year of the conflict, and even then did little. Their principal contribution was direct support in the push to liberate Belgrade. It was an I.O.U. that Tito, disillusioned by years of empty promises from Stalin, could call in from the Soviet dictator without having to mortgage postwar freedom of action. For by the end of 1944, Tito, thanks to his own efforts, Allied aid and the Chetnik collapse, was the master of Yugoslavia.

Soviet reluctance to aid Tito in any material way apparently stemmed from Stalin's concern that such help would alarm the West and would then cause the U.S. and Britain to intervene militarily in the Balkans and cut their aid to the Soviet Union. Early in the war Stalin went so far as to publicly proclaim *Mihailovich* as the champion of Yugoslav resistance.

The West's strategy produced short-term and long-range benefits. The Germans were defeated. Further, as Robert B. Asprey observes in *War in the Shadows*, his comprehensive work on the history of guerrilla warfare:

"Had Tito not built his Partisan army, in part with Allied aid, a most uncomfortable vacuum would have existed in postwar Yugoslavia — a geographical entity traditionally in the Russian sphere of influence. But...Tito had never been overly impressed with the Russian Communists, and his war experience did not endear them to him. Although he would have trouble with the West in postwar years, he still had to face the inescapable fact that the West had helped him when the chips were down.

"So it was that Tito not only filled the Yugoslav vacuum left by World War II, but shortly after doing so, proved to the world that Communism and Moscow were not synonymous. Although his rule left much to be desired, it turned an area once riddled with factionalism into a reasonably stable country whose insistence on independent political status has more than once proved a healthy stabilizing factor in international diplomacy. . . ."

OUTGOING MAIL [continued from page 2]

the fact that all they publish is a calendar), the station last Fall initiated a crusade to re-sod the League's playing site, a large open field in Central Park known as the Sheep Meadow. Selling T-shirts promoting the crusade to its listeners (including this writer), WNEW-FM proclaimed the virtues of a re-sodded Sheep Meadow — no dust to blow in the eyes of a batter at a crucial moment, no thirty-foot mud puddles inundating the area where third base should be. Ahh, foolish knaves that we were, we purchased T-shirts apparently in sufficient quantity to enable the project (funded mostly by the city and U.S. government, actually) to proceed. And lo and behold: spring came, and up came the grass! And up sprang a fence, and a patrol of forest rangers, who proclaimed, "No more softball; it's no good for the grass!"

You may laugh, but I'm concerned that it's only a matter of time before the street rangers close down the newsstands — "no more newsstands, they're no good for the sidewalks." And from there a simple step for the Nielson agents to invade our homes and confiscate our books and games: "No more reading or wargaming; it's no good for the TV ratings." We'll be lucky if they don't lock us up as subversives. (Jim Dunnigan has never even *owned* a TV; he's liable to get us all in trouble.)

★ ★ ★

Actually, while we are not overly concerned with America's declining literacy rate, changes "in the market" do indeed affect the way in which we publish games. Compared to seven or eight years ago, in many ways we are a different company. Our sales then were approximately 90% direct mail (whereby the gamer paid SPI an average 80% of the list price and then SPI sent him the game); now sales are 90% wholesale (whereby SPI sends a wholesale distributor or store the game, then waits 90 days or more, and *then* gets paid...40% of the list price). In effect, SPI is now in the loan business. Depending on the time of year, we are "loaning" out between \$400,000 and \$700,000, interest free!

Another difference is that years ago, SPI published more games than all the other wargaming companies combined. In fact, SPI was started in order to get as many games as possible into print, because, at the time, no one else was publishing except Avalon Hill, who published a measly one new game a year. But in 1979, while SPI published 40 games, that amounted to only about one-fifth of the games published in the hobby! Times have changed.

The changes are reflected in the games themselves. In 1974, SPI (and the hobby) had only one science fiction game in print. Now SPI publishes a magazine with an sf (or fantasy) game in it every other month, and other companies exist which publish sf or fantasy games exclusively.

Back in the 1960's, wargamers would watch every spring and summer with a mixture of amusement and trepidation as Avalon Hill once again scratched and clawed in a desperate attempt to break into "the mass market." They would publish these chutes and ladders games that were so ludicrous, you had to laugh. (There was one called *Squander* in which the first person to lose \$1,000,000 won, and another whose name evades memory loosely based on the travels of one of Jesus Christ's apostles.) But while it was funny, it was nerve-racking too. You always knew that while AH did grant you one game a year its corporate soul belonged to "the mass market," wargaming, while nice, was playing second fiddle. There was always the unspoken fear that if AH succeeded and became a Parker Brothers, wargamers would be left in the dust. Or alternately

[continued on page 16]

FYEO.

FOR YOUR EYES ONLY

An Open Intelligence Summary
of Current Military Affairs

FYEO newsletter culls information from 60 plus foreign and domestic periodicals to provide subscribers with up-to-the-minute information on military affairs around the world. Every issue of *FYEO* contains at least one page of "deep background" material on the events behind tomorrow's headlines. Regular features include "Rumors," key stories in capsule form that are making the round of professional military press — from the development of

the huge US base at Diego Garcia to the dismal state of the NATO defenses — and "Dateline," a compendium of the events that transpire in the two weeks between issues — from NATO's reaction to the cost-cutting of some of its member nations to the feelings of the former owners of Diego Garcia who now have a US base in their back yard. All the timely information readers want and need but do not have time to dig out for themselves!

SPECIAL FEATURE

A FREE *FYEO* yearbook — *Military Affairs Review*

This annual spring publication will summarize the significant military events of the previous year in numerous major categories, the same sort of concise, formatted material that has made *FYEO*'s Hardwares and Softwares famous over the course of the past five years. Also included will be "think" pieces reflecting on

where the year's events are leading and what to expect 3, 5 or 10 years down the road. This is the kind of material you would expect to pay \$20 to \$50 for independently. As a subscriber to *FYEO* newsletter, it is yours FREE!

25 ISSUES PER YEAR, PLUS ANNUAL REVIEW!

\$50 for a one-year subscription to *FYEO* newsletter.

Issue nr. 1 dated 10 September 1980 will be mailed 5 September 1980.

Richard Berg's Review of Games

This 4-page, bi-weekly newsletter edited by the inimitable Richard Berg provides subscribers with timely, incisive reviews of games recently released or about to hit the market. At least three games will be reviewed in each issue by independent reviewers. The newsletter will also include a comprehensive list of recent game

and game-related publications, and "Grapes," a column on hobby/industry news and gossip. Not only will *Richard Berg's Review of Games* keep you entertained and informed, if it saves you from buying a couple of turkeys — or one big buzzard — it will repay itself in no time!

FROM THE PREMIERE ISSUE OF *Richard Berg's Reviews of Games*
(as introduced at *Origins '80*, Widener University, Chester, PA)

- Richard Berg on Phoenix Games' *Streets of Stalingrad*

"If you're going to shell out \$40 for a monster, but you want something that you can sit down with and begin playing within an hour, this is it. It's fast and it's fun, and if you're not overly discerning in terms of historicity, you'll certainly get your money's worth."

- Eric Goldberg on Avalon Hill's *Fortress Europa*

"A game on the Western Front would not be complete without air rules, and the *Fortress Europa* coverage of that

aspect of the war is elaborated enough to satisfy all but the dyed-in-the-wool purist...The whole air routine is quite fluid; I have always liked those mechanics which pit one player's guesses against the aims of his opponent."

- Greg Costikyan on Yaquinto's *Hero*

"The objective of each player is to gain the love of Alysia. The first to exit the dungeon...will gain her love...presumably the winning Hero can't be worse than (Alysia's) father, who has cold-heartedly made her the prize in this dungeon endurance contest."

25 ISSUES PER YEAR!

\$20 for a one-year subscription to *Richard Berg's Reviews of Games*.

Issue nr. 1 dated 3 September 1980 will be mailed 29 August 1980.

Medieval Battles at Sea

Around 1000 A.D. the Viking longboat ruled the seas of northern Europe. The Gokstad Longboat, found perfectly preserved, is an oak craft with a gracefully curved prow and stern post. It weighs 20 tons, is 79 feet long and 16 wide (a ratio of 5 to 1), has 16 pairs of oars, a single mast with a square sail, and is steered by a paddle on the starboard side. (Vessels were tied up at dock by the port side so as not to damage the steering mechanism.) An average longboat was likely larger, with 20 to 30 pairs of oars, and on raids would carry some 200 men. These craft are usually depicted with shields hanging on their sides; but as the shields impeded rowing — and would have been torn loose in heavy seas — the Vikings likely bedecked their fighting boats with shields only for ceremonial occasions in port, or perhaps as a challenge if they were sailing in calm weather near an enemy shore. Under full sail, these low, sleek craft could probably achieve 11 knots.

Battles took place in relatively calm waters close to shore. Typical was a battle at Aarhus in 1044 between King Magnus of Norway-Denmark and Swend, a pretender to the king's throne. The men of the opposing fleets fought at the prows of their boats, the foremost warriors thrusting at each other with spears while those behind shot arrows and hurled javelins. Magnus led his men from the prow of his ship to Swend's, and in the sword and axe melee Swend was killed. During most of this era, sea battles were essentially land battles, but fought on tilting decks.

The craft used in these battles were the same as those William the Conqueror sailed to England. The first significant change in naval construction came soon after Richard I (the Lionhearted) of England encountered a Saracen galley off Beirut while en route to the Third Crusade in 1188. Described by Hakluyt as a great "Carak" with numerous oars and three tapering masts with lateen sails, it carried some 1,500 soldiers. It towered over the low English boats and gave them a desperate fight until it was sunk. Shortly afterwards, the English began to build tall castles on their boats fore and aft to give their archers and javelin throwers the advantage of height.

By the early 1200's, northern European naval architects began to build ships, as distinct from large boats, and this basic design remained essentially unchanged until the late 1400's. Little is known about these ships, but they featured a prominent forecastle and aftercastle and a higher sideboard than the Viking boats. An average ship, probably 60 feet long with a wide beam (now a ratio of 3 to 1), relied less on oar power, but still had a single mast and square sail. Now more top heavy, when they heeled in the wind the steering paddle sometimes came out of the water, so the gracefully curved Viking sternpost was made straight and bluff to accommodate a rudder.

There was no distinction at this time between fighting and merchant ships. In fact, Edward III, who is often called the father of the British navy (so is King Alfred), really had no fighting navy at all. When he needed fighting ships, he leased them from merchants.

War at Sea. The first major sea battle of the era (and one of the few) was fought at Sluys at the beginning of the Hundred Years War. In one of the

early sea raids that initiated the war, the French captured five large British ships intact. One, the *Great Christopher*, had been specially built for Edward III. Each of these ships was armed with four small cannon, the first ships' cannon known for certain (although the Genoese probably had a few some years earlier). These ships were used by the French as their vanguard at Sluys.

In the spring of 1340, King Philip IV of France assembled a fleet of 190 ships to invade England. He recruited archers and men-at-arms from Picardy and Upper Normandy. The Norman barons were not enthusiastic about this project, so only 150 knights joined him, bringing with them 400 crossbowmen. Philip's main force was 20,000 "wretched fishermen and bargemen," most of whom had no knowledge of armed combat. This fleet sailed to Sluys, a fortified port in Flanders, where the crews debarked and pillaged the countryside, which they were later to regret.

Edward sailed from Harwich with a somewhat larger fleet. Accompanying was the flower of English chivalry, and one highly gilded vessel carrying ladies of his court. (During the battle, this ship was sunk.)

The French leader, Hue Quieret, drew up his fleet in the port estuary in three lines, each line lashed together with chains, transforming the French fleet into a floating fort. The five captured English vessels were positioned to the left of this formation as an advanced echelon so that they could make maximum use of their guns. The floating fortress was protected by barricades of spars and planks and small craft filled with earth to prevent the enemy from closing and grappling.

Edward sailed into the estuary at the head of his fleet and made directly for the first in line of the captured English ships, his own *Great Christopher*.

Common sea fighting technique of the times was for the soldiers in the forecastles to trade blows and missiles; they also threw quicklime at each other, and sprayed the enemy decks with soap or tallow to make them slippery. Wide-headed arrows were shot into sails to tear them, and billmen attempted to cut the enemy's stays to bring his rigging down on him. Incendiary darts arched through the air. Specialists slipped into the water and tried to bore holes in the enemy hulls.

But Sluys was still essentially a land battle. Edward himself, brandishing a sword, led his men on to the *Christopher's* deck. One of the French leaders, Nicholas Behuchet, sought Edward out and managed to slash his thigh.

By now many of the first line French ships were blazing. In the fighting there was no quarter given — dead and wounded alike were heaved overboard. After several hours, four of the English ships had been recaptured, and most of the first French line was cleared. Quieret, badly wounded, was found and beheaded. For wounding Edward, Behuchet was hanged.

The second French line had been unable to reinforce the first, but was managing to hold off the English attacks, although many French sailors had been felled by the longbow archers. By nightfall, the situation might have reached a stalemate, but as darkness fell, the local inhabitants, who earlier had been pillaged by the French, attacked from the rear, causing wholesale panic. Hundreds of French sailors leaped into the water, where many drowned. Only a few French ships managed to cut their moorings and escape. It was a total English victory, and it gave England control of the Channel until 1372. In Paris, no one dared to tell King Philip the news until the court jester finally blurted it out.

After the Battle of Sluys, cannon on ships became more common. Unlike the far larger, cast

The Battle of Sluys



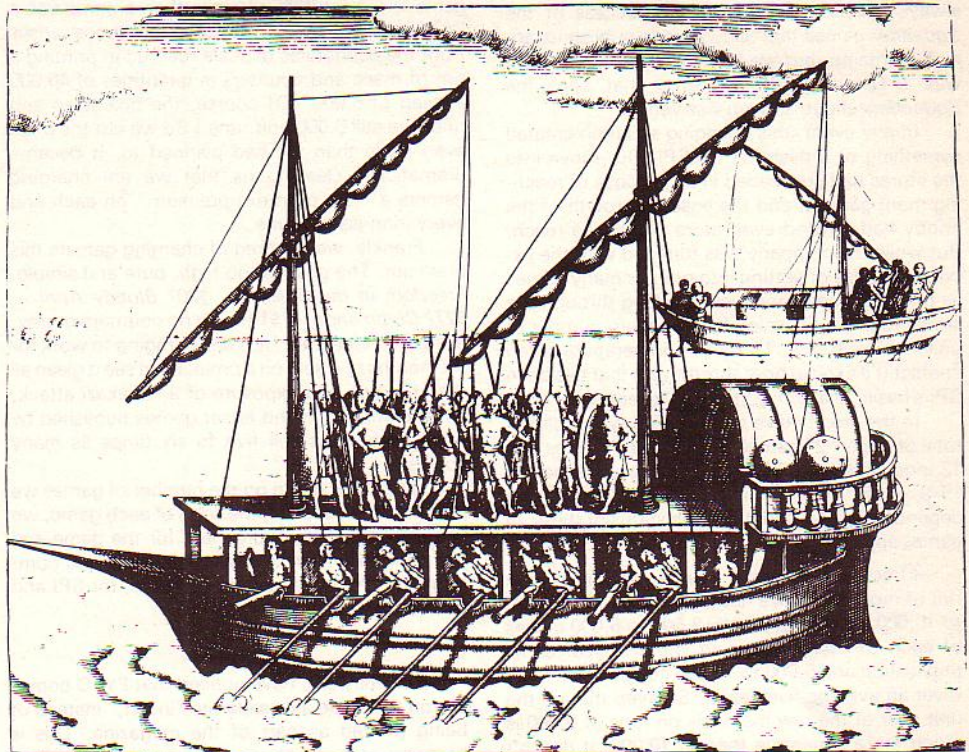
land guns, ships' cannon were built from a number of forged iron strips welded together longitudinally around a tube. This was reinforced by a wood case or wound rope, later with shrunk-on iron hoops. By 1470, a typical light *petarara* was a gun some three feet long mounted on a swivel. It weighed about 120 pounds and shot a stone ball two to three inches in diameter about the same distance as a longbow arrow. They were strictly man-killers — up to 1400 there is no recorded case of a ship being sunk by cannon. They were quite quick-firing — until the barrel overheated — because the powder and shot were loaded into a reserve chamber which was fitted onto the barrel. They were usually mounted on the castles, and could be swivelled to fire into the ship's waist to blast boarders. It was not until the early sixteenth century that anything resembling a large land gun was mounted on a ship.

Ship Design. Development of ship design throughout this era was slow because there were few theoretical tools, and experience showed that more often than not a departure from proven principles ended in disaster. Ships remained generally less than 200 tons and single-masted. Two-masted ships were tried, but they could not sail close-hauled to the wind. It was quite a revelation in the mid-fifteenth century when it was found that three masts gave a ship a spritely balance and maneuverability.

Of course, there were always exceptions to the general rule. The Viking King Olaf Trygvesson reputedly built the largest longboat, the *Long Serpent*, 165 feet in length, 200 tons, with 68 pairs of oars, capable of carrying 400 men. As a fighting ship, it is said to have failed because it was cumbersome. The Hanseatic League, a confederation of some 70 German cities that dominated northern sea trade from 1100 to 1300, built the *Brindled Cow*, which may have been a three-master. The crowning achievement at the end of the period was the *Regent* built by Henry VII. This monster was a four-master of 1,000 tons that mounted at times as many as 225 *petararas*.

Shipbuilding in the Mediterranean was also slow to develop. There was no essential difference between a Dromon of the first century and a Venetian galley of the eighteenth. The largest of these vessels were 600 tons. While they had sails, they relied for power mainly on two or three banks of oars — sometimes as many as 200 oars, each weighing up to 125 pounds. While galley slaves were sometimes used, professional rowers were more efficient. The galleys surmounted the problem of heeling by having a steering paddle on both sides. These vessels were sufficient for the relatively calm Mediterranean, but as sea trade with the north began to increase in the 1300's, they were found unsuitable for the stormy Atlantic and North Sea. By 1400, southern shipbuilders had developed a version of the northern ships, the *carak*, a rather tubby vessel with one main mast and often a smaller mizzen mast.

Sea fighting in the Mediterranean was similar to that in the north with the exception of two tactics, ramming and sailing along side to shear off the enemy's oars.



A trireme

PRINCIPAL FIGHTING SHIP CLASSES, 1000-1500 AD

Nationalities/ Ships	Dates Used	Weight	Avg. War Crew	Max. Speeds	Str.	Missiles & Weapons
Byzantines						
Galleys (Monoremes)	1000-1450	50-100	70	5/7/11	34	M,CT,SB,S
Biremes	1000-1450	100-200	200	6/8/12	7	GF,R,M,CT,SB,S
Triremes	1000-1450	150-350	300	7/9/15	10	GF,R,M,CT,SB,S
Italians						
Galleys	1000-1500	130-150	100	5/7/11	5	R,M,CT,CB,C,LG
Taridas (Barbottes)	1100-1500	180-220	200	4/5/10	8	R,M,CT,CB,C,LG
Uscieri	1100-1500	10000-20000	300	-/-/9	7	R,M,CT,GF,CB,C,LG
Northern Europeans						
Viking Longboats	1000-1300	30-60	150	5/7.5/11	2	J,SB
Nefs (Ships)	1200-1450	60-120	70	-/-/10	3	BC/LB,S,L
Cogs (Ships)	1250-1500	100-200	135	3/3/13	9	CB/LB,T,S,L
Great Cogs	1450-1500	300-1000	200-500	-/-/14	11	C,LG,LB

Max. Speeds: Maximum Speeds. Oar power several hours/short spurts/sail power.

Weight: Tons displayed. **Str.:** Strength. Combat strength relative to other vessels. **GF:** Greek Fire. **R:** Ram. **LB:** Long bow. **CB:** Cross bow. **SB:** Short bow. **C:** Small cannon. **LG:** Light guns. **Note:** Small cannon and light guns only came into use to any extent about 1450. **Note:** During most of this period, the Byzantine Dromon trireme was the most powerful fighting ship of the Mediterranean and Northern European world. Here is a list of one such

vessel's military stores — not including Greek Fire and heavy missiles: 70 mail coats, 12 light cuirasses, 10 ordinary cuirasses, 10 helmets with visors, 8 pairs of metal brassards, 70 bucklers of sewn leather, 30 Lydian bucklers, 80 boat hooks (long poles) with steel shod ends, 20 scythe lances to cut rigging, 100 spears, 100 javelins, 20 crossbows with spare parts, 70 short bows, 10,000 arrows, 200 darts, 10,000 caltrops, 4 grapnels with chains, 50 surcoats of heavy textiles to wear over armor.



OUTGOING MAIL [continued from page 12]

that AH would gamble too much on a *Squander* one year and go bust itself. Of course, Avalon Hill always claimed that it was the success of the *Squander* games that allowed it to publish its annual wargame, but we knew in our hearts that it was *D-Day* and *Afrika Korps* that kept the *Squanders* afloat, and not vice versa.

In any event, this changing situation created something of a dilemma for SPI. Our move into the stores had succeeded in its purpose of reaching more gamers, and the ensuing growth of the hobby had created even more gamers to reach. But while the company was founded with the express purpose of getting into print as many games as possible, the economics of selling through the stores requires the sale of a maximum number of units for each title. These two imperatives often conflict (I'll explain how shortly) and that has been SPI's basic "marketing strategy" dilemma.

In the next twelve months, SPI will publish a total of "only" 24 games — 12 in *S&T* or *Ares* and 12 independently. Of the 40 games published in 1979, eight were published in *S&T* and 32 independently. (An update on the status of these 24 games appears below.)

Effective this month (June), the initial print run of most new titles has been raised from 5,000 to 10,000 units. Historically 3,500 to 6,000 copies of each SPI game are sold within a year of its publication and 5,000 to 10,000 copies in its "life" (over an average five years). So even though the unit cost of the raw materials on runs of 5,000 is much more expensive than at 10,000, it doesn't pay to have huge quantities of capital tied up in inventory for five years. Thus at that level of sales, a "run" of 5,000 is more economical.

In today's inflated market, however, with 5,000-run unit costs of material, we are hard-pressed to set a price low enough to be competitive in the stores (remember, SPI gets only 40% of the list price of a game sold to a store). Furthermore, in the last year, we have consistently gone "out-of-stock" on new items within a month or two of publication, not because we sold all 5,000 but because of a box bottle-neck. Storage space and cash flow limitations made it unfeasible to manufacture all 5,000 of a game's boxes at once, and in controlling the flow of 40 new games last year, we often found ourselves choosing between making boxes for a brand-new game or a two-month old out-of-stock item. The new game means more cash (there would be ten times as many backorders for it) and wins out every time. In this way our new titles constantly "knock one another off." This is how the conflict arises between the imperatives of publishing many games and selling many copies of each.

The new games also knock off each other in another way. While each Avalon Hill game (for example) may be "new from Avalon Hill" for four to six months or longer, no SPI game can be "new from SPI" for longer than four to six weeks. It may be silly, but in this age of progress most of us tend to pay more attention to the "new." Each game SPI publishes loses potential sales because its "newness" is so short-lived.

A lot of subscribers may not have noticed, but a few months ago something dramatic happened to the way *S&T* issue games are now sold. A couple of months after *S&T* 75 was published, *Napoleon's Art of War* (22" x 35" map, 200 counters, eight pages of rules) was made available in a two-inch box with a counter tray at \$12, as had several previous issue games. Then, a couple of months after *S&T* 76, *The China War* (22" x 35" map, 200 counters, eight pages of rules) was made available in a one-inch box with no plastic tray — for \$5.95. The smaller box and the lack of the tray accounts for part of the price difference;

furthermore, when we re-figured the components cost, we realized we had overlooked the fact that the unit cost of a 200 counter, full-size map issue game is almost 30% cheaper than a comparable "non-issue" game. This cost difference arises from the economies of scale realized in printing a run of maps and counters in quantities of 40,000 instead of 5,000. (Of course, the box wrap and rules are still 5,000 unit runs.) So we cut the price even more than we had planned to. It became dramatically clear to us that we are charging gamers a "low print-run premium" on each and every (non-issue) game.

Frankly, we are tired of charging gamers this premium. The price is too high, pure and simple. *Freedom in the Galaxy* — \$20? *Bloody April* — \$27? *Commando* — \$19 (with no counters or tray, even!)? (Incidentally, it is discouraging to work for six months or a year on a project and see it glean all the attention and exposure of a kamikazi attack, while comparable and lesser games published by other companies sell five to six times as many copies.)

By cutting down on the number of games we publish and increasing the sales of each game, we can afford both to charge less for the game and put more into it (in terms both of time and components). We think it's a good move, for SPI and for the gamers.

★ ★ ★

You may also have noticed that FYEO comes to you this issue as a separate "insert," instead of being printed as part of the magazine. This is because, at long last, we are executing the will of the feedback and splitting FYEO off from *S&T*. In the future, FYEO will appear as a separate bi-weekly newsletter. This is a move we have been considering for some time, and we have recently been laying the groundwork for the newsletter by recruiting additional writers and upgrading our research facilities. The premier issue was circulated to good effect at Origins 80, and we are officially releasing the first numbered issue on 10 September 1980.

In addition to the newsletter itself, subscribers will receive (gratis) a copy of another new SPI publication, the *Annual Review of Military Affairs*. Whereas the newsletter will allow us to stay on top of what's happening in military affairs in a way that was impossible in a bi-monthly format, the *Annual* will allow us to take a "long look" at the year's events in retrospect and attempt to analyze trend lines. The first edition will be out in Spring, 1981.

Another new product which you may have noticed nestled among this issue's inserts is a second newsletter, *Rich Berg's Review of Games*. *RBRG* is intended to fill a perceived need for timely dissemination of information on games published in the hobby (primarily) and general information about what else is new in the hobby (secondarily). The premier issue was also distributed at Origins and the first numbered issue will be released 3 September 1980.

The addition of these two new publications marks a growing trend here at SPI in the direction of periodical publications. In fact, some staffers have talked of the day when SPI will be publishing half a dozen magazines and a dozen newsletters. That may or may not happen, but we do intend to divert more and more energies into the production of periodicals. Not that we'll ever stop publishing games. Quite the contrary! If you turn to the feedback, you will find that we are actively pursuing the idea of launching one or more publications which are tied as closely to games and gaming as *S&T* itself. Perhaps the day will even come when each of those special fields of interest which just never seem to catch the fancy of the gaming

public as a whole will be serviced by its own individual mini-*S&T*, complete with game, formatted information, and all of the other elements that go to make up *S&T*. We would never bar any era of history from the pages of *S&T*. But we might develop a sister magazine which dealt only with World War II topics or Civil War or Napoleonic type topics. Better yet, how about a publication devoted to Ancients? Or Frederickian Warfare? Or World War I? Or even, shudder, such "alternate history" topics as *Case Geld*? Hmmm.

Brad Hessel

Works in Progress

The following list includes all unpublished projects currently being worked on. The listing for each game includes the title, subject, designer, developer, and a one word description of the current status of the game. These descriptions include **Design** (the game is currently being designed); **Develop** (the game is being tested either here at SPI or by outside blindtesters working under the watchful eye of the R&D staff); **Edit** (development work on the game is completed, at least in the opinion of the developer, and the game is being checked out by disinterested R&D Staffers here); **AD** (the game is being graphically created at SPI by the Art Department); **Production** (the game is being printed, die-cut, folded, collated, or whatever).

Barbarian Kings (Sword & sorcery on a mythical continent). Costikyan/Costikyan. Production. *Ares* 3 game.

Austerlitz (Capsule game on the Napoleon battle). Ritchie/Ritchie. AD.

Across Suez (Egyptians vs. Israelis). Herman/Jervis & Hessel. AD.

Circus of Death (Gladiator-style combat using the *DragonQuest* combat system). Ritchie/Ritchie. AD. *Ares* 4 game.

DragonQuest Adventure #1 (The Origins adventure). Herzig/Ritchie. Develop.

Central Front I (Operational analysis of the Fulda Gap region incorporating the latest troop dispositions, weaponry, and doctrine). Dunnigan/Butterfield. Edit. *S&T* 82 game.

Against Four Worlds (SF interstellar war). Hessel & Simonsen/Ritchie. Develop.

Central Front II (The adjoining area to the south of the *S&T* 82 game-map, using the same system and linkable). Kamps/Butterfield. Develop.

Citadel of Blood (*S&S* characters in a *DeathMaze* adventure). Smith/Smith. Design. *Ares* 5 game.

DragonQuest Adventure #2. Karp/Ritchie. Design.

Dallas (Role-playing game based on the adventures of JR and family). Dunnigan/Dunnigan. Develop.

Kaiser Battle (Operational-scale game on the 1918 German spring offensive designed to win the war). Balkoski/Balkoski. Develop. This is the *S&T* 83 game.

Voyage of the Pandora (Sequel to the highly rated *Ares* 2 game, *Wreck of the Pandora*, covering the entire mission of the ship). Butterfield/Butterfield. Design. *Ares* 6 game.

Air Cav (Modern helicopter combat). Meridy/Balkoski. Develop.

DragonQuest Supplement #1 (Magic system). Ritchie/Ritchie. Design.

Desert Fox (Rommel vs the British). Berg/Balkoski. Develop. This game is slated for *S&T* 84.

[continued on page 20]

THE SECOND \$2,160 WARGAME.

In our first three months, nearly 2,000 of you bought the "\$2,160 wargame", Computer Bismarck™...a strategic historical wargame for your home computer. From the letters we've gotten, playing that one has been a mind-stretching experience for wargamers. The second \$2,160 wargame, Computer Ambush™, is more gut-wrenching than mind-stretching.

Tactical Simulation

Computer Ambush uses the computer to create combat so complex and realistic that actual military NCO experience has proven to be a substantial advantage to the player! You command a squad of ten WWII infantrymen (either American or German), with names, ranks and such individual combat skills as footspeed, strength, intelligence, endurance, and marksmanship. Each man also has limited energy, which is expended on the tactical moves you command.

Weapons

Your squad is armed with grenades, rifles, automatic weapons, plastic explosives, bayonets, and even garottes. You fight with carefully-aimed shots, area bursts, explosions, and hand-to-hand combat...with results (wounds and death) dependent on time, distance, the individual skills of each soldier, and your ability as a squad leader.

Battlefield

You face the toughest tactical situation in warfare—street fighting in a half-ruined French town. The computer displays a map indicating buildings (your plastic explosive turns them into rubble during the game), walls, hedges, doors, windows (nasty sniper positions) and each of your men by name. The enemy is usually hidden.

Play the Computer

The computer plays the German squad leader (*Feldwebel* Kurt Reich) to perfection...defending the town with sniping, machine guns, grenades, and finally, hand-to-hand combat. You're Sgt. Buck Padooka. You maneuver your men and fire at revealed and probable German positions. If you kill all the Germans before they get you, the town is yours. But the computer's a tough, experienced squad leader, so don't expect to win very often.

Play a Friend

You take turns examining the video map, analyzing your resources, moving your men, and firing your weap-

ons. Your options are limited by casualties, wounds, physical exhaustion, ammo supplies, terrain, and the individual skills of each of your men. The same is true for your opponent. And every action takes precious time, even the flight of a grenade or bullet. Remember, time is life or death on the battlefield *and* in Computer Ambush! After each turn, the computer displays the movements and weapons fire of both squads as tracks on the video map...just once, so watch carefully to figure out where each enemy is, or was.

The Sweat and Death of War

The time pressure and complexity of Computer Ambush creates the stress of actual combat command. Your palms sweat as you watch PFC Chuck Lawson get blown away by that damned Kraut machine gun you forgot when you ordered him to sneak across the alley. It all makes paper and pencil wargames seem as tame as chinese checkers.

Wargame of the Future

Computer Ambush is the second of many computer wargames from Strategic Simulations Inc. To play them, you'll need a suitable home computer. For about \$2100, you can get an Apple II Plus with 48K memory and a mini-floppy disc drive. (The older Apple II with Applesoft Firmware ROM Card or the new Apple III will also suffice.)

An additional \$59.95 gets you Computer Ambush which includes the game program mini-disc; 2 map-board cards; 2 squad leader's data cards; a rule-book; and a game selection card...which tells you how to set up any of seven wargames: NCO Training, Ambush, or Raid against the computer... Patrol, Ambush, Strongpoint, or Free Form against a human opponent.

The Future is Now

If you have an Apple home computer, you can get Computer Ambush by calling 800-648-5600 (toll free) and asking Operator 181 to charge it to your VISA or MASTERCHARGE. In Nevada, call 800-992-5710. To order by mail, write Strategic Simulations Inc., 450 San Antonio Road, Suite 62, Dept. S, Palo Alto, CA 94306. Send no money; we'll mail it C.O.D. for \$59.95 plus mailing costs. There's a 14-day money back guarantee.



COMPUTER AMBUSH™..The sweat and death of war.

Civil War Heavy Artillery

Heavy artillery were those cannons which were too large and cumbersome to accompany the normal movements of a field army. *Siege* and *garrison* pieces were used primarily to defend or attack fortified positions. They could be moved by special carriages, and sometimes accompanied an army in its siege train; occasionally, as at Malvern Hill, Shiloh, and Fredericksburg, they were used in open battle. Heavier pieces that required special machinery in order to be moved (some weighed over 100,000 pounds) were used to defend coastal works (*seacoast artillery*). All types of heavy artillery were used aboard ships (*naval artillery*).

Mortars. Mortars were short-barreled pieces which fired projectiles at a high elevation with a small powder charge. They were almost always smoothbore, though the Confederates are known to have "rifled" a few. Mortars usually fired hollow projectiles (shells and grape) which were set off by percussion or timed *fuses*. Mortars were loaded by means of special straps tied around the projectile, or by "shell hooks" (like ice tongs) which were inserted into special "ears" on the projectile. The lightest mortars were the *coehorns*, which had been invented by a Dutch Baron in the 1600's. These were short bronze or iron tubes set into a wooden bed. Wooden coehorns were made by both sides at Vicksburg by boring hardwood logs and reinforcing them with iron bands.



The other most common mortar sizes were the 8 and 10-inch siege (or "light") mortars, and the 10 and 13-inch seacoast (or "heavy") calibres. These were all made of iron. The Confederates used primarily the US Model 1841, in which the barrel was elevated by special wooden blocks placed under the front. The North developed a more efficient and streamlined model in 1861, in which a ratchet and handspike were used for elevation. These mortars were often mounted on boats or barges; one 13-inch calibre was mounted on a railroad car at Petersburg (the famous "Dictator," now in Hartford, Connecticut). The first artillery shot of the war was a shell from a 10-inch seacoast mortar fired at Fort Sumter to signal the start of the bombardment on 12 April 1861. Though McClellan deployed a number of mortars at Yorktown in 1862, they were not widely used again until the sieges of 1864.

Howitzers. Howitzers fired large projectiles on higher trajectories than guns, but lower than mortars. Siege and garrison howitzers came in two calibres, a 24-pounder and the 8-inch; lighter field calibres also existed. The 24-pounder was usually posted in fortifications, while the 8-inch siege howitzer was used to batter masonry. Seacoast howitzers came in 8 and 10-inch calibres. All heavy howitzers fired shell, case and grape.

Smoothbores. All heavy artillery at the start of the war were smoothbores. Most saw only limited service, since they were soon out-ranged and outmoded by the new rifled guns developed in the 1850's. In fact, many large smoothbore guns were "rifled" (grooves were made in the barrel to give a spin and thus greater distance to the projectile) as the war progressed. The most effective large calibre smoothbores were the new Columbiads cast by the Rodman process after 1860. Large smoothbore guns fired primarily shot and shell.

Siege and garrison smoothbores were made of iron and came in 12, 18 and 24-pounder calibres. None of these had much popularity during the war. Many of the most common size, the 24-pounder, were "rifled" to fire James shells.

Seacoast smoothbore guns were also made of iron, and came in 32 and 42-pounder calibres. They were made in different models by both the army and the navy. An iron 64-pounder smoothbore gun was used solely by the navy.

Columbiads. Columbiads were invented in 1811 by George Bomford. They were large calibre iron smoothbores that could fire shot and shell at high trajectories over long distances. Used briefly in the War of 1812, they were revived in the 1840's in 8 and 10-inch calibres; a 12-inch calibre was experimentally developed but showed weaknesses. Many of these earlier Columbiads were "rifled" for use during the war, especially by the Confederates.

Due to structural problems, Columbiads were redesigned in 1858, and then were cast in the Rodman method in 1861. (Rodman had devised a way of cooling a gun casting from the inside so that the shrinkage from cooling would reinforce the tube rather than put stress on it, as happened when castings were cooled from the exterior inward). This method produced a whole new generation of Columbiads (or "Rodmans"). These came in 8, 10, 13, 15 (the most common) and 20-inch calibres. All were made of iron and, when mounted on

CIVIL WAR HEAVY ARTILLERY

Gun	Model	Metal	Bore (inches)	Weight (pounds)	Proj.	Charge (pounds)	Elev.	Range (yards)
8-in. Siege Mortar	1841	I	8	930	shell	1	45°	1200
10-in. Siege Mortar	1861	I	10	1000	shell	4	45°	2100
13-in. Seacoast Mortar	1861	I	13	17,120	shell	11	45°	4200
24 pdr. Coehorn Mortar		B	5.82	164	shell	.5	45°	1200
24 pdr. Siege Howitzer	1844	I	5.82	1476	shell	2	5°	1322
8-in. Siege Howitzer	1841	I	8	2614	shell	4	12-30'	2280
8-in. Seacoast Howitzer	1841	I	8	5740	shell	8	5°	1800
10-in. Seacoast Howitzer	1841	I	10	9500	shell	12	5°	1650
8-in. Columbiad	1844	I	8	9240	shell shot	15	27-30'	4468 4812
15-in. Columbiad	1861	I	15	50,000	shell	30	40°	5018
20-in. Columbiad	1864	I	20	115,000	shot	200	25°	8000
100 pdr. Parrott	1861	I	6.4	9700	shell	10	25°	6820
200 pdr. Parrott	1861	I	8	16,500	shell	16	35°	8000
300 pdr. Parrott	1862	I	10	26,500	shell	26	13-30'	9000 +
11 in. SB Dahlgren		I	11	15,700	shell	15	15°	3400
70 pdr. Armstrong ML		IS	6.4	7140	bolt	11	10°	4000
70 pdr. Whitworth ML		S	5	8580	bolt	13	10°	5000 +
200 pdr. Blakely		IS	8	17,000				
650 pdr. Blakely		ISB	12.75	60,480	shell	55	2°	2200 +

Abbreviations on Chart: in. = inch; pdr. = pounder; SB = smoothbore; ML = muzzle loading; I = Iron; B = bronze; S = steel Proj. = projectile type; Elev. = elevation..

Source
Artillery and Ammunition of the Civil War by Ripley (1970).

barbette carriages, were elevated by a ratchet. Rodmans were made chiefly by the North, and saw little service in the war since they were placed in seacoast defenses. The Confederates made a few 8 and 10-inch guns of Rodman style. Attempts to "rifle" the Rodman guns were not successful.

Parrott Rifles. In 1860, Robert Parrott developed iron rifled guns which were reinforced at the breech with a band of wrought iron. After first producing 10, 20 and 30-pounder field pieces, he soon turned to 100 (6.4 inch), 200 (8 inch) and 300 (10 inch) pounder heavy pieces. These were used both by the navy and in fortifications. A 60-pounder (5.3 inch) naval Parrott was developed in 1864. Massed produced cheaply during the war (they cost about the same as equivalent size smoothbores), Parrotts soon fell into disfavor because of their tendency to burst. This fate befell no fewer than 51 of the heavy Parrotts used in the attempt to recapture Fort Sumter, including the most famous Parrott of all, the "Swamp Angel." This was an 8-inch model which fired 150 pound shells into Charleston from 8000 yards away; it burst at the breech while firing its 36th round and may be seen today in Trenton, N.J.

The only three 10-inch Parrotts made also served at Charleston. After the muzzle of one burst near its mouth, the barrel was trimmed back and the piece fired another 370 rounds before it was permanently disabled. Because of these structural problems and their inaccuracy when fired from boats, Parrotts were no longer produced after 1865, though several were converted to breech loaders.

Brooke Rifles. The Confederate equivalent to the North's Parrott rifle was the Brooke rifle, which was designed by John Brooke, the head of the Bureau of Ordnance in Richmond. Like the Parrott, the Brooke was cast iron and had a banded breech, but its reinforcement could consist of either 1, 2, or 3 bands. In addition, the Brooke's rifling was a variation of that used in the Blakely rifle. Brookes were most commonly made in 6.4 and 7-inch calibres; 8 and 11-inch versions also existed. Some 10 and 11-inch smoothbores were cast by Brooke in the same shape as his rifles and, strange to say, some of the rifles were actually converted to smoothbores (perhaps to increase their calibre, since the 8-inch rifle could be rebored to a 10-inch smoothbore).

Dahlgrens. Several types of naval guns were designed by Admiral John A. Dahlgren, chief of US Naval Ordnance and then commander of the South Atlantic Blockading Squadron. His boat rifles and howitzers do not concern us here. The heavy guns he designed in the 1850's were 9, 10 and 11-inch iron smoothbore shellguns which were used aboard US gunboats and ironclads (the *Monitor's* only guns were two 11-inch Dahlgrens). Popular because of their reliability and rapid rate of fire, numerous 11-inch Dahlgrens were "rifled" after the war. During the war Dahlgren also made 15 and 20-inch shellguns by the Rodman casting method, in addition to 8 and new 10-inch shellguns and 50, 80 and 150-pounder rifles.

Armstrong Rifle. In the late 1850's, Baron William Armstrong of England developed a series of rifled guns which were made of overlapping tubes. These were first made of iron, but after 1864 the main tube was made of steel. Armstrongs were used in the war principally by the South, which had to rely heavily on imported guns because of its own lack of foundries. The Confederates imported numerous field Armstrongs of

various calibres, but used only one calibre of heavy gun, the 8-inch (150 pounder) seacoast rifle. The most famous of these was used in the defense of Fort Fisher (it is now at West Point).

Whitworth Rifles. Developed by Sir Joseph Whitworth of England in the 1850's, the Whitworth gun was made of steel and could fire a hexagonal bolt up to 10,000 yards. A few field Whitworths were used by both sides, but only a few heavy pieces took part in the war. Two 4.1-inch guns (32-pounders) were part of the armament of the Confederate raider *Shenandoah*. The Confederates tried unsuccessfully to import several other calibres of heavy Whitworths. Four 5-inch (70-pounder) seacoast rifles were ordered at a cost of 700 British pounds each, but were captured aboard their blockade runner near Fort Fisher. Two of them ended up being used against their would-be owners at Charleston. Salvage efforts show that a 6.4-inch (120-pounder) Whitworth probably sank with a blockade runner near Fort Fisher. No heavy Whitworths are known to have successfully made it through the blockade.

Blakely Rifles. Captain Robert Blakely of England made rifles in various calibres of steel or cast iron strengthened by steel. Numerous of his heavy rifles (4, 4.5, 6.4, 7, 7.5 and 12.75-inch calibres) were imported by the Confederacy, and a dozen 9 and 11-inch guns were bought by the state of Massachusetts. Blakelys were used extensively by the South in their coastal defenses. The most famous pieces were the 7.5-inch (150-pounder) "Widow Blakely" used at Vicksburg (so named because it was the only Blakely gun in the city's defenses; after its muzzle burst in May 1863, its barrel was trimmed back and the gun was used as a mortar until the city fell), and two giant 12.75-inch guns which were brought through the blockade in 1863. Weighing 27 tons each, these were the heaviest guns owned by the South, and also were the most expensive at 10,000 British pounds each. They were deployed at Charleston, but ironically were never fired against the enemy because of their unreliable projectiles. The pivot gun on the *CSS Alabama* was a 6.4-inch (100 pounder) Blakely rifle.

Carriages. The primary function of the carriage was to hold the cannon barrel in firing position and to absorb some of the recoil shock. It was also used to transport the lighter artillery pieces. The principal types of carriage used were *field*, *seacoast* and *naval*. Carriages for *mortars* were technically known as *beds*. These consisted of two cheeks joined together to support the mortar,

and lacked the trails of field carriages. Mortar beds were usually set on planked platforms placed in firing position. They were transported on specially adapted limbers called *mortar wagons*.

Siege and garrison carriages were similar to field carriages (consisting of trail, two cheeks and wheels), but were larger and heavier because of the heavier gun tube; when moved, the tube had to be moved backward on the carriage in order to balance the weight better. Siege and garrison carriages were made of wood and came in three basic sizes.

Seacoast carriages were made in two parts: the carriage proper, which supported the gun and gave it elevation; and the frame or chassis, which supported the carriage and determined the piece's general direction. Before the 1830's, the recoil in the seacoast carriage was absorbed by the carriage sliding back on the chassis. In the 1830's, the French Barbette carriage system was adopted in two forms, the front-pintle and the center-pintle. In the front-pintle Barbette carriage, the front end of the carriage was attached to a stone block, and the rear end was set on a wheel which ran on a 180° iron track. When the gun fired, the recoil was absorbed as the gun swiveled on its wheel. In the center-pintle system, the carriage was pinned at its center, and wheels were set under its front and rear ends, with a track that permitted 360° movement. Barbette carriages came in several sizes in wood or iron. Special barbette type carriages were used for guns in casemates. Here wheels were placed under both ends of the chassis, and a "tongue" extended the frame forward so it could be pinned under the front of the gun's muzzle, thus giving the carriage more room for movement. The "flank casement" carriage was much like the front-pintle Barbette carriage, with the addition of small wheels attached under the front of the cheeks of the carriage proper.

Naval carriages were in three types. The principal Broadside carriage was the "4-truck," which had been the standard naval carriage for several centuries. This consisted of a bed (cheeks and "stool") set on two pairs of axled wheels; recoil was absorbed by a rope and pulley system. The Pivot carriage was much like the early seacoast carriages, where the recoil was absorbed by the upper carriage sliding along a lower frame. Carriages used in *Monitors' turrets* were basically Pivot carriages with mechanical aids because of the limited space available.

Dr. David G. Martin



OUTGOING MAIL *[continued from page 16]*

Rescue from the Hive (SF adventure game). Karp/Ritchie. Design. The *Ares 7* game.

Battle Over Britain (Spitfires vs Me109's). Butterfield/Butterfield & Smith. Develop.

Fighting Sail (The system developed for our erstwhile "Trafalgar" game applied to several more reasonable situations). Balkoski/Balkoski. Develop. Scheduled to appear in *S&T* 85.

Taskforce (Modern naval combat). Balkoski/Balkoski. Develop.

Published since last issue: *DragonQuest* (nee "Dragonslayer"), *Drive on Washington*, *Empires of the Middle Ages*, *NATO Division Commander*, *Pea Ridge*, *TimeTripper*, *Tito*.

Fifth Corps

This game, covering a major Soviet offensive in the Fulda/Frankfurt area of West Germany in the 80's, is slated to appear in the next issue of *S&T* as the first game of SPI's new *Central Front* series. The second game, *Hof Gap*, will be available separately when issue 82 is in your hands. Jim Dunnigan designed the *Central Front* game system (his initial report appeared last issue). Jim and our man on the inside, Chuck Kamps, have produced an up-to-the-minute regiment-battalion level NATO/Warsaw Pact order of battle for the games. *Fifth Corps*, which I have in the late stages of development, features two Soviet armies, a Soviet airborne division, the equivalent of one and a half West German divisions, and the equivalent of two U.S. divisions from this OB.

The *Fifth Corps* game map (which appears below) shows the central area of West Germany from the East German border to just west of Frank-

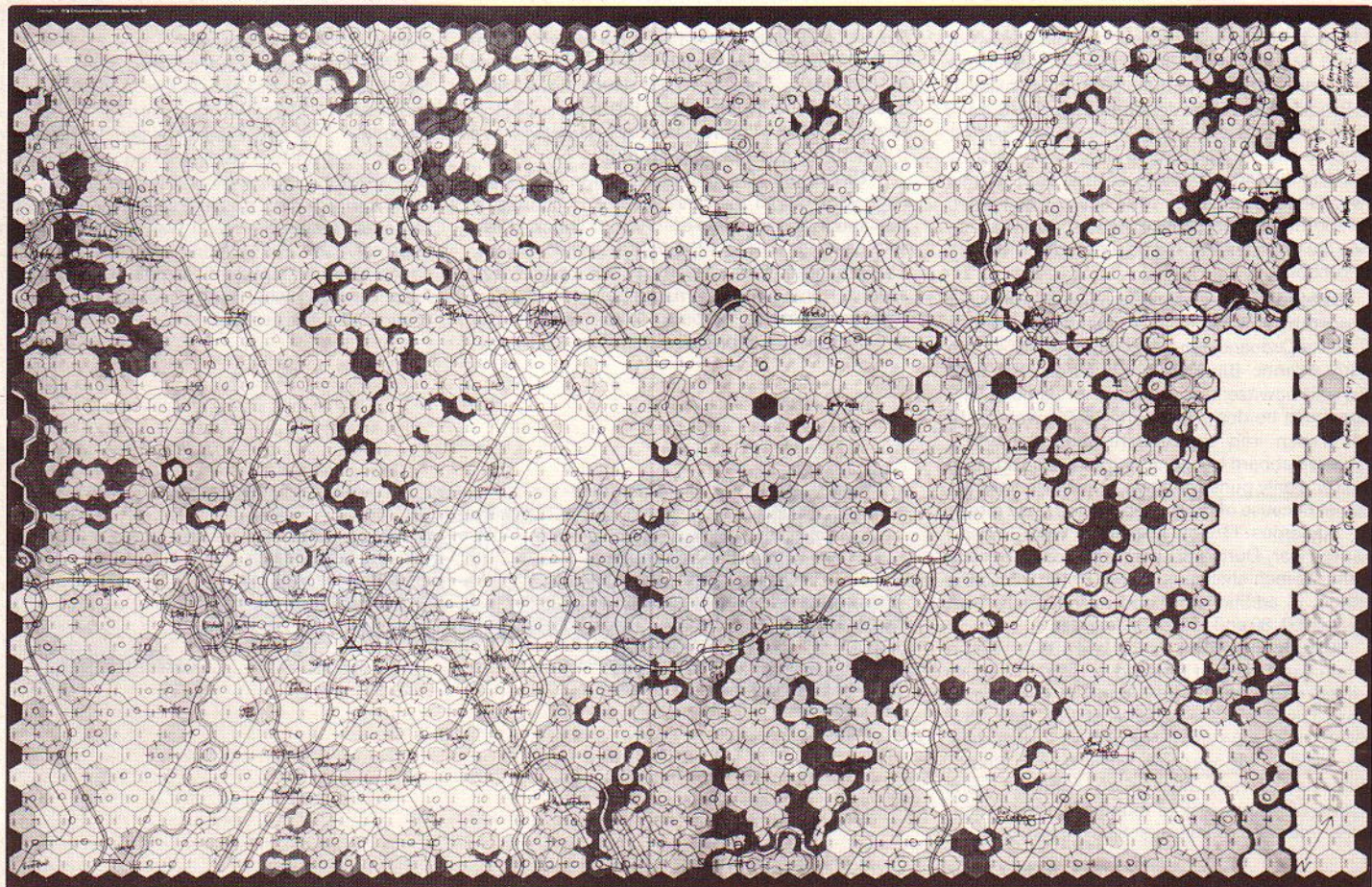
furt, including a bit of the Rhein. Other cities of note on the map include Fulda, Giessen, Worms, Wiesbaden, and Koblenz. The terrain analysis is totally new and more detailed than that in other games done on the area. Working directly from the latest 1:250,000 NATO training maps, each hex was analyzed for contour change, woods cover, and population density. Three types of roads are used: Autobahns, roads, and something new — access hexsides. The *Fifth Corps* map (and the *Hof Gap* map) is at a scale of four kilometers per hex. The map is not oriented north-south. Rather, north is traced along a diagonal hexrow, moving to the right as it goes up. In play, the *Fifth Corps* map highlights a number of operational realities about the area: control of Autobahns for rapid troop response is essential; the famous "Fulda Gap" is not really much of a gap at all, it is just not quite as rough as the terrain to either side; the area is also very densely populated. All in all, the area contains some of the best defensive terrain in West Germany.

Most NATO units in the game are battalions, but there are a few companies. The Soviet units are mostly regiments, with a few battalions. Through exhaustive research, Chuck Kamps has provided us with three strengths for every combat unit: an Attack Strength, a Defense Strength, and a Close Combat or Overrun Strength, used when attacking or defending in this special combat situation. Every unit has a Movement Allowance of twelve (called an Operation Point Allowance in the game, since the points are used for movement and to conduct attacks). As stated in Jim's report, each unit may possess from zero to five *Friction Points* at any point during play. Friction Points, representing fatigue, wear and tear on equipment, and personnel loss, are gained by conducting

operations (moving and attacking) and by incurring combat loss. Friction Points are removed once per Game-Turn, to show rest and the receipt of supplies and replacements. A unit that has Friction Points operates less effectively and, if it gains its sixth Friction Point, is eliminated. The use of a hypothetically "endless" Game-Turn (representing half a day of real time) allows a player (especially the Soviet player) to burn his units out by piling on the Friction Points while pressing on for objectives.

Fifth Corps includes three scenarios. The introductory scenario is a tensely-balanced game positing a Soviet raid into the area a few days after the war has begun. According to the scenario premise, this part of the front was initially quiet and thus was stripped of all forces. The Soviets charge on with two divisions and some attack helicopters in the hope of seizing the Rhein-Main airbase, a NATO nuclear site at Giessen, and a REFORGER supply depot near Wiesbaden. NATO responds by sending the U.S. 11th Cavalry Regiment and part of a German *Jaeger* brigade back to the area to hold them off. The second scenario uses only the eastern half of the map and portrays the opening two days of a major offensive by the Soviet 8th Guards Army (four divisions and army support units). The 11th Cav Regiment (again), a German *Jaeger* brigade, and some German territorialists must hold the line until the arrival of the German 5th *Panzer* Division. The third scenario is the biggie, using the whole map and all the units to create the first five days of a major Soviet offensive in the area. Playing times for the scenarios range from two hours for the introductory to 15 hours for the campaign. Electronic warfare, tactical nuclear weapons, and airpower are used in the latter two scenarios. Chemicals are used in all.

Fifth Corps sketch map



Hof Gap will be advertised in the next issue of *S&T*. It covers the area to the southeast of the *Fifth Corps* area and will include 400 counters (instead of 200) and a number of its own scenarios, as well as extensive rules for linking with *Fifth Corps* to create a two-map campaign game. Chuck Kamps is hard at work on this one now. He is also writing a Central Front article for the next *S&T*.
John Butterfield

Due Process

In case anyone was watching, Due Process did not appear in *S&T* 80. Basically, there were two reasons for this omission. The first was that I lost track of the due date and, therefore, missed the boat. The second and more important reason was the ongoing conversion of our processing software into new, more efficient Cobol language. As mentioned in *S&T* 79, this software was written to replace our dangerously deficient and hazardous 7-year-old programs, which have been responsible for untold customer service problems over the years. As anyone "into" computers will know, the extensive conversion of processing and subscription maintenance strings is a massive undertaking, but all went relatively smoothly here, with most of the debugging already complete. The end result of this should interest our customers — ever since late April (the day of writing is 12 June) we have processed and shipped all orders received within 2.33 days. This means that orders received on a Monday are processed and labels sent to shipping before noon, Thursday. All items in stock are then immediately shipped. The only "catch" to this increased turnaround is that if an item is out of stock, it still cannot be shipped. This is our next focus of attention.

I continue to be amazed at the good will expressed by SPI's customers. Ever since I announced in *S&T* 77 my intentions to clear up old problems, I have spoken to and answered literally hundreds (thousands?) of customers' inquiries to some very old problems, and some not so old. Unfortunately, although I tried to answer each letter, the load was too heavy. Clearly, the majority of ancient problems have subsided, and I believe we are zeroing in on the remaining errors. Subscriptions should be "clean" now — still a trickle of problems — but nowhere near the level of a few months ago. One "bug" just recently discovered resulted in some subscribers receiving a duplicate issue of a particular magazine. Luckily, it was only a programming error, and was found out in time to prevent too many duplicates being sent.

The plague of "out of stock items" will unfortunately be around for a while, until our improved inventory system can catch up with the old "sins of the father." Some folks see some of our games in stores and are incensed when their own game is "back ordered and out of stock" at SPI. The object at SPI is, of course, to keep items in stock. Most retail outlets obtain an SPI game in quantity at the same time it is first offered. Though we keep two separate computer inventories — one for wholesale and one for direct mail — when an item goes out of stock, it's out in *both* inventories. The stores may still have the item on their shelves — but only due to their own stockpile having been previously ordered.

Before getting on to a list of items now deemed "out of print," let me preface the list with a note that although these items will not be reprinted, there may be a few left that we will send to satisfy orders still unfulfilled. All the rest are currently being processed by our Finance Department for refunds.

Out of Print: "old" AirWar; Armageddon; "old" Bastogne; Battle of Moscow; Blitzkrieg Module; Bull Run; Combat Command; Destruction of AGC; DMZ; 1812; Flight of the Goeben; Franco-

Prussian War; Golan; Grunt; La Belle Alliance; Leipzig Miniatures; Lost Battles; Marne; Modern Battles Quad; Musket & Pike; Phalanx; 3 Hard Boxes; S&T Binders; Renaissance of Infantry; Search & Destroy; Sixth Fleet; SPI T-shirts; Viking; Wagram Miniatures; Year of the Rat; *MOVES* 3, 13, 24, 33; *S&T* 19, 21, 22, 23, 26, 28, 29, 30, 31, 32, 33, 34, 35, 40, 46, 47, 48, 50.

John Greer

Feedback

So much for being caught up by 81. We should have results from *S&T*'s 78 and 79 next issue, however, and by *S&T* 83, hopefully, we will be caught up.

All in all, our tenth anniversary 3-game, 3-article issue was well received. All the articles were highly rated, and while none of the games set the world on fire, the average rating of *S&T* 79 easily made it the highest rated issue of 1979.

FEEDBACK RESULTS, S&T 77

Rank	Item	Rating
1.	Great Medieval Battles	6.74
2.	Cityfight	6.73
3.	Paratroop	6.69
4.	Out-going mail	6.68
5.	Red Devils	6.51
6.	FYEO	6.43
7.	Crete	6.33
8.	Briefings	6.04
9.	Eben Emael	5.92
<i>S&T</i> 77 overall		6.89

Those who are worried that the growing popularity of fantasy and science fiction games poses a threat to the hobby of wargaming should take heart. True, 43% of the respondents to *S&T* 77 feedback know one or more persons "who once spent almost all their gaming time playing historic games, and who now spend more than half their time playing role-playing games." However, the fame of *D&D* and others is beginning to pay back dividends: 25% know of a former role-player who had been converted to a primary diet of historical games.

The games proposals that fared well included Arbela, Storm in the Valley, Central Front, and Kaiserschlacht. The latter two have been scheduled to *S&T* 82 and 83 respectively. At the present time we are working on too many pre-20th century games to make scheduling of the former two games feasible.

Brad Hessel

Gossip

What is the hottest thing in the hobby today? It is still role-playing games, and coming up fast are the under-\$10 games. The latter category is taking the shape of micro, mini, pocket capsule, gamettes, and album games. Just about everyone has done something in both these categories or is at least planning to. And for all those historical buffs, these items have not been limited to fantasy and science fiction.

Metagaming is adding more to its line of micro-history games which already consists of *Rommel's Panzers*. The new addition will be *Ram Speed*, tactical ancient naval warfare. Their fantasy role-playing series, *In the Labyrinth*, continues with more in the form of *Grail Quest & Death Test II*. Down the road is a science fiction role-playing game and the possibility of a tie-in with the upcoming Disney-Paramount movie, *Dragonslayer*.

Game Designers' Workshop has a lot of products in the works for the summer months. They cover more in their 120 series of small boxed games: *Asteroid* and the 2nd edition of *Guilford*

Courthouse. Further *Traveller* adventures are in the offing under the title *Twilight's Peak*. GDW has also discontinued some of its slow movers: *Kasserine Pass*, *The Iliad*, *Pharsalus*, and *Manassas*. I guess they went to join *Chaco* in that great game burial ground. Down the road is GDW's own fantasy role-playing game called *Companions of the Road*.

International Games is an Italian puzzle company which has gone into the hobby gaming field. Their products are imported exclusively by Polk's Hobbies. The games feature extremely attractive interior and exterior art. The line has been around since the beginning of the year, and recently they have announced some new releases: *Sicily '43*, *The Beginning of the End*, *Jena*, *Waterloo*, *East & West* (WWIII), *Wohrom* (fantasy) and *Empire* (the most expensive of the lot). The games come with multilingual rules that have caused some problems in comprehension. These games are not a casual matter, since the asking price ranges from \$25 to \$35 apiece. The new prices on the above additions will be from \$35 to \$50. This certainly will hurt that old impulse buy, but the games are certainly worth looking at from the game collector's standpoint.

Science fiction role-playing games are on their way to challenge *Traveller*. Fantasy Games Unlimited has its *Space Opera* game approaching; SPI has set up its designer, John Butterfield, with a publication date of Origins 1981 for a game along related lines. Even Avalon Hill is considering role-playing games and maybe even science fiction. I am sure others will be joining the movement.

In Vietnam the next "popular" historical period? It seems that a number of companies are thinking along those lines. Some are even acting. Task Force will be publishing a Vietnam Quad to include the battles of Junction City, 1972 Offensive, A Shau Valley and Lam Son. The due date is early 1981. Phoenix games, who did the *Streets of Stalingrad*, might be doing *Tchepone '71* this fall. It is already set for *Aftermath*, a role-playing game set in a post-holocaust world. Meanwhile GDW, Metagaming, and the UK based World Wide Wargamers is taking a look at a few Vietnam titles.

A number of companies have been doing games for micro-computers. There's been a great deal of talk of it being the wave of the future and that the micros and the electronic games would eat into the hobby gaming general gaming market. Little of that has happened, except that the electronic games have eaten into themselves and filled the market with many games all trying to do virtually the same thing. The home micro-computer has had a slower but more stabilized growth pattern. Nevertheless the machines do exist, and the users have a need for more games for their expensive toys. SPI has been playing around for awhile on their TRS-80 Level II, but nothing has materialized on the market yet. Tom Shaw has taken the bull by the horns and set up Microcomputer Games, Inc. for Avalon Hill. Its purpose is to supply electronic games, though its first products are pre-programmed cassette packages for the TRS-80, Apple, and PET micro systems. The products will be boxed in a gamette box with the cassette and rules booklet. The initial four will be: *B-1 Nuclear Bomber*, *Midway Campaign*, *North Atlantic Raider*, and *Nukewar*. All will be priced at \$15.00.

Avalon Hill will be presenting its ode to Randy Reed, *Longest Day*. The game will be a double size flat box game with three AH maps, 3000 counters, and a dedication to the designer by the designer, a characteristic touch of modesty. Though the price is \$50.00, don't fret. I hear there may be a pre-publication offer. Or maybe it was that 50.00 is the pre-pub price. AH will have a gamette called *Circus Maximus* for \$8.00 which is one half of the old

[continued on page 42]

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TITO

and his Partisan Army Yugoslavia, 1941-45

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Read this First:

The rules of this SPI simulation game are organized in a format known as the *Case System*. This system of organization divides the rules into *Major Sections* (each of which deals with an important aspect of play). These Sections are *numbered* sequentially as well as being named. Each of these Major Sections is introduced by a *General Rule*, which briefly describes the subject of the Section. Many times this General Rule is followed by a *Procedure* which describes the basic action the Player will take when using the rules in that Section. Finally, the bulk of each Major Section consists of *Cases*. These are the specific, detailed rules that actually regulate play. Each of these Cases is also numbered. The numbering follows a logical system based upon the number of the Major Section of which the Cases are a part. A Case with the number 6.5, for example, is the fifth *Primary Case* of the sixth Major Section of the rules. Many times these Primary Cases are further subdivided into *Secondary Cases*. A Secondary Case is recognizable by the fact that it has two digits to the right of its decimal point. Each Major Section can have as many as nine Primary Cases and each Primary Case can have as many as nine Secondary Cases. The numbering system is meant as an organizational aid. Using it, Players can always easily tell where a Case is located in the rules. As a further aid, an outline of the Major Sections and Primary Cases is given at the beginning of the rules.

How the Section and Case Numbers Work:

Major Section Number
 ↓
 Primary Case Number
 ↓
 Secondary Case Number
 ↓
 [6.53]

The preceding example would be the number of the third Secondary Case of the fifth Primary Case of the sixth Major Section of the Rules.

How to Learn to Play the Game:

Familiarize yourself with all of the components. Read all of the General Rules and Procedures and read the *titles* of the Primary Cases. Set up the game for play (after reading the pertinent Section) and play a trial game against yourself referring to the rules only when you have a question. This procedure may take you a few hours, but it is the fastest and most entertaining way to learn the rules short of having a friend teach them to you. You should not attempt to learn the rules word-for-word. Memorizing all that detail is a task of which few of us are capable. SPI rules are written to be as complete as possible — they're not designed to be memorized. The Case numbering system makes it easy to look up rules when you are in doubt. Absorbing the rules in this manner (as you play) is a much better approach to game mastery than attempting to study them as if cramming for a test.

We hope you enjoy this SPI game. Should you have any difficulty interpreting the rules, please write to SPI, phrasing your questions so that they can be answered by a simple sentence, word, or number. You must enclose a stamped, self-addressed envelope. We cannot guarantee a proper answer should you choose to phone in your question (the right person is not always available — and since SPI has published hundreds of games, no one individual is capable of answering all questions). Write to:

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- 4.2 Game-Turn Sequence Outline
- 5.0 THE GAME MAP
 - 5.1 Occupation Zones
 - 5.2 Occupation Zone Displays
 - 5.3 Objective Displays
 - 5.4 Neutral Chetnik Boxes
- 6.0 MOVEMENT
 - 6.1 How to Move a Unit
 - 6.2 Stacking Restrictions
 - 6.3 Axis Movement Restrictions
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 - 6.6 Occupation Zone Movement Restrictions
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- 9.0 TITO
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 - 13.5 Axis Replacements
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- 14.0 YUGOSLAV VICTORY POINTS
 - 14.1 How Yugoslav Victory Points are Recorded
 - 14.2 How the Yugoslav Player Accumulates Victory Points
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 - 14.4 Events Triggered by Yugoslav Victory Points
- 15.0 HOW TO START AND WIN THE GAME
 - 15.1 Axis Set-up
 - 15.2 Yugoslav Set-up
 - 15.3 Axis Anti-Guerrilla Limitations
 - 15.4 Special Rules (Game-Turns One and Two Only)
 - 15.5 How to Win the Game

[1.0] INTRODUCTION

Tito is a simulation of guerrilla warfare in the Balkans during the Second World War. The game portrays all of the elements of this dynamic partisan campaign, which successfully tied down large numbers of Axis troops on occupation duties and eventually helped liberate Yugoslavia and Albania from Axis domination.

1.0 INTRODUCTION

2.0 GAME EQUIPMENT

- 2.1 The Game-Map and Charts
- 2.2 The Playing Pieces

2.3 Parts Inventory

3.0 GLOSSARY

4.0 SEQUENCE OF PLAY

- 4.1 The Game-Turn

REMOVING THE RULES FROM THIS ISSUE:

Open the magazine to the center, bend the staples with a penknife or screwdriver; lift out the rules and close staples.

[2.0] GAME EQUIPMENT

CASES:

[2.1] THE GAME-MAP AND CHARTS

The map is a 22" by 34" representation of Yugoslavia and most of Albania during the Second World War. Various charts and visual aids are printed on the map as an aid to play.

[2.2] THE PLAYING PIECES

The cardboard pieces (called "counters") represent the actual military units that participated in the campaign. Each counter contains certain information that is vital to the play of the game.

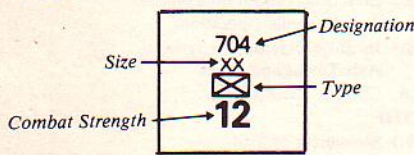
[2.21] How to Read the Counters

Each countermix includes forces from various European nationalities. Each nationality is portrayed by a color unique to that force.

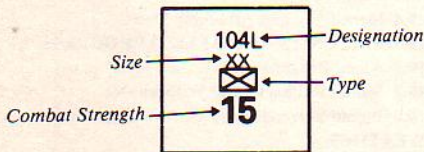
[2.22] Sample Units

INFANTRY DIVISION (GERMAN)

Front

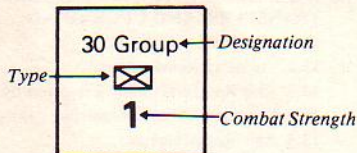


Back

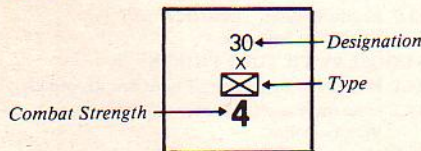


GUERRILLA GROUP (PARTISAN)

Front



Back



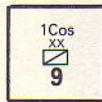
[2.23] Summary of Unit Types

Combat	
Front	Back
<p>Parma XX 6</p>	<p>48 XX 12</p>
<p>4SS XX 20</p>	
<p>1 XX 20</p>	

Front



Tank (Panzer)



Cavalry



Parachute

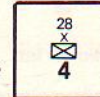


Tito



Partisan Group

Partisan Brigade



Markers



Victory Points



Allied Progress



Game-Turn



Note: The front and reverse-side of certain units are sometimes employed for entirely different purposes in terms of the game.

[2.24] Unit Size Symbols

A unit's size plays an important role in the game: II = Battalion; III = Regiment; X = Brigade; XX = Division; XXX = Corps. Guerrilla groups possess no size symbol.

[2.3] PARTS INVENTORY

- 1 22" x 34" map
- 1 200 die-cut counter sheet
- 1 12 page rules booklet
- 1 6-sided die (not included in S&T edition)
- 1 Game-box assembly (not included in S&T edition)

If any of these parts are missing or damaged, please fill out the enclosed Complaint Card and return it to SPI. SPI can supply replacement parts only in cases of gross manufacturing error or illegibility.

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[3.0] GLOSSARY

Anti-Guerrilla Operation: Special form of combat that allows Axis units to enter Yugoslav Moun-

tains and Hide-aways and attack at more advantageous ratios.

Axis: The Axis Player controls German, Italian, Croat, Serbian, Bulgarian (before Game-Turn 15), and sometimes Chetnik units.

Combat Strength: A quantification of a unit's strength in attack and defense.

Guerrilla: A Partisan or a Chetnik unit.

Objective Display: A rectangle, divided into two boxes of equal size, representing key cities, towns, market towns, villages, and industrial sites.

Occupation Zone: The map is divided into 12 areas, known as "Occupation Zones," which represent the historical zones delineated by the Axis High Command in 1941.

Yugoslav: The Yugoslav Player controls Partisan, Soviet, Bulgarian (after Game-Turn 14), and sometimes Chetnik units.

Zone Display: Each Occupation Zone possesses a single Zone Display. This is simply a collection of three triangles (known as "Mountain triangles") and three circles (known as "Hideaway circles").

[4.0] SEQUENCE OF PLAY

CASES:

[4.1] THE GAME-TURN

Each game is played in seventeen Game-Turns, each of which consists of two Player-Turns (one Yugoslav and the other Axis) plus three independent Stages. The Player whose Player-Turn is in progress is termed the *Phasing Player*. On Game-Turn 1, the game begins with the Yugoslav Player-Turn (the Special Events Stage is skipped). On Game-Turn 17, the game ends at the conclusion of the Victory Point Stage (the Axis Player-Turn and the Terminal Stage are skipped).

[4.2] GAME-TURN SEQUENCE OUTLINE

Each Game-Turn must proceed strictly in order as outlined below:

A. SPECIAL EVENTS STAGE

1. Allied Progress Phase (Game-Turn 6 and after): The Yugoslav Player rolls one die and applies the result to the Allied Progress Track (see 10.1).

2. Weather Phase (Game-Turns 2, 6, 10, and 14): The Yugoslav Player rolls a single die in order to determine if drought is created in the current and three successive Game-Turns (see 11.2).

3. Tito Phase: Game-Turn ? - Game-Turn 14): The Axis Player rolls a single die in order to *identify* or *locate* Tito (see 9.41).

4. Axis Reinforcement Phase: Axis reinforcements and replacements are placed on the map. In addition, units are upgraded and transfers may take place (see 13.0).

5. Chetnik Collaboration Phase (Game-Turns 2 through 17, inclusive): The Yugoslav Player rolls a single die for each Chetnik occupied box, triangle or circle on the map in order to determine if the Chetniks become pro-Yugoslav, pro-Axis, or neutral (see 7.2). In addition, during Game-Turn 9 through 13, the Yugoslav Player determines if *Allied Support Withdrawal* has occurred (see 7.26).

6. Italian Surrender Phase: Italian units either disband, defect, or remain in place during the Game-Turn of Italian Surrender (see 10.3). In addition, *Operation Konstantin* takes place (see 10.36).

7. Axis Anti-Guerrilla Operations Phase (Game-Turns 3 through 14, inclusive): See Case 8.4.

A. Planning Segment: The Axis Player declares if none, one, or two Anti-Guerrilla Operations will take place. If operations are declared, the target Zones are secretly written down and up to 7 divisions per operation are chosen to participate.

B. Yugoslav Reaction Segment: The Yugoslav Player rolls a single die if operations have been declared — the result indicating the number of Yugoslav units that may conduct a "bonus" Movement Phase.

C. Deployment Segment: All participating Axis units are placed in the Mountains and/or Hide-aways of the Zone for which their operation was targeted.

D. Combat Segment: Axis units attack Yugoslav units in corresponding triangles or circles in the target Zone Display(s).

B. YUGOSLAV PLAYER-TURN

1. Movement Phase: The Yugoslav Player may move all of his eligible units (see 6.4) and receives pre-determined reinforcements.

2. Combat Phase: The Yugoslav Player attacks Axis units occupying corresponding locations in Objective or Zone Displays (see 8.0).

C. VICTORY POINT STAGE

The Yugoslav Player accumulates or deducts Victory Points according to the instructions of Section 14.0.

D. AXIS PLAYER-TURN

1. Movement Phase: The Axis Player may move all of his eligible units (see 6.3).

2. Combat Phase: The Axis Player attacks Yugoslav units occupying corresponding locations in Objective or Zone Displays (see 8.0).

E. TERMINAL STAGE

1. Guerrilla Reinforcement Phase

A. Recruitment Segment: The Yugoslav Player deploys guerrilla reinforcements created due to the occupation of Objective or Zone Displays (see 7.43).

B. Tito Segment: The Yugoslav Player deploys Partisan reinforcements created due to the presence of Tito within a Zone (see 7.46).

C. Uprising Segment (Game-Turns 3 and after): The Yugoslav Player deploys guerrilla reinforcements created due to a successful Guerrilla Uprising (see 7.47).

2. Guerrilla Status Phase: The Yugoslav Player determines if Partisan and/or Chetnik units have achieved brigade or division strength (see 7.6).

3. Axis Anti-Guerrilla Operations Redeployment Phase: Axis units that participated in Anti-Guerrilla Operations during the current Game-Turn are placed back on the map (see 8.47).

4. Game-Turn Indication Phase: The Game-Turn marker is advanced one space on the Turn Record Track, indicating the start of a new Game-Turn.

[5.0] THE GAME MAP

GENERAL RULE:

The *Tito* map is a representation of Yugoslavia and most of Albania during the Second World War. The map is divided into 12 *Occupation Zones* (hereafter referred to as "Zones"), each of which portrays cities, towns, market towns, villages, and industrial sites. Each Zone bears the name of a Balkan region. **Note:** Occupation Zone borders do not correspond exactly with historical provincial borders. The name of each Zone is used only for the Players' convenience.

CASES:

[5.1] OCCUPATION ZONES

There are 12 Zones on the map: Albania, Baranya, Bosnia, Carinthia, Croatia, Dalmatia, the

"Islands," Istria, Macedonia, Montenegro, Serbia, and Slovenia.

[5.2] OCCUPATION ZONE DISPLAYS

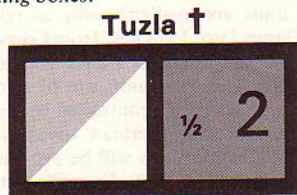
Each Zone contains a single Occupation Zone Display, subdivided into three triangles and three circles. The triangles are called *Mountains* and the circles are called *Hide-aways*. The left-hand-most triangle and circle are meant for the deployment of Yugoslav Partisan units. The middle triangle and circle are meant for the deployment of Axis units. The right-hand-most triangle and circle are meant for the deployment of Yugoslav Chetnik units. *Note that each triangle and circle is portrayed in a color unique to the nationality of the units that may be deployed in it. If two triangles or two circles physically touch one another, they are called corresponding.*



Each Occupation Zone name is followed by three Values. The first is the *Garrison Value*. The second (a letter) is the Zone's *Alignment Value*. The third is the *Uprising Modifier* (see 7.5).

[5.3] OBJECTIVE DISPLAYS

Each Zone possesses a number of *Objective Displays*. An Objective Display is simply a rectangle, sub-divided into two boxes of equal size. The left-hand box is meant for the deployment of Yugoslav units — either Partisan or Chetnik, but never both at the same time (this box is printed half in the Partisan color and half in the Chetnik color). The right-hand box is meant for the deployment of Axis units and is colored accordingly. The name of the Display and its terrain type (either city, town, market town, village, or industrial center) is printed across the top of the rectangle. In addition, each Display portrays two Values in the Axis box. These are the Yugoslav *Recruitment Value* and the Yugoslav *Victory Point Value*, in that order. The Yugoslav and Axis boxes within a given Objective Display are called *corresponding boxes*.



[5.4] NEUTRAL CHETNIK BOXES

All Zones possess a *Neutral Chetnik* box. During the Chetnik Collaboration Phase, Chetnik units that have become neutral are placed within this box signifying that they are controlled by neither Player (see 7.2).



[6.0] MOVEMENT

GENERAL RULE:

After their deployment on the map, Axis and Yugoslav units may move either *within* the Zone they currently occupy or from one Zone to an adjacent Zone. At all times during the game, units on the map must occupy either the Zone Display or an Objective Display. **Exception:** See 5.4.

CASES:

[6.1] HOW TO MOVE A UNIT

During a Movement Phase, the Phasing Player may move his units in any order he wishes. Eligible units are moved individually; once a Player begins to move a given unit, he must complete its movement before any other unit is moved. During a Movement Phase, all, some, or none of a Player's units may be moved.

[6.11] If a Player wishes to move a unit, he may move it within the Zone it currently occupies or to any adjacent Zone. An "adjacent" Zone is any Zone with a common border of any length with the Zone currently occupied by a unit.

[6.12] Within a given Zone, a unit must occupy the Zone Display or any of that Zone's Objective Displays.

[6.13] If a unit is positioned in a Zone Display, it must be deployed into either the *Mountains* or the *Hide-away*. In addition, the unit must be positioned in a box analogous to its nationality (e.g., Yugoslav/Partisan).

[6.14] If a unit is positioned in an Objective Display, it must be deployed in the box analogous to its type (e.g., Axis).

[6.15] A Yugoslav unit may never be placed in an Axis box, circle, or triangle and vice versa. However, the presence of an Enemy unit in a corresponding location has no effect on a unit's movement capability.

[6.16] When moving *within* a Zone, a unit may be placed in any of that Zone's Objective Displays or the Zone Display. **Exception:** See 6.34.

[6.2] STACKING RESTRICTIONS

[6.21] No box, circle, or triangle may ever contain more than seven divisions or their equivalent at the end of a Movement Phase (see 6.22).

[6.22] A battalion is considered *one-sixth* of a division, a regiment is considered *two-sixths* (i.e., one-third) of a division, and a brigade is considered *three-sixths* (i.e., one-half) of a division. Thus, if a battalion, regiment, and brigade occupied the same location, this would be considered the equivalent of one division. All Soviet corps are considered the equivalents to divisions.

[6.23] Units of different nationalities may stack in the same location as long as they are friendly to each other (see 3.0). Enemy units and Partisan and Chetnik units may never stack together.

[6.24] Guerrilla *groups* (see 7.6) are stacked in boxes, circles, or triangles for "free." An unlimited number of these units may occupy the same location.

[6.3] AXIS MOVEMENT RESTRICTIONS

[6.31] Axis units are permitted to move *three* contiguous Zones per Axis Movement Phase. **Exception:** See 6.32. **Example:** An Axis unit in Baranya could move to Serbia or Bosnia. Assuming it moves to Bosnia, it could then enter Carinthia, Croatia, or Serbia. Assuming it enters Carinthia, it could complete its movement by entering Istria, Slovenia, or Croatia.

[6.32] Pro-Axis Chetnik units (see 7.2) are moved exactly like Yugoslav units (see 6.4).

[6.33] When the final Zone an Axis unit enters in a Movement Phase has been decided upon, the unit must be positioned in the Zone Display or any Objective Display of that Zone.

[6.34] Axis units may never enter a Hide-away of a Zone Display except when on Anti-Guerrilla Operations (see 8.4.)

[6.4] YUGOSLAV MOVEMENT RESTRICTIONS

[6.41] All Yugoslav units (including Tito, Partisan, pro-Yugoslav Chetnik, Soviet, and pro-Yugoslav Bulgarian units) are permitted to move within the Zone they currently occupy or to any adjacent Zone during each Yugoslav Movement Phase. **Example:** A Partisan unit occupying Macedonia could move within Macedonia or to Montenegro or Serbia.

[6.42] When a Yugoslav unit enters a Zone during the Yugoslav Movement Phase, it must end this Movement Phase in the Mountains or the Hide-away of the Zone Display — it may not move directly into an Objective Display. **Exceptions:** See 6.43 and 10.36. **Example:** A Yugoslav unit moving from Macedonia into Serbia must end the Movement Phase in the Mountains or Hide-away of the Serbian Zone Display. It could not move directly into a Serbian Objective Display.

[6.43] Soviet and pro-Yugoslav Bulgarian units are not subject to the restrictions of Case 6.42. When such a unit enters a Zone, it may be positioned in the Zone Display or any of the Zone's Objective Displays. However, note that Soviet and pro-Yugoslav Bulgarian units are subject to specific movement restrictions (see 6.65).

[6.44] Soviet and pro-Yugoslav Bulgarian units should be considered Partisan units for movement and combat purposes. When occupying a Zone Display, they must stack in the Yugoslav/Partisan triangles or circles. They may stack freely with Partisan units and may participate in combat with them without restriction. Soviet and pro-Yugoslav Bulgarian units, however, may never stack with Chetnik units.

[6.5] ISLANDS

A unit may enter the *Islands* Zone only from Istria, Slovenia, Croatia, or Dalmatia. The Islands Zone consists only of a single Zone Display — it does not possess any Objective Displays.

[6.6] OCCUPATION ZONE MOVEMENT RESTRICTIONS

Units of different nationalities may be restricted in the Zones that they may enter or move through during the course of the game. If a unit is prohibited from entering a given Zone, it is also prohibited from retreating after combat into that Zone. For a summary of these restrictions, see the Occupation Zone Table (6.7).

[6.61] Between Game-Turns 1 and 14 (inclusive), Partisan and Chetnik units may enter any Zone on the map except Carinthia and Baranya. **Exception:** See 6.63. Starting with Game-Turn 15, they may enter any Zone on the map.

[6.62] Each Axis nationality has a "sphere of influence" limited to the Zones listed below. An Axis unit may never enter a Zone outside of its sphere of influence. **Exception:** See 6.64 and 6.66. However, beginning with Game-Turn 15, all movement restrictions are lifted for *German* units — they may enter any Zone on the map.

A. **German:** Serbia, Bosnia;

B. **Italian:** Albania, Croatia, Dalmatia, Islands, Istria, Montenegro, Slovenia;

C. **Bulgarian:** Macedonia (see also 6.65);

D. **Croatian:** Bosnia, Croatia (see also 6.66);

E. **Serbian:** Serbia;

F. **Pro-Axis Chetnik:** See Case 6.61.

[6.63] On Game-Turns 1 and 2, all units of both Players must remain in the Zone in which they started the game or in which they entered the game as reinforcements.

[6.64] During all Axis Movement Phases following the Game-Turn in which the Yugoslav Player first accumulates 45 Victory Points (or in which the first Yugoslav brigade has been placed on the map), the following movement restrictions are lifted:

A. German units may enter all Zones in the Italian sphere of influence;

B. Up to three Italian divisions may enter Serbia or Bosnia on an Anti-Guerrilla Operation (see 8.4), but not if an Italian Pullback has occurred (see 10.2). However, if Italian units participate in an Anti-Guerrilla Operation in Serbia or Bosnia, they must redeploy into Croatia (where they are considered part of the Axis garrison; see 7.5).

C. The Bulgarian 25th and 27th Divisions may enter any Objective Display in Serbia labeled with a "Bulgarian Occupation" in the Axis box. In addition, these units may participate in an Anti-Guerrilla Operation in Serbia, but are obligated to redeploy after the Operation into a box labeled with a "Bulgarian Occupation."

[6.65] Soviet and pro-Yugoslav Bulgarian units may not move out of Serbia or Macedonia on Game-Turn 15.

[6.66] In all Axis Movement Phases following Italian Surrender (see 10.3), Croat units may include Dalmatia as part of their sphere of influence.

[6.67] Between Game-Turns 1 and 13 (inclusive), there may be no more than four Partisan and four Chetnik units (of any allegiance) in Macedonia. The Players may not move Partisan and Chetnik units into this Zone in excess of these limitations, nor may guerrilla reinforcements (see 7.4) be created in Macedonia that would violate this restriction.

[6.7] OCCUPATION ZONE TABLE (see mapsheet)

[7.0] GUERRILLA UNITS

GENERAL RULE:

Throughout the game, the Yugoslav Player controls three types of units: guerrillas, Soviets, and pro-Yugoslav Bulgarian units. Soviet and Bulgarian units are available only as reinforcements on Game-Turn 15. Thus, from Game-Turns 1 through 14, the Yugoslav Player controls only *guerrilla* units. Guerrilla units are of two types: *Partisan* (those guerrillas controlled by Tito) and pro-Yugoslav *Chetnik* (Serbian royalists). It is possible that Chetnik units will be pro-Yugoslav, pro-Axis, or neutral (see 7.2). Guerrilla units come in three sizes: *groups*, *brigades*, and *Partisan divisions*. However, there are specific restrictions concerning the time in which brigades and divisions may be first created by the Yugoslav Player. At the beginning of the game, all guerrilla units operate in groups.

CASES:

[7.1] PARTISANS

Partisan units (including the Tito counter) are always under the control of the Yugoslav Player.

[7.2] CHETNIKS

[7.21] During each Chetnik Collaboration Phase between Game-Turns 2 (inclusive) and the Game-Turn in which *Allied Support Withdrawal* takes place (exclusive; see 7.26), the Yugoslav Player must roll a single die for each box, triangle, or circle currently occupied by at least one Chetnik unit (including the Neutral Chetnik boxes):

A. If the die roll is 2 or less, the Chetnik units become (or remain) pro-Axis (see 7.24);

B. If the die roll is 3 or 4, the Chetnik units become (or remain) neutral (see 7.24);

C. If the die roll is 5 or more, the Chetnik units become (or remain) pro-Yugoslav (see 7.24).

[7.22] During each Chetnik Collaboration Phase between the Game-Turn in which *Allied Support Withdrawal* (inclusive) takes place and the end of the game (inclusive), the Yugoslav Player must roll a single die for each box, triangle, or circle currently occupied by at least one Chetnik unit:

A. If the die roll is 2 or less, the Chetnik units become (or remain) pro-Axis (see 7.24);

B. If the die roll is 3 through 6, the Chetnik units *disband* (they are immediately removed from the map);

C. If the die roll is 7 or more, the Chetniks become Partisan. They are immediately replaced by an equal number and type of Partisan units, which are placed in the Yugoslav/Partisan Hide-away of the occupied Zone. If an equal number and type of Partisan units are not available for use, the Chetniks are considered disbanded (see 7.22B).

[7.23] The following modifiers are applied to all Chetnik Collaboration die rolls (all modifiers are cumulative):

A. +1: If the Chetniks stack is currently pro-Yugoslav;

B. +1: If an Italian Withdrawal has taken place (see 10.2);

C. +1: In all Game-Turns after and including the Game-Turn in which *Allied Support Withdrawal* takes place (see 7.26);

D. -1: If the Chetnik stack is currently pro-Axis;

E. -1: If Tito has been eliminated (see 9.4).

[7.24] If Chetnik units become *pro-Axis*, they pass to the control of the Axis Player at the end of the Phase by being transferred to the Axis Mountain triangle of the occupied Zone's Zone Display. If Chetnik units become *pro-Yugoslav*, they pass to the control of the Yugoslav Player at the end of the Phase by being transferred to the Yugoslav/Chetnik Mountain triangle of the occupied Zone's Zone Display. If Chetnik units become *neutral*, they are placed in the occupied Zone's Neutral Chetnik box at the end of the Phase. Here they remain, uncontrolled by either Player, until future die rolls make them pro-Axis or pro-Yugoslav.

[7.25] If Chetnik units *remain* pro-Axis, pro-Yugoslav, or neutral, they are not moved from their current location.

[7.26] At the beginning of the Chetnik Collaboration Phases of Game-Turns 9 through 13, the Yugoslav Player must determine if *Allied Support Withdrawal* has taken place. *Allied Support Withdrawal* occurs only once per game, and after its initiation, it is in effect for the remainder of the game (i.e., it is unnecessary to calculate its occurrence again in succeeding Game-Turns).

A. On Game-Turn 9, *Allied Support Withdrawal* occurs if less than 20% of the Chetnik units currently on the map are pro-Yugoslav;

B. On Game-Turn 10, *Allied Support Withdrawal* occurs if less than 40% of the Chetnik units on the map are pro-Yugoslav;

9 Group



1

C. On Game-Turn 11, Allied Support Withdrawal occurs if less than 60% of the Chetnik units on the map are pro-Yugoslav;

D. On Game-Turn 12, Allied Support Withdrawal occurs if less than 80% of the Chetnik units on the map are pro-Yugoslav;

E. On Game-Turn 13, Allied Support Withdrawal occurs automatically if it has not occurred already.

[7.27] It is not necessary to perform Chetnik Collaboration die rolls when there are no Chetnik units on the map.

[7.3] GUERRILLA MOVEMENT AND COMBAT RESTRICTIONS

[7.31] Partisan and pro-Yugoslav Chetnik units may never occupy the same box, triangle, or circle. They may never participate in an attack together and may never be attacked as a combined force.

[7.32] Pro-Axis Chetnik units may stack freely with other Axis units. When stacked with Axis units that are performing combat, they must participate. **Exception:** See 7.33.

[7.33] Pro-Yugoslav Chetnik and pro-Axis Chetnik units may never perform combat against one another. Pro-Axis Chetnik units are ignored when stacked with Axis units that are performing combat against pro-Yugoslav Chetniks. Pro-Yugoslav Chetniks may attack Axis units stacked with pro-Axis Chetniks (although the pro-Axis Chetniks are ignored in the attack).

[7.4] GUERRILLA REINFORCEMENTS

During the course of the game, new guerrilla units may be created through *pre-determined* reinforcements or *variable* reinforcements.

[7.41] The Yugoslav Player receives pre-determined Partisan reinforcements (including Tito) at the beginning of the Yugoslav Movement Phase of Game-Turn 2. These units are placed according to the instructions of Case 13.92.

[7.42] During all Guerrilla Reinforcement Phases, the Yugoslav Player must determine if *variable* reinforcements are available. In each of the 12 Zones, the Yugoslav Player must determine if reinforcements are available through *recruitment* (see 7.43), due to *Tito* (see 7.46), or through a *Guerrilla Uprising* (see 7.47). Reinforcements are expressed in *groups* (see 7.6) of Partisans and/or Chetniks.

[7.43] There are two means by which the Yugoslav Player can obtain reinforcements through recruitment: by occupying an *Objective Display* (see 7.44) or by occupying a *Mountain* triangle (see 7.45). Note that recruitment may be affected by Tito's removal from the map or his elimination (see 9.32) or by weather (see 11.0).

[7.44] Each Objective Display currently occupied by at least one Yugoslav unit (including Soviets and pro-Yugoslav Bulgarians) is eligible for recruitment during the Recruitment Segment. In order to determine the number of groups created due to a Yugoslav-occupied Display, the Yugoslav Player rolls a single die and multiplies this die roll by the Display's Recruitment Value (round down if a fraction is created). The result is the number of reinforcing groups created. These reinforcements are *Partisan* if the Display is currently occupied by a Partisan (or Soviet or pro-Yugoslav Bulgarian) stack, or *Chetnik* if the Display is currently occupied by a Chetnik stack. The number of reinforcements created on a Display is subject to the following modifications:

A. No more reinforcing groups may be created than the number of Yugoslav Strength Points currently occupying the Display;

B. If a drought is in effect (see 11.2), the number of groups created in *market town* Objective Displays is *halved* (round fractions down);

C. If a Winter Game-Turn is in effect (see 11.1), the number of groups created in *village* Objective Displays is *halved* (round fractions down);

D. If a Zone's Alignment Value is Partisan (see 7.5), the number of reinforcing Chetnik groups created by recruitment in all Objective Displays within that Zone is *halved* (round fractions down). If a Zone's Alignment Value is Chetnik (see 7.5), the number of reinforcing Partisan groups created by recruitment in all Objective Displays within that Zone is *halved* (round fractions down). If a Zone's Alignment Value is neutral, recruitment in Objective Displays within that Zone is unaffected.

[7.45] Each Mountain triangle currently occupied by at least one Yugoslav unit is eligible for recruitment in the Recruitment Segment. In order to determine the number of groups created due to this cause, the Yugoslav Player should total the number of Yugoslav Strength Points occupying a given Mountain triangle and divide by *four* (round fractions down). The result is the number of reinforcing groups created within that Mountain. Reinforcing groups are *Partisan* if the Mountain triangle is occupied by Partisan (or Soviet or pro-Yugoslav Bulgarian) units. Reinforcing groups are *Chetnik* if the Mountain triangle is occupied by Chetnik units. The number of reinforcements created within a Mountain is subject to the following modifications:

A. No more groups may be created than the number of Yugoslav units currently occupying a given Mountain triangle.

B. If it is a Winter Game-Turn (see 11.1), the number of groups created in each Mountain triangle is *halved* (round fractions down).

C. If a Zone's Alignment Value is Partisan (see 7.5), the number of reinforcing Chetnik groups created by recruitment in the Mountain triangle within that Zone is *halved* (round fractions down). If a Zone's Alignment Value is Chetnik (see 7.5), the number of reinforcing Partisan groups created by recruitment in the Mountain triangle within that Zone is *halved* (round fractions down). If a Zone's Alignment Value is neutral, recruitment in Mountains within that Zone is unaffected. **Note:** The presence of Axis units in a corresponding triangle has no effect on recruitment.

[7.46] During the Tito Segment, the Yugoslav Player determines if Tito (in any state) is present anywhere within this Zone, including the Hide-away circle. If Tito is present, the Yugoslav Player receives a number of *Partisan* groups as reinforcements according to the following schedule:

A. If the Zone is Croatia, 3 groups are created.

B. If the Zone is Baranya, Bosnia, Carinthia, Dalmatia, or Slovenia, 2 groups are created.

C. If the Zone is not listed above, only 1 group is created.

[7.47] During the Uprising Segment, the Yugoslav Player determines if any Zones are eligible for a Guerrilla Uprising (see 7.5). If a Guerrilla Uprising is successful, a number of Partisan and/or Chetnik Strength Points will be created.

[7.48] Variable guerrilla reinforcements are deployed as follows:

A. If they are created by recruitment in an Objective Display, they are immediately placed in the Yugoslav box of that Display.

B. If they are created by recruitment in a Mountain triangle, they are immediately placed directly in that Mountain.

C. If they are created by Tito's presence within a Zone, they are immediately placed directly on top of the Tito counter.

D. If they are created by a Guerrilla Uprising, they are immediately placed in the appropriate

Hide-away circle of the Zone in which the uprising occurred.

[7.49] Anytime the number of reinforcing guerrilla groups created by recruitment is *halved more than once* in a given Objective Display or Mountain triangle, no reinforcements are created at all during the current Recruitment Segment for that Display or triangle.

Example of Variable Reinforcements:

During the Guerrilla Reinforcement Phase, the Yugoslav Player is calculating reinforcements in Slovenia. One Partisan Division (Strength of 12) plus Tito occupies the Partisan Mountain triangle. Nine Chetnik groups (each with a Strength of 1) occupy the Chetnik Mountain triangle. In addition, one Partisan group occupies Ljubljana. During the Recruitment Segment, the Yugoslav Player rolls a single die for Ljubljana, obtaining a 6. Multiplied by Ljubljana's Recruitment Value (2), a 12 results. However, only one Partisan group is created, because only a single Strength Point occupies this Display (see 7.44A). This group is immediately deployed in Ljubljana (if available). For the Mountains, only a single Partisan group is created due to the Partisan division (12 divided by 4 equals 3; since there is only one Partisan unit in the triangle, only a single group is created — see 7.45). Similarly, one Chetnik group is created by the Chetnik presence in the Mountain triangle (9 divided by 4 equals 2¼, dropping fractions leaves 2; 2 is halved to 1 because Slovenia is aligned to the Partisans — see 7.45C). Both of these reinforcing groups are deployed in their respective Mountain triangles. During the Tito Segment, the Yugoslav Player receives 2 Partisan groups due to Tito's presence in the Zone (see 7.46), both of which are placed on top of Tito in the Partisan Mountain triangle. During the Uprising Segment, the Yugoslav Player determines if an uprising takes place in Slovenia. However, the Axis garrison is sufficient to prevent its occurrence (see 7.5).

[7.5] GUERRILLA UPRISINGS

A Guerrilla Uprising may take place within a Zone if the Axis *garrison* falls below the minimum strength required to keep the Zone pacified. On the map, the name of each Zone is followed by *three* Values. The first is the *Garrison Value*, the Second (a letter) is the *Alignment Value*, and the third is the *Uprising Modifier*.

[7.51] If, at the beginning of the Uprising Segment of all Game-Turns between 3 and 17 (inclusive), the Axis Player currently has *fewer* divisions (or their equivalents; see 6.22) within a Zone than that Zone's Garrison Value, a Guerrilla Uprising automatically takes place.

[7.52] In each Zone in which a Guerrilla Uprising takes place, the Yugoslav Player immediately rolls a single die. The Zone's Uprising Modifier is immediately *subtracted* from this die roll. A modified die roll of *1 or more* indicates a successful Guerrilla Uprising (see 7.53). A modified die roll of less than 1 indicates an unsuccessful Guerrilla Uprising. If a Guerrilla Uprising is unsuccessful, nothing further is done.

[7.53] If a Guerrilla Uprising is successful, the following procedure is performed:

A. The Axis Player determines the difference between the Garrison Value of the Zone and the actual number of divisions currently occupying this Zone (drop fractions of divisions);

B. The figure determined in Step A is multiplied by the Yugoslav Player's original modified die roll which created the successful uprising (see 7.52). This product is the number of reinforcing groups created as a result of the uprising;

C. The Yugoslav Player rolls a single die and compares this roll with the Zone's Alignment Value (either **P** - Partisan; or **C** - Chetnik; or **N** - Neutral). If an *even* number is rolled, *all* of the reinforcing groups created as a result of the uprising are of the same type as the Zone's alignment. If the Zone is neutral, no die roll is necessary and half the groups are Partisan (round fractions up) and the other half are Chetnik. If an *odd* number is rolled, half the reinforcing groups are Partisan (round fractions up) and the other half are Chetnik, regardless of the Alignment Value of the Zone.

[7.54] Axis units on an Anti-Guerrilla Operation within a Zone (see 8.4) may be fully counted as part of that Zone's garrison, even though they are not currently deployed on the map.

[7.55] No Guerrilla Uprisings may take place if there are no guerrilla units on the map.

[7.56] Reinforcements created by a Guerrilla Uprising are placed in the appropriate Hide-away circle of the Zone in which the uprising occurred.

Example of Guerrilla Uprising:

In Bosnia, the Axis Player has nine Croat brigades. This is equal to $4\frac{1}{2}$ divisions — below Bosnia's Garrison Value of 6. Thus, a Guerrilla Uprising takes place. The Yugoslav Player rolls a single die and obtains a 2. Bosnia's Uprising Modifier is 1, so the modified die roll is 1 — a successful uprising. The Axis Player is two divisions short of the Garrison Value, so a 2 multiplied by 1 yields 2. The Yugoslav Player again rolls the die, obtaining a 4 (even). Thus, the two reinforcing guerrilla groups created in Bosnia are both Partisan (Bosnia's Alignment Value is **P**). These groups are placed in the Partisan Hide-away in Bosnia.

[7.6] MAXIMUM SIZE OF GUERRILLA UNITS

Guerrilla units come in three sizes: *groups*, *brigades*, and *divisions* (Partisan only). Brigades and divisions are created from smaller guerrilla units. When creating brigades and divisions, any unused brigade or division counter may be employed.

[7.61] At the beginning of the game and in all succeeding Game-Turns until *brigade-strength* is achieved (see 7.62), the maximum size of any guerrilla unit on the map is the group.

[7.62] At the end of each Guerrilla Status Phase, the Yugoslav Player should total the number of Partisan and the number of Chetnik groups currently on the map:

A. If there are 30 Partisan groups on the map at this time, the Yugoslav Player has achieved brigade-strength for the Partisans;

B. If there are 25 Chetnik groups of any allegiance on the map at this time, the Yugoslav Player has achieved brigade-strength for the Chetniks.

Note: There are 30 and 25 Partisan and Chetnik groups provided in the counter mix, respectively. Thus, when all of the groups of a particular guerrilla type are on the map, brigade-strength has been achieved for that type.

[7.63] If the Partisans (or Chetniks) have achieved brigade-strength, the Yugoslav Player may build Partisan (or Chetnik) groups into brigades, subject to the restrictions of Cases 7.64 and 7.67:

A. Immediately (and in every succeeding Guerrilla Status Phase), the Yugoslav Player may create brigades from groups of the same guerrilla type that currently occupy the same box, triangle or circle. 3 *groups* are the equivalent of 1 *brigade*. In each Guerrilla Status Phase, the Yugoslav Player may perform as many of these substitutions as he

desires. The substituted units are removed from the map and are replaced by an unused brigade counter.

B. In ensuing Guerrilla Reinforcement Phases, the Yugoslav Player may bring reinforcing Partisan or Chetnik groups onto the map in brigade-size. 3 *groups* are the equivalent of 1 *brigade*. **Example:** If in Zagreb the Yugoslav Player were due 7 Partisan groups as reinforcements, 2 brigades and 1 group, or 1 brigade and 4 groups, or simply 7 groups could be deployed.

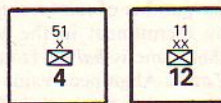
[7.64] Only Chetnik units that are controlled by the Yugoslav Player may be built into brigade-size. Partisan and Chetnik units may never combine to form any higher level of organization.

[7.65] At the end of each Guerrilla Status Phase *after* brigade-strength has been achieved for the Partisans, the Yugoslav Player should total the number of Partisan brigades currently on the map. If this number is 25 or more, division-strength has been achieved by the Partisans.

[7.66] If the Partisans have achieved division-strength, the Yugoslav Player may create Partisan divisions according to the restrictions of Case 7.67. Chetniks may never form into divisions.

A. Immediately (and in every succeeding Guerrilla Status Phase), the Yugoslav Player may create divisions from groups and/or brigades that occupy the same box, triangle, or circle. 2 brigades or 6 *groups* are the equivalent of 1 *division*. In each Guerrilla Status Phase, the Yugoslav Player may perform as many of these substitutions as he desires. The substituted units are removed from the map and are replaced by an unused division counter.

B. In ensuing Guerrilla Reinforcement Phases, the Yugoslav Player may bring Partisan groups onto the map in division-size. 6 groups or 2 *brigades* are the equivalent of 1 *division*.



[7.67] The first Partisan *brigade* and *division* that is placed on the map must be created in the box, triangle, or circle that Tito currently occupies. After this requirement is fulfilled, Partisan brigades and divisions may be created for the remainder of the game without further restriction. If Tito is removed from the map or eliminated (see 9.4) at the time brigade or division-strength is achieved, brigades or divisions may not be created until Tito's redeployment on the map.

[7.68] The number of Yugoslav groups, brigades, and divisions provided in *Tito* is an intended limitation. If no more counters of a given type are available for use, then no more units of this type may be created by any means of reinforcement. However, all guerrilla units that are eliminated immediately become available for use again upon their elimination. Note that all Yugoslav groups and divisions are back-printed with brigade-size units. Similarly, Italian units are back-printed with Partisan divisions; as Italian units are eliminated from play or are withdrawn from the map, the Yugoslav Player may employ the reverse side of these counters as divisions become available for employment.

[7.69] Once the Yugoslav Player is permitted to build brigades or divisions, he may continue to do so for the remainder of the game, even if conditions for their creation may have fallen below their original "triggering" point. However, once a Yugoslav brigade or division is created, it may never be broken-down again for any reason (including combat loss) for the remainder of the game. **Note:** The achievement of brigade-strength

for Partisans or Chetniks may trigger a number of key events (see 6.64 and 9.4).

[8.0] COMBAT

GENERAL RULE:

Each unit in the game possesses a Combat Strength (or simply "Strength") expressed in points, which is employed when attacking or defending. Only opposing units occupying *corresponding* boxes, triangles, or circles may participate in combat. Combat is mandatory between opposing units in corresponding Objective Display boxes and voluntary between opposing units in corresponding Mountain or Hide-away triangles or circles. Only the *Phasing* Player may initiate combats. If a combat is initiated, the Phasing Player is the *attacker* and the non-Phasing Player is the *defender*. Combat results will obligate the losing Player to lose Strength Points and/or retreat his units. The outcome of a combat may be influenced by terrain.

CASES:

[8.1] HOW COMBAT OCCURS

[8.11] Combat may occur only under the following circumstances:

A. Opposing units occupy corresponding boxes of an Objective Display (see 5.3). In this situation, the Phasing Player *must* initiate combat during his Combat Phase;

B. Opposing units occupy corresponding Mountain triangles on a given Zone Display (see 5.2). Combat is voluntary in this situation; i.e., the Phasing Player is not obligated to initiate it during his Combat Phase;

C. Opposing units occupy corresponding Hide-away circles on a given Zone Display (see 5.2). Combat is voluntary in this situation; i.e., the Phasing Player is not obligated to initiate it during his Combat Phase. **Note:** Axis units may only enter Hide-away boxes on Anti-Guerrilla Operations; see 8.44.

[8.12] If the Phasing Player has initiated a combat within an Objective or Zone Display, *all* of both Players' units occupying these corresponding boxes, triangles, or circles *must* participate. **Exceptions:** See 7.33, 8.25, and 8.48. No units may be voluntarily withheld from this combat.

[8.13] No unit may attack more than once per Combat Phase and no unit may be attacked more than once per Combat Phase. If an Axis stack in a Mountain or Hide-away has Partisan *and* Chetnik units in corresponding Mountain triangles or circles, this stack may attack only the Partisan *or* the Chetnik stack in a given Combat Phase, never both.

[8.2] HOW TO RESOLVE COMBAT

[8.21] If an attack has been declared by the Phasing Player, it is resolved in the following manner:

A. The Phasing and the non-Phasing Player total the Strength Points of their respective participating units;

B. The Phasing Player's total is compared to the non-Phasing Player's total, and this comparison is stated as a probability ratio: attacker's Strength to defender's Strength. This ratio is rounded down in favor of the defender to conform to the simplified ratio columns found on the Combat Results Table (CRT). **Note:** Terrain may affect the Strength of the defender (see 8.3);

C. The Phasing Player rolls a single die and cross-references this die roll with the appropriate ratio column. The result is applied immediately (see 8.22).

[8.22] Combat results are read as follows:

A. **A** (attacker) or **D** (defender) followed by a *number*: The affected Player loses a unit(s) equal in Strength Points to the numerical result. If it is impossible for this Player to equal *exactly* the numerical result in Strength Points, he must eliminate as many Strength Points as possible from the affected stack without exceeding the numerical result. If it is impossible to lose any units that would yield a total of eliminated Strength Points less than the numerical result, nothing is lost. Regardless of how capable a Player's force is of fulfilling a loss result, this force *must* retreat after combat (see 8.24);

B. **DE** or **AE**: The defender's or attacker's force is eliminated from play entirely.

Example: A Partisan brigade (Strength of 4) receives a D2 result. It is impossible for the Yugoslav Player to lose the brigade without suffering a Strength Point loss of less than 2. Thus, no loss is taken, but the brigade must retreat.

[8.23] Yugoslav brigades and divisions may never be broken down in order to fulfill combat loss results.

[8.24] Retreats are conducted as follows:

A. Yugoslav units always retreat into the Hide-away circle of the Zone they currently occupy. However, in all adverse results suffered in Axis Anti-Guerrilla Operations (see 8.4), Yugoslav units must retreat into the Hide-away of any *adjacent* Zone (Axis Player's choice, subject to the restrictions of Case 6.6);

B. Axis units retreat into the Mountain triangle of the Zone they currently occupy. However, Axis units suffering an adverse combat result in a Mountain are retreated into the Mountain triangle of any adjacent Zone (Axis Player's choice, subject to the restrictions of Case 6.6).

Note: Axis units on Anti-Guerrilla Operations are never obligated to retreat.

[8.25] Units that are retreated may not participate in combat again for the duration of the Combat Phase, even if the box, triangle, or circle they are retreated into possesses units that are attacking or defending. If units retreat into a box, triangle, or circle that subsequently suffers an adverse combat result in the same Phase, these units are immediately eliminated. (Since stacking limitations apply only at the end of a Friendly Movement Phase, units may be retreated into a location in excess of these limitations.)

[8.26] Units may never "advance" after combat.

[8.27] The Phasing Player conducts combats in any order he wishes.

[8.28] If units are unable to retreat due to the restrictions of Case 6.6, they are eliminated.

[8.3] EFFECTS OF TERRAIN ON COMBAT

[8.31] Yugoslav units occupying Hide-away circles are *doubled* in Combat Strength when defending.

[8.32] The numerical loss result following the letters **A** or **D** on the CRT is modified according to the following schedule:

A. It is *tripled* if the combat is taking place in a city (i.e., a D1 would become a D3);

B. It is *doubled* if the combat is taking place in a town or market town;

C. It is *doubled* in all combats taking place during an Anti-Guerrilla Operation (see 8.4).

[8.4] ANTI-GUERRILLA OPERATIONS

Between Game-Turns 3 and 14 (inclusive), the Axis Player may conduct up to two *Anti-Guerrilla*

Operations per Game-Turn. However, the number of Anti-Guerrilla Operations that may be performed during the course of the game is limited (see 15.3). Anti-Guerrilla Operations allow Axis units to enter the Hide-away circles of the Zones the operations are being conducted in and permit more favorable attacks to be performed by the Axis Player.

[8.41] At the beginning of each Axis Anti-Guerrilla Operations Phase between Game-Turns 3 and 14 (inclusive), the Axis Player must state if he is performing none, one, or two operations in the current Game-Turn. If an operation(s) is declared, the Axis Player secretly writes down the name of a *single* Zone in which this operation will be conducted. (If two operations are declared, two Zones are listed — but the same Zone may not be chosen twice in the same Game-Turn). If no operations are declared, the rest of this Phase is skipped.

[8.42] For each declared operation, the Axis Player may choose up to 7 divisions (or their equivalents; see 6.22) during the Planning Segment to participate. These choices are made openly but may only include units that would normally be able to reach the Zone through normal movement in a hypothetical Movement Phase. In addition, Occupation Zone movement restrictions apply fully to Anti-Guerrilla Operations (see 6.6). After these units have been chosen, they are removed from the map and placed aside. (**Note:** See 10.23.)

[8.43] During the Yugoslav Reaction Segment, the Yugoslav Player rolls a single die (even if two operations have been declared). The result is the number of Yugoslav units that may be *immediately* permitted a "bonus" Movement Phase, subject to all normal movement rules. The units chosen to make this bonus move may be picked from any area on the map, although the Yugoslav Player is not obligated to move any units if he does not wish to. The movement of Tito counts against the Yugoslav Player's allotment of bonus moves. Units chosen to make a bonus move may move normally in the ensuing Yugoslav Player-Turn.

[8.44] During the Deployment Segment, all Axis units participating in an Anti-Guerrilla Operation must be placed in the Mountain triangle and/or Hide-away circle of the Zone Display declared as the object of this operation. Participating units may be placed in these two locations in any combination the Axis Player desires — all may be placed in one or the other, or in any other conceivable combination. If two operations have been declared in the current Game-Turn, the Axis Player must resolve the first fully before proceeding to deploy the participating units of the second (i.e., performing Steps C and D of this Phase).

[8.45] During the Combat Segment, Axis units in a Mountain triangle or Hide-away circle may attack Yugoslav units in corresponding triangles and circles subject to normal combat rules. If no Yugoslav units are present in the corresponding locations, the Axis units are immediately removed from the map (see 8.47).

[8.46] The following special rules apply to combat during Anti-Guerrilla Operations:

A. The ratio is shifted *two* columns to the *right* (i.e., a 3-1 becomes a 5-1);

B. *All* numbered results on the CRT are *doubled* (i.e., a D1 becomes a D2);

C. If the Yugoslav Player is forced to retreat, his units are retreated into the Hide-away circle of an *adjacent* Zone;

D. Axis units are never obligated to retreat.

[8.47] After each combat is resolved, participating Axis units are immediately removed

from the map. During the Anti-Guerrilla Operations Redeployment Phase (of the Terminal Stage), these units are placed back on the map. At this time, the Axis Player may place each of these units in any Axis box or triangle of the Zone in which the operation was conducted — **Exception:** see 6.64B — including those with corresponding Enemy units.

[8.48] Axis units that are not participating in an operation may not be included in any attacks during this Phase, even if they occupy the same location as participating Axis units.

[8.49] Immediately before the start of the game, the Axis Player must determine the number of Anti-Guerrilla Operations that he is limited to for the duration of the game (see 15.3).

[8.5] INTRINSIC DEFENSE STRENGTHS OF AXIS TOWNS AND CITIES

Trieste, Pola, Fiume, Zara, and Belgrade possess intrinsic Defense Strengths which are printed in parentheses within the Axis box of these Objective Displays.

[8.51] The Yugoslav Player is not eligible to receive guerrilla reinforcements (see 7.4) or Victory Points (see 14.0) when occupying any of the above Objective Displays unless the intrinsic Defense Strength of the Display has been eliminated (see 8.53).

[8.52] An intrinsic Defense Strength is equivalent to a normal Combat Strength, but it may never be used to attack. It may only be employed when the Yugoslav Player is conducting an attack against one of the above Displays. It may be employed by itself or in conjunction with Axis units currently occupying the Display. It may not be moved and may never be considered part of an Axis garrison.

[8.53] An intrinsic Defense Strength is considered eliminated in any attack against the Display that results in a "D" outcome. The elimination of a Display's intrinsic Defense Strength must be kept track of on a separate piece of paper.

[8.54] The elimination of an intrinsic Defense Strength may never be used to satisfy Strength Point losses for Axis units that were affected by a "D" result in this Display.

[8.55] The intrinsic Defense Strengths of Trieste, Pola, Fiume, and Zara are permanently eliminated at the instant of Italian surrender (see 10.3).

[8.6] COMBAT RESULTS TABLE (see mapsheet)

[9.0] TITO

GENERAL RULE:

Marshal Tito is represented by a single, back-printed counter that is controlled by the Yugoslav Player at all times. Tito may provide the Yugoslav Player certain advantages in combat and guerrilla reinforcement. However, the Axis Player may attempt to identify, locate, and eliminate Tito.

PROCEDURE:

Tito is made available to the Yugoslav Player as part of the Partisan reinforcements of Game-Turn 2 (see 13.92). When initially placed on the map, Tito is always placed with his *unidentified* counter-side showing.

CASES:

[9.1] MOVEMENT OF TITO

The Tito counter is subject to all normal movement rules, and moves as if it were a Partisan combat unit. However, Tito *must* end each Yugoslav

Movement Phase stacked with a Partisan unit. **Exception:** See 9.45.

[9.2] TITO AND COMBAT

[9.21] If Tito (in any state) is stacked with Partisan units that are *attacked*, the ratio is shifted one column to the *left* on the CRT. If Tito is stacked with Partisan units that are *attacking*, the ratio is shifted one column to the *right* on the CRT. Tito may provide a maximum of one shift per Combat Phase.

[9.22] If Partisan units stacked with Tito are obligated to retreat, Tito must retreat with these units. However, Tito may never be eliminated due to normal combat. If a Partisan stack containing Tito is eliminated, Tito is simply placed on top of any Partisan unit in the same Zone, or if this is impossible, on top of any Partisan unit on the map. If there are no Partisan units currently on the map, Tito is placed aside for the time being, but may return to the game with Partisan replacements (see 13.6).

[9.23] Tito may only be eliminated according to the procedure described in Case 9.4. If Tito is eliminated, the Axis Player may shift the ratio one column to the right in all Axis attacks against any Partisan units, and one column to the left in all attacks made by Partisan units. In addition, Chetnik Collaboration die rolls are affected (see 7.22).

[9.3] TITO AND YUGOSLAV REINFORCEMENTS AND VICTORY POINTS

[9.31] If Tito is present within a Zone during the Guerrilla Reinforcement Phase, the Yugoslav Player receives a variable number of reinforcing Partisan groups (see 7.46).

[9.32] During each Game-Turn in which Tito is *withdrawn* from the map (see 9.43), the number of Partisan groups available by recruitment in Objective Displays or Mountain triangles is *halved* (round fractions down; see 7.44 and 7.45). If Tito is eliminated, this condition is in effect for the remainder of the game. (Also, see 7.49).

[9.33] The Yugoslav Player loses 5 Victory Points for each Game-Turn that Tito is *withdrawn* from the map (see 9.43). If Tito has been eliminated, the Yugoslav Player immediately loses 25 Victory Points in the ensuing Victory Point Stage and loses 5 Victory Points in each succeeding Victory Point Stage.

[9.4] IDENTIFYING AND ATTACKING TITO

The Axis Player may make a specific attack against Tito, but only after he has been *identified* and *located*. However, no identification, location or attack attempt against Tito may be made after Game-Turn 14.

[9.41] The Axis Player may attempt to *identify* Tito during the Tito Phase of each Game-Turn following the one in which the first Partisan brigade is placed on the map (see 7.6) or in which the Yugoslav Player has first accumulated at least 45 Victory Points (see 14.0). The Axis Player rolls a single die at this time, a 6 indicating that Tito has been identified and a 1 through 5 indicating no effect. If Tito is identified, his counter is flipped over to the appropriate side.

[9.42] The Axis Player may attempt to *locate* Tito during the Tito Phase of each Game-Turn following the one in which he is identified. The Axis Player rolls a single die at this time, a 6 indicating that he has been located and a 1 through 5 indicating no effect. When Tito has been located, the German 501st SS Parachute Battalion becomes available as a reinforcement in the ensuing Axis Reinforcement Phase.

[9.43] The Axis Player may attempt to eliminate Tito during any Axis Combat Phase or Segment following the Tito Phase in which Tito is located. However, only *one* elimination attempt against Tito may be made per game. In order to eliminate Tito, the Axis Player must conduct an attack against a Partisan stack of units containing Tito. The 501st SS Parachute Battalion *must* participate in this attack. However, before resolving normal combat, the Axis Player rolls a single die. A 6 indicates that Tito is eliminated and a 1 through 5 indicates that Tito is "withdrawn" from the map for a number of *full* Game-Turns equal to this die roll (see 9.45). After this die roll, the normal combat must be resolved, and the 501st SS must participate (it remains on the map and functions as a normal unit for the remainder of the game).

[9.44] As long as the 501st SS participates, an Axis elimination attempt against Tito may be performed during an Anti-Guerrilla Operation.

[9.45] If Tito must be withdrawn from the map, his counter is picked up and placed aside for the time being. However, he automatically becomes available as a Partisan reinforcement after a number of *full* Game-Turns equal to the Axis Player's elimination attempt die roll (see 9.43). **Example:** If Tito were attacked on Game-Turn 7 with a die roll of 2, he would become available as a Partisan reinforcement in any Partisan-occupied Objective or Zone Display during the Guerrilla Reinforcement Phase of Game-Turn 10.

[10.0] ITALIAN UNITS AND ALLIED PROGRESS

GENERAL RULE:

Certain events outside the scope of the Balkans campaign trigger pullbacks, withdrawals, and surrender of Italian units, as well as the entry of special German reinforcements. These events are measured on the Allied Progress Track.

CASES:

[10.1] ALLIED PROGRESS

Starting with Game-Turn 6, the Yugoslav Player rolls a single die during the Allied Progress Phase and applies the result to the Allied Progress Track (10.14). There are seven events displayed on this Track, which, as they occur, may trigger events affecting Italian units.

[10.11] At the beginning of Game-Turn 6, the Allied Progress marker is placed in the upper-half of Box #1 (Alam Halfa) on the Allied Progress Track. When the Yugoslav Player rolls the die during the Allied Progress Phase, a roll of 1 through 5 indicates that the marker is advanced to the upper-half of the next box, where it remains until the next Allied Progress Phase. A roll of 6 indicates that the marker is not advanced but is simply shifted to the lower-half of the box it currently occupies, indicating that the Allied campaign has been temporarily stalled.

[10.12] If the Allied Progress marker currently occupies the lower-half of a box, *one* is added to the Yugoslav Player's die roll during the Allied Progress Phase. The maximum addition to this die roll is one, no matter how long the marker remains in the lower-half of the box. No modification to the die roll is made when the marker occupies the upper-half of the box.

[10.13] If the Allied Progress marker currently occupies the lower-half of a box and a 6 or 7 is rolled by the Yugoslav Player during the Allied Progress Phase, the marker is not moved at all; it remains in the lower-half of the box it currently occupies (see 10.12). Whenever the Marker is advanced, it is always placed in the upper-half of the next box.

[10.14] **Allied Progress Track**
(see mapsheet)

[10.2] ITALIAN PULLBACKS AND WITHDRAWALS

[10.21] When the Allied Progress marker enters Box #3 on the Allied Progress Track, the Axis Player is immediately subject to an *Italian Pullback* for the remainder of the game. When an Italian Pullback is in effect, Italian units in Croatia may not enter the Zone Display for any reason, and may only occupy Objective Displays labeled "Italian Pullback" in the Axis box. Italian units currently occupying a prohibited location at the moment an Italian Pullback comes into effect must move out in the ensuing Axis Movement Phase. **Note:** Once an Italian Pullback has occurred, Italian units are not permitted to participate in Anti-Guerrilla Operations in Bosnia or Serbia (see 6.64B).

[10.22] When the Allied Progress marker enters Box #6 on the Allied Progress Track, the Axis Player is immediately subject to an *Italian Withdrawal*. In this event, the Axis Player immediately rolls a single die, the resulting number indicating the number of Italian units (Axis Player's choice) which must be immediately and permanently removed from the map. This die roll takes place only once per game. In the ensuing Axis Reinforcement Phase, German reinforcements due as a result of Italian Withdrawal (see 13.91) become available to the Axis Player. In addition, Chetnik Collaboration die rolls are affected (see 7.2).

[10.23] No Italian unit may participate in an Anti-Guerrilla Operation once an Italian Withdrawal takes place.

[10.3] ITALIAN SURRENDER AND OPERATION KONSTANTIN

When the Allied Progress marker reaches Box #7 on the Allied Progress Track, *Italian Surrender* takes place. As a result, all Italian units on the map either *disband* or *defect*. This determination is made during the Italian Surrender Phase. This Phase occurs only once per game in the Game-Turn in which Box #7 is reached. After Italian Surrender, the Allied Progress Phase is omitted for the rest of the game.

[10.31] The Axis Player receives reinforcements in the Axis Reinforcement Phase following the Allied Progress Phase in which Italian Surrender occurs (see 13.91).

[10.32] In the Italian Surrender Phase, the following procedure is performed:

A. All Italian units on the map either *disband* (see 10.33), *defect* (see 10.34), or remain in place (see 10.35).

B. All German units perform *Operation Konstantin* (see 10.36).

C. All Partisan units respond to *Operation Konstantin* (see 10.36).

D. All Italian units that remained in place according to the procedure in Step A either *disband*, *defect*, or continue to remain in place.

E. All remaining Italian units on the map are permanently removed.

[10.33] During Steps A and D of Case 10.32, a given Italian unit *disbands* if it occupies an Axis box, triangle, or circle containing an equal amount or more non-Italian Axis Strength Points than Partisan Strength Points in a corresponding box, triangle, or circle. A disbanded unit is immediately removed from the map.

[10.34] During Steps A and D of Case 10.32, a given Italian unit *defects* if it occupies an Axis box, triangle, or circle with fewer non-Italian Axis

Strength Points than Partisan Strength Points in a corresponding box, triangle or circle. If an Italian unit defects, it is immediately removed from the map and replaced with a Partisan brigade (if available), which is placed in the Yugoslav box, triangle, or circle corresponding to the one formerly occupied by the Italian unit.

[10.35] During Steps A and D of Case 10.32, a given Italian unit *remains in place* if it occupies an Axis box, triangle, or circle without any other non-Italian Axis units *and* no Partisan units in a corresponding location.

[10.36] When *Operation Konstantin* comes into effect (see 10.32B), the Axis Player is permitted a bonus Movement Phase for *German* units only. This bonus Phase is identical to a normal Movement Phase. As soon as all German units have completed this movement, the Yugoslav Player is permitted an identical bonus Movement Phase for all Partisan units. This is also considered a normal Movement Phase, except the Yugoslav Player is not subject to the restrictions of Case 6.42 (i.e., a Partisan unit may move into a Zone and enter one of its Objective Displays immediately). Bonus Movement Phases are in addition to normal movement permitted during Axis and Yugoslav Movement Phases.

[11.0] WEATHER

GENERAL RULE:

Game-Turns 4, 8, 12, and 16 are automatically Winter Game-Turns. In addition, during the Weather Phase of Game-Turns 2, 6, 10, and 14, the Yugoslav Player must determine if *drought* will exist in the ensuing year (the current and three successive Game-Turns).

CASES:

[11.1] WINTER

[11.11] During a Winter Game-Turn, the number of reinforcing guerrilla groups that are created by recruitment in Mountain triangles or village Objective Displays is *halved* (round fractions down). **Exception:** See Case 11.12.

[11.12] Yugoslav units occupying the Mountain triangles in the *Islands Zone* Display are not affected by Winter Game-Turns in terms of recruitment.

[11.2] DROUGHT

[11.21] During the Weather Phase of Game-Turns 2, 6, 10, and 14, the Yugoslav Player must roll a single die in order to determine if drought is created during the current Game-Turn and the following three Game-Turns.

[11.22] There are two possible weather results: *drought* and *normal*:

A. On Game-Turn 2, a die roll of 1 through 3 indicates drought, and a die roll of 4 through 6 indicates normal.

B. On Game-Turns 6, 10, and 14, a die roll of 1 through 5 indicates a result *opposite* that in existence for the previous four Game-Turns (i.e., if Game-Turn 5 was drought and a 4 was rolled by the Yugoslav Player during the Weather Phase of Game-Turn 6, a normal result would be in effect through Game-Turn 9). A die roll of 6 indicates that the previous condition is repeated for the next four Game-Turns.

[11.23] If drought is created, the Game-Turn marker should be flipped over to indicate this condition. If drought is in effect during a Guerrilla Reinforcement Phase, the number of reinforcing guerrilla groups created by recruitment in market

town Objective Displays is *halved* (rounding the fractions down).

[11.24] Normal weather has no effect on any game function.

[12.0] MOUNTAIN UNITS

GENERAL RULE:

The Axis Player possesses a number of *mountain* units. These are considered normal combat units for all purposes, except that when any stack containing at least one mountain unit (German and Italian only, *not* Croat) conducts an *attack* in any Mountain triangle, Hide-away circle, or village box, the ratio is shifted one column to the right on the CRT. There is a maximum of *one* shift to the right per combat.



[13.0] REINFORCEMENTS, REPLACEMENTS, TRANSFERS, AND UPGRADING

GENERAL RULE:

Both Players receive reinforcements and replacements during the course of the game. In addition, both Players may *transfer* units at pre-determined times. Similarly, the Axis Player is permitted to *upgrade* certain units at specific times during the course of the game.

PROCEDURE:

A. Axis reinforcements and replacements appear on the map during the Axis Reinforcement Phase of the indicated Game-Turn. In addition, unit transfer and upgrading takes place at this time. The Axis Player may place reinforcements and replacements anywhere within a Zone that the unit would normally be allowed to move into according to the restrictions of Case 6.6 (even in a Display whose corresponding box, triangle, or circle is currently occupied by an Enemy unit).

B. Yugoslav reinforcements and replacements appear on the map at the beginning of the Yugoslav Movement Phase, except for variable guerrilla reinforcements, which appear in the Guerrilla Reinforcement Phase (see 7.4). In addition, transfer of Soviet and pro-Yugoslav Bulgarian units takes place at the beginning of the Yugoslav Movement Phase. Yugoslav units are placed on the map according to the requirements of Cases 13.2, 13.4, and 13.6.

CASES:

[13.1] AXIS REINFORCEMENTS

The Axis Player is due reinforcements as described in the Reinforcement, Transfer, and Upgrading Schedule (13.9).

[13.2] YUGOSLAV REINFORCEMENTS

[13.21] The Yugoslav Player is due pre-determined Partisan reinforcements (including Tito) on Game-Turn 2 (see 13.92).

[13.22] The Yugoslav Player is due Soviet and Bulgarian reinforcements on Game-Turn 15 (see 13.92). In addition, there are three optional Soviet reinforcing units that are available to the Yugoslav Player at this time. However, if these units are used, the Yugoslav Player loses 15 Victory Points in the ensuing Victory Point Stage (see 14.3).

[13.3] AXIS REINFORCEMENTS TRIGGERED BY EVENTS

The Axis Player is due reinforcements as certain events are triggered during the course of the game. These are:

- A. Italian Withdrawal (see 10.2);
- B. Italian Surrender (see 10.3);
- C. Tito is located (see 9.42);
- D. The Yugoslav Player first accumulates 45 Victory Points *or* the first Yugoslav brigade is placed on the map.

Note: The units available as a result of these events are listed in Case 13.91.

[13.4] YUGOSLAV VARIABLE GUERRILLA REINFORCEMENTS

The Yugoslav Player is due variable guerrilla reinforcements during all Guerrilla Reinforcement Phases (see 7.4).

[13.5] AXIS REPLACEMENTS

Axis replacements must be drawn from units that have been previously eliminated from play. Replacements may never be accumulated; if they are not used or not available on a given Game-Turn, they are permanently lost.

[13.51] Starting with the Axis Reinforcement Phase of Game-Turn 2, the Axis Player receives one Serbian *unit* (Axis Player's choice) as a replacement each Game-Turn.

[13.52] Starting with the Axis Reinforcement Phase of Game-Turn 3, the Axis Player receives two Croat *units* (Axis Player's choice) as replacements each Game-Turn.

[13.6] YUGOSLAV GUERRILLA REPLACEMENTS

[13.61] If, at the beginning of any Yugoslav Movement Phase of Game-Turn 3 (or after), there are no Partisan units on the map, the Yugoslav Player is immediately eligible for Partisan replacements (see 13.63).

[13.62] If, at the beginning of any Yugoslav Movement Phase between Game-Turns 2 and 13 (inclusive), there are no Chetnik units of any allegiance on the map, the Yugoslav Player is immediately eligible for pro-Yugoslav Chetnik replacements (see 13.63).

[13.63] If the Yugoslav Player is due replacements, he rolls a single die for Partisans and/or a single die for Chetniks. The result(s) is the number of replacement groups of the appropriate type immediately available to the Yugoslav Player.

[13.64] Partisan replacements may be placed in the Hide-away circle of the Bosnia, Croatia, Serbia, Dalmatia, and/or Slovenia Zone Display. Chetnik replacements (always placed on the map as pro-Yugoslav) may be placed in the Hide-away circle of the Montenegro and/or Serbia Zone Display.

[13.7] TRANSFERRING UNITS

[13.71] The Reinforcement, Transfer, and Upgrading Schedule (13.9) will ask the Axis Player to *transfer* (remove) specific units on the map at various times during the game. In order to transfer a unit, the Axis Player simply picks it up and removes it from the map during the Axis Reinforcement Phase. A unit that is transferred may not return to play unless specified by 13.9.

[13.72] Transfer of Axis units is *not* mandatory. However, during the Victory Point Stage of each Game-Turn in which there are Axis units on the map whose transfer had previously been called for, the Yugoslav Player receives 5 Victory Points for each such unit (see 14.2).

[13.73] If an Axis unit has been eliminated when its transfer is called for, this transfer is ignored.

[13.74] The Yugoslav Player may transfer only Soviet and pro-Yugoslav Bulgarian units *after* Game-Turn 15. This is performed exactly like Axis transfer, except it takes place at the beginning of the Yugoslav Movement Phase. The Yugoslav Player loses 10 Victory Points for each Soviet and pro-Yugoslav Bulgarian unit on the map during the Victory Point Stage of Game-Turns 16 and 17 (see 14.3).

[13.8] UPGRADING AXIS UNITS

[13.81] The Reinforcement, Transfer, and Upgrading Schedule (13.9) will list the times at which specific Axis units will be *upgraded*. In order to upgrade a unit, the Axis Player simply flips it over, revealing a new unit with a stronger Combat Strength.

[13.82] If a unit that is to be upgraded is eliminated from play, its upgrading is ignored. **Note:** Eliminated Croat units that re-deploy onto the map as Axis replacements (see 13.52) after their scheduled upgrading are *automatically* upgraded.

[13.9] REINFORCEMENT, TRANSFER, AND UPGRADING SCHEDULE

All reinforcements, transfers, and units to be upgraded are given by Game-Turn. Each unit's designation is listed, followed by a letter and number in parentheses which indicate nationality and Combat Strength. Abbreviations are as follows: **G** = German; **C** = Croat; **P** = Partisan; **B** = Bulgarian; **S** = Soviet. All units listed are reinforcements unless otherwise noted.

[13.91] AXIS

At Start:

A. Place in Box #6 of Allied Progress Track (available after Italian Withdrawal): 100L(G10), 173(G6), 297(G12), 373(G10), 92(G6).

B. Place in Box #7 of Allied Progress Track (available after Italian Surrender): 181(G18), 264(G15), 371(G15), 1Cos(G9).

C. Place aside (available after locating Tito): 501SS(G1).

D. Place aside (available after first accumulation of 45 Victory Points by Yugoslav Player or placement of first Yugoslav brigade on the map): 25(B12), 27(B12). **Special Note:** These reinforcements must be deployed (and must remain) in Serbia, but only in any Objective Display labeled "Bulgarian Occupation."

Game-Turn 2: 342(G18), 125(G3), Gd(C3), 1Ust(C2), 2Ust(C2), 3Ust(C2).

Game-Turn 3: 113(G18), 4Ust(C2), 5Ust(C2). **Transfer:** 125(G3).

Game-Turn 4: 1(C1), 2(C1), 3(C1), 4(C1), 5(C1), 1Mt(C2), 2Mt(C2), 3Mt(C2), 4Mt(C2), 5Mt(C2). **Transfer:** 113(G18).

Game-Turn 5: Transfer: 342(G18).

Game-Turn 6: 7SS(G16).

Game-Turn 8: 369(G10), 6(C1). **Upgrade:** 704(G12), 714(G12), 717(G12), 718(G12). **Transfer:** 117L(G15).

Game-Turn 9: 1(G20).

Game-Turn 10: 1Pz(G30). **Transfer:** 104L(G15), 1Pz(G30). **Note:** Employment of 1Pz during Game-Turn 10 (and each succeeding Game-Turn) automatically yields 5 Victory Points to the Yugoslav Player.

Game-Turn 12: 13SS(G8), 187(G9).

Game-Turn 13: 202Pz(G10).

Game-Turn 14: 21SS(G8), 23SS(G4), 98(G20), 392(G10).

Game-Turn 15: 4SS(G20), 22(G24), 11LW(G12), 104L(G15), 117L(G15). **Note:** These units must be placed anywhere within Macedonia. **Upgrade:** All Croat units. **Transfer:** All Bulgarian units (*may not be delayed by Axis Player*).

[13.92] YUGOSLAV

Game-Turn 2: 10 groups (each P1), Tito-unidentified: **Serbia Yugoslav/Partisan Hide-away circle;** 4 groups (each P1): **Slovenia Yugoslav/Partisan Hide-away circle;** 3 groups (each P1): **Montenegro Yugoslav/Partisan Hide-away circle.**

Game-Turn 15: 75(S30), 68(S30), 64(S30), 10Gd(S33), 31Gd(S33), 4Gd(S42), 5(S12), 1(B15), 2(B15), 3(B15), 4(B15), 5(B15), 7(B15), 8(B15), 6(B18), 9(B18): **In any Yugoslav/Partisan box, triangle, or circle in Serbia or Macedonia** (for Soviet units) **or simply Macedonia** (for Bulgarian units). None of these units may leave their original Zone of placement on Game-Turn 15. **Note:** The following are optional Soviet reinforcements that are available to the Yugoslav Player at this time: 18Gd(S33), 20Gd(S33), 7(S38). However, if these units are employed, the Yugoslav Player loses 15 Victory Points in the ensuing Victory Point Stage.

[14.0] YUGOSLAV VICTORY POINTS

GENERAL RULE:

The Yugoslav Player (only) accumulates and loses Victory Points during the Victory Point Stage. The number of Victory Points accumulated by the Yugoslav Player at the end of the game will determine the winner. In addition, the accumulation of a certain number of Victory Points during the course of the game will trigger events altering the game's flow.

CASES:

[14.1] HOW YUGOSLAV VICTORY POINTS ARE RECORDED

[14.11] Yugoslav Victory Points are recorded on the Victory Point Track (14.13) only during the Victory Point Stage. At this time, the Yugoslav Player should examine the map, checking to see if any of the conditions of Cases 14.2 and 14.3 are fulfilled — accumulating and deducting Victory Points according to the instructions of these Cases.

[14.12] Yugoslav Victory Points are recorded with the appropriate markers on the Victory Point Track. As each condition of Cases 14.2 and 14.3 is fulfilled, these markers should be adjusted appropriately. Each Victory Point marker is printed with a positive and negative side. (It is permissible for the Victory Point total to go into negative figures; if it does, simply flip the markers over to their negative sides.)

[14.13] **Victory Point Track**
(see mapsheet)

[14.2] HOW THE YUGOSLAV PLAYER ACCUMULATES VICTORY POINTS

The fulfillment of the following conditions accumulates Victory Points for the Yugoslav Player during the Victory Point Stage of each Game-Turn:

A. The Yugoslav Player should check each Objective Display currently occupied by at least one Yugoslav (or Soviet or pro-Yugoslav Bulgarian) unit. For each occupied Objective Display, the

Yugoslav Player receives the Victory Point Value of that Display (the second Value printed in the Axis box).

B. The Yugoslav Player should check every Yugoslav (or Soviet or pro-Yugoslav Bulgarian) occupied *Mountain* triangle separately. The number of Yugoslav Strength Points in each such occupied Mountain should be totalled and divided by *four* (round fractions down). The result is the number of Victory Points awarded to the Yugoslav Player. However, no more Victory Points may be awarded per Mountain triangle than the number of *units* currently occupying the triangle. **Example:** If one Partisan division (Strength of 12) and nine Chetnik groups (each with a Strength of 1) occupy their respective Mountain triangles in Istria, the Yugoslav Player would receive 1 Victory Point for the Partisan division and 2 Victory Points for the Chetnik groups.

C. The Yugoslav Player receives 5 Victory Points for *each* German unit that is currently on the map after its scheduled transfer (see 13.7).

[14.3] HOW THE YUGOSLAV PLAYER LOSES VICTORY POINTS

The Yugoslav Player should *deduct* Victory Points due to the fulfillment of the following conditions during the Victory Point Stage:

A. If Tito is currently withdrawn from the map (see 9.43), the Yugoslav Player loses 5 Victory Points.

B. If Tito has been eliminated (see 9.43), the Yugoslav Player loses 25 Victory Points in the ensuing Victory Point Stage and 5 Victory Points in every succeeding Victory Point Stage.

C. If, at the beginning of the immediately preceding Yugoslav Movement Phase, there were no Chetnik guerrillas on the map, the Yugoslav Player loses 5 Victory Points. If there were no Chetnik units of any allegiance, the Yugoslav Player loses 15 Victory Points instead. **Exception:** After Game-Turn 13, this Case should be ignored.

D. If, at the beginning of the immediately preceding Yugoslav Movement Phase (except on Game-Turn 1), there were no Partisan units on the map, the Yugoslav Player loses 25 Victory Points.

E. For each Soviet and pro-Yugoslav Bulgarian unit on the map during the Victory Point Stages of Game-Turns 16 and 17, the Yugoslav Player loses 10 Victory Points.

F. If the three optional Soviet reinforcements have been deployed by the Yugoslav Player in the immediately preceding Yugoslav Movement Phase (see 13.92), the Yugoslav Player loses 15 Victory Points.

[14.4] EVENTS TRIGGERED BY YUGOSLAV VICTORY POINTS

A number of events are triggered by the first accumulation of 45 Victory Points by the Yugoslav Player (*or* the first appearance of a Yugoslav brigade on the map). These events are described in Cases 6.64 and 13.91D.

[15.0] HOW TO START AND WIN THE GAME

GENERAL RULE:

Before the start of play, both Players must deploy a number of units on the map according to the instructions of Cases 15.1 and 15.2. In addition, the Axis Player must calculate the number of Anti-Guerrilla Operations that he may perform during the course of the game (see 15.3).

CASES:

[15.1] AXIS SET-UP

Units to be deployed are indicated by nationality, designation, and strength (in parentheses). Axis units may be deployed in any Objective Display of the indicated Zone.

A. German

1. *Serbia*: 704(12), 714(12), 717(12).
2. *Bosnia*: 718(12).

B. Italian

1. *Slovenia*: Emilia(6), Marche(6), Alpi Gr(6), CD Alpi(6).
2. *Istria*: Murze(6), Messina(6).
3. *Croatia*: Bergamo(6), Sassari(6).
4. *Dalmatia*: Savoia(6), Zara(6).
5. *Montenegro*: Re(6), Lombard(6), Macerata(6), Isonzo(6), Ferrara(6), Taurinese(6), Perugia(6), Venezia(6), Puglia(6).
6. *Albania*: Firenze(6), Arezzo(6), Parma(6).

C. Serbian

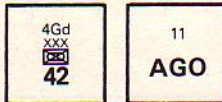
1. *Serbia*: 1(1), 2(1), 3(1), 4(1), 5(1).

D. Bulgarian

1. *Macedonia*: 14(12), 22(12), 24(12).

[15.2] YUGOSLAV SET-UP

The Yugoslav Player deploys 5 Chetnik groups in the Yugoslav/Chetnik Hide-away circle of the Serbia Zone Display and 2 Chetnik groups in the Yugoslav/Chetnik Hide-away circle of the Montenegro Zone Display. These units are under the control of the Yugoslav Player at the start of the game.

**[15.3] AXIS ANTI-GUERRILLA LIMITATIONS**

[15.31] Before starting play, the Axis Player should place all ten Soviet units available in the countermix in a cup. Each Soviet unit is back-printed with a number of Anti-Guerrilla Operations ("AGO"). Then, the Axis Player should *blindly* choose one of the Soviet units. The number indicated on the *reverse* side of this unit is the number of Anti-Guerrilla Operations that the Axis Player may perform during the course of the game.

[15.32] The chosen Soviet counter is kept *hidden* in front of the Axis Player between Game-Turns 1 and 14 (inclusive). Each time an Anti-Guerrilla Operation is performed, the Axis Player records this fact on a separate sheet of paper. Then, at the beginning of Game-Turn 15, this counter is revealed to the Yugoslav Player, who must verify that the number of Anti-Guerrilla Operations actually performed during the game does not exceed the counter's number. During this Game-Turn, all Soviet units become available as reinforcements.

[15.4] SPECIAL RULES (Game-Turns One and Two Only)

On Game-Turns 1 and 2, *all* of both Players' units must remain in the Zone in which they start the game (or enter the game as reinforcements).

[15.5] HOW TO WIN THE GAME

The game ends at the completion of the Victory Point Stage of Game-Turn 17 (the remaining Phases of this Game-Turn are deleted). At this time, the final Yugoslav Victory Point total is computed and a winner is determined according to the following schedule:

- A. **Yugoslav Decisive Victory**: Greater than 700 Points.
- B. **Yugoslav Substantive Victory**: 601-700 Points.
- C. **Yugoslav Marginal Victory**: 501-600 Points.
- D. **Axis Marginal Victory**: 401-500 Points.
- E. **Axis Substantive Victory**: 301-400 Points.
- F. **Axis Decisive Victory**: Less than 301 Points.

TITO DESIGN CREDITS

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Game Development: **Joseph Balkoski**
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On top of this crazy-quilt political-ethnic situation, the Axis, after its lightning military conquest of Yugoslavia in April, 1941, superimposed a fragmentation of its own. Parts of the country were annexed outright by Germany, Italy, Bulgaria, and Hungary, and the rest of the land was carved into occupation zones overseen by the Germans, Italians, and Bulgarians. Into the mix were tossed the not inconsiderable pro-Axis ethnic elements in Yugoslavia, mainly Croats and Serbs, who formed national armies of their own. In true Balkans fashion, the occupation zones, which in certain cases cut across traditional ethnic boundaries, caused the Axis considerable problems in mounting a coordinated effort against the guerrillas.

In strategic terms, Yugoslavia was immensely important to the Germans. Some 50% of Germany's oil, all its chromium, 60% of its bauxite, and almost a quarter of its copper and antimony came from the Balkans, at whose heart lies Yugoslavia. The country stood astride Germany's line of communications with its forces in Greece and Crete. When the tide of war turned against the Axis in the Mediterranean, Germany was constantly preoccupied with the fear of an Allied landing on Yugoslavia's Adriatic coast.

So, with the guerrilla war of necessity a military sideshow, the Germans were faced with the problem of waging it as cheaply as possible, but for big stakes. Militarily, the units employed could be put to better use on the major fighting fronts. But strategically, a quiescent Yugoslavia would take some of the pressures off those fronts.

In the final analysis, what the Germans do in the game will not win the big war going on in the outside world. At best, the German Player can duplicate what the Germans historically did in Norway — surrender a relatively intact force when hostilities cease in 1945.

The guerrillas (in the game the brunt of their fighting is done by the Partisans, so mostly hereafter we'll refer to them as such) must keep striking at the German war effort while trying to build an army capable of eventually taking the offensive against the Axis. As we shall see, the first goal is a vital precondition for achieving the second.

Operationally, the most striking factor is the mountainous nature of the country and its over-riding effects on movement and combat. To the Partisans, the mountains, which occupy 80% of the country, were both friend and foe. The mountains offered refuge, but not sustenance. Thus, there is a compelling need for the Partisans to come out of hiding and attack to gain recruits, supplies, and self-confidence.

From the Axis standpoint, it was vital in the game to depict the general unwillingness of their forces to prosecute an anti-guerrilla war, and the devastating effects on the Partisans when the Axis occasionally got its act together and mounted large-scale anti-guerrilla operations. Then, too, there were the complications of Italy's surrender, which threw the weight of the campaign onto German shoulders, and the defection of the Bulgarians, which suddenly confronted the Germans with a well-armed enemy on Yugoslavia's eastern frontier.

And, speaking of well-armed enemies, there were, of course, the Soviets. Their appearance late in the game turns what had been a search-and-destroy campaign into a war with defined front lines. How heavily the Partisans rely on Soviet support determines how heavily they will be dominated by Moscow after the war. In game terms, too many Soviets helping for too long can be a mixed blessing.

Dick Rustin

DESIGNER'S NOTES

My main task in designing *Tito* was to translate into game terms a wealth of distinctive factors, many of them unique to the Balkan theater, that went into the conflict between the Axis and the Yugoslav guerrillas.

I started out with the concept that the conflict was a war within a war, within a war. The Axis were fighting the Allies on the major battlefronts, and what was happening in the Mediterranean and in the Soviet Union had indirect but important effects on the war against the guerrillas. But the guerrillas, while battling the Axis, were at each other's throats. There were two rival guerrilla factions: the Communist-led Partisans headed by Marshal Tito, and the predominantly Serbian, pro-royalist Chetniks. Not only was the resolution of the war against the Axis at stake for both, but the political makeup of postwar Yugoslavia hung in the balance as well. And the guerrillas were not the only ones with internal differences. Germany, as head of the Axis bloc, saw its position in the Balkans seriously weakened by the collapse of Italy in September 1943 and the defection of Bulgaria to the Soviet side a year later.

The polyglot makeup of Yugoslavia also had to be factored in. Here is a country with six major ethnic groups, three languages, and three religions — a situation that made Yugoslavia a microcosm of the fragmented Balkans. This fragmentation and its significant influence on operations during the guerrilla war could not be ignored. For example, the regions of Serbia and Montenegro had to be depicted as the Chetnik strongholds they were, while the rest of the country had to be shown as more hospitable to the broader-based Peoples Liberation Army of Tito.

The counter images for this game have been provided here to aid players in reproducing damaged or lost counters.

Tito Counter Section Nr. 1 (200 pieces): Front

Quality of Sections of this identical type: 1. Total quantity of Sections (all types) in game: 1.

704 12	714 12	717 12	718 12	297 12	11LV 12	113 18	181 18	342 18	264 15
371 15	100L 10	369 10	373 10	392 10	98 20	187 9	173 6	125 3	455 20

GERMAN

22 24	92 6	1 20	75S 16	135S 8	215S 8
5015S 1	235S 4	1P2 30	202P2 10	1Cos 9	

Emilia 6	Marche 6	Murze 6	Messina 6
Sassari 6	Re 6	Lombard 6	Macerata 6

ITALIAN

1 1	2 1	3 1	Perugia 6	Venezia 6	Puglia 6	Firenze 6	Arezzo 6	Parma 6	Alpi Gr 6
4 1	5 1		CD Alpi 6	Savona 6	Zara 6	Isonzo 6	Ferrara 6	Taurinese 6	Bergamo 6

2 1	3 1	4 1	5 1	6 1	1Mt 2	2Mt 2	3Mt 2	4Mt 2	5Mt 2
Gd 3	11Jst 2	2Jst 2	3Jst 2	4Jst 2	5Jst 2	1 1			

7 15	8 15	6 18	9 18	88 30	64 30	10Gd 33	18Gd 33	20Gd 33
14 12	22 12	24 12	25 12	75 30	31Gd 33	5 12	7 38	4Gd 42

BULGARIAN

SOVIET

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301P41

1 Group 1	2 Group 1	3 Group 1	4 Group 1	5 Group 1	6 Group 1	7 Group 1	8 Group 1	9 Group 1	10 Group 1
11 Group 1	12 Group 1	13 Group 1	14 Group 1	15 Group 1	16 Group 1	17 Group 1	18 Group 1	19 Group 1	20 Group 1

CHETNIK

21 Group 1	22 Group 1	23 Group 1
24 Group 1	25 Group 1	

MARKERS

Game Turn	Allied Prog	
VP 1-1	VP 1-1	VP 1-1
x 1	x 10	x 100

TITO
NOT
IDENT

1 Group 1	2 Group 1	3 Group 1	4 Group 1	5 Group 1	6 Group 1	31 4	32 4	33 4	34 4
35 4	36 4	37 4	38 4	39 4	40 4	41 4	42 4	43 4	44 4

PARTISAN

45 4	46 4	47 4	48 4	49 4	50 4	51 4	52 4	53 4	54 4
55 4	56 4	57 4	58 4	59 4	60 4	7 Group 1	8 Group 1	9 Group 1	10 Group 1

11 Group 1	12 Group 1	13 Group 1	14 Group 1	15 Group 1	16 Group 1	17 Group 1	18 Group 1	19 Group 1	20 Group 1
21 Group 1	22 Group 1	23 Group 1	24 Group 1	25 Group 1	26 Group 1	27 Group 1	28 Group 1	29 Group 1	30 Group 1

Tito Counter Section Nr. 1 (200 pieces): Back

10 4	9 4	8 4	7 4	6 4	5 4	4 4	3 4	2 4	1 4
20 4	19 4	18 4	17 4	16 4	15 4	14 4	13 4	12 4	11 4

TITO
IDENT

VP
1-1
x 100

VP
1-1
x 10

VP
1-1
x 1

Dropt
Turn

23 4	22 4	21 4
25 4	24 4	

4 12	3 12	2 12	1 12	6 4	5 4	4 4	3 4	2 4	1 4
14 12	13 12	12 12	11 12	10 12	9 12	8 12	7 12	6 12	5 12

24 12	23 12	22 12	21 12	20 12	19 12	18 12	17 12	16 12	15 12
10 4	9 4	8 4	7 4	30 12	29 12	28 12	27 12	26 12	25 12

20 4	19 4	18 4	17 4	16 4	15 4	14 4	13 4	12 4	11 4
30 4	29 4	28 4	27 4	26 4	25 4	24 4	23 4	22 4	21 4

118L 15	117L 15	114L 15	104L 15
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34 12	33 12	32 12	31 12
39 12	38 12	37 12	36 12

PARTISAN

49 12	48 12	47 12	46 12	45 12	44 12	43 12
35 12	42 12	41 12	40 12	52 12	51 12	50 12

15 4	14 4	13 4	12 4	11 4	10 4	9 4	8 4	7 4	6 4
			5 4	4 4	3 4	2 4	1 4	Sturm 5	Gd 5

8 AGO	8 AGO	8 AGO	7 AGO	6 AGO
11 AGO	10 AGO	9 AGO	8 AGO	5 AGO

5 15	4 15	3 15	2 15	1 15
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With the collapse of the German's August 1914 offensive, the Marne battles, and the resulting war of attrition, German and Allied General Staffs began to search for a way to break the West Front stalemate. In the long interconnected graves known as frontline trenches — in reality one single

defensive system running from Switzerland to the English Channel via the boneyards of Verdun and Ypres – infantrymen armed with 20th Century weapons, subjected to 20th Century artillery, led by 19th Century minds, discovered the daily cruelty of static positional war.

This map illustrates the Ypres Salient during the First World War, specifically focusing on the period up to April 22, 1915. It shows the German front line (solid black line) and the Allied front line (dashed black line). A dotted line indicates the zone of gas attack, which is shown reaching the German positions. Key locations marked include Bixchoote, Steensstraat, Het Sas, Boesinghe, Pilckem, Langemarck, and St. Julien. The Ypern Kanal and Ypern are also labeled. A legend in the bottom left corner defines the symbols used: solid black line for German positions, dotted line for the zone of gas attack, dashed black line for lines reached by the gas attack, and a dash-dot line for the enemy position. A scale bar indicates distances up to 1000 meters. A north arrow is located at the top center. The map also shows various dates in April 1915, such as 22.4.1915, 23.4.1915, 24.4.1915, 25.4.1915, and 26.4.1915, indicating the progression of the battle.

Allied thinking vacillated between selecting sea-borne flanking operations or attempting headlong assaults with infantry and artillery. Lacking sea-control, the Germans were left with the second option. The result was a war of attrition in which bogged down infantry divisions and hub-to-hub artillery clawed out "successful offensives" measured in hundreds of meters. The casualty rates on both sides were stupefying.

Even in the late fall of 1914 and early 1915, elements of the German General Staff believed that unless mobility was restored to the Western Front, the Allies' naval blockade and their superior economic capabilities would eventually grind down the Central Powers. Of course, the key question of how to achieve this much sought mobility was a Gordian knot no one had yet successfully cut.

In the late 19th Century and through the 20th's first decade, Germany built the world's most advanced chemical industry, the conglomerate of I.G. Farben being perhaps the best known company of the era. One of the spin-offs of this chemical capability had been a mild interest in the possible adaptation of irritant chemical agents into tactically useful weapons. Such research and development were not confined to Germany; several metropolitan police departments across the world sported tear gas rifles for riot control use. In fact, the first recorded use of chemical weapons in WWI was by French policemen who, when called to their reserve units, brought along their 26mm tear gas rifles. The rifles fired a cartridge charged with ethyl bromoacetate, a lachrimator (but with a toxicity higher than chlorine's). Although the weapons were of little consequence, they did provide the Germans with a propaganda ploy.

In the summer of 1914, a team of German chemists at the Kaiser Wilhelm Institute for Physical Chemistry began developing a series of phosgene and arsenical grenades. The leader of the research team, Professor Fritz Haber, became increasingly convinced of the practicability of tactical chemical weapons. Weapons were not Haber's sole interest, for he was also engaged in developing a process for the manufacturing of ammonia (essential in the production of explosives) from air, thus relieving the pressure on Germany's nitrate industry. Haber's warfare group had its military advocates, but there was no practical delivery system.

A certain Professor Nernst suggested refilling the German's 105mm artillery shell with lead balls packed in o-dianisidine chlorosulphonate, with the balls and chemical-fill to be scattered by a small explosive charge. Nernst's "Ni-Schrapnell" round proved to be a weak hybrid containing too little explosive and too little agent. It saw action only once, on 27 October 1914 against the French at Neuve-Chapelle, who failed to notice anything unusual about the 3,000 105mm shells landing around their positions. One German source maintained the shells forced the French to stay down, which aided in the capture of the town. Whatever the true effect, Nernst's rounds never left the business end of another gun tube.

Still, the development of artillery-delivered chemical munitions received abundant attention. A chemist by the name of Tappen, brother of a general on Field Marshal von Mackensen's staff, proposed the use of a lachrimator agent composed of xylol bromide and xylene bromide. The mixture became known as T-Stoff in recognition of Tappen. Realizing that a larger shell could deliver more agent, the Germans developed the "15cm High Explosive Shell 12 T" as an irritant chemical weapons system. Two-thirds of the standard 150mm heavy field howitzer shell was replaced by a lead canister with T-Stoff fill; the remain-

ing HE served to burst the canister and shell and disperse the agent. The Germans discovered the new shell still possessed a satisfactory fragmentation action with an average of 600 splinters against the standard round's 800.

However, the T-shell's introduction to combat (East Front, Bolimov, 31 January 1915) produced mediocre results. Ninth Army fired over 18,000 T-shells and succeeded in severely disrupting — but not eliminating — Russian artillery fire. The reason for the disappointing results (from the German point of view) proved to be chemical warfare's biggest bugaboo — weather limitations. The severe cold at Bolimov limited the build-up of sufficient vapor concentrations. The Germans fired T-shell on the West Front in March of 1915 in the bombardment of Nieuport. In the warmer weather the results were significantly better.

March also witnessed the introduction of the first French artillery-delivered chemical munition, a 75mm shell loaded with ethyl bromoacetate (the same chemical used in the 26mm tear gas cartridge). Since their bromine supplies were dwindling, the French were also experimenting with a chloroacetone fill. During the late fall of 1914, the British had investigated using ethyl iodoacetate stink bombs to clear bunkers, and had also reconsidered employing poison smoke in naval combat. Both ideas were rejected, but the second proposal did evolve into a new smoke screen system.

Still, even before the first mass employment of the T-shell, many members of Germany's Supreme Command began to doubt that irritant agents delivered by artillery would ever produce more than a minimal effect. Under pressure to find a solution to the West Front deadlock, the General Staff went shopping for suggestions. Germany's pre-war stocks of high explosives were nearing exhaustion, and the sea blockade had effectively cut the nitrate supply required to replenish the stockpiles. During a General Staff Conference in late 1914, a meeting attended by then Chief of Staff General Ludendorff, representatives of I.G. Farben, there to discuss munitions production, suggested chemicals be used as casualty agents, i.e., to kill rather than harass. Haber's developments group stated that the idea was feasible but that the chief problem of getting sufficient agent to the target still remained. They suggested a "cloud attack" with gas discharged onto enemy positions from cylinders placed in front-line trenches. Field trials in January, still prior to Bolimov, vindicated the idea. Two engineer regiments, the 35th and 36th, began training for the employment of chemical weapons. The German planners had come to believe that toxic chemical weapons might be of some benefit, but to what extent the weapons could be relied upon, given their susceptibility to terrain and weather conditions, was inestimable. The decision to engage in a massive "field test" was reached and a Supreme Command staff study of wind conditions along the Western Front selected Ypres as the most promising site.

Ypres

The stage was set for what would have been the most decisive battle on the Western Front, had the Germans had any inkling of the surprise and shock effects of poison gas. Any discussion of the first chlorine cloud attack at Ypres should begin with the attack's understandable but nevertheless dominating flaw: the attack was really nothing more than an experimental field test. The Germans failed to allocate sufficient troops to exploit overwhelming results because they did not expect any — an interesting sort of military psychological contradiction since the chief reason for continuing the toxic gas program had been to find a decisive way to end the deadlock and the

war. Despite months of meticulous planning, training, and logistical preparation, the General Staff was not totally convinced of the efficacy of chemical attack and chose a wait-and-see attitude and did not commit an extra corps to a possible exploitation. As a result the German attack was not the decisive blow it could have been.

The responsibility for actual implementation of the attack fell to the newly organized 35th Engineer Regiment, "Gas Regiment Peterson," named after its commander. The unit consisted of two battalions, each with three line companies, one service company, and one field meteorological station and telephone line section.

The Germans had begun shipping gas cylinders charged with chlorine to the Ypres area in mid-February. The 35th received 1,600 long commercial-type cylinders and 4,000 improved gas cylinders, which were only half as long but had a larger diameter. The 6,000 cylinders represented about half the available commercial supplies. As the cylinders arrived, the German engineers emplaced them in parapets in a section of the line between Steenstraat and Langemarck; bad weather and the local wind conditions — the plague of cloud attacks — prevented any trials.

The transportation and installation of the cylinders went on at night, but installation proved difficult, with marshy ground and a high water table affecting emplacement almost as much as the artillery fire. On the 25th of March, orders were issued to install the remaining cylinders in a second battery series where local conditions might be more favorable; two of the 35th's gas companies accomplished this placement between 5 April and 11 April. The area nearest Bixchoote proved to be particularly troublesome since Allied artillery fire destroyed the cylinder parapets on a daily basis. The cylinders for this battery had to be completely withdrawn from the front trenches and were re-installed on the night before the assault.

During this period the German commanders discovered that with the proliferation of cylinder batteries along a widening front, the regiment could not provide sufficient numbers of trained chemical personnel. Infantrymen were hastily trained and assigned to beef up the cylinder crews. With weather, personnel shortages, battery-to-battery communications problems, plus uncertain prospects, the chemical field trial appeared to be totally disorganized and, in all likelihood, compromised.

British patrols and Allied observers had indeed discovered several of the cylinder emplacements. Several days prior to the attack, a deserter gave a detailed account of the operation to British intelligence, but analysts dismissed the story because such an attack "was considered technically impossible." British troops, informed of the deserter's story, hoisted a sign over one frontline trench which read: You will have to wait a long while for the right wind to blow!

The Germans delayed the test until 22 April, when favorable wind conditions arrived. Assault troops were brought forward; with no support trench line in the entire zone, however, the front trenches became packed with shock troops, messengers, and cylinder crews. The order to attack came at 1725, with the release time set for 1800. The cylinders took from six to eight minutes to empty, but by 1805 a well concentrated cloud was advancing south.

Allied Catastrophe

The line of release ran along a six kilometer front from Steenstraat through Bixchoote and Langemarck towards Poelcappelle. The Allied line west of the Yser Canal was manned by Belgian troops; east of Poelcappelle a Canadian unit had dug in along the road. Seventeen companies of

French Territorials and two battalions of the 45th (Algerian) Division held the central sector. It was in this area that the greatest concentration of gas struck. The Germans watched the greenish-yellow cloud boil into the Allied trenches and immediately sent their own cautious infantry forward. Despite its caution and trepidation the German advance was astonishing. Langemarck fell at 1820 and Pilkem Ridge at 1849. In less than forty minutes a four kilometer deep penetration was achieved; in many instances the infantry occupied entire trench networks without firing a shot. Overhead, German artillery pumped high explosive and 150mm T-shell irritant at Allied artillery positions and along the cloud's ragged flanks.

Among the Allied troops total panic ensued. At first it was nearly impossible to find out what was happening. Smoke and fumes hid the battlefield. With hundreds of men lying comatose in trenches or dying along the muddy embankment behind the defenses, the French territorial division reeled and fell to pieces. Turcos and Zouaves fled the trenches. Some quick-witted British and Canadians along the peripheral edge of the cloud ripped off scarves and leggings, urinated on the cloths and held them to their noses in a desperate attempt to filter out the asphyxiating gas.

The German infantry, wearing small protective masks of mull or hemp soaked in a solution of sodium thiosulphate, swept the trenches for survivors but kept out of the deeper trench sections and shell holes where the heavy yellow gas had begun to collect. Below Pilkem and along the Yser Canal, the infantry stopped to watch the frantic Allied retreat, satisfied with sniping the gagging stragglers wandering south of Boesinghe. Over fifty artillery pieces were captured.

Aftermath

Fear, panic, and confusion gripped the Allied troops and staff. Approximately 15,000 casualties were directly attributable to gas, 5,000 being fatal. The Germans captured 5,000 prisoners. Only a few supply and transportation troops, headquarters units, and a severely depleted infantry unit stood between the eight kilometer hole in the Allied line and the Channel.

The German infantry, however, ceased their advance for want of reserves. The commanders were not prepared for their overwhelming success.

How disastrous had the attack been? British chemical warfare commentator Victor Lefebure, a former chemical officer, put it bluntly: "The enemy just missed colossal success rendered possible by the use of an entirely new war method. There were elements in this first gas attack which were absent even from the situation created by our first use of tanks. . . . The enemy had but to exploit the attack fully to break through to the channel ports."

By the afternoon of the 23rd, elements of a British and Canadian unit moved into position south of the new front line. Although weather conditions on the 24th and 25th were less auspicious, the Germans used their remaining cylinders against the Canadians. The attack was less intense, and the Canadians had improvised crude filters. In the ensuing infantry battle they even managed to launch a bitter counterattack. Still, the Germans managed to make gains of over a kilometer along the left flank.

Professor Haber's field trial had been a total success, given its limited aims. The exhaustion of most of the chlorine stocked in the frontline area, the failure to follow up the breakthrough, and the instantaneous Allied response in acquiring respirators defeated the greater goal, restoration of mobility. The war once again slipped into the trenches.

Lessons of War

Newspaper headlines and scaremongers to the contrary, chemicals are not the ultimate weapon. The first total chemical attack at Ypres illustrates the problems which plague chemical weapons deployment, though modern weapons systems — and modern agents — have certainly helped to minimize the effects of these limitations. Still, chemical weapons effectiveness remains limited by weather (including wind, temperature, and gradient), terrain (including soil type, natural and man-made features), delivery system (spray, cylinder, artillery, etc.) and the agent's own properties. Despite inherent problems, chemical weapons are relatively cheap and create comparatively less material damage than high explosive (and certainly less than nuclear). Most non-persistent agents pose comparatively minor environmental problems, and the weapons' massive casualty potential — and thus their potential decisiveness — is enormous.

Chemical combat in WWI explored most avenues of dissemination: cloud (as at Ypres), artillery-delivered munitions, chemical bombs from aircraft, mines, and projectors. Spray attacks as we now define them were not utilized, except in what may be called a limited ground-line dissemination mode (though in essence a cylinder attack is a kind of spray attack from a fixed source). Aerial spray is, as one chemical sergeant puts it, "nothin' but crop dustin' while gettin' shot at."

In WWI the technology existed before the tactics (as is nearly always the case), and the advent of gas warfare caught tacticians flat-footed. It took the Germans, who were far more adaptable when it came to implementing new military concepts, nearly two years to work out coherent tactical guidelines for the employment of artillery-delivered gas shells. Thus, after Ypres and its lost opportunity (excepting some extraordinary casualty results on the Eastern Front — the German cloud attack at Bolimov on 2 May 1915 caused 9,100 casualties, including 6,000 dead; the 53rd and 54th Siberian Regiments were

completely wiped out) until the introduction of mustard gas, results from chemical attacks were never predictable. The weather and terrain limitations were always important factors, but the haphazard development of employment doctrine played a hidden and perhaps significant part in the uncertainty of effect.

Throughout the war, the new agents, delivery systems, and defensive apparatus (protective suits, masks, decon agents) increased in sophistication, culminating with the introduction by the Germans in July 1917 of percutaneous (skin) casualty agents (Yellow Cross shell — mustard). Never after Ypres, however, would the potential gain ever be so great.

The early agents (phosgene and chlorine, for example) could be thwarted by relatively simple respirators; the mustard gases by-passed the mask, thus greatly increasing overall battlefield gas casualties. In 1917, for instance, the British total gas casualties were 7.2% of all casualties, and in 1918 they rose to 15% due to mustard. Still, overall gas deaths dropped from 3.4% to 2.4% (minuscule figures to begin with) because mustard is rarely lethal and is a delayed action agent.

By the end of the war, the common view of an attack pictured a mass of infantrymen bundled in hot, chalk-treated clothing and boots scrubbed with vesicant dressing, slogging slowly through fields of drizzling yellow rain. This view of chemical warfare still holds firm in many minds today; i.e., that chemicals do nothing but slow the pace of the assault and that the delivery of sufficient agent concentration on the target is at best haphazard. Such a viewpoint discounts the development of rapid-acting, toxic, percutaneous agents (VX and thickened GD) and the increased assurance of high agent concentration on the target through accurate mass delivery systems (BM-21 rockets) and precision guided munitions.

One useful way of looking at the development of delivery systems and agents in WWI is to trace their employment in combat. At Ypres the cloud-attack method using cylinder emission was slow, tedious, and practical only in static combat. Winds had to be just right or the attacker sat and waited (for eight weeks in the Germans' case). On 19 December 1915, the Germans staged another cloud attack on British positions in Flanders in the Wiltje sector. The Allies, using information obtained from a prisoner captured in November, knew the Germans' aim this time was to drive to the Channel ports. The French confirmed that sufficient German reserves were being moved into the area. The Germans, on the other hand, realized that they were confronting an enemy with a strong measure of gas protection, so they tried for surprise. However, any remaining secrecy was lost when a German sergeant having detailed knowledge of cylinder battery emplacements was captured on 16 December. The Germans released a mixture of phosgene and chlorine at 0515; though the cloud, released across a four kilometer front, penetrated eight kilometers behind the forward trenches, the 35,000 British troops in the immediate zone were fully prepared. Chemical casualties amounted to 1,069 with only 120 dead. The German's follow-up infantry assault was stopped cold.

Another interesting cloud attack using a mixture of phosgene and chlorine was staged by the Austro-Hungarian Special Sapper Battalion (formerly the 62d Sapper Battalion) against Italian positions on the Doberdo Plateau on 29 June 1916. Under heavy pressure from the Italians, the commander of the Austro-Hungarian VII Corps decided to use the chemicals to dislodge the enemy from Mont St. Michel and Cote 197 and thereby straighten the lines, which in some places were only eight to ten paces apart. Some 6,000

French infantryman ready for gas attack



cylinders were emplaced in the sectors occupied by the 17th Infantry Division, the 20th Honved Division, and the 5th Mountain Brigade. On the 29th, when the gas was released, only 3,000 cylinders could be used due to a shift in winds; despite the proximity of the lines, surprise was still achieved. Numerous strong points managed to spit heavy machinegun fire at the advancing Austrians, but the majority of the Italian troops fled as the gas advanced. Italian losses came to 5,000 men, most of them killed by gas. The Italian 10th Infantry lost 1,300 men. The Austrians suffered the loss of 3 officers and 33 men, and took over 1,000 prisoners. Though the Austrians' terrain objectives were not met, the relentless Italian pressure was broken and the front saw little action until August 1916.

Chemical Shell Attacks

It is much more convenient to take a common and relatively mobile weapons system, a cannon for example, and use it instead of a cylinder to disperse chemical munitions. The cylinder attacks required time and an extensive system of rear communications and could not be moved to support the battle's different focal points. If the wind shifted, the operation was over. With artillery, this limitation didn't hold.

Dr. Rudolph Hanslian, a German chemical warfare commentator, points out that it was artillery chemical shell and doctrine development that moved gas warfare "into the center of the stage with respect to major operations." Unlike cylinder attacks, artillery-delivered chemical shells didn't pollute the axis of advance between line of departure and objective; unlike conventional artillery shells, chemical shells need only land in the near vicinity to inflict real punishment. However, artillery shells are of limited size, and so there is a constant trade-off between blast, splinters and agent, which, of course, remains susceptible to wind and weather.

Gas surprise fire, cloud concentration fire, and toxic fire constitute the three basic methods of chemical shell attacks developed in WWI. Gas surprise fire is fairly self-explanatory, the object being to concentrate a rapid blitz of fire on one point with the purpose of catching the enemy unmasked. (Call it a time on target with poison gas.) Repeated gas surprise fire forces the enemy to enter a "protective posture" and lose efficiency. By 1917 the Germans had fairly well established a solid surprise fire doctrine though they never licked the problem of simultaneous arrival of the shells. The Germans preferred Green Cross and late Yellow Cross #1 ammunition, while the Allies opted for phosgene and AC as surprise casualty agents. AC remains a preferred Soviet surprise attack agent.

The German surprise gas bombardment of Italian positions in the vicinity of Cividale of 23-24 October 1917 is a good example of this tactic. Air currents in the valley of the Isonzo were such that any persistent agent might be blown back into friendly lines and reserve positions. A conventional artillery attack had failed to suppress enemy artillery batteries in the rock embrasures — an absolute necessity if German troops were to continue to move through the mountain spurs of the Krn range — but a quick surprise fire with Varicolored Cross silenced the batteries.

Cloud concentration fire is simply surprise fire placed on an area target in order to inflict casualties or maintain sustained suppression. Concentration fire can extend from several minutes to several hours and requires enormous expenditures of ammunition in addition to a large dedication of artillery assets. Cloud concentration fire could not be conducted in windspeeds over 1.5 meters per second (versus 3m/s for surprise

fire and 5m/s for toxic fire). One objective of concentration fire is to keep the enemy masked continually and wear down his chemical discipline; of course, this requires a continuance of quite favorable weather conditions and suppression of enemy counterbattery fire.

The British fired a successful cloud concentration attack against five German artillery batteries in the Flanders area on 16 June 1917. The attack program called for two minutes of phosgene-arsenic trichloride surprise fire to catch the enemy unmasked, followed by four hours of ethylodacetate to saturate the positions and force the enemy to keep using his mask and thus not be able to replace filters. This attack was followed by an intense 10-minute bombardment of phosgene and chloropicrin which would penetrate the worn-down filters with lethal effect. Four of the German batteries were silenced until the 19th, and the fifth was out of action until 24 June.

The Germans launched one of the war's most successful cloud concentrations against the Russians on 1 Sept 1917. Supporting a crossing of the Dvina at Uxkull in highly favorable atmospheric conditions (1/3 to 1 meter/second windspeed) the Germans fired over 70,000 Green Cross series shells and 45,000 Blue Cross-high explosive shells. The Russians' batteries were completely neutralized by the gas action.

As noted earlier, attacks of this nature gave chemical weapons the then deserved reputation of reducing the pace of operations to a near standstill. On the Western Front there were times when both sides were firing toxic barrier missions and cloud concentrations, and the order of the day was to remain in the hot sweating mask and wander about in the "chemical fog" of war. Col. William P. Screws, Commander of the 167th Regiment of the U.S. 42d ID, described his unit's misery as they conducted an attack at Ourcq on 27 July 1918: "Contributing heavily to the failure of the attack that day had been the curtain of gas covering the entire valley along the Ourcq River and its tributaries. . . . Although I wore my gas mask almost constantly, I suffered considerable burns and nausea from the effects of gas." The 167th spent more time evading wind-shifted pockets of German and American gas than it did attacking.

Toxic Shell Fire

Toxic fire was the German term for area denial fire or persistent gas shell fire; i.e., deliberate, continuous fire of a persistent agent (usually mustard) against a target area that was to be denied to or cleared of enemy personnel. The Germans referred to such areas as "yellow zones." Initially, both the Germans and the Allies fired denial missions more as harassment in the front line areas, but as experience progressed (particularly in the offensives of 1918) the Germans turned to deep zone fire in order to disrupt rear-area communications, supply lines and reserve units, and to channel possible routes of counterattack. Toxic fire missions could go on for days, literally soaking the ground; in fact, in the Verdun area, mustard fire for area denial became so intense that occasional "gas pockets" are still being discovered (unfortunately only 12 hours after contamination when a farmer begins to notice redness developing on his hands).

What the Germans labeled as their first "toxic gas" bombardment took place on the night of 12-13 July 1917 and became the Allies' first introduction to mustard gas. With their primary target a British trench, where units were concentrating for an attack, the Germans began the bombardment at 2200 with fire from 77mm and 105mm Yellow Cross shells. The fire continued at intervals throughout the night. Initially, the British thought

the Germans were firing bogus chemical shells, for the gas failed to cause any immediate effects. The smell seemed vague and the agent was colorless; it was only hours later when the agent began to react that the results began to "appear." Troops were pulled back from the forward area and the offensive was postponed.

As shell fire tactics advanced, both sides put increasing emphasis on combined high-explosive and gas shell fire. The Germans used such combination fire to devastating effect in conjunction with their rolling barrage and infiltration tactics during their last offensives on the Western Front. In these attacks two barrages were fired — one of HE immediately in front of the advancing troops and one of gas shell far enough in the front of the action so that the lead elements were not delayed by gas effects.

It is worth noting at this point that the need for rapid shell fire to insure effective concentrations put a premium on the development of the mortar as a chemical delivery system. Already of value in the trenches, where the need for high angle fire is obvious, the relatively large mortar "bombs" and the high rate of fire (up to 15 pounds per minute) made the mortar an ideal delivery system in all aspects but range. The German *Minenwerfer* was rapidly adapted to a chemical role. In May of 1915 the Germans formed their 1st Gas Mortar Battalion of 24 heavy trench mortars with rifled bores. The weapon fired the "E" bomb (bromacetone) and the "C" bomb (chloromethylchloroformate). The British 3-inch Stokes Mortar was the Allied equivalent of the German light *Minenwerfer*. Its 12 pound projectiles carried 2½ pounds of agent. A 4-inch version of the Stokes mortar, less accurate than the Germans' medium mortar, did have a high rate of fire and a 24-pound projector with 7 pounds of agent. The British emphasized the mortar as a prime weapon for surprise attacks, while the Americans were infatuated with thermite and white phosphorus rounds, and later used the weapon as a means for delivering high concentrations of mustard.

Gas Projectors

The gas projector is a unique and somewhat unusual weapons system, its main function being to get large concentrations of chemical agent to a selected target. The British were intrigued with the concept and were the first to develop a practical projector — the Livens projector — and the first to launch a major projector attack (near Arras on 4 April 1917).

The Livens projector is exemplary of all projector systems. It consists of a 20cm-diameter steel tube with a butt plate, formed from one piece of pressed steel. A charge was set in the bottom of the projector which shot out a small fused cylinder filled with agent. The propellant charge could be ignited by either battery or hand detonator. Hundreds of these projectors could be quickly emplaced and trained on the objective, and in a manner similar to claymore mines, directed at the target zone. The British developed two types of the Livens — a light version of 70 pounds with a range of 1,200 yards, and a heavy version of 135 pounds with range of 1,900 yards. The bombs weighed 70 and 135 pounds and were usually loaded with phosgene, though chloropicrin, chlorine-phosgene, and iodine ethyl acetate were also used. Night attacks were favored, especially with winds of 1.5 meter/second blowing into the enemy lines, but successful projector attacks could be conducted in 5 meter/second winds and during heavy rains — such conditions diminished any persistent effects, however.

Usually the projectors were installed in support trenches, out of sight of enemy observers and

under considerably more cover than cylinder attacks could effect.

The Germans developed an 18cm gas projector, which had a maximum range of just under 1,500 meters. Eventually, the 35th and 36th Engineer Regiments of cloud attack fame were reorganized into eight separate gas mortar battalions, each equipped with 1,000 such projectors. The first German projector attack took place on 25 October 1917 during the 12th Isonzo Battle on the Italian front. The 35th Engineer Battalion, under the command of the 32d Austro-Hungarian Rifle Division, installed 1,000 phosgene-filled projectors on a plateau southeast of Little Ravelnik and directed the weapons at an Italian unit dug in across the valley. Two assault detachments of 80 and 60 men respectively followed the attack and found over 500 dead Italians in the position.

The largest projector attack of the war was conducted by the British near Lens on 31 March 1918. Several British Special Gas Projector Companies, supported by Companies "A" and "B" of the 1st U.S. Gas Regiment, fired 3,728 Livens projectors and 920 Stokes mortars in a short, intense bombardment. No verifiable figures are available on German casualties.

At a reunion in 1977 of the 1st U.S. Gas Regiment, one of the unit veterans provided a metaphorical reminiscence of the deadly projector attacks. "The shells looked like thousands of watermelons traveling through the air," he recalled. "They traveled end over end, like a football."

At the end of WWI gas was viewed as a dangerous addition to the arsenal of war. Though strong sentiment existed to ban it entirely (just as strong sentiment existed prior to the war), few military experts could consider war without gas as a factor. George Patton wrote in the mid-20's that he saw the next worldwide conflict as being one where masses of tanks were advancing through choking clouds of poison gas. In terms of WWII, General Patton was wrong. WWII might be a different story.

Final Note

No matter how long and how hard the debate continues to condemn chemical weapons, the fact

remains that they constitute a substantial portion of the arsenals of some of the world's greatest powers. Responsible planners must assume that the weapons will be used if the adversaries believe something can be gained. No chemical weapons ban has ever worked because the weapons are cheap and potentially very effective.

WWII presented a Mexican stand-off in terms of chemical weapons — no one pulled the trigger because everyone had a trigger to pull. This situation no longer exists. Some critics cite the great chemical battles of 1917 and 1918 as examples of the futility of chemical weapons. In those battles the "pace of operations" was reduced to a snail's rate. These analysts maintain that the Soviets would never use chemical weapons in Europe because (1) the wind is generally blowing against them; (2) they want a fast war and chemical weapons will slow it down, *a la* WWI; (3) chemical weapons use invites U.S. nuclear response.

The fact is, as long as the wind is not too strong, it really doesn't matter which way it is blowing — if artillery and rockets deliver non-persistent agent and the assault troops can fight in chemical defensive clothing and have APC's with air filtration systems.

As for slowing down the pace of operations, critics seem to ignore the fact that mustard agent is a persistent, delayed action casualty agent and that the WWI armies were foot-slogging infantry. Today we have a situation where AC blood gas delivered by MLR's is only slightly faster than the mechanized assault which follows it.

As for the third problem, U.S. nuclear retaliation (tactical and strategic) is something the Soviets invite by crossing the border. The Soviets also have nuclear weapons. Chemical weapons are primarily tactical and, in the gray rainbow of escalation, fall somewhere solidly between conventional and nuclear weapons. From the Soviet point of view, use of chemical weapons to gain an initial edge and drive deep into West Germany might be a worthwhile gamble.

What is the edge the Soviets gain? In an article for *Armor Magazine* published in 1978 I stated what I believed to be the result of Soviet chemical

assault in Europe. I think the main points remain salient and valid.

"Ultimately, the key to individual survival is the soldier's confidence in his NBC protective equipment and in his ability to use it successfully. In the larger picture, such confidence and ability is the key to the unit's preservation. I personally believe the greatest single effect of Soviet chemical attack will be panic, fear, and demoralization. Our greatest casualties will not be caused by direct exposure to chemical agents, but by the physical and mental disruption their use will cause our tactical planning and deployment. Certainly, physical on-the-ground contamination and casualties will exist, but their most decisive effect will be their mental intimidation and our unwillingness to operate in the chemical environment. This lack of confidence in our ability to operate in such conditions could be rapidly exploited by Soviet units having no such qualms. . . .

"The situation suggested...is only intended to illustrate how chemical weapons could prove to be the key offensive element which unbalances our command structure in the same sense that bypassing strong points allowed the Germans to unnerve the command effectiveness of the Polish and French armies. We are ready for a similar blitz and accelerated assault tactics on a broad, fluid front and we train to deal with them both mentally and physically. But we do not train to deal with them while suffering the awesome shock of chemical or nuclear weapons. Our tactics, the active defense for example, key on coolly executed combined arms action, quick counterattack, and timely withdrawal. They demand clear and confident thinking and application. Sir Basil Liddell-Hart's *Strategy* chronicles and rechronicles wars between fairly evenly matched opponents that have been lost because command disruption and loss of confidence were the keystones to rapid and irretrievable defeat. . . .

"This is all the more reason to ensure our units are able to effectively deal with the shock of chemical assault. Unit training should be keyed to insure successful reaction to the shock of Soviet first-use because the time frame immediately following first-use will be the period of greatest tactical vulnerability." ■ ■

CASUALTY ESTIMATION: Well, it all depends. . .

Accurate casualty estimation for any military weapons system is always a hit-or-miss proposition; with chemical weapons it is even more variable. Basically, chemical target analysts must consider first, the level of troop training of enemy personnel, especially their chemical defense training, and second, the level of troop pre-strike preparedness. This second factor is most critical and involves a variety of intelligence "ifs." Are they masked or unmasked (do they even have masks at all)? Are they in winter clothing (winter clothing, even if untreated, being less permeable to liquid agents)? Are they wearing protective ensembles (if such ensembles are available)? Are they wearing all of their protective clothing (i.e., are they in a high MOPP level)? All of these factors have an impact on determining immediate and delayed casualties.

Shooting for delayed casualties requires an important consideration of chemical

defense equipment resupply capabilities. Do they have replacement filters and other items, and do they possess decontamination and rest points that can maintain full-time operation so line units can rotate personnel? Replacement filters become equally critical if the attacking force is using a non-persistent agent like AC (hydrogen cyanide) which rapidly degrades filter elements. Finally, even the basic target considerations come into play: weather and terrain (especially for chemical weapons) and if the enemy troops are dug in (bunkers, foxholes, redoubts).

How does all this translate into figures? The U.S. Army works from classified tables which allegedly take into account all of these factors; however, the accuracy of the casualty percentage estimate remains doubtful. Theoretically, firing at well-trained, prepared troops and seeking surprise casualties will result in less than 5% enemy troop casualties or fatalities for, as an example, a dug-in company-sized target hit by a 155mm battery firing GB. For trained but unprepared troops (i.e.,

not in a high MOPP level, with masks available but not on) the casualty estimates jump dramatically, into the 15 to 20% range, again for surprise fire. Remember, "trained" assumes the troops know how to react quickly and coolly (masked in 9 seconds or less) so that fatalities are limited, and when the second volley arrives they are prepared.

But how about troops with mediocre training, whose protective garments are still on some deuce and a half, whose filters were only checked before the last AGI (and then by a sergeant whose other duties include drug and alcohol reports, RREO reports, field sanitation, and beer runs for the first sergeant), whose unit decon teams began training a week before the AGI and stopped the day after, and whose own hair is too long for him to get an adequate seal on his protective mask? *Fatality* estimates for a unit of this Army, even in well-dug foxholes but down wind from two batteries firing nerve agent, could run as high as 50% with casualties in the 60 to 70% bracket. ■ ■

GLOSSARY

Taken in part from CBR Staff Officer Course publication "Technical Aspects of Chemical Operations"

Chemical Agent: Chemical compounds that are used in military operations to kill, incapacitate, or seriously injure personnel through their chemical properties. Specifically excluded from this definition are riot control agents, herbicides, smoke and incendiaries.

Concentration: The amount of chemical compound present in a cubic meter of air expressed in milligrams of agent per cubic meter.

Dosage: Amount of chemical compound necessary to produce a certain effect; for example:

A. **Median Lethal Dosage** (vapor and aerosol inhalation) LC_{50} : The exposure to an airborne agent required to kill 50% of exposed, unprotected personnel. LC_{50} is the concentration of the agent in the air multiplied by time of exposure to that concentration and is expressed in milligram minutes per cubic meter. The lower this number for a compound, the more toxic the compound.

B. **Median Lethal Dosage** (skin absorption) LD_{50} : The amount of a chemical compound which must be absorbed through the skin to kill 50% of exposed, unprotected personnel. LD_{50} is expressed as milligrams of the compound per kilogram of body weight.

C. **Median Incapacitating Dosage** (vapor or aerosol inhalation) IC_{50} . Dosage as in LC_{50}

except ultimate effect is only to incapacitate, not kill.

Hydrolysis: The combination of a chemical compound with water to give a less toxic product (this is an Army definition).

Example: Phosgene and water combine to yield CO_2 and hydrochloric acid.

Persistence: A relative term expressing the length of time a compound will be effective once disseminated (i.e., duration of effectiveness). Compounds which remain effective for an extended period of time (days) are called "persistent." Those which disappear rapidly (minutes or hours) are called "non-persistent." The factors which most influence the persistence of a chemical agent are:

A. Weather: To include wind, temperature, temperature gradient, and precipitation.

B. Method of dispersal. (Artillery shell, spray, etc.)

C. Terrain and Vegetation: To include soil conditions and man-made features.

D. Characteristics of the agent: To include rate of hydrolysis and volatility.

Rate of Detoxification: The rate at which a chemical compound is destroyed (detoxified) by the body. Compounds not readily detoxified are said to be cumulative.

Volatility: An expression of the rate at which a compound evaporates. Volatility is expressed in milligrams of agent per cubic meter of air. The higher the number, the faster the compound evaporates.

Note on Chemical Agent Classifications
Chemical agents are often classified in

three ways:

1. According to tactical use;
2. According to physiological action;
3. According to physical state.

9Use Classification

1. Casualty agents: to kill, injure, snf incapacitate by debilitation.
2. Incapacitating agents (incapacitate without permanent harm).
3. Riot control agents.
4. Training agents.
5. Antiplant agents (Agent Orange, etc.).
6. Antimaterial agents (no compounds existing at present).
7. Screening smokes.
8. Signaling smokes.
9. Incendiaries.

Physiological Classifications:

1. Nerve.
2. Blister.
3. Blood (Respiratory).
4. Choking (Respiratory).
5. Vomiting (Harrassing).
6. Tear (lachrimators) (Harrassing).
7. Plant growth regulators.
8. Defoliants.
9. Incapacitating (as the physiological action).

Physical State Classifications:

1. Solid.
2. Liquid.
3. Gas.
4. Aerosol (a finely divided solid or liquid suspended in air). ■ ■

SUMMARY OF SELECTED CHEMICAL AGENTS

Code	Trivial Name	Physiol. Class	Persist.	Dissemin. Form	Dosage Type: Symptoms	LD_{50} Inhalation mg-min/m ³	Odor/Remarks
AC	Prussic Acid Hydrogen Cyanide	Blood	NP	Vapor	Lethal: Convulsions, asphyxia	5000	Bitter almonds/ common Soviet agent
CG	Phosgene	Choking	NP	Gas	Lethal: Coughing, foaming at mouth, asphyxia	3200	New mown hay/80% of WWI gas fatalities
HD	Distilled mustard	Blister	P	Vapor, liquid	Harassing: Eyes inflamed, ulceration, blindness Skin: Redness, blisters Lethal: Similar to phosgene in action on lungs	1000	Garlic/Action similar to all H-series and Lewisite (L)
GA	Tabun	Nerve	NP	Vapor, liquid, aerosol	Symptoms begin for inhalation from moment of exposure to up to 10 minutes later; for skin absorption from a few minutes up to ½ hours	150	
GB	Sarin	Nerve	NP	Vapor, liquid		70	
GD	Soman	Nerve	P	Vapor, liquid, aerosol	Harassing: Eye pupils constrict, vision blurs	70	Fruity/resistant to oxime therapy, Soviet use thickened form
GP	CMPF	Nerve	?	Liquid, vapor, aerosol	Respiration: Difficulty in breathing, chest tightness	?	New agent
VX	-	Nerve	P	Liquid, aerosol	Lethal: Drooling, sweating, nausea, vomiting, cramps, spasms, convulsions, coma, asphyxia	?	V-agent in US and Soviet arsenals
CX	Phosgene Oxime	Blister	P	Liquid	Skin: Destroys skin tissue completely	High	Irritating/Soviet agent
CK	Cyanogen Chloride	Blood	NP	Gas, vapor	Lethal: Convulsions, gasping, choking	11,000	Irritating/WWI agent
CN	CAP	Tear	NP	Aerosol	Harassing: Burning on skin, tears	8500	Apple blossoms
CS	OCMB	Tear	Varies	Aerosol	Harassing: Burning on skin, tears, may cause nausea	Very high	Peppery/Favorites of Chicago PD
DM	Adamsite	Vomiting	NP	Aerosol	Harassing: Headache, sneezing, cough, nausea	30,000	Little smell/Soviets have stockpiles
BZ	'Buzz'	Incapacitating	NP	Aerosol	Incapacitating: Hallucinations, giddiness, side effect of disoriented psychotic behavior	High	Now non-standard

General Note: Parathion, a comparatively common pesticide, has LD_{50} of 8; Malathion, another pesticide available to gardeners, has an LD_{50} of 15000. The LD_{50} of pure nicotine is 60.

DOCTRINE: THE USSR

When the Germans first employed chemical weapons in WWI, they were not tactically prepared to exploit their initial success with a coordinated follow-up assault. Both sides rapidly fielded protective clothing, gas masks, and decontaminating equipment, and from that point on, given that the opponents were roughly equivalent in their abilities to conduct both offensive and defensive chemical operations, chemical agents became more of a terror weapon than a tactical system.

Both sides had chemical weapons in WWII but they were fortunately never used. Though the Germans developed the first of the now infamous line of nerve agents (Tabun, or GA) and were prepared to field it in large quantities, Hitler feared that the Allies would retaliate with a massive air bombardment using chemical bombs. The Germans assumed (incorrectly) that the advanced U.S. chemical and insecticide industry had also synthesized nerve agents.

One of Eisenhower's greatest fears was that the dense troop concentrations of D-Day

would prove to be chemical targets too lucrative and too dangerous for the Germans to pass up.

Subsequent to the fall of the Third Reich, the Russians captured nerve gas stocks and German chemists. Awed by the U.S. nuclear edge, the Soviets tried to develop an inexpensive mass casualty "option" to counterbalance the U.S. advantage. The Russians developed a variety of mission and agent appropriate delivery systems ranging from landmines to IRBM's. More importantly, Soviet troops began to train to operate in a chemical environment. As a result, Soviet troops are skilled in the conduct of offensive operations (including exploitation and pursuit) in a battlefield environment "dirtied" by chemical agents. They are supported by well drilled chemical recon and decontamination units. This chemical advantage becomes critical since NATO and Warsaw Pact armies are approaching a rough equivalency in nuclear weapons.

At this time there is nothing even approaching tactical equivalency in the field of chemical preparations. The Soviet soldier is the acknowledged master of chemical warfare,

with the front line units of Poland, East Germany, and Czechoslovakia not far behind. One U.S. Division commander publicly calls this Warsaw Pact chemical expertise "by far the greatest tactical threat to NATO."

The Soviets plan to employ chemical weapons in basically four ways:

1. Long range bombardment with a "drizzle" of persistent nerve agents (the "hard rain" of GD or VX) designed to contaminate airfields, supply depots, and assembly areas of REFORGER units arriving from the U.S. This is delivered by aircraft spray, aircraft bomb, or a high burst SCUD-B warhead.

2. Persistent agents (GD, VX, HD, etc.) along the flanks of fast moving armored columns. The agents are deliverable by a variety of weapon systems, with tube and rocket artillery the likely tactical choice.

3. Harassing chemical fires (persistent and non-persistent agents) intended to disrupt communications and command, terrorize, and force NATO troops to don protective clothing.

4. Direct assault with non-persistent agents. Here the likely choice is the highly volatile AC blood gas delivered by tube artillery or, most likely, BM-21 multiple rocket launcher

SOVIET CHEMICAL DELIVERY SYSTEMS

System	Diameter	Chemical Warhead	Warhead Weight	Range(km)	Area Coverage/ Type Burst	Prime Mover
STRATEGIC ROCKETS (Army Level)						
SCUD B (SS 1-c)	-	GD, persistent agents	-	160-180	15km ² /low air	MAZ 543 transporter
TACTICAL ROCKETS (Division Level or lower)						
FROG 7 (LUNA)	550mm	GD,VX	450kg	up to 70	6 km ² /low air	ZIL-135
BM-21	122mm(× 40)	AC,GD(?), DM(?)	19kg	15	BTRY-1/1km ²	URAL 375 truck
RM-70 (Czech BM-21)	122mm(× 40)	AC,GD(?), DM(?)	19kg	15	BTRY-1/1km ²	URAL 375 truck
M1965 (14-16 and 14-17)	140mm (× 16 or × 17)	AC,GD(?)	?	10.6	BTRY-1/600km ²	M14-16 on GAZ-63 M14-17 on ZIL 6 × 6 truck
BM-24	240mm(× 12)	AC(?),GD(?)	46.9kg (18.2 kg filler)	11	BTRY-1/600km ²	ZIL 157 6 × 6 truck
New 240mm tac rkt	?	?	?	?	?	?
ARTILLERY						
Weapon	Chemical Shell Fill	Range (km)	Area Coverage	Prime Mover		
D-30 122mm how	HD,GD,GB,AC,VX	15.3	BTRY-1/100m ² BN-1/less than 2km ²	Towed		
D-74 122mm	HD,GD,GB,AC,VX	21.9	BTRY-1/100m ² BN-1/less than 2km ²	Towed		
SAU 122mm SP	?	HE:15.3 RAT:21.9	BTRY-1/100m ² BN-1/less than 2km ²	Self-propelled		
M-46 130mm	HD,GD,GB,AC,VX	27.5	BTRY-1/100m ²	Towed		
D-1152mm how	HD,GD,VX	17 +	BTRY-1/150m ²	Towed		
D-20 152mm how	HD,GD,VX	17.3	BTRY-1/150m ²	Towed		
M-1955 180mm	?	29.3	?	AT-T tractor		
M-1953 240mm mortar	HD,VX (?rumored)	9.7	?	Truck		
LANDMINES						
Weapon	Description	Agents				
KhF	Bounding chemical mine (spreads liquid agents over the ground)	VX(?),HD(?),GD(?)				

(MRL). Because AC is so light, the area bombarded will be reasonably clear of agent within ten to fifteen minutes. AC is particularly effective if vomiting agent is also present. AC is inhaled so the mask is the primary means of protection, but a mask filled with regurgitated C-rations is not very protective.

The Soviets can consider these operations because of their high degree of individual and unit training. Their combat units are supported by trained chemical defense units available at every level from Front to Regiment. While the U.S. practically destroyed its own chemical warfare expertise by all but deactivating the Chemical Corps (it is allegedly being revived but old attitudes die hard), the Soviets built up a huge chemical defense troop directorate with 70,000 personnel.

The TMS-65 offers a peculiar insight into Soviet tactical thinking. The decon job done by a TMS-65 is best described as quick, hot, and dirty — but clean enough to render the exterior surfaces of the decontaminated armored vehicle "fightable" given the high level of individual training possessed by Soviet soldiers. Soviet chemical troops like to set up "quick" decontaminating stations utilizing two TMS-65's in sort of an armored "car wash" configuration. One TMS-65 takes care of one side of the column and another TMS-65 blow-dries the other side. A Soviet tank battalion can be decontaminated in about 70 minutes, thus sustaining the fast pace of an armored assault.



The Soviets put a major emphasis on NBC reconnaissance. Their chemical recon platoons are rigorously trained and regularly operate with the forward elements of the regiment or division. In service with all Warsaw Pact forces is the BRDM-rkh, a specially modified and equipped version of the standard BRDM recon vehicle designed for NBC recon and monitoring missions. The BRDM-rkh weighs six tons, mounts a 7.62mm machine-gun, can reach speeds of 80 kilometers per hour and has a range of just over 500 kilometers. It has a specially designed air filtration system for maximum crew protection. The vehicle is equipped with a variety of NBC monitoring devices which include externally mounted radiological meters and chemical sampling devices. (These may be versions of the GSP-1 or GSP-1M nerve agent and radiological alarm systems, or the GSP-11 nerve agent alarm system.)

The BRDM-rkh mounts 40 contamination marker flags contained in two canisters of 20 flags each. These canisters are mounted on the rear of the vehicle and may be automatically deployed so that the crew is not unnecessarily exposed. Though not specifically designed for NBC recon work, these vehicles can be reconfigured with monitoring devices and flag dispensers. While not nearly as good as the "installed at the factory" rkh model, the retrofits are still better than anything possessed by NATO countries. The British and Germans are contemplating cooperating on development of an NBC recon vehicle that mounts a 20 or 30mm cannon. Three years ago the U.S. discussed starting such a project.

While all Soviet and frontline Warsaw Pact units at one time or another train with actual (but diluted) chemical agents, the rumor mill supports speculation that certain elite Soviet armor and airborne infantry units have undergone extensive operational training in contaminated environments for prolonged periods. In 1967 the Soviets allegedly conducted a two battalion parachute drop into a drop zone thoroughly contaminated with mustard agent. The trained and protected troops suffered minimal casualties. In one of the Soviets' secret training sites northeast of Leningrad, one tank division conducted a 15 day exercise in a region liberally contaminated with diluted liquid nerve (probably VX.) Casualties were rated as "acceptable." Other in-service scuttlebutt alleges the Soviets annually lose 15 to 20 men a year in deaths attributable to chemical weapons training.

Even if it were politically possible (or desirable) to train NATO units under similar conditions it would take years to reach the level of expertise possessed by the Soviet Army.

The Soviets also possess an exceptional array of chemical weapon systems and multi-purpose weapon systems capable of delivering chemical warheads.



APPRECIATION

The author wishes to thank Col. Ray Macedonia and Dr. Richard Sommers of the US Army War College, Carlisle Barracks, for their research assistance in preparation of this article. Extensive use was made of basic research materials provided by the War College. Other primary data and information has been drawn from *The Problem of Chemical and Biological Warfare Volumes I and II* edited by the Stockholm International Peace Research Institute and published in the US by Humanities Press, New York. These volumes are essential to any understanding of the complex problems presented by chemical weaponry. Background information on the gas attack at Ypres was drawn from several sources, primarily Dr. Rudolph Hanslian's *Der chemische Krieg*. ■■

DOCTRINE: THE U.S.

American chemical warfare policy disavows first use of chemical weapons and is strictly retaliatory. Ostensibly the U.S. has some 42,000 tons of chemical agent, most of it stored in canister stocks. In most cases it would take a minimum of several months to transfer the agent from storage containers to munition and then ship the munition to the front. The U.S. does have some stocks of "ready" chemical weapons, mostly 155mm GB, 8 inch VX, and the Misteye/Weteye chemical bombs, all of which are gravity bombs.

The real chemical warfare policy of the U.S. Army is a tale of politics and ignorance. Prior to 1977 the Army had spent a decade trying to phase out the Chemical Corps — chemical warfare being a hot political issue the Department of the Army did not want to deal with during the Vietnam War. Active duty chemical units were eliminated, except for small cadre detachments assigned to division to operate the NBC warning and reporting

In the October War of 1973, the Israelis captured a new decontamination kit from the Syrians — a decon kit with a strange little bottle of brownish liquid and a puncturing nail: the IPP individual chemical treatment and decon kit. Chemical analysis of the decon chemicals produced a picture of the agent they were designed to defeat: thickened Soman. Needless to say, the kits in the hands of the Syrians scared the Israelis. Furthermore, the existence of a deployed rapid action percutaneous agent in the Soviet arsenal for which American troops had minimal protection planted a time bomb in the U.S. Army that is only beginning to explode. The Army rushed into production of its own copy of the IPP, the M-258 decon kit, and began a reassessment of U.S. chemical warfare capabilities.

The offensive doctrine of response was very clear, but in most artillery units it had been years since anyone had even thought about training in the handling of chemical munitions. The defensive side of U.S. doctrine hinged on MOPP (Mission Oriented Protective Posture). The idea behind MOPP was sound. Since chemical defensive equipment (suits, masks, gloves, treated boots, etc.) slows down the pace of operations significantly, simple tasks become more difficult. The MOPP table tried to insure individual and unit chemical protection while striking a balance between the unit mission and the perceived level of enemy chemical threat.

Unfortunately, what few chemical "Protective ensembles" existed in logistics channels were good only against liquid mustard. Virtually no practical NBC defensive training was going on other than firing a few rounds on the rifle range while wearing a protective mask. Unit decon was strictly organic and consisted in most cases of a squad-sized element in the company that only reviewed decon procedures two or three days before the Annual General Inspection. Overall, unit training in chemical equipment was minimal and field exercises in MOPP were virtually non-existent.

This was the general situation in late 1975 when the U.S. Army decided that the Soviet chemical threat was very real. In 1976 chemical protective suits that provided some defense

against GD were acquired from the British. U.S. Army Europe (USAEUR) began putting increasingly heavy emphasis on chemical training.

Using the Soviet and Bundeweher chemical decon units as models, the U.S. has recently begun activating one chemical (NBC) defense company per Regular Army Division. The first raised (and tested) was the 68th Chemical Company, 1st Cavalry Division (Armored) at Ft. Hood, Texas. All divisions in USAEUR now have at least cadre elements for a chemical company and the cavalry regiments (2d and 11th ACR) have chemical recon elements. The separate brigades, like 1st Infantry Division (Forward), are still chemically "defended" by a Chemical Corps Captain O-3 and a Sergeant First Class E-7 54E assigned to their G-3/S-3 shop.

MTOE 03937TFC88, effective 21 January 1978 organized the 68th Chemical Company into three platoons, each with two decon squads, one mobile decon squad, and one NBC recon squad. The Division Chemical Section, which actually deploys with the Division G-3 Operations section, is also carried on the company's roll.

U.S. NBC Defense Company

	Officers	Enlisted
Div Chemical Section	3	7
Co. HQ Sec.	1	12
NBC Def. Plt HQ (x3)	1(3)	2(6)
Decon Squad (x6)	0	6(36)
Mobile Decon Squad (x3)	0	7(21)
Recon Squad (x3)	0	9(27)
	7	109

The most mobile item of decontamination equipment is the truck mounted PDDA (power driven decon apparatus). There are nine trucks organic to the company. The mounted PDDA is similar to the ARS-14 Soviet series. There are several serious weaknesses in the U.S. chemical company. Not one of the NBC Recon squad members is required to have secondary MOS's as cavalry scouts. The recon squads are mounted on wheeled vehicles and their survivability out front with the other recon troops is very questionable. The sad fact is that nine PDDA's, with the capability of decontaminating five or six AFV's per tank of water and decon solution, are not even adequate for a brigade, much less a division.

While the U.S. chemical systems as taken from FM3-10 (the confidential version is FM 3-10B) may look impressive, the availability of the munitions is best termed "minimal." It might be worth adding that some public estimates say the available U.S. arsenal will be expended in less than 48 hours of combat and this may be a liberal estimate.

Work has begun on a new "binary" nerve gas shell for the 155mm and 8-inch gun. A binary shell is composed of two non-lethal chemicals that after firing mix inside the warhead to form a non-persistent nerve agent. Basically, the shells contain a chamber of organophosphorous material and an explosive charge. Prior to use, the gun crew adds a solution of isopropanol (rubbing alcohol) which becomes the activating agent. There is strong congressional and political resistance to the program. ■■

CHEMICAL WARFARE BEFORE WWI

Professor Haber of the Kaiser Wilhelm Physical Chemistry Institute in Berlin, and for that matter the whole of Imperial Germany, cannot be blamed for inventing chemical warfare or even initiating its use in WWI. Kudos for the latter historical distinction go to those unknown French policemen turned soldiers who fired tear gas rifle grenades in August 1914 (see main story). One can only blame the Germans for deducing how to employ correctly toxic gas and then failing to assess fully their insight's impact, thus stupidly wasting an opportunity to end a stupid war.

The origins of chemical warfare are obscure. Many prehistoric cave sites in both North America and Central Europe show traces of the most primitive form of gas warfare, i.e., lighting a fire in front of the cave in order to smoke out the bear, wolf, or neighboring Neolithic.

Polyaenus, Fronto, and Pausanias all document a 7th Century BC use of what seems to be an incapacitating agent. According to Pausanias, shortly before 600 BC misguided individuals in Delphi's port city, Cirrha, stole land deeded to Apollo's temple. The Amphictyonic League declared war against the Cirrhaeans and hired Solon as a military advisor. Solon besieged the city and sought to deny the city drinking water by diverting the Pleistus River. Drinking well and rain water, the Cirrhaeans hung on. Solon then tossed hellebore roots into the dammed up water, let the tubers dissolve, then released the river into its original channel. When the Cirrhaeans drank the water they were seized with uncontrollable diarrhea, thus allowing Solon to seize Cirrha's unguarded walls.

The first fully documented attempt to attack an enemy with poison or suffocating gas is a sidelight of the Peloponnesian War of 431-404 BC. Spartans, besieging the cities of Platea and Delium, saturated wood with pitch and sulphur and burned the concoction beside the walls of those cities "in hopes of choking the defenders and rendering the assault less difficult." The Spartans also resorted to melting pitch, charcoal, and sulphur in cauldrons and blew the fumes into Platea by means of a giant bellows.

Polybius noted that Marcus Fulvius used poison smokes against an Ambracian sapper attack in the second century BC. Justinus claims that Hannibal utilized a strange sort of toxic liquid chemical attack during a sea battle with King Eumenes of Pergamum. Hannibal filled clay pots with poisonous vipers and tossed the earthen pots on the enemy decks. Whether or not one calls the attack biological or chemical, Hannibal called the result "victory." The Pergamenes surrendered.

"Greek fire" may well be the best known of the ancient's chemical agents. It has the double advantage of being a flame weapon that in combustion generates sulphurous dioxide — a blinding, asphyxiating smoke. Greek fire is a combination of quicklime, petroleum, sulphur, pitch, and resin. Adding water slakes the quicklime which generates enough heat to ignite the petroleum which in turn ignites the sulphur, resin, and pitch. One of the more interesting combats using Greek fire occurred in 672 AD. The Byzantines attacked the Saracens with the flaming substance and

"delivered (it) against the enemy by means of fantastic syringes in the shape of dragons and other monsters with wide jaws." The Saracens knew a good weapon when they felt one and in subsequent combat turned Greek fire on Christian souls.

In 1456 while defending Belgrade against the Turks, Hunyadi employed a drifting cloud attack charged with arsenical smokes. An Austrian observer, von Senfftenberg, noted that "it was a sad business. Christians must never use so murderous a weapon against other Christians. Still, it is quite in place against Turks and other miscreants." In 1672 troops under the Bishop of Munster fired arsenical projectiles during a siege of the city of Gronigen.

The use of toxic smokes as a siege weapon was a possibility acknowledged by many 15th, 16th, and 17th century writers. In one of his notebooks, Leonardo da Vinci described one variety as being a "German poison gas" that could be used to overcome stubborn fortifications. A mid-17th century Polish artilleryman and military writer named Siemienowicz discussed in some detail prescriptions for the employment of toxic smoke producing fires as well as the use of toxic artillery shells and hand grenades. Just how often toxic smokes were employed tactically remains in dispute, but the use of smoke to blind or disrupt an enemy was common.

Actually, military manuals and the treatises with "recipes" for chemical warfare date back at least to the 4th century BC and the Indian *Arthashastra* of Kautilya. One commentator reports the text contains "a number of formidable recipes; one of these includes seeds of Indian liquorice — *Abrus precatorius* — from which modern chemistry has isolated a toxin known as abrin ... which the US Army has described in a recent addendum to a manual on CW agents."

One Chinese Sung Dynasty (11th century AD) military treatise, the "Wu Ching Tsung Yao" ("Essentials of the Military Classics,") details how to make toxic-smoke projectiles charged with poisonous powdered aconite tubers.

During the 19th century the 10th Earl of Dundonald strongly advocated the use of toxic sulphur fumes as a means of reducing seaward defense fortifications. The British also studied the rejected proposals for the use of organo-arsenical bombs and shells during the Crimean War. Interestingly, the first modern war, the American Civil War, might also have been the first great chemical war had the proposal of a certain John W. Doughty of New York been given any serious consideration by the Union War Department. Writing Secretary of War Edwin Stanton, Doughty proposed to use chlorine gas shells against the Rebels. He finished his proposal with the following observation:

"As to the moral question involved in its introduction, I have, after watching the progress of events during the last eight months ... arrived at the somewhat paradoxical conclusion, that its introduction would very much lessen the sanguinary character of the battlefield, and at the same time render conflicts more decisive in their results."

Despite the historical precedents and centuries of speculation, chemical agents as militarily significant weapons are another offspring of the 20th century's confluence of science and military technology. ■■

ALLEGED USE OF CHEMICAL WEAPONS AFTER WORLD WAR I

Date	Alleged User	Opponent	Location/ Tac Employ	Chemical Agent/Type	Delivery System	Casualties/ Effectiveness
1919	UK	Red Army	Archangel/T	Sternutator	M-device	?/?
1920 ¹	Red Army	White Russians	Kakhovka	?	Gas cylinder	?/?
1920(?)	Red Army	?	Turkestan	?	Aircraft	?/?
1920-25	UK	Rebels	Mid-East	?	Aircraft	?/?
1925	France	Morocco	Fez/F	Mustard	Bombs	?/?
Early 1930's	Govt. of Manchuria	Insurgents	Manchuria	?	?	?/?
1930's	USSR	Basmatch tribes	Central Asia/TF	Mustard	Aircraft spray	?/?
1935-36 ²	Italy	Ethiopia	Ethiopia/TF	Various	Air spray, bomb	15,000t/1
1936	Spanish Govt.	Fascists	Guadarrama Front/T	Tear	Artillery	?/?
July 1937	Japan	China	Yangtze Front/?	Mustard	?	19/?
Aug 1938	Japan	China	Juichang/T	?	?	600 + f/1
July 1938	Japan	China	Chu-Wou/T	DC	Candles	?/?
Sept 1938	China	Japan	Ch'ing Hua Chen	Phosgene	Captured Japanese Artillery	?/?
Sept 1939	Germany	Poland	Warsaw/F	Mustard	Bomb	?/?
Sept 1939	Poland	German	Jaslo/T	Mustard	Mine	14t/3
Oct 1941	Japan	China	Ichang	Lewisite	Mustard and artillery, bombs	1600t(600f)/2
May 1942	Japan	China	Hopei/TF	?	?	800f/1
May 1942 ⁴	Germany	USSR	Crimea/T	?	Artillery, cylinder	3000t/2
WWII	Japan	USA	Islands (Okinawa?)/T	AC, Phosgene	Grenade (candles?)	?/3
1945-49 ⁵	Chinese	Chinese	?	?	?	?/?
1947 ⁶	France	Vietnam	Vietnam	?	?	?/?
Jan 1949 ⁷	Israel	Egypt	Faluja/T	Toxic gas	?	?/?
1949	Greek Govt.	Communist insurgents	Taiyetos Mountains/T	Sulphur dioxide	Burned sulphur at cave entrances	?/1
1951-52 ⁸	US	Chinese/ North Koreans	?	?	?	?/?
1957	Cuban Govt.	Insurgents	?	?	?	?/?
1957 ⁹	France	Algeria	?	?	?	?/?
1963-67 ¹⁰	Egypt	Yemen	Yemen/TFH	Various	Air, artillery	?/3
1968	Portugese	Rebels	Guinea Bissau/?	?	?	?/?
1970	Portugese	Rebels	Angola/?	Anti-plant	Air spray	?/?
1970	Rhodesia	Rebels	Zimbabwe/FH	Poison in streams	?	?/?
Vietnam War ¹¹	US	North Vietnamese	Vietnam/TH	Anti-plant	Air spray	?/?
Vietnam War ¹²	NVA	US/ARVN	Vietnam/T	Nerve (?)	Mine	?/?
Vietnam War ¹³	US	NVA	Vietnam/TH	Tear gas	Grenade, artillery	?/?
Vietnam War ¹⁴	NVA/VC	US/ARVN	Vietnam/TH	Tear gas	Grenade	?/?
1976-79 ¹⁵	Vietnam	Hmong tribes	Laos/TF	Mustard nerve (?)	Air spray, bomb	?/2
1978-79 ¹⁶	Cuba, Ethiopians	Somalia	Ogaden/TF	?	Air, artillery	?/?
1978-79 ¹⁷	Cuba, Angolans	Pro-West Rebels	Angola/FH	Irritants(?)	?	?/?
1979-80 ¹⁶	Vietnam	Cambodia	Cambodia/TF	Mustard nerve (?)	Air spray, bomb artillery (?)	?/?
1979-80 ¹⁶	USSR	Afghans	Afghanistan/TF	?	Air, artillery	?/?

Key: **Tac Employ** = Tactical employment: **T** = Tactical combat; **F** = Terror; **H** = Harrassing. **Effectiveness** = Estimated effectiveness rating (if known): **1** = Excellent; **2** = Fair; **3** = Poor; **?** = Unknown. **Casualties**: **f** = Fatal; **t** = Total; **?** = Unknown.

Notes:

1. This attack was planned but never took place. It is included because of the numerous allegations of Red Army chemical warfare preparations.

2. The Italians employed gas to cover flanks, terrorize, and aid tactical combat. They used tear gas, mustard and phosgene.

3. The Chinese alleged that the Japanese used CW agents in over 889 instances prior to 1939.

4. The Soviets' claim is suspect, as is the use.

5. During the Chinese Civil War, there were allegations from both sides, but there is no proof.

6. Denied by the French; probably propaganda.

7. Bitterly denied by Israel. Egyptians claimed their forces were trapped in caves.

8. During the Korean War there were several allegations by the Chinese and North Koreans of U.S. use. All claims are undocumented and are declared totally false by the U.S. The Chinese claimed there were B-29 chemical bombing raids on Nampo City.

9. No substantiation. It may be a propaganda ploy.

10. There are dozens of documented instances of chemical attacks on Yemeni Royalists. Most were aircraft bomb attacks on civilian population centers. Mustard and phosgene traces were found, as well as

some tear gas residues. Total deaths by chemical agents exceeded 1600 with higher overall casualties. Nerve gas may have been used on 12 May 1967 at Beit Marran. A bomb casing with Cyrillic letters was recovered after this attack, indicating Soviet supply.

11. Operation Ranchhand used the "Agent Orange."

12. There is one alleged, undocumented incident.

13. Riot control agent CS was used for clearing tunnels. CS powder was spread on trails for harrassing.

14. A limited response with captured CS munitions.

15. Well substantiated. Apparently the Vietnamese used CW as a matter of policy.

16. No documentation, but it is highly possible.

17. No documentation.

WHY NOT THE REST?

Given the use of toxic chemicals in Ethiopia and China, any sober WWII war planner had to expect the use of such weapons. Yet, excepting a few very isolated (and minor) cases, a genuine balance of terror kept gas munitions out of the gun tubes and bomb bays — but not out of the logistics system.

Pre-war chemical stockpiles were limited, though all sides claimed their opponents possessed massive quantities. By the end of the war, everyone did possess huge and untouched chemical weapon stocks. Obviously the possibility of chemical warfare crossed the agenda of more than a single staff meeting. An approximate breakdown in growth of total chemical agent stockpiles (in tons) is as follows:

TABLE 1: Chemical Agent Stockpiles During World War II¹

	USA	UK	JAPAN	GERMANY
1939	-	500	2,000	10,000
1940	1,000	700	2,500 (?)	20,000
1941	2,000	2,000 ²	3,500 (?)	40,000
1942	3,000	7,500	4,800	45,000
1943	5,000	20,000	5,200	48,000
1944	20,000	35,000	7,500	52,000
1945	50,000 ³	36,000	8,000	70,000

1. It is important to distinguish between tons of agent and chemical weapon tonnage, which includes weight of agent and container. U.S. forces alone captured over 102,000 long tons of German chemical weapons, and this figure does not take into account weapons captured by the Soviets, French or British. The British manufactured 108,000 tons of chemical weapons with 36,000+ tons of agent.

2. This figure includes 1,500 tons of mustard gas and 500+ tons of phosgene and irritants.

3. By August 1945 this figure reached 135,000 tons.

No accurate figures are available for Soviet stocks but one source asserts that the Germans estimated Soviet agent output at 8,000 tons per month. The Soviets claimed the Germans possessed 250,000 tons total.

Building on the experience of WWI and the Italian bomb and spray experiments in Ethiopia, delivery systems included spray tanks, artillery shells, and a variety of air-delivered munitions, to include a remarkably advanced bomblet dispersion system developed by the Russians. The backbone of U.S. and U.K. chemical warfare remained the grandsons of the Stokes mortar, in the case of the U.S. the 4.2 inch chemical mortar, nicknamed the "four deuce." Though better known as the standard U.S. medium mortar firing HE, the 4.2 primary round was allegedly its mustard gas shell. The U.S. fielded 33 different chemical mortar battalions during the war, as well as several separate companies, the majority of which saw action as reinforcements to battalion mortar sections. Soviet dedicated chemical troops prior to hostilities included a chemical brigade, a chemical battalion, two chemical regiments, and a host of chemical companies. By the end of 1944, in addition to the organic chemical company in each division, the Soviets had some 30 chemical defense units. Thus, the munitions and men were there.

The U.S., U.K. and Soviet Union basically regarded mustard as the agent of choice, not knowing of the startling new agents — Tabun

and Sarin — the Germans synthesized in the late 1930's. The Germans were frightened by their own discovery of nerve agents. They incorrectly assumed that the U.S. chemical industry, the world's most advanced in terms of insecticide development (nerve agents for insects), had already discovered the agents and that the reason for the news not being out was that far-sighted technologists in the American Government were suppressing the information. Worse yet, the German, long aware of the Soviet's aggressive opinion of CW, suspected the Russians had a nerve gas capability since their sarin process utilized a reaction based on the work of A. Ye. Arbuzov, a Russian chemist associated with the school of organophosphorous chemistry at Kazan. The Germans were more afraid of what the Soviets might know about nerve gas than they were about the secret Japanese intelligence reports that the Soviets were developing dichloroformoxime (CX) and nitrogen mustard.

Belligerents were given ample opportunity to employ gas warfare. Certainly, liquid mustard used for area denial would have slowed (but not stopped) the Wehrmacht's blitz of Poland and France. There are indications that should Operation Sea Lion have gained a foothold in Britain, the English might have used gas. General Herman Ochsner, wartime commander of the German chemical troops, wrote after the war, "(We) had to allow for the possibility (during Sea Lion) of our troops being attacked while approaching the English coast with non-persistent agents." While it can be argued that fear of the Royal Navy and RAF scrubbed Sea Lion, the Germans were certain that once their troops hit English soil, the British would not hesitate to initiate chemical warfare. The flip side of this fear was the Allies' concern for their landings in Italy and France. The U.S. Chemical Warfare Service reported after the war that intelligence strongly suggested the Germans considered using gas at Salerno and Anzio. Certainly large stocks of Italian chemical weapons were in German hands and in stockpiles reasonably close to the beaches. Eisenhower's fears of German gas clouds choking Operation Overlord are well documented.

How close the Germans came to spreading the gospel of nerve agent will always remain moot. Albert Speer testified after the war that three members of the Nazi elite — Bormann, Goebbels, and Robert Ley — constantly advocated its use, especially during late 1944 when Allied armies encircled the Fatherland. Speer quoted Ley as saying, "You know we have this new poison gas — I've heard about it. The Fuehrer must do it. He must use it. This is the last moment." Still, Hitler continued to reject gas warfare, but Speer says, "... he hinted at a situation conference in headquarters that the use of gas might stop the advance of Soviet troops." The Germans also considered employing chemical munitions (persistent) to stop partisan raids on supply lines and as a means to revenge the fire-bombing of Dresden.

The Japanese demonstrated in China that against an opponent with no retaliatory chemical capability, chemical agents could be their weapon of choice. The Japanese issued large stocks of blood gas and phosgene grenades, and in a few isolated instances these were used against American troops on the in-

itiative of desperate junior commanders. However, the U.S. realized that these attacks did not constitute the initiation of gas warfare. The Japanese Army did request that gas be utilized to defend the Marianas but General Tojo rejected the proposal.

Though never documented, it has been alleged that American planners considered attacking Iwo Jima with toxic chemicals. Julian Perry Robinson quotes one source as stating that "... a well-informed Japanese officer stated that the use of mustard against islands such as Iwo Jima would have reduced U.S. casualties considerably and the Japanese forces would probably have been decimated to the point where American decontamination groups could have gone ashore and decontaminated the areas prior to the debarkation of the main body of American troops."

Perry points out that the resulting casualties on Iwo Jima "strengthened the case of those who argued for U.S. use of gas" against such island bastions. General Marshall recognized the efficacy of gas against a dug-in and fanatical enemy. Should Operation Olympic, the invasion of Japan, have gotten bogged down with heavy casualties, the JGS might well have been pushed into using gas. However, the American introduction of another special weapon — the atomic bomb — turned Olympic into a map exercise.

Outside of the Japanese grenades, only three other instances of chemical use crop up in the literature. Fourteen German soldiers were gassed by Polish mustard-filled landmines as they tried to overrun a bridge near the small town of Jaslo. The Germans termed the use as "purely local." The Poles asserted that mustard bombs were dropped on Warsaw during an air raid on 3 September 1939, and the Russians claim the Germans fired "chemical mortar bombs" and used toxic gas against Soviet cave complexes during May of 1942.

Why weren't chemical weapons used in WWII? Mutual fear is one answer, especially of strategic employment against civilian population areas. Certainly large elements of all military establishments doubted its ultimate usefulness outside of reducing underground fortifications. Respecting the other side's retaliatory capability left everyone feeling vulnerable. For example, by 1944 Germany had a six-month supply of chemical weapons in a stand-by status, but German civilians were so poorly protected against bomber delivered chemical munitions that they believed the Allies could inflict stupendous casualties. The Soviets failed to shoot chemicals at the advancing Germans because the initial blitz had disrupted their transport and organization at all levels, making the transportation of toxic weapons almost impossible. Along with a general loss of morale, the Soviets believed that their troops' chemical discipline had significantly deteriorated and that they could not insure troop protection if the Germans responded with a gas counterattack. By 1943 the Soviets seem to have come to the conclusion that they could beat Germany without running the risk of the Germans replying with liberal doses of mustard, retarding the Soviet advance. Training, doctrine, fear, chemical stockpiles, and prejudice aside, Albert Speer's assessment of the German staff's true point of view may hold for all of the belligerents: "Undoubtedly the generals feared the unpredictable consequences." ■ ■

The Israeli Air Force An Order of Battle

There is little question that the Israeli Air Force ranks high among the list of most-studied air forces. Its history and exploits have become virtually legendary. The Heyl Ha'avir is however, shrouded with a heavy veil of secrecy, exceeded perhaps only by that surrounding Israeli nuclear capability, which itself shares intimate association with the Air Force. To date, little has been done to present a single, non-speculative order of battle for the Air Force of Israel. Some attempts have been made to list the types of aircraft which have seen service with the IAF, or perhaps to prepare OB's for the Heyl Ha'avir's early history.

The preparation of any such order of battle must be noted as having been prepared within a given time period. Obviously, the sale or arrival of a single aircraft cannot always be considered in the compilation of such information.

Sources for an order of battle, at least until June 1980, are quite widespread. Periodicals include the ever popular *Aviation Week & Space Technology*, *International Defense Review*, and a relatively new journal, *Defense and Foreign Affairs Digest*. Major published books which provide other than a historical, and often over-dramatized, account of IAF strengths are not to be found. Careful readers may be able to use such works as *Shield of David* or *The Israeli Air Force* as base references, adding aircraft when new sales are announced (or more appropriately, delivered) and deleting aircraft which suffer combat attrition or have been sold.

Notable transactions involving the Israeli Air Force have centered around updating the inventory. The purchase (as of June, 1979) of twenty-three F-15A's and two F-15B's established a new squadron of air defense aircraft. Also capable of weapons delivery, the Eagles joined the indigenously-produced *Kfir* C.1 and C.2, offspring of the *Nesher*, or "Son of Barak." These new aircraft have allowed older aircraft, particularly the F-4E Phantom, to be placed in more specialized roles. For example, the IAF currently dedicates Phantom squadrons exclusively to ASM delivery, SAM suppression, and other specific missions. These squadrons, referred to in *No Victor, No Vanquished* as "Hunter Squadrons," train specifically for the delivery of particular weapons, such as Shrikes, ARM's, Walleyes, and Mavericks. To support this new stable of sophisticated aircraft, the IAF operates four E-2C Hawkeye aerial warning aircraft. It was this radar-equipped aircraft which positioned Israeli Eagles and *Kfirs* in the Summer of 1979 to destroy six MiG-21's, and to destroy four more three months later.

Israeli reconnaissance capability has been enhanced with the acquisition of two OV-1D electronic intelligence (ELINT) aircraft. These aircraft, along with the IAF RF-4E's, possess side-looking airborne radar (SLAR) and active data-link capability. It is hoped that these planes will help to prevent another "surprise" war, as occurred in October of 1973.

Israel has not been solely a purchaser of equipment. Twelve of its Super Mystere B-2 aircraft, re-engined with A-4 Skyhawk engines, were sold to

the Honduras. Argentina was the recipient of eighteen Mirage III CJ's, while the remaining eighteen in the IAF inventory await disposal, most of them without radar.

The export of the *Kfir* rests more on American political temperature than on the merits of the aircraft. At this time, the future of a potential sale of *Kfirs* to Taiwan is unclear.

Future sales to Israel will most certainly include the F-16, or perhaps the F-18L. Beyond that, little is known. Israel is producing a development-stage second-generation aircraft to succeed its *Kfir*. Whatever is purchased will be designed to combat any perceived threat in the Fertile Cres-

cent. Whether these threats include Saudi Arabia's F-15's, Egypt's F-5E's or F-4's, or Syria's *Floggers*, remains to be seen.

As of summer of 1979, the Israeli Air Force comprised eight major wings. These wings were based, in no particular order, at Ramat David, Sde Dov, Ben Gurion, Hatzor, Egron, Hatserim, Gaen Naqb, and Etam air bases. The latter two were based in the occupied Sinai. The future of such bases is in doubt after the signing of the Egyptian-Israeli peace treaties. Other bases exist, such as Baluza and Refidim, but are used as either staging or forward bases, or are restricted to emergency operations.

Israeli squadron breakdown is usually straightforward. A fighter-interceptor squadron (FIS) normally comprises twenty-five to thirty *Kfir* or *Kfir*-equivalent aircraft. Approximately twenty-five F-4E Phantoms make up a fighter-bomber squadron (FBS) and may include two to four RF-4E's. A-4 Skyhawks (of both H and N versions) make up an aerial bombardment squadron. Normally thirty Skyhawks comprise such a unit. Helicopter squadrons (HS) will vary in composition and size, ranging from twenty-five to sixty helicopters. Transport squadrons (TS) include all variants of the C-130 (usually fifteen), while Stratocruiser squadrons (SS) are responsible for KC- and EC-97, B-707, RC-707, and VIP aircraft. Approximately twenty-five planes, total, are found in this squadron type. A single flight test squadron (FTS) exists, and its composition varies, but usually includes a single aircraft of several types. A single attack helicopter squadron (AHS) exists, and includes six to ten AH-1S helicopter gunships.

Typical deployment of aircraft squadrons may be generalized as follows: Deployments are often altered, and aircraft are frequently detached to other bases when tactical or operational procedures so demand.

Ramat David

1 FBS, 1 FIS, 2 ABS

Sde Dov

Liaison aircraft

Ben Gurion

1 SS, 1 TS, 1 HS, 1 adjunct squadron

Hatzor

2 FIS, 2 FBS

Egron

1 FTS, 1 FBS, 2 ABS, 1 AHS, 3 HS plus
1 F-15 squadron (probably FBS)

Hatserim

1 ABS, 1 HS, 1 FBS, Flight Training School

Gaen Naqb

1 FIS, 2 ABS

Etam

1 FIS

Selected References

Dupuy, T. N., *Elusive Victory: The Arab-Israeli Wars 1948-73*

Hopkins, R. S., "The Role of the Israeli Air Force in the Survival of the State of Israel."

Quandt, W. B., *Decade of Decisions*

Tahitnen, D. R., *The Arab-Israeli Military Balance Since October, 1973*

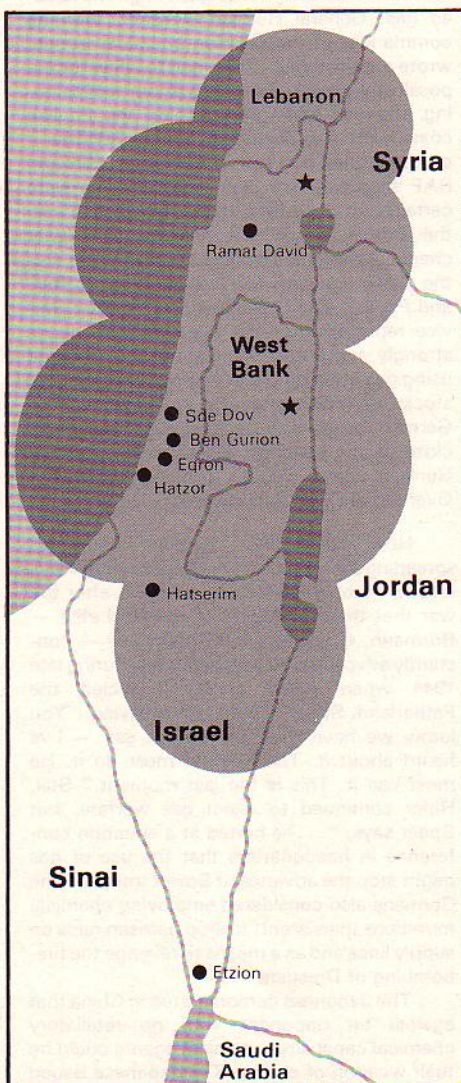
Robert S. Hopkins, III

Major Israeli Air Fields and SAM coverage

★ = Major Airfields

● = Major GCI sites

■ = Approximate SAM coverage



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Briefings

Briefings is a three-part collection of short announcements of new games and book reviews. These notices do not constitute recommendations, and they attempt to describe the new publications objectively. *Briefings Three* does not appear in this issue. It will return in the next issue.

BRIEFINGS ONE: RECENTLY PUBLISHED WARGAMES

SUMMARY OF GAMES RECEIVED

Title	Publisher	Pub Date	Price	Complexity	Playing Time	Solitaire Playability
Eylau	GDW	1980	\$10	4.0	4	7.5
Lee at the Crossroads	SC	1980	\$12	5.7	8	7.0
Narvik (2nd ed)	GDW	1980	\$15	6.8	10	4.5
Kriegsmarine	SC	1980	\$12	6.3	3	2.5
Rommel's Panzers	MG	1980	\$3	5.0	2	7.0
Artifact	MG	1980	\$3	5.0	2	6.5
Shadow/Annie Nova	GDW	1980	\$5	na	na	na
Research St. Gamma	GDW	1980	\$5	na	na	na

NAPOLEONIC

Eylau GDW, 203 North St., Normal, IL 61761; \$9.98) Napoleon in the snow versus the Russians, 1807. One three-color map on heavy stock; 240 multi-colored counters; charts; rules booklet; boxed. A battle-level game using regiments. Nothing new in this one, as it is oriented mostly towards playability and a fast evening. Assault CRT is odds/ratio with De/Dr/Ex type results, while bombardment causes step-losses (flip-over) or retreats. Simple move-fight sequence with reorganization phase and Russian command problems (limit on movement) thrown in. Weather varies from clear to heavy snow, and ZOC's are rigid with mandatory combat. Morale plays a role, and there are the usual problems with cossacks. Victory is partly geographic, partly casualty. 30 minute turn equivalents with 150 yards per hex. Fairly simple. Designed by Rik Fontana.

CIVIL WAR

Lee at the Crossroads (Simulations Canada, Box 221, Elmsdale, Nova Scotia, Canada, B0N 1M0; \$11.99) Battle of Gettysburg, 1863. 22" x 27" three-color map; 255 counters; one rules booklet; zip-lock bag. A brigade-level game with many tactical overtones, making for some strange, if interesting, rules and systems. Units rated for Morale, and that is the important item, as each morale level has a different line on the CRT. CRT is odds/ratio with percentile losses (which, as a designer, I know are dangerous items to work with). Losses are in steps. ZOC's depend on facing, artillery has field of fire. Goodly number of leaders, mostly division/corps. Some truly unusual units show up: both sides have armed religious fanatics, called calvary units. (And they all probably wear lots of juley.) Spelling is not SimCan's forte, as we will see below. Influence of leaders is quite strong, but most other systems are quite familiar. There is melee and fire, with artillery getting ranged fire. The map is not overly engaging and somewhat hard to read where ridges and slopes are concerned. Scale is 2 hours per turn, 350 yards per hex. Moderate complexity, and the entire battle could be finished in about 8 hours. Designed by Stephen Newburg.

WORLD WAR II

Narvik (GDW, 203 North St., Normal, IL 61761; \$14.98) The German invasion of Norway, and the attempted Allied landings, 1940. Two, three-color maps on heavy stock; 720 multi-colored counters; various charts

and tables; rules booklet; boxed. The old GDW Scandinavian warhorse has been gussied up with new maps, some minor rules changes, and a box. But no matter what you put it in, it is still one of the finest game designs extant. If you do not have this, the most playable item in the Europa series, you are really missing out on a lot of fun. This is an invasion game: the German gets to pick where he lands, and the Allied player then tries to cut him off and halt the Nazi spread. Norwegian militia pop up like in-laws at a will-reading, and the range and spread of unit types — and their colorful counters — are a joy to behold. This is one of my all-time favorite games, even after these many years. Fairly complex, but not overly so; a complete play-through should take a day or two. Designed by Frank Chadwick.

Kriegsmarine [sic] (Simulations Canada, Box 221, Elmsdale, Nova Scotia, Canada, B0N 1M0; \$11.99) Tactical naval and air combat in WWII (European theatre). 22" x 27" blue map on heavy stock; 255 multi-colored counters; rules booklet; zip-lock bag. Companion to *I/J/N* and *Torpedo*; uses same scale and system. Ships of many countries, including Netherlands, Russia, Canada, as well as the "biggies." Counters/ships have 9 different ratings, including sonar, aspect, bomb defense, etc. 2-12 diceroll differential CRT with Hit results referred to damage table, which results in speed loss as well as sinkings, etc. Sequence includes search, gunfire, movement, air combat, torpedoes, and so on. Unsighted units are not on map. Optional rules cover personnel, weather, damage control, et al. Fifteen scenarios printed in a type-size guaranteed to increase your ophthalmologists pocket-book, including Black Sea and Med engagements. The publisher apologizes for the spelling error in the title by means of the errata. 90 seconds per turn and 100 yards per hex. Moderately complex; scenarios can probably be completed in an evening. Designed by Stephen Newburg.

Rommel's Panzers (Metagaming, Box 15346, Austin, TX, 78761; \$2.95) Tactical desert warfare. Two-color, 12" x 14" stock map sheet; 126 counters; rules booklet; boxed. Individual tanks and other assorted anti-tank weapons. Sequence of play includes fire for units that did move and those that didn't, interwoven with defensive fire. CRT is in two-parts: target acquisition (dependent on range) and then odds/ratio, adjusted for range, all results being destroyed or unaffected. Rules booklet has potentially harmful blooper wherein sample unit confuses movement factor (now there's an archaic word from days of yore) with defense factor. Makes for some interesting tanks. Optional rules include mines, off-board artillery, overrun, and even some counters for buildings. Even with the glitch on the counters this should be fun (if a bit Spartan). Moderately complex (with all the rules) but nice, short play time. Designed by Roger Damon.

FANTASY & SCIENCE FICTION

Artifact (Metagaming, Box 15346, Austin, TX 78761; \$2.95) Tactical combat on the moon, circa 2000. One two-color, 12" x 14" map; 84 counters; rules booklet; boxed. Two rivals (US vs Russia: I guess that now, given the Afghanistan situation, we can go back to giving the Ruskis all the juicy bad-guy roles) find something on the moon, both go after it, escalation, etc. Tactical, with moon landings, etc. Find your target, see if you can hit it, see if you destroy it — all with different weapons types. Various scientists, militia, aliens, radiation, jamming, and whatever. Rules also cover capture, hand-to-hand fighting, plus some nice scenarios. All this in MG's new minibox (or microbox, whichever HT's lawyers prefer). With it all, the graphics are drab and garish at the same time, if that's possible — and it is. Game looks nice, though. Moderate complexity, maybe about two hours for a scenario. Designed by Glenn Williams.

Shadow/Annie Nova (GDW, 203 North St., Normal, IL 61761; \$4.98) Two role-playing adventure books (printed piggy back) for the *Traveller* game series. The books provide referee information for running two adventures in space, one concerning a drifting starship and the other some sort of alien structure. Both have been whipped into shape by Marc Miller.

Research Station Gamma (GDW, as above; \$4.98). Yet another in the *Traveller* series — probably the most coherent and well-designed role-playing game around today; this time those nasty folks from the Imperium have got some sort of animal experimentation lab going, a la Dr. Moreau. Your mission, if you choose to accept it, is to go in, get those unfortunate if somewhat grotesque, critters out of the evil lab, get your bucks, and arrive home safely for the next *Traveller* book. Imaginative. Marc Miller strikes again.

Richard Berg

BRIEFINGS TWO: RECENTLY PUBLISHED SELECTED NON-WARGAMES

Grass, by Jeff London, takes an old idea and adds a wealth of fascinating new twists. Basically the two to six players try to be the first to accumulate a quarter of a million dollars — by playing "Peddle" cards, in values from \$5,000 to \$100,000 — to their "Stash." In order to do this, they must first play a "Market Open" card to start their "Hassle Pile." These can be covered by "Heat On" cards of various types, bringing the peddling to a halt until the proper "Heat Off" card is added or a "Pay Fine" card is played together with the penalty of a stashed Peddle card. The plot thickens with the use of "Nirvana" cards. These bring extra turns and donations from the opponents' Stashes. "Paranoia" cards are horrible to play and can be even worse if held to the end of a hand; but with luck they can be passed to the sucker on the left. "Skim" cards allow you to swipe a Peddle card or, with the "Banker" variety, to grab 20% of all opponents' Stashes at the end of a hand. A "Protection" card can protect up to \$50,000 of a Stash from all depredations. A hand ends when a player chooses to play the "Market Close" card, or when the "Grass Stack" is gone. There is a penalty of the highest unstashed Peddle card in each player's hand, and a bonus of \$25,000 for the high scorer. New hands are played until the goal is reached. Oh yes, and if you don't get the card you need, you can always try to barter for it. (BB Imports, 230 Fifth Ave., N.Y., NY 10001. \$6.00 + \$2.50 postage.)

Dominique, by Ken Rand, is a colorful pastime for from two to four. Forty-four tiles are provided, each consisting of a line of three circles, in different arrangements of four colors. Choosing from a rack of three tiles, each player in turn places a tile at either end of a row. Players score for each circle in a line of three or more of the same color, and double if the line is diagonal. When the row of tiles reaches eleven, a new row is started above or below, and at either end. After this it continues in one direction. High score when four rows are completed, wins. (Great Games, \$6.00.)

Zodiac March, by George & Helen Kramer, is more intricate. There are ninety-six "domino" tiles, consisting of different pairings of the twelve zodiac symbols, and each symbol appears in red and black. Twelve of the tiles have stars at one end, which are "wild" and very powerful. Two to four can play, each using a rack of six tiles. Tiles can be placed anywhere in the layout provided they "match" (the same symbol in opposite colors) at least one face of a previously played tile. (Notches on the tiles help to keep the layout securely in place.) The score for a play depends on the number of matches which, in rare cases, can be as many as six. If a player is able to make a match on at least one face of his first tile, he can play a second, and so on up to all six tiles, which earns a healthy bonus. Play ends when, after all the tiles have been drawn, a player clears his rack, earning a bonus. High score wins. (Orion Educational Ent., P.O. Box 131, Terryville, CT 06786. \$8.25.)

Agribizz, by Stephen Turner, gives each of the two to six participants four thousand dollars and the chance to make a fortune or go broke by investing in farms and farm related businesses. A property can be purchased only by landing on it, and each time a player must decide whether to invest his limited funds or whether to hope for something better among the twenty-eight farms and nine businesses. Cheaper properties are easier to develop, but have a smaller payoff when an opponent lands. Another decision is which of three types of crops, represented by differently colored plastic bases, to plant. Again the cheaper pays off sooner, but in smaller amounts. Once the crop is in, a player can add farm equipment in the form of plastic "silo sections" which are piled in strict color sequence. Limited quantities, particularly in the best crop and the top silo section, give further opportunities and frustrations. A player may mortgage a property to pay a debt or to make other investments, and can still collect 10% of the usual fee from a visiting opponent. Other features are taxes, becoming incorporated, luck cards (which can be disastrous), selling of properties to an opponent or the treasury, and more. A few points in the rules are not too clear, but are not difficult to resolve. (Interest Developments, 7700 College Town Dr., Sacramento, CA 95826. \$16.49)

Battle: The Game of Generals, by S. Craig Taylor, is a game of pure strategy that serves to introduce many of the concepts of wargaming to two novices. The only terrain on the board of one hundred and twenty-six hexes are two short rivers, symmetrically located. However, die-

cut pieces representing mountains, woods, and towns are placed to cover hexes. In the basic game, each player has a total of ten combat units of three types, plus a fixed headquarters which is the enemy objective. The mobile units are secretly placed behind a screen, which is then removed. All units can move on a turn, with maximum range of either one or two hexes. Combat values vary from zero for headquarters, up to four, depending on the type of unit and its terrain. An enemy unit is eliminated by moving one or more units next to it with a greater total combat value. Optional scenarios add up to a maximum of twenty-three units per player, with greater variety in movement and in combat strength. Six different periods, from ancient through modern, give personalities to the units. Among the variants are creating your own army, hidden units with scouting, and more (Yaquinto Publications, P.O. Box 24767, Dallas, TX 75224. \$7.00 + \$1.00 postage.)

Kick-Off Soccer, by Roy Harwood, is a realistic simulation of this up and coming sport. The field is laid out on a thirty by twenty-one grid. Play alternates between the offensive and defensive teams, and all men can be moved on every turn. The ball is advanced by passing, dribbling, and heading. When a defensive man is within specified distances of the ball, an attempt can be made to tackle or to intercept. The result is determined by throw of a die, but strategic placing of the men can affect the odds. Goal tries are similarly determined by a die throw, adjusted to the positioning of the goalkeeper and other defensive players. The full game is rather difficult for someone not thoroughly familiar with the sport to digest at one sitting. A junior version, with suggestions for advancing to the full game, is supplied. (Piknik Imports, 3095 Kerner Blvd., Suite J, San Rafael, CA 94901. \$15.00 + \$1.00 postage.) **Zoccer**, by Curtis Kaltsukis, is simple, fast, and largely influenced by the throw of a die. The plastic board is an interesting arrangement of "wells," which can hold as many as three marbles representing the ball and a fielder from each team, and "blocks," a smaller opening which holds a single fielder, blocking a pass by the opponent. On a turn a player throws the die and uses the count to move one or more men and, if in possession, to pass the ball. Throwing a six loses the turn and, if the player with the ball throws one, the opponent can try to take over possession on the next turn. There are a few points not covered in the instructions, but nothing that can't easily be taken care of with "house rules." (Reiss Games, \$10.00.)

Baseball's Greatest Moments, by Tim Ashburn, is for from two to six baseball trivia lovers. Moving along a path by dice throw, they get the opportunity to gain or lose points by trying to answer one of the many questions. As they advance from the "Tinkers" to the "Evers" to the "Chance" path, the values of the questions double and triple. Points for correct answers are not merely accumulated, but are invested in souvenirs. The value of these are enhanced if a matching collection of four is obtained. Cards from a "Suicide Squeeze" deck can also raise or lower the value of the souvenirs. Other cards, called "Instant Replay," give a player a second chance after goofing. There are opportunities to gamble with the opponents and also to arrange souvenir trades and other deals. Win by passing a specified space with souvenirs worth at least 1500 points and another one hundred or more "answers" points. (Ashburn Industries, P.O. Box 343, Holliston, MA 01746. + \$12.00 + \$1.00 postage.)

Sid Sackson



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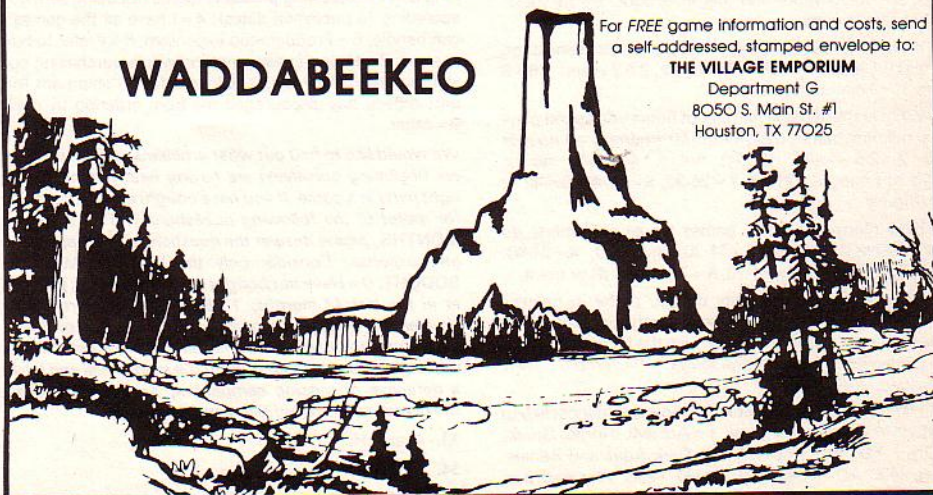
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Feedback Questions

S&T nr. 81, published July/August 1980

How to use the Feedback Response Card: After you've finished reading this issue of *S&T*, please read the Feedback questions below, and give us your answers by writing the answer-numbers on the card in the response boxes which correspond to each question number. See centerfold for card. Please be sure to answer all questions (but do not write anything in the box for question-numbers labelled "no question"). Incompletely filled-out cards cannot be processed.

What the numbers mean: When answering questions, "0" always means NO OPINION or NOT APPLICABLE. When the Question is a "yes or no" question, "1" means YES and "2" means NO. When the question is a rating question, "1" is the WORST rating, "9" is the BEST rating, "5" is an AVERAGE rating, and all numbers in between express various shades of approval or disapproval.

1-3. No question

The following questions ask you to rate the articles in this issue on a scale of 1 (poor) through 9 (excellent); 0 = no opinion.

4. Tito (game)
5. No question
6. Tito (article)
7. Modern Chemical Warfare (article)
8. Outgoing Mail
9. Briefings 1
10. Briefings 2
11. Datafile 022: Medieval Battles at Sea
12. Games Rating Chart
13. No question
14. This issue overall
15. Was this issue better than the last one?

16. Assume that you don't subscribe to *S&T*. Would the quality of this issue alone motivate you to subscribe?

17. For how many issues have you had a continuous subscription to *S&T*? 0 = I don't subscribe, 1 = This is my first issue; 2 = This is my second or third issue; 3 = This is my fourth or fifth issue; 4 = This is my sixth issue; 5 = This is my seventh issue; 6 = This is my eighth through twelfth issue; 7 = This is my thirteenth through eighteenth issue; 8 = This is my nineteenth or subsequent issue; 9 = I am a *Lifetime Subscriber* to *S&T* (regardless of number of issues received).

18. Did you send in the feedback card for your last issue of *S&T*?

19. Your age: 1 = 13 years old or younger; 2 = 14-17; 3 = 18-21; 4 = 22-27; 5 = 28-35; 6 = 36 or older.

20. Your sex: 1 = Male; 2 = Female.

21. Education: 1 = 11 years or less; 2 = 12 years; 3 = 13-15 years; 4 = 13-15 years and still in school; 5 = 16 years; 6 = 17 years or more.

22. How long have you been playing conflict simulation games? 0 = less than a year; 1 = 1 year; 2 = 2 years; 3 = 3 years; 4 = 4 years; 5 = 5 years; 6 = 6 years; 7 = 7 years; 8 = 8 years; 9 = 9 or more years.

23. What is the average number of hours you spend playing simulation games each month? 0 = none; 1 = 1 hour or less; 2 = 2-5 hours; 3 = 6-9 hours; 4 = 10-15 hours; 5 = 16-20 hours; 6 = 21-25; 7 = 26-30; 8 = 31-40; 9 = 40 or more hours.

24. How many simulation games (of all publishers) do you possess? 1 = 1-10; 2 = 11-20; 3 = 21-30; 4 = 31-40; 5 = 41-50; 6 = 51-60; 7 = 61-70; 8 = 71-80; 9 = 81 or more.

25. What level of complexity do you prefer in games? Rate your preference on a 1-9 scale, with higher numbers indicating increased complexity. Use the following games as guidelines. 4-5 = *Chickamauga*; 7 = *Terrible Swift Sword*; 9 = *Air War*.

26. Pick the one area about which you would most like to see games and articles done: 1 = Ancient (Rome, Greek, Biblical, 3000 BC - 600 AD); 2 = Dark Ages and Renaissance (600 AD - 1600 AD); 3 = 30 Years War and pre-Napoleonic (1600 AD - 1790); 4 = Napoleonic (1790 -

1830); 5 = Civil War/19th Century (1830 - 1900); 6 = World War I (1900 - 1930); 7 = World War II (1930 - 1945); 8 = modern (1945 - present); 9 = Fantasy and Science Fiction.

27. Overall, which of the following features in the past few issues of *S&T* are most in need of change (to make them better through changes in quality, quantity, format, etc.)? 0 = don't change anything; 1 = the game; 2 = the lead article (on the same subject as the game); 3 = the second major article; 4 = Outgoing Mail; 5 = Briefings; 6 = Data Files; 7 = Games Rating Chart; 8 = Feedback; 9 = some other aspect of the magazine that bugs you.

28. How did you purchase this copy of the magazine? 1 = by subscription; 2 = by mail, as a single copy; 3 = in a store; 4 = it was passed along to me by a friend; 5 = other means (describe).

29. How many people (including yourself) will read this copy of *S&T*? 1 = one (only yourself); 2 = two; 3 = three... 9 = nine or more.

The following refers only to non-S&T SPI games published in the last 12 months that you have played.

30. Did you have any problems with these games' rules? 0 = Did not play any non-S&T SPI games in the last 12 months; 1 = No problems with games played; 2 = A few problems, but not enough to prevent my playing the game, and I was able to handle them myself; 3 = A few problems, wrote to SPI for a clarification and received a reply within a month; 4 = A few problems, wrote to SPI for a clarification and received a reply over a month later; 5 = A few problems, wrote to SPI for a clarification but never received an answer; 6 = Had serious problems with the rules that prevented play, wrote to SPI for clarification and received reply more than a month later; 7 = Had serious problems with the rules that prevented play, wrote to SPI for clarification and received reply within a month; 8 = Had serious problems with the rules that prevented play, wrote to SPI for clarification but never received reply; 9 = Had problems with the rules and called SPI.

31. If a month has passed since you last ordered something from SPI, please answer the following questions about the service. 1 = I ordered a game(s) and received my order complete within three weeks of sending it in; 2 = I ordered a game and received my order complete within three weeks of sending it in, but with a game part(s) missing from one of the games; 3 = I ordered a game and received my order within three weeks, but one of the games was the wrong game; 4 = I didn't receive my order within three weeks, but did receive an out of stock notice; 5 = I ordered a pre-publication sale game and didn't expect to see it for a while; 6 = Over three weeks have passed, and I have still received no game or notification; 7 = My last order was for a subscription; 8 = My last order was for a non-subscription, non-game item and was handled all right; 9 = My last order was for a non-subscription, non-game item and I consider service to have been unjustifiably slow or otherwise unsatisfactory.

32. Please indicate the primary reason for not ordering through SPI's mail order service for items other than subscriptions. 0 = Do use SPI's mail order service regularly; 1 = Don't want SPI products other than *S&T*; 2 = Never buy anything by mail order (from any company); 3 = Stopped using SPI's mail order service because of long delay in receiving products (game not being sent out according to published dates); 4 = I have all the games I can handle; 5 = Products too expensive; 6 = Prefer to buy in store; 7 = Haven't seen anything worth purchasing but still may buy; 8 = Product damage due to shipment (on part orders) has discouraged me from ordering by mail; 9 = other.

We would like to find out what problems various publishers (including ourselves) are having with getting all the right parts in a game. If you have bought a game from one (or more) of the following publishers IN THE PAST 12 MONTHS, please answer the question with the appropriate response. Consider only the LAST GAME YOU BOUGHT. 0 = Have not bought a game from this publisher in the last 12 months; 1 = Bought a game retail, no problem; 2 = Bought a game direct mail, no problem; 3 = Bought the game direct mail and it had a defective or missing component; 4 = Bought the game retail and it had a defective or missing component; 5 = Bought a game direct mail and received the wrong game.

33. Avalon Hill

34. GDW

35. SPI

Please rate the following proposed publications on a scale of 1 to 9, with 1 indicating very little inclination to subscribe if offered up through 9, indicating a definite intention to subscribe.

36. *FYEO Newsletter*. Bi-weekly, mailed first class (air mail subscriptions for foreign subscribers available). Modeled on the FYEO that has graced the pages of *S&T* for the last few years, *FYEO Newsletter* will provide a compact compendium of the latest news on military affairs culled from over 60 publications, worldwide. Due to the timely appearance of the publication (every two weeks), we will be able to cover news items which are not included in FYEO in its present bi-monthly format. As an additional service, subscribers will receive a copy of SPI's forthcoming *Military Affairs Review*, an annual spring publication summarizing the significant military events of the previous year in several dozen categories (aircraft development, ASW technology, doctrinal changes, etc.). \$50 per year (25 4-page issues plus annual review).

37. *Richard Berg's Review of Games*. Bi-weekly, mailed first class, four pages, 25 issues a year. Published by SPI but edited independently by the estimable Mr. Berg, *RBG* will provide subscribers with incisive, timely reviews of the majority of new games published each year. Each issue of *RBG* will cover no less than three brand-new releases, featuring independent reviewers (i.e., not SPI staffers). It will also include a comprehensive list of recent game and game-related publications, as well as a column on hobby/industry news and gossip. 1 year subscription: \$20.

38. *Civil War Quarterly*. Each 48-page issue will concentrate on one aspect of the War for Southern Independence. A detailed article or collection of long essays and a game on the subject will comprise most of the issue (the 48 pages include the game rules). The game would be of *S&T* quality (i.e., die-cut counters and map inserts). Other features include reviews of relevant books and other games and Civil War topic Data Files. \$16 for one year (including at least four games).

39. *WW II Quarterly*. Same format as 38; \$16 for one year subscription.

40. *Current Military Conflict*. Same format as 38; \$16 for one year subscription.

41. *Napoleonic Quarterly*. Same format as 38; \$16 for one year subscription.

Rate the following game proposals on a scale of 1 of 9, with 1 indicating very little inclination to buy the game if published up through 9 indicating a definite intention to purchase it.

42. *The Sails of Empire*. Between the years 1652 and 1674, a series of wars for naval supremacy pitted the British against the Dutch. The prize was leadership in the colonization of the New World and the ultimate formation of a great maritime empire. The three Anglo-Dutch naval wars were closely fought affairs, featuring huge fleets of often over 100 ships per side and many fiercely contested battles. The names of the various leaders on both sides are remembered to this day: Van Tromp, De Ruyter, Blake, and Prince Rupert. The objective of Holland was to protect their large convoys sailing to the East Indies, while the British sought to enforce a blockade of the enemy ports. The game would include rules for leadership, morale, mobilization, convoys, and ship repair. It would be played on one full-size map showing the western approaches and the southern North Sea. To sell for \$12.

43. *Bunker Hill*. A tactical battalion level simulation of the British attack on Breed's Hill in Charlestown, Boston on 17 June 1775. The well-trained and armed British units (total strength 2500 men), with naval gun support, attack the entrenched and more numerous (3000 men) but erratically led, very green and poorly armed Continentals. The British must take the Colonial position without suffering excessive losses. The game map will represent the Charlestown peninsula with such terrain features as hills, towns, streams, swamps, fences, stone walls, and fortifications. The game would use a variation of the TSS system, adapted to the Revolutionary War weapons and formations (muskets had an effective range of only 150 yards). The game would include one 22"x34" map (at a scale of 40 yards to the hex), 200 counters, and would be playable in three hours. To sell for \$8.

44. *Franco-Prussian War, 1870-71*. Often considered a case of inevitable victory for the Prussians and their North German allies, the Franco-Prussian War may be the most misunderstood war of modern times. The quick collapse of the French due to a series of absurd command decisions has tended to mask the severe limitations of the Prussians in the war. The rickety Prussian logistical

system fell apart early, and only a series of fortuitous events saved them from the consequences of their flawed planning. Later, the failure of Prussian intelligence to discover the French counter-offensive in time nearly led to the breaking of the German siege ring around Paris and the reuniting of the French nation under the Third Republic. *Franco-Prussian War* would simulate the entire course of the war using an adaptation of the *Great War in the East* game system. The game would consist of one 22" x 34" mapsheet, 200 counters, 12 pages of rules, and an historical article on the war. \$12.

45. *The Guns of August*. It was the most decisive campaign since Waterloo, and one of the most costly battles in history. In three weeks, more than half a million Britons, Belgians, Frenchmen, and Germans fell in the series of actions that culminated in the Battle of the Marne on September 5th, 1914. Whether it was a consequence of Von Moltke's deviation from the Schlieffen plan, of the poor staff work that resulted in the withdrawal on the Marne, or of Joffre's competent leadership of the French Army, these battles resulted in a strategic Allied victory by setting the stage for a four year stalemate that broke Germany. *The Guns of August* will cover the entire opening campaign in the West during August and September, 1914. The full size map will portray all of northeastern France and most of Belgium at a game-scale of between 15 and 20 kilometers to the hex. A streamlined version of the highly successful and popular *Great War in the East* game system will be employed. This system includes treatment of such important factors as supply, railroads, leadership, and the tactical competence of the various forces involved in the campaign. Also included in *The Guns of August* will be rules for the hidden deployment of strategic reserves and rules for the use of air reconnaissance. Moreover, the game will include rules for linking the game with SPI's popular *Tannenberg* game, thus enabling players to more realistically simulate the effects of each front's combat on the other. \$12.

46. *The Great Carrier War*. After more than a year of historical research, the designer of *Battles for the Ardennes* has created a comprehensive simulation of the four carrier battles of 1942 that revolutionized naval warfare. The engagements of Coral Sea, Midway, Eastern Solomons, and Santa Cruz are presented along with a detailed historical analysis of the campaign. The fast, action-oriented game system uses all the naval vessels, aircraft and troops that participated in the battles. Searches are conducted on two strategic maps of the Central and South Pacific at 66 nautical miles to the hex. Air strikes are displayed on a tactical map at 1000 meters to the hex with each Game-Turn representing four hours, telescoping into smaller intervals in the event of battle. The unique combat system uses dice throws regulated by a series of easily memorized "conflict guidelines." In a campaign that was dominated by the improbable, this technique speeds play while maintaining historicity. As in the actual battles, the handling of aircraft is crucial. Planes may be "buttoned up" in the hangar, placed on combat air patrol or search, or armed and moved on deck for air strikes. The strategic uncertainty of the conflict rewards the player who can outmaneuver, outguess and outnerve his opponent. Other rules cover submarines, radar, surface combat, task force deployment and Allied intelligence. Optional rules include critical hits, fire control, weather conditions, strategic uncertainty, Japanese "Victory Fever," and pilot skill. Tailored for exciting, smooth play, a typical game of *Carrier War* may be played in two hours with a system that will lure land gamers into naval simulations. The game would include 400 counters (including about 20 double-sized carrier counters), three 22" x 17" maps, and displays; all for \$20.

47. *Valley of Death: The Battle for Dien Bien Phu*. From November 1953 through May 1954, French Union forces held a fortified encampment in the valley of Dien Bien Phu against superior numbers of Vietminh regulars commanded by General Vo Nguyen Giap. When the garrison finally surrendered to Giap, 10,000 elite paras and legionnaires went into captivity and the fate of French Indochina was sealed. *Valley of Death* would simulate this milestone battle on a tactical-operational level using a split scale to cover both the battle in the valley itself and the larger battle for the approaches to the valley. Units would be battalions and companies. Each Turn would equal one week, made up of seven daily pulses during which tactical action could be resolved. The French base and surrounding terrain would be portrayed on one map at a scale of 500 meters to the hex (or less). The Vietminh supply line and the environs of the valley would be shown on a separate folio size map at a scale of 2.5 kilometers per hex. The game would concentrate on the events of the battle itself,

but would allow for manipulation of outside events (including possible U.S. aid) which could have affected the outcome of the struggle. Special emphasis would be placed on the use of air power and artillery. One 22" x 34" map, one 17" x 22" map, 600 counters, 28+ pages of rules and scenarios. \$18.

The following proposals (48 through 57) would be packaged in our new one-inch box format and would feature quick-playing, highly developed, novel systems that have been carefully balanced for competitive play. Each game would have an 11" x 17" map, 100 counters, four pages of rules and would sell for \$5.95.

48. *Tarawa*. The Marines are nearly thrown back into the ocean as they attempt to take the Japanese-held island.

49. *Sharpsburg Ridge*. McClellan and Lee battle over the sunken road at Antietam.

50. *AFCENT*. Warsaw Pact-NATO conflict in modern Europe, from Austria to the Baltic.

51. *Little Round Top*. The critical action at the battle of Gettysburg.

52. *Counterstroke*. The Soviet counter-offensive south of Kharkov in January, 1942.

53. *1939*. The Allies pre-empt Nazi Germany by launching an offensive during the invasion of Poland.

54. *Singapore*. The Japanese campaign in Malaya, 1941-42.

55. *Alamo*. Davey Crockett and his fellow Texicans' finest hour.

56. *Gunfighter*. Man-to-man combat in the wild west.

57. *Austria Resists*. The Anschluss is rejected and war breaks out between Austria and Germany in 1938.

Please rate the following games on a 1 to 9 scale with "1" indicating a particularly strong dislike for a game, and "9" an especially favorable opinion. Please rate only those games which you have played (against an opponent or solitaire) at least once in the last year. If you have not played the game in the last year, please do not rate it (respond "0" in the space). All games listed are SPI published, unless otherwise specified.

- 58. Napoleon at Bay (OSG)
- 59. Wooden Ships and Iron men (AH)
- 60. Napoleon at War Quad
- 61. Wagram
- 62. Marengo
- 63. Battle of Nations
- 64. Jena-Auerstadt
- 65. Chickamagua
- 66. Blue and Gray Quad
- 67. Blue and Gray II Quad
- 68. Antietam
- 69. Shiloh
- 70. Crimean War Quad
- 71. Chattanooga
- 72. Inkerman
- 73. Crimea (GDW)
- 74. DNO/Unentschieden (GDW)
- 75. War in the East
- 76. Wacht am Rhein
- 77. War in the West
- 78. Panzerkrieg (OSG)
- 79. Rommel in Tunisia (OSG)
- 80. Upscope
- 81. Modern Battles Quad
- 82. Jerusalem
- 83. Yugoslavia
- 84. Bundeswehr
- 85. Wurzburg
- 86. Modern Battles II Quad
- 87. Sinai
- 88. Chinese Farm
- 89. Wilson's Creek
- 90. SPI Baseball
- 91. SPI Football

92. Starfire (TF).

93. Asteroid Zero-Four (TF)

94. Do you own, or plan to buy, one of the following microcomputer systems? 1 = I own a Commodore PET; 2 = plan to buy a PET; 3 = own a Radio Shack TRS 80; 4 = plan to buy a TRS 80; 5 = own some other microcomputer; 6 = plan to buy some other microcomputer; 7 = have no plans to buy a microcomputer because I'm not interested; 8 = have no plans to buy a microcomputer because I already have access to a computer; 9 = have no plans to buy a microcomputer for some other reason.

95-96. No questions

Are You Changing Your Address?

If you are, you must let us know in advance in order to avoid missing any of your issues of *Ares*, *S&T* and/or *MOVES*.

1. Your name — as it appears on the mailing label of your *Ares*, *S&T* and/or *MOVES*.
2. Your Customer Code and Expiration Codes (this is the very top line of information on your mailing label).
3. Your *old* address (clearly indicate it is "old" address).
4. Your *new* address (clearly indicate it is "new" address).
5. The *effective date* of your new address.

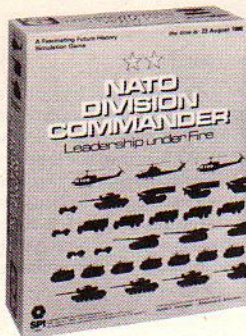
When you send us a change of address, don't enclose any other correspondence that does not pertain to that change — it just slows up the processing of the change and creates a possibility of missed information. A postcard is best. Write to:

**Simulations Publications, Inc.
Customer Service, COA Dept.
257 Park Avenue South
New York, New York 10010**

Pacificon The West Coast Wargaming Convention

Jim Dunnigan will attend Pacificon at the Dunfey Hotel in San Mateo, California. The convention will be held over Labor Day weekend (August 30 to September 1). For more information contact: Pacificon, PO Box 5833, San Jose, CA 95150.





NATO DIVISION COMMANDER

NEW
IMMEDIATELY AVAILABLE

NATO Division Commander, a battalion level simulation of conflict in contemporary Europe, combines 20 different aspects of modern combat in one game, ranging from the offensive and defensive postures of combat units to all the elements of combat support — air power, artillery, chemical and electronic warfare, and tactical nuclear weapons. The game system is layered to allow players their choice of desired complexity. *NATO Division Commander* contains two identical 22" x 34" maps; 1200 cardboard playing pieces; rules booklets containing solitaire, two-player and "controller" versions of the game; plus various playing aids.

Buyer's Guide for *NATO Division Commander*

Age range: 12 years through adult

Number of players: Two (suitable for solitaire play)

Average playing time: 4 hours plus

Complexity: Medium to High (7.0)

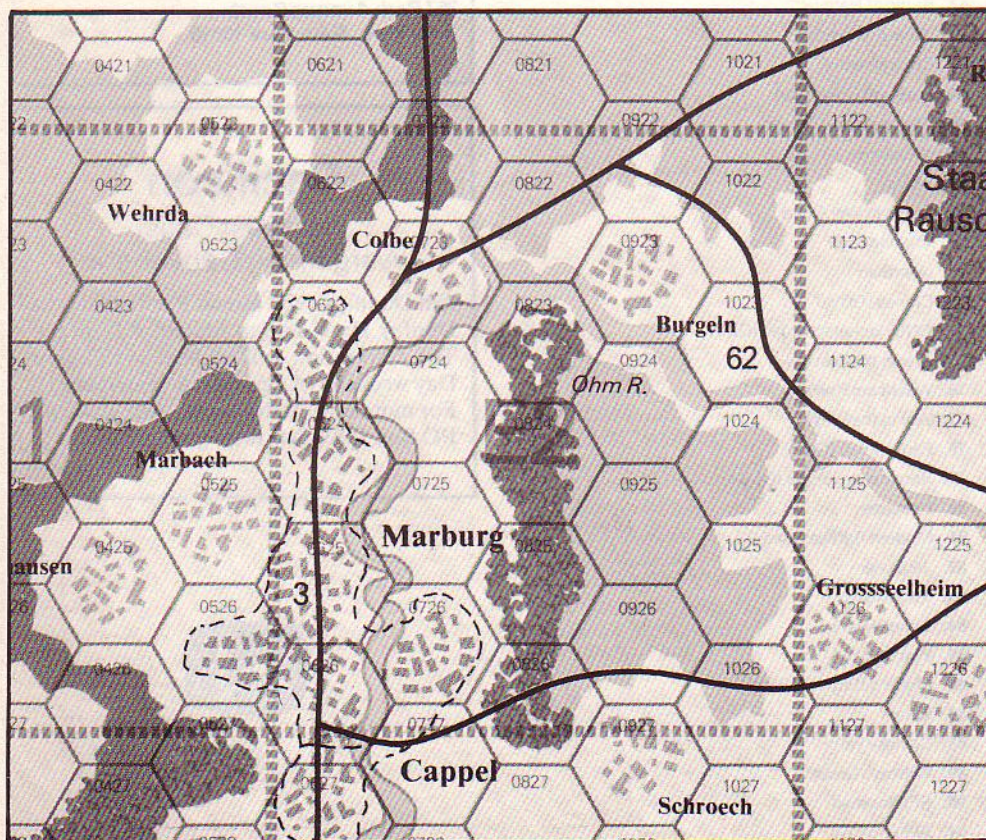
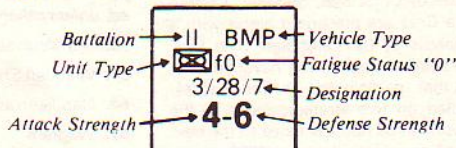
For purposes of comparison, *Monopoly* is considered to have a complexity of 2.34.

- 9.0 MOVEMENT
- 10.0 ZONES OF CONTROL
- 11.0 COMBAT
- 12.0 FATIGUE
- 13.0 UNIT BREAKDOWN AND RECOMBINATION
- 14.0 WEATHER AND NIGHT
- 15.0 AMMUNITION SUPPLY
- 16.0 CHEMICAL WARFARE
- 17.0 ELECTRONIC WARFARE (EW)
- 18.0 TACTICAL NUCLEAR WEAPONS
- 19.0 THE DIVISION COMMANDER
- 20.0 SUBORDINATE AND BATTALION LEADERSHIP
- 21.0 DOCTRINE
- 22.0 CONTROLLER GAME

SOVIET MECHANIZED INFANTRY BATTALION (Front)



SOVIET MECHANIZED INFANTRY BATTALION (Back)



UNIT ORGANIZATIONS

	TANK Bns				MECH Bns			
	USX	USP	SU	WG	USX	USP	SU	WG
MBT	27	54	31	53	17	-	-	-
APC	37	23	3	6	49	63	30	58
Misc AV	-	-	-	2	-	-	-	-
FA	4	4	-	-	6	13	6	6
(SP)	4	4	-	-	6	6	-	6
ATGML	21	21	-	-	36	36	32	36
ATG	-	-	-	-	-	-	-	-
AAA	-	-	-	-	-	-	-	-
SAM	-	5	-	-	-	5	-	-
Pers	630	552	168	480	820	901	440	850

	TANK DIV				MECH DIV			
	US	SU	WG		US	SU	WG	
MBT	329	415	300		216	269	280	
APC	515	125	250		532	385	287	
Misc AV	35	85	60		35	148	30	
FA	173	96	112		185	144	191	
(SP)	173	24	112		185	24	191	
ATGML	380	134	186		424	156	193	
ATG	-	-	15		-	35	16	
AAA	24	40	36		24	40	36	
SAM	24	34	-		24	34	-	
NCA/C	28	-	-		8	-	-	
Tk Bn	6	10	5		4	6	4	
Mech Bn	6	3	4		6	9	5	
Pers	15,500	11,000	17,000		18,300	13,800	17,000	

Notes: MBT = Main Battle Tanks; APC = Armored Personnel Carriers; Misc AV = Miscellaneous Armored Vehicles (light tanks, armored cars, etc.); FA = Field Artillery (including mortars over 80mm); (SP) = Field Artillery pieces that are self propelled (including in the above FA number, not in addition to); ATGML = Anti-Tank Guided Missile Launchers; ATG = Anti-Tank Guns (90mm and over); AAA = Anti-Aircraft Artillery; SAM = Surface to Air Missile Launchers; NCA/C = Non Combat Aircraft (combat aircraft are included in the FA total); Tk Bn = Tank Battalion; Mech Bn = Mechanized Infantry Battalions; Pers = Personnel, total manpower of unit; US = United States; SU = Soviet Union; WG = West Germany.

There are some variations in the strengths of the above units within each army. The units that are shown above are the first line units, the strongest lines each army is likely to field. The above units are also the ones most likely to go into action first.

US battalions are shown with normal cross attachment between tank and infantry battalions (tank battalion would give up one company of tanks for one company of infantry, etc.). All armies practice this. In addition, battalions would have numerous regimental and division support units attached. USP Battalions are shown without cross attachment.

Now available: \$27.00
See your dealer!

GAMES RATING CHART

PRE 19th CENTURY

Title	Pub	Pub Date	Price (\$)	Accept Rating	% Played	Complex Rating	Playing Time	Solitaire Playability
1. Kingmaker	AH	6/74	10	6.9	33	5.2	4	2.0
2. Tyre	SPI	1/79	9	6.7	10	6.0	5	6.0
3. Art of Siege	SPI	1/79	30	6.6	10	6.3	6	6.0
4. The Conquerors	SPI	5/77	20	6.5	14	6.5	6	6.0
5. Agincourt	SPI	8/78	14	6.5	13	5.9	4	7.1
6. Lille	SPI	1/79	9	6.5	10	6.4	7	6.0
7. Caesar (Alesia)	AH	7/77	12	6.4	22	5.5	4	2.5
8. A Mighty Fortress	SPI	7/77	12	6.4	17	5.6	5	2.0
9. Nordlingen	SPI	4/76	4	6.4	13	4.6	3	6.0
10. Acre	SPI	1/79	9	6.4	10	6.0	5	6.0
11. Sevastopol	SPI	1/79	9	6.4	10	6.4	6	6.0
12. Frederick the Great	SPI	4/75	12	6.3	31	5.7	3	4.0
13. Lutzen	SPI	4/76	4	6.3	11	4.8	2	6.0
14. Muskett & Pike	SPI	3/73	12	6.3	14	5.1	3	6.4

NAPOLEONIC

1. Napoleon's Last Battles	SPI	10/76	16	7.2	30	5.4	8	6.5
2. Napoleon at Bay	OSG	11/78	18	7.2	12	6.5	8	3.0
3. Wood Ships/Iron Men	AH	10/75	9	7.1	38	6.1	1	4.0
4. Wellington's Victory	SPI	10/76	30	7.1	20	7.5	12	6.0
5. La Belle Alliance	SPI	10/76	4	7.0	27	5.0	2	7.0
6. Ligny	SPI	10/76	4	7.0	23	5.0	2	6.0
7. Napoleon at War Quad	SPI	8/75	16	6.9	31	4.7	2	6.6
8. Wagram	SPI	8/75	4	6.9	31	4.6	2	6.6
9. Quatre Bras	SPI	10/76	4	6.9	28	4.9	1	8.4
10. Bataille de la Moskowa	GDW	4/73	18	6.9	14	7.1	8	3.0
11. Marengo	SPI	8/75	4	6.7	29	4.6	2	6.6
12. Wavre	SPI	10/76	4	6.7	25	5.0	3	6.5
13. Ney vs Wellington	SPI	5/79	12	6.6	69	7.0	5	6.0
14. Battle of Nations	SPI	8/75	4	6.6	29	4.8	2	6.0
15. Borodino	SPI	4/72	12	6.5	24	4.2	2	6.9
16. Eylau	SPI	8/79	12	6.3	53	6.0	3	7.0
17. Jena-Auerstadt	SPI	8/75	4	6.3	27	4.6	2	6.6
18. 1815: Waterloo	GDW	4/76	9	6.3	9	5.8	3	5.5

CIVIL WAR AND LATE 19th CENTURY

1. Terrible Swift Sword	SPI	7/76	24	7.3	35	7.4	90	5.5
2. Chickamauga	SPI	4/75	4	6.8	32	4.6	2	6.6
3. Blue & Grey	SPI	4/75	16	6.7	30	4.6	2	6.6
4. Blue & Grey 2	SPI	12/75	16	6.7	22	4.6	2	6.6
5. War Between States	SPI	5/77	26	6.6	23	6.9	50	6.0
6. Stonewall	SPI	4/78	12	6.5	48	6.6	5	5.5
7. Antietam	SPI	4/75	4	6.5	28	4.6	2	6.6
8. Shenandoah	BL	na	10	6.5	8	6.0	20	3.5
9. Shiloh	SPI	4/75	4	6.4	28	4.6	2	6.6
10. Crimean War Quad	SPI	4/78	20	6.4	19	5.8	3	6.0
11. Chattanooga	SPI	12/75	4	6.3	20	4.6	2	6.6

KEY TO ABBREVIATIONS: AH=Avalon Hill; BL=Battletline; CGC=Conflict Games Co.; EG=Excalibre Games; FBI=Flying Buffalo; GDW=Game Designers Workshop; IG=Imperial Games; MGC=Metagaming Concepts; SPI=Simulations Publications, Inc.; TC=The Chaosium; TSR=Tactical Studies Rules. *Acceptability Rating* is the game's overall popularity. *% played* is the percentage of readers who have played the game within the last six months. *Complexity Rating* is the relative complexity of the game on a scale of 1 (simplest) to 9.

LOWER RATED GAMES

The following games are rated from 5.8 to 6.2: Sixth Fleet (SPI 6.2); Breitenfeld (SPI 6.2); October War (SPI 6.2); Battle for Germany (SPI 6.2); Fredericksburg (SPI 6.2); Anzio (AH 6.2); Hooker & Lee (SPI 6.2); Frigate (SPI 6.2); Bloody Ridge (SPI 6.2); The Fast Carriers (SPI 6.2); Objective: Moscow (SPI 6.2); West Wall Quad (SPI 6.2); Cauldron (SPI 6.2); Crusader (SPI 6.2); Spartan (SPI 6.2); Patrol (SPI 6.2); Bastogne (SZI 6.2); La Grande Armee (SPI 6.2); Starship Troopers (AH 6.2); Legion (SPI 6.2); Rocroi (SPI 6.2); Tchernaya River (SPI 6.2); 30 Years War Quad (SPI 6.2); Viking (SPI 6.2); Kiev (SPI 6.2); Soldiers (SPI 6.2); Brusilov (SPI 6.2); Empire Petal Throne (TSR 6.2); En Garde (GDW 6.2); Kasserine Pass (CGC 6.2); Vector 3 (SPI 6.2); Beda Fomm (GDW 6.2); Torgau (GDW 6.2); Lobositz (GDW 6.2); Starweb (FBI 6.2); Ancient Conquests (IEG 6.2); Source of the Nile (DG 6.2); Vera Cruz (SPI 6.1); Dresden (SPI 6.1); France 40 (IAH 6.1); 1776 (IAH 6.1); Drednought (SPI 6.1); StarForce (SPI 6.1); Gondor (SPI 6.1); Sorcerer (SPI 6.1); USN (SPI 6.1); Battle of the Wilderness (SPI 6.1); Mech War '77 (SPI 6.1); Saipan (SPI 6.1); Seelowe (SPI 6.1); NAW-Expansion (SPI 6.1); North Africa Quad (SPI 6.1); Tobruk (SPI 6.1); Jutland (AH 6.1); Panzer '44 (SPI 6.1); Chariot (SPI 6.1); Rostov (SPI 6.1); Yeoman (SPI 6.1); Titan Strike (SPI 6.1); Ice War (MG 6.1); Mayday (GDW 6.1); Rappah (GDW 6.1); Guilford Courthouse (GDW 6.1); White Bear/Red Moon (TC 6.1); Tannenberg (SPI 6.0); Conquistador (SPI 6.0); World War One (SPI 6.0); Richthofen's War (AH 6.0); Arab-Israeli Wars (AH 6.0); World War II (SPI 6.0); Island War Quad (SPI 6.0); Outreach (SPI 6.0); Mukden (SPI 6.0); Balaklava (SPI 6.0); Alma (SPI 6.0); Warp War (MG 6.0); Desert War (SPI 6.0); Freiburg (SPI 6.0); Black Hole (MG 6.0); Russo-Japanese War (GDW 6.0); Alpha Omega (BL 6.0); Nomad Gods (TC 5.9); Raid (SPI 5.9); CA (SPI 5.9); Battle of the Bulge (IAH 5.9); Sauron (SPI 5.9); Cemetery Hill (SPI 5.9); Victory in the Pacific (IAH 5.9); Global War (SPI 5.9); Kasserine (SPI 5.9); Moscow Campaign (SPI 5.9); After the Holocaust (SPI 5.9); Air Assault on Crete (AH 5.9); DMZ (SPI 5.9); Strategy I (SPI 5.9); Red Sun Rising (SPI 5.9); Rivets (MGC 5.9); Olympia (MGC 5.9); Sticks & Stones (MG 5.9); Battle for Midway (GDW 5.9); Coral Sea (GDW 5.9); Battle of Alma (GDW 5.9); Siege of Jerusalem, 70 (HP 5.9); Objective Atlanta (BL 5.9); Siege (F&F 5.9); Nap. at Waterloo

12. Inkerman	SPI	4/78	4	6.3	17	5.9	3	6.5
13. Crimea	GDW	5/75	9	6.3	10	6.6	6	4.8

WORLD WAR ONE

1. To the Green Fields	SPI	5/78	12	6.9	20	6.9	9	7.0
2. Diplomacy	AH	6/61	10	6.5	34	4.3	6	2.2
3. Serbia/Galicja	SPI	11/78	5	6.5	11	5.8	4	5.5
4. Great War Quad	SPI	11/78	20	6.4	12	5.9	4	5.4
5. Caporetto	SPI	11/78	5	6.3	11	6.2	6	5.5
6. von Hindenburg	SPI	11/78	5	6.3	11	5.8	4	4.4

WORLD WAR II

1. Cross of Iron	AH	7/78	12	7.4	27	6.6	2	5.0
2. Panzergruppe Guderian	SPI	8/76	12	7.3	45	6.0	8	7.3
3. Squad Leader	AH	7/77	12	7.3	40	6.6	2	5.0
4. Dauntless	BL	7/77	12	7.3	16	7.0	1	2.0
5. Ardennes Quad	SPI	1/79	20	7.2	13	5.8	25	6.0
6. DNO/Uneentschieden	GDW	10/73	15	7.2	13	8.0	100	4.3
7. Clervaux	SPI	1/79	5	7.2	11	5.5	4	6.0
8. War in the East-2nd Ed	SPI	11/76	30	7.1	22	7.3	80	4.5
9. Air Force	BL	7/76	10	7.1	15	6.8	1	2.0
10. War in Europe	SPI	11/76	50	7.0	23	6.5	180	5.0
11. Wacht am Rhein	SPI	1/77	30	7.0	22	6.5	90	6.5
12. War in the West	SPI	3/76	40	7.0	22	7.3	100	4.5
13. Atlantic Wall	SPI	6/78	33	7.0	15	6.5	30	6.5
14. St. Vith	SPI	1/79	5	7.0	13	5.5	4	6.0
15. Celles	SPI	1/79	5	7.0	11	5.5	4	6.0
16. Campaign N. Africa	SPI	6/79	44	7.0	7	8.5	500	5.5
17. War in the Pacific	SPI	5/78	50	6.9	14	8.0	400	2.0
18. Bismarck-79 Ed	AH	6/79	12	6.9	12	6.5	5	4.0
19. Highway to the Reich	SPI	2/77	33	6.8	20	7.5	80	7.5
20. Sedan	SPI	1/79	5	6.8	12	5.5	4	6.0
21. Marita-Merkar	GDW	6/79	13	6.8	10	6.0	5	6.0
22. Case White	GDW	na	13	6.8	8	7.0	5	4.5
23. Russian Campaign	AH	7/76	10	6.7	29	5.3	5	5.0
24. Arnheim	SPI	2/76	4	6.7	24	5.0	3	8.0
25. Flattop	BL	7/77	15	6.7	10	6.9	8	1.0
26. Cobra	SPI	12/77	12	6.6	52	6.2	8	6.9
27. Winter War	SPI	8/72	12	6.6	18	4.5	2	5.8
28. Panzer Leader	AH	11/74	10	6.5	35	7.1	3	5.0
29. Third Reich	AH	11/74	10	6.5	32	6.5	6	6.0
30. Drive on Stalingrad	SPI	12/77	18	6.5	22	6.0	17	5.8
31. Typhoon	SPI	11/78	22	6.5	16	6.3	25	6.8
32. Anzio	AH	11/74	10	6.5	15	6.5	10	5.5
33. Operation Star	SPI	6/79	5	6.5	14	6.0	3	6.5
34. Narvik	GDW	12/74	9	6.5	12	7.9	60	4.0
35. Road to the Rhine	GDW	8/79	12	6.5	7	6.0	50	5.0
36. Panzerblitz	AH	10/70	10	6.4	38	7.0	3	5.4

(SPI 5.8); Midway (AH 5.8); Waterloo (AH 5.8); Okinawa (SPI 5.8); Leyte (SPI 5.8); Remagen (SPI 5.8); Chitin I (MGC 5.8); Descent on Crete (SPI 5.8); Code Name: Sector (PB 5.8); Spitfire (SPI 5.8); Caesar's Legions (IAH 5.8); Alien Space (LZ 5.8); Burma (GDW 5.8); Fury in the West (BL 5.8); Godfire (MGC 5.8); Yalu (GDW 5.8); The following are rated lower than 5.8: Constantinople (SPI 5.7); The Crusades (SPI 5.7); Panzer Battles (SPI 5.7); Operation Olympic (SPI 5.7); Blitzkrieg (AH 5.7); Luftwaffe (AH 5.7); World War III (SPI 5.7); American Civil War (SPI 5.7); NATO (SPI 5.7); Snapshot (GDW 5.7); Magic Realm (IAH 5.7); Alex, the Great (IAH 5.7); Overlord (CGC 5.7); Afrika Korps (AH 5.6); Stalingrad (AH 5.6); Star Soldier (SPI 5.6); Hurtgen Forest (SPI 5.6); Grenadier (SPI 5.6); Supercharge (SPI 5.6); Gettysburg '77 (AH 5.6); Chancellorsville (IAH 5.6); Emperor of China (DG 5.6); Dune (AH 5.6); Battle of Britain (LZ 5.6); Lankmar (TSR 5.6); Pharsalia (GDW 5.6); Plot to Assassinate Hitler (SPI 5.5); East is Red (SPI 5.5); Foxbat & Phantom (SPI 5.5); War at Sea (IAH 5.5); Module I: First World War (SPI 5.5); Battle of Agincourt (GDW 5.5); Helms Deep (F&F 5.5); Better (GDW 5.5); Punic Wars (SPI 5.4); Wolfpack (SPI 5.4); D-Day (AH 5.4); Lee Moves North (SPI 5.4); Minuteman (SPI 5.4); Quebec 1759 (GTG 5.4); Nuclear Destruction (FB 5.4); Cosmic Encounter (EP 5.4); Star Lord (FB 5.4); Oil War (SPI 5.3); Barbarossa (SPI 5.3); Origins of WW II (AH 5.3); Metamorphosis: Alpha (TSR 5.3); 1942 (GDW 5.2); Elric (TC 5.2); Viva Espana (BL 5.2); South Africa (SPI 5.1); Armada (SPI 5.1); Revolt in the East (SPI 5.1); El Alamein (SPI 5.1); Canadian Civil War (SPI 5.1); Dixie (SPI 4.9); War of the Wizards (TSR 4.9); Wizard's Quest (IAH 4.8); Star Probe (TSR 4.8); Tactics II (AH 4.4); Kriegspiel (AH 3.5).

GAMES PLAYED BY LESS THAN FIVE PERCENT

Operation: Crusader (GDW 6.9); Indian Ocean Adven. (GDW 6.1); Little Big Horn (SPI 6.1); Double Star (GDW 6.0); Schutztruppe (FBI 6.3); Super Tank I (SAT 5.9); The East Front (TCB 5.9); The African Campaign-2nd Edition (TSR 5.8); Manassas (GDW 5.8); 1066 AD (TSR 5.8); Napoleon (GTG 5.8); Decline & Fall (WG 5.8); Battle of Five Armies (TSR 5.7); Fight in the Skies (TSR 5.7); Battle of Saratoga (OG 5.7); Godfire (MGC 5.6); Custer's Last Stand (BL 5.6); Edgehill (EG 5.6); Tunisia, 1943 (EG 5.6); Troy (TC 5.5); Siege of Port Arthur (SPI 5.5); Battles of Tobruk (BG 5.5); Peloponnesian War (SC 5.3); Viva Espana (BL 5.2); 4000 AD (HO 5.2); IUN (ISC 5.2); Rift Trooper (AW 5.1); Crete (EG 5.1); English Civil War (IG 5.1); Formalhaut II (AW 5.1); Stalk-1 (C-C 5.1); Venerable Destruction (EG 5.0); Atlantis (EG 5.0); Flying Tigers (LZ 5.0); Chickamauga (FB 5.0); Missile Crisis (AW 4.9); Raiders of the North (TG 4.9); Rommel (LS 4.8); Bunnies & Burrows (FGU 4.7); Caen (EG 4.4); Viva (FB 4.4); 7th Cavalry (IAW 4.2); Rheinburg (IAW 3.9); War of Star Slaves (AW 3.9); Patton (RG 3.7); Quebec Libre (ISC 3.7); Warlocks and Warriors (TSR 3.4).

37. Kharkov	SPI	6/78	12	6.4	37	5.8	6	6.8
38. Army Group South	SPI	6/79	20	6.4	15	6.0	3	6.5
39. Panzerkrieg	OSG	11/78	18	6.4	11	5.8	5	6.0
40. Sniper	SPI	9/73	12	6.3	22	7.1	3	4.5
41. Panzer Armee Afrika	SPI	10/73	12	6.3	21	5.3	10	6.2
42. Upscope	SPI	1/78	14	6.3	17	6.6	1	2.0
43. Korsun	SPI	6/79	5	6.3	14	6.0	3	6.5
44. Rommel in Tunisia	OSG	1/79	18	6.3	8	7.0	4	4.0

MODERN

1. Mech War II	SPI	6/79	35	7.3	13	8.0	20	6.0
2. Red Star/White Star	SPI	6/79	20	7.3	12	8.0	20	6.0
3. The Next War	SPI	7/78	34	7.2	12	7.9	40	5.5
4. Suez to Golan	SPI	6/79	20	7.0	10	8.0	20	6.0
5. Bundeswehr	SPI	7/77	4	6.9	20	5.3	2	6.0
6. Firefight	SPI	8/76	20	6.8	24	6.5	2	5.5
7. Air War	SPI	9/77	17	6.8	22	9.0	2	2.0
8. Citadel	GDW	4/77	10	6.7	6	7.0	6	4.0
9. Fulda Gap	SPI	6/77	12	6.6	25	7.0	7	6.5
10. Yugoslavia	SPI	7/77	4	6.6	19	5.4	3	6.0
11. Bar Lev	CGC	5/74	8	6.6	14	6.7	6	5.0
12. Wurzburg	SPI	6/75	4	6.5	27	5.0	2	6.5
13. Mod Quad II	SPI	7/77	16	6.5	24	5.3	2	6.0
14. Jerusalem	SPI	7/77	4	6.5	17	5.2	2	6.0
15. Mod Quad I	SPI	6/75	16	6.4	26	5.0	2	6.5
16. Sinai	SPI	2/73	12	6.4	25	5.7	3	6.7
17. Chinese Farm	SPI	6/75	4	6.3	23	5.0	2	6.5

FANTASY AND SCIENCE FICTION

1. Freedom in the Galaxy	SPI	6/79	20	7.1	12	7.0	7	5.5
2. GEV	MGC	na	3	7.0	16	5.0	2	6.5
3. Imperium	GDW	na	10	7.0	14	6.1	6	2.5
4. War of the Ring	SPI	11/77	18	6.9	35	5.5	3	4.5
5. Ogre	MGC	5/77	3	6.8	27	4.8	1	6.5
6. Melee	MGC	na	3	6.8	21	5.3	1	6.5
7. Creature Sheboygan	SPI	4/79	4	6.8	19	5.0	1	6.5
8. Wizard	MGC	na	3	6.8	16	5.8	1	6.0
9. Swords & Sorcery	SPI	7/78	18	6.8	13	6.0	3	6.0
10. Traveller	GDW	7/77	12	6.7	14	6.2	5	5.5
11. Death Test	MGC	na	3	6.7	12	5.8	1	1.0
12. Dungeons & Dragons	TSR	12/74	10	6.6	31	6.5	5	1.0
13. John Carter	SPI	5/79	20	6.6	11	6.0	4	5.5
14. Stellar Conquest	MGC	2/75	9	6.5	11	5.8	6	3.0
15. Stargate	SPI	4/79	4	6.4	11	5.5	2	6.0
16. Battlefleet: Mars	SPI	4/77	15	6.4	16	6.8	6	3.0
17. Invasion: America	SPI	12/75	18	6.3	31	5.5	6	4.5
18. War in the Ice	SPI	1/79	12	6.3	9	6.8	5	4.5

OUTGOING MAIL [continued from page 21]

Battleline *Circus Maximus* game. This one will have new art and new rules. In fact, it might even be a new game. The second half of the original will be the gladiator game. It will also be a gamette at \$8.00. *Air Force* has been totally redone by Kevin Zucker, though there have been complaints about some of the changes by the playtesters.

Operational Studies Group of New York is ready to release its \$24.00 *Air Cobra* game — 800 counters, two maps, and mucho rules, charts, and the like. *Devil's Den* is a larger follow-up to their 20th Maine (Cemetery Hill) game. A pirate game is in the works for August, priced at \$9.00, using the

multi-player approach a la *Kingmaker*. *Ninja* deals with feudal Japan and uses hidden movement: A two-player game, with one player holding the Shogun castle and the other heading the Ninja forces. The company is still hanging on and in fact has increased its sales and distribution.

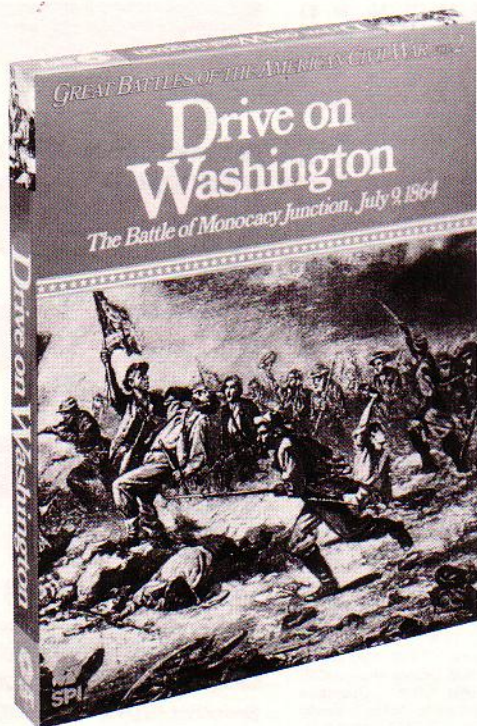
SPI has been making big changes. Eric Goldberg is now freelancing. The story from Eric is that he left to pursue other endeavors. That leaves three full time R&D people in SPI. Brad Hessel has moved more into the role of operations than R&D. Dave Ritchie takes that burden. In support are John Butterfield and Joe Balkoski. *Air Cav* is still being kicked around with the new projected date

for publication being Christmas of 1980. Some of the pre-20th Century titles have been filed away for the time being. Berg's *Hastings* may eventually end up an S&T game. *Antietam* could possibly be put out in conjunction with a TSS game in S&T a year from now. No plans for *Julius Caesar*. *Trafalgar* will be transformed into *Fighting Sail* and end up in S&T 85. *DragonQuest* will reveal its combat system through *Circus of Death* in the successful *Ares* magazine. After that is *Citadel of Blood*, another sword & sorcery game.

Will the real company doing a *Dallas* game please stand up. So far it is SPI, Yaquinto, and even Avalon Hill.

Howie Barasch

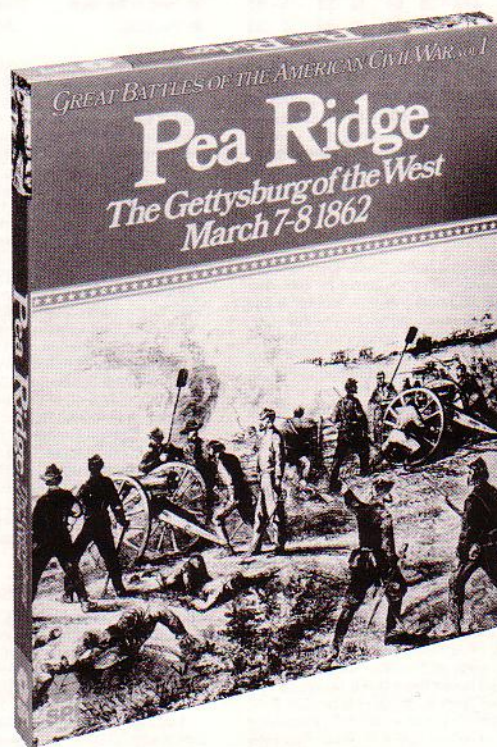
Great Battles of the American Civil War, Vols. I and II from the award-winning Terrible Swift Sword game system



In July of 1864, time was clearly running out for the Confederacy. The years of grim attrition had all but extinguished the capacity for the Army of Northern Virginia to carry the war home to the Yankees. *Almost* extinguished... but not quite!

Drive on Washington recreates the last battle of the last offensive by CSA forces in the East. General Jubal Early led a surprise attack against a Union division led by General Lew Wallace in an attempt to force the Monocacy River and threaten Washington, D.C. *Drive on Washington* simulates this desperate struggle and includes special rules detailing the influence of Early's leadership, the Confederate search for the hidden ford, the effects of fighting over fences and wheatfields, and more. *Drive on Washington* contains 200 counters, Exclusive and TSS-system Standard rules books, various charts and tables, and a 22" x 34" map.

Available now for \$8.95.



In early 1862 the Union prospects looked bleak indeed. Far from controlling the rebellion, the Union army appeared hard pressed even to contain it. Confederate forces were contesting the border states, seriously threatening the viability of the Union war effort. The darkest hours came on 7 and 8 March when, below towering Pea Ridge, an outflanked and out-numbered Union army faced a Rebel force twice its size and fought to save not only Missouri, but their very lives as well.

Pea Ridge is a simulation of this two day battle that eventually gave control of Missouri to the North. Special rules include Confederate militia (armed with *shotguns*), attachment and detachment of brigades (fighting often splits into two fronts, with a player's distribution of forces being decisive), and the possibility of the battle lasting into a second day. *Pea Ridge* includes a 22" x 34" map, 200 counters, TSS-system Standard and Exclusive rules books, and various charts and tables.

Available now for \$8.95.

***Pea Ridge* and *Drive on Washington*
are now available from SPI and in stores nationwide.**

EMPIRES OF THE MIDDLE AGES

Fantastic, positive word-of-mouth!
Spontaneous, all-night gaming sessions at Origins 80!
A must-have game for solitaire and multi-player!

It's 5 AM Sunday morning; do you know where your children are? If the time is June 1980, and the place is Rochester, Michigan (MichCon) or Chester, Pennsylvania (Origins), chances are they are whaling away at SPI's new multi-player game, *Empires of the Middle Ages*. Through the long night, each player is guiding the fortunes of one of the ruling dynastic Houses of Europe. As the flow of Middle Ages history ebbs towards dawn, from out of the East the ravages of the Mongol hordes and the Plague sweep over the Continent, religious fervor fans the flames of the Crusades, startling technological developments are contributing to the constantly shifting balance of power, and through it all, each player is negotiating, pillaging, conquering, fortifying, and administering his way to hegemony. SPI's new game *Empires* is a "sleeper" — a multi-player game on a pre-20th Century topic that has caused a wave of excitement (not to mention some long nights) at this summer's conventions. *Empires of the Middle Ages* includes one 22" x 34" game map, rules booklet, 600 cardboard playing pieces, 112 playing cards, and various playing aids.

BUYER'S GUIDE FOR EMPIRES OF THE MIDDLE AGES

Age Range: 12 years to adult.
Number of Players: 1 to 6.
Average Playing Time: From 2 hours for a brief game, to 75 hours for the Grand Scenario.
Complexity: Moderate (6.2)
 For purposes of comparison, the game of *Monopoly* is considered to have a complexity rating of 2.34.



EVENT CARD			Card Nr. 1
YEAR OF PLENTY			
Social State increases by one level in...			
Moscow	Livonia	Lithuania	
Prussia	Novgorod	Smolensk	
Kiev	Volhynia		

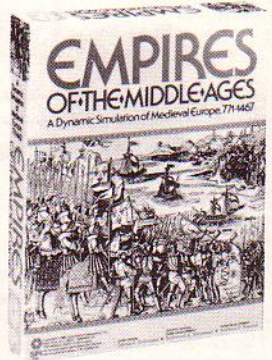
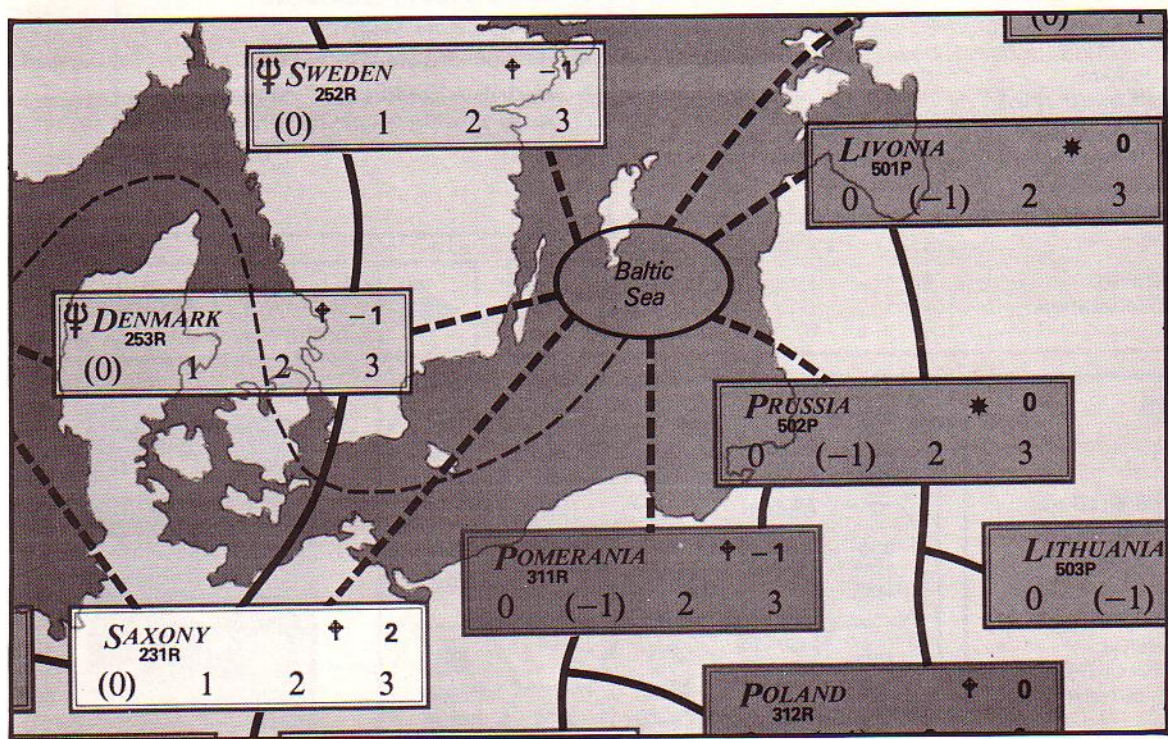
- GAME-TURN SEQUENCE**
- I. Event Card Segment
 - II. Theological Politics Segment
 - III. The Rounds
 - A. First Round
 1. Year Card Distribution Phase
 2. Crusade Determination Phase
 3. Raider Phase
 4. Magnate Phase
 5. Crusader Phase
 6. Initiative Determination Phase
 7. First Player-Turn
 8. Second Player-Turn
 9. Remaining Player-Turns
 10. Colonization Record Phase
 - B. through E. Second through Fifth Round

[22.3] CONVERSION RATING CHART

Religion	Proselytic Ability Rating	Convictional Strength Rating
Roman Catholic	10	20
East. Orthodox	10	20
East. Moslem	8	20
Iberian Moslem	0	0
Germanic Pagan	0	16
Slavonic Pagan	0	14
Baltic Pagan	0	16
Christian Heretic	0	16

1. The Conversion Differential is obtained by subtracting the Proselytic Ability Rating of the Player's Religion from the Convictional Strength Rating of the Area's Religion.
 2. Religions with a Proselytic Ability Rating of zero cannot be spread through conversion.

- 20.0 Grand Diplomacy
- 20.1 Exchangeable Items
 - 20.2 Time Restrictions
 - 20.3 Binding Agreements
 - 20.4 Conditions Under Which a Diplomatic Parley May Be Convened
 - 20.5 Diplomatic Parley Procedure
- 21.0 Exile
- 21.1 Conditions of Exile
 - 21.2 Asylum
 - 21.3 Returning from Exile
- 22.0 Excommunication and Religious Conversion
- 22.1 Excommunication
 - 22.2 Religious Conversion
 - 22.3 Conversion Rating Chart
- 23.0 The Schism and the Crusades (Optional)
- 23.1 The Schism
 - 23.2 Schism Table
 - 23.3 The Crusades



Now available for only \$18.00. See your dealer!

TIMETRIPPER

TimeTripper simulates the adventures of a U.S. infantryman, who accidentally creates a time warp that transports him to famous battles of the past and to fantastic battles of the future. Though armed with modern weaponry, the TimeTripper must husband his resources as he encounters the fearsome Tyrannosaurus Rex, Greek hoplites, Nazi infantry, and the futuristic Timepolice. Rules cover travel through time, missile and melee combat, endurance, and experience; the game also includes rules for TeamTripper play and for a Timemaster. *TimeTripper* includes an 11" x 17" sheet with Battlefield and Time Displays, 100 cardboard playing pieces, rules, and playing aids.

Buyer's Guide for *TimeTripper*

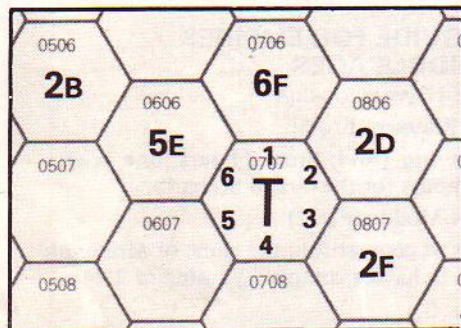
Age range: 12 years through adult.

Number of Players: 1 to 4 (highly suitable for solitaire).

Average playing time: One to three hours.

Complexity: Moderate (5.2).

For purposes of comparison, the game of *Monopoly* is considered to have a complexity rating of 2.34.



62. LOS ANGELES FREEWAY

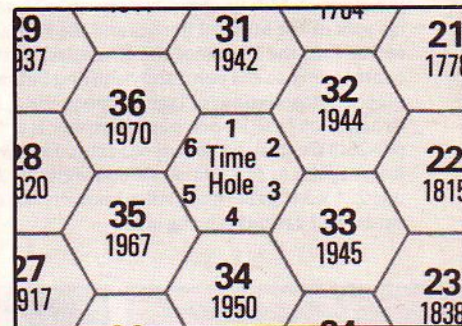
Negotiation: Not allowed

Treasure: None

Random

Opponents: Cars: 11X15X; 1D.

Notes: Do not use detection. On initial placement, only one car may be placed in each hex row. Cars move 6 hexes per turn down that hex row towards the bottom of the display, attacking any Tripper in its path (without stopping). A car reaching the lower edge of the display immediately re-enters the same hex row at the top of the display.



[13.3] TEAMTRIPPER WEAPON SELECTION CHART

Item	Die roll					
M16 Ammo Reload	1	2	3	4	5	6
Shotgun Reload	1	2	3	4	5	6
.357 Pistol (Each Player rolls)	0	1	1	2	2	3
.25 Pistol (Only Players who did not roll a .357)	1	1	-	-	-	-
.357 Reloads (Each owner rolls)	0	1	1	1	2	2
.25 Reloads (Each owner rolls)	0	1	1	1	2	2
M26 Grenades (Each Player rolls)	1	1	1	1	2	3
M1 Grenade (Each Player rolls)	0	1	1	1	1	2
M 72	1	1	1	-	-	-
Claymore	1	-	-	-	-	-
- = No weapon.						

49. JAWS 27 (FANTASY)

Negotiation: Not allowed

Treasure: Shark tooth, 5-3

Random

Opponents: Landmobile sharks: 10X12H; 1D + 2.

TIMETRIPPER SEQUENCE OF PLAY

1. TIME TRAVEL STAGE

2. BATTLE STAGE

A. Tripper Phase

B. Historical Soldier (or Animal Phase)

C. Stun Marker Removal Phase



24. BATTLE OF SHILOH (1862)

Negotiation: DEF

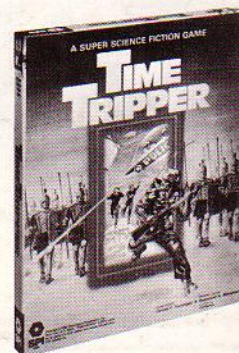
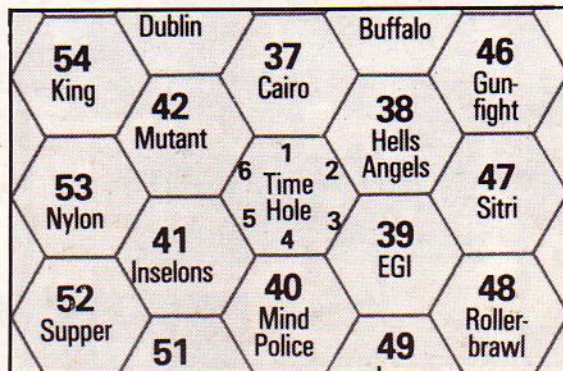
Treasure: Union document, 5-1

Enter

Opponents: Union infantry: 10B1E; 1D + 2.

Note: After each man fires, he becomes a "4X1F." Johnston's Confederates surprised Grant's encamped Federal army and nearly engulfed it. The confusion of the terrain, the stubborn Federal defense, and a morning counterattack finally threw the Confederates back in defeat.

The Federal, or Union soldier carried an 1861 Springfield musket, bayonet, cartridge pouch, canteen, and haversack.



NOW AVAILABLE for only \$5.95. Ask your dealer!

· Quality of Sections of this identical type: 1. Total quantity of Sections (all types) in game: 1.

704	714	717	718	267	111W	113	161	312	264
704	714	717	718	267	111W	113	161	312	264
12	12	12	12	12	12	18	18	18	15
371	1001	369	373	382	98	187	173	125	45S
15	10	10	10	10	20	9	6	3	20

GERMAN

22 XX 24	92 XX 6	1 XX 20	75S XX 16	135S XX 8	215S XX 8	Emilia XX 6	Marche XX 6	Murze XX 6	Messina XX 6
501SS XX 1	235S XX 4	1Pz XX 30	202Pz XX 10	1Ccs XX 9		Sassari XX 6	Re XX 6	Lombard XX 6	Macerata XX 6

ITALIAN

Alpi Gr XX 6	Parma XX 6	Arezzo XX 6	Firenze XX 6	Puglia XX 6	Venezia XX 6	Perugia XX 6	3 XX 1	2 XX 1	1 XX 1
Bergamo XX 6	Taurinense XX 6	Ferrara XX 6	Isorzo XX 6	Zara XX 6	Savona XX 6	CD Alpi XX 6	4 XX 1	5 XX 1	

SERB

5Mt	$\frac{5}{x}$	2
4Mt	$\frac{4}{x}$	2
3Mt	$\frac{3}{x}$	2
2Mt	$\frac{2}{x}$	2
1Mt	$\frac{1}{x}$	2
	$\frac{6}{x}$	1
	$\frac{5}{x}$	1
	$\frac{4}{x}$	1
	$\frac{3}{x}$	1
	$\frac{2}{x}$	1
	Gd	3

CROAT






7 XX	8 XX	6 XX	9 XX	68 XXX	64 XXX	10Gd	18Gd XXX	20Gd XXX
15	15	18	18	30	30	33	33	33
14 XX	22 XX	24 XX	25 XX	75 XXX	31Gd	5 X	7 XX	4Gd XX
12	12	12	12	30	33	12	38	42

BULGARIAN

SOVIET

[illegible]

CHETNIK

21 Group	22 Group	23 Group	Game Turn	Allied Prog			
 1	 1	 1					
24 Group	25 Group		VP (+) x 1	VP (+) x 10	VP (+) x 100		TITO NOT IDENT
 1	 1						

MARKERS





1 Group	2 Group	3 Group	4 Group	5 Group	6 Group	31	32	33	34
$\begin{array}{c} \boxed{\times} \\ 1 \end{array}$	$\begin{array}{c} \boxed{\times} \\ 1 \end{array}$	$\begin{array}{c} \boxed{\times} \\ 1 \end{array}$	$\begin{array}{c} \boxed{\times} \\ 1 \end{array}$	$\begin{array}{c} \boxed{\times} \\ 1 \end{array}$	$\begin{array}{c} \boxed{\times} \\ 1 \end{array}$	$\begin{array}{c} \boxed{\times} \\ 4 \end{array}$	$\begin{array}{c} \boxed{\times} \\ 4 \end{array}$	$\begin{array}{c} \boxed{\times} \\ 4 \end{array}$	$\begin{array}{c} \boxed{\times} \\ 4 \end{array}$
$\begin{array}{c} 35 \\ \boxed{\times} \\ 4 \end{array}$	$\begin{array}{c} 36 \\ \boxed{\times} \\ 4 \end{array}$	$\begin{array}{c} 37 \\ \boxed{\times} \\ 4 \end{array}$	$\begin{array}{c} 38 \\ \boxed{\times} \\ 4 \end{array}$	$\begin{array}{c} 39 \\ \boxed{\times} \\ 4 \end{array}$	$\begin{array}{c} 40 \\ \boxed{\times} \\ 4 \end{array}$	$\begin{array}{c} 41 \\ \boxed{\times} \\ 4 \end{array}$	$\begin{array}{c} 42 \\ \boxed{\times} \\ 4 \end{array}$	$\begin{array}{c} 43 \\ \boxed{\times} \\ 4 \end{array}$	$\begin{array}{c} 44 \\ \boxed{\times} \\ 4 \end{array}$

PARTISAN

45	$\frac{x}{x}$	4	46	$\frac{x}{x}$	4	47	$\frac{x}{x}$	4	48	$\frac{x}{x}$	4	49	$\frac{x}{x}$	4	50	$\frac{x}{x}$	4	51	$\frac{x}{x}$	4	52	$\frac{x}{x}$	4	53	$\frac{x}{x}$	4	54	$\frac{x}{x}$	4
55	$\frac{x}{x}$	4	56	$\frac{x}{x}$	4	57	$\frac{x}{x}$	4	58	$\frac{x}{x}$	4	59	$\frac{x}{x}$	4	60	$\frac{x}{x}$	4	7 Group	1	8 Group	1	9 Group	1	10 Group	1				

11 Group	<input checked="" type="checkbox"/>	1
12 Group	<input checked="" type="checkbox"/>	1
13 Group	<input checked="" type="checkbox"/>	1
14 Group	<input checked="" type="checkbox"/>	1
15 Group	<input checked="" type="checkbox"/>	1
16 Group	<input checked="" type="checkbox"/>	1
17 Group	<input checked="" type="checkbox"/>	1
18 Group	<input checked="" type="checkbox"/>	1
19 Group	<input checked="" type="checkbox"/>	1
20 Group	<input checked="" type="checkbox"/>	1
21 Group	<input checked="" type="checkbox"/>	1
22 Group	<input checked="" type="checkbox"/>	1
23 Group	<input checked="" type="checkbox"/>	1
24 Group	<input checked="" type="checkbox"/>	1
25 Group	<input checked="" type="checkbox"/>	1
26 Group	<input checked="" type="checkbox"/>	1
27 Group	<input checked="" type="checkbox"/>	1
28 Group	<input checked="" type="checkbox"/>	1
29 Group	<input checked="" type="checkbox"/>	1
30 Group	<input checked="" type="checkbox"/>	1

10	$\frac{10}{4}$	4
9	$\frac{9}{4}$	4
8	$\frac{8}{4}$	4
7	$\frac{7}{4}$	4
6	$\frac{6}{4}$	4
5	$\frac{5}{4}$	4
4	$\frac{4}{4}$	4
3	$\frac{3}{4}$	4
2	$\frac{2}{4}$	4
1	$\frac{1}{4}$	4
20	$\frac{20}{4}$	4
19	$\frac{19}{4}$	4
18	$\frac{18}{4}$	4
17	$\frac{17}{4}$	4
16	$\frac{16}{4}$	4
15	$\frac{15}{4}$	4
14	$\frac{14}{4}$	4
13	$\frac{13}{4}$	4
12	$\frac{12}{4}$	4
11	$\frac{11}{4}$	4

TITO IDENT	VP (-) x 100	VP (-) x 10	VP (-) x 1	Drogst Turn
				23  4
				22  4
				25  4
				24  4

[illegible]

24 $\frac{10}{\times}$ 4	23 $\frac{9}{\times}$ 4	22 $\frac{8}{\times}$ 4	21 $\frac{7}{\times}$ 4	20 $\frac{6}{\times}$ 12	19 $\frac{5}{\times}$ 12	18 $\frac{4}{\times}$ 12	17 $\frac{3}{\times}$ 12	16 $\frac{2}{\times}$ 12	15 $\frac{1}{\times}$ 12
--------------------------------	-------------------------------	-------------------------------	-------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------

20	\times	4
19	\times	4
18	\times	4
17	\times	4
16	\times	4
15	\times	4
14	\times	4
13	\times	4
12	\times	4
11	\times	4
30	\times	4
29	\times	4
28	\times	4
27	\times	4
26	\times	4
25	\times	4
24	\times	4
23	\times	4
22	\times	4
21	\times	4

[illegible]

39 XX 12	38 XX 12	37 XX 12	36 XX 12
34 XX 12	33 XX 12	32 XX 12	31 XX 12

49	$\frac{49}{12}$	36	$\frac{36}{12}$
48	$\frac{48}{12}$	42	$\frac{42}{12}$
47	$\frac{47}{12}$	41	$\frac{41}{12}$
46	$\frac{46}{12}$	40	$\frac{40}{12}$
45	$\frac{45}{12}$	52	$\frac{52}{12}$
44	$\frac{44}{12}$	51	$\frac{51}{12}$
43	$\frac{43}{12}$	50	$\frac{50}{12}$

Gd	X ₁	5
Sturn	X ₁	5
8	X ₁	4
7	X ₁	4
6	X ₁	4
5	X ₁	4
4	X ₁	4
3	X ₁	4
2	X ₁	4
1	X ₁	4
0	X ₁	4
9	X ₁	4
10	X ₁	4
11	X ₁	4
12	X ₁	4
13	X ₁	4
14	X ₁	4
15	X ₁	4

[illegible][illegible]

Factory ■

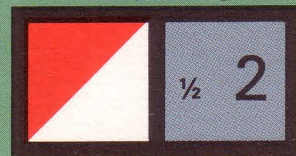


Carinthia 0P

Maribor ★



Varazdin †



Ljubljana ★

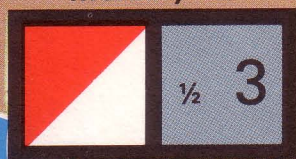
Trunk Railway ■



Factory ■



Mercury ■



Istria
2P2

Fiume ★



Bauxite ■



Trieste ★



Pola ★



Karlovac †



Ogulin †



ITALIAN
PULLBACK

Bihac †



ITALIAN
PULLBACK

Drvar †



ITALIAN
PULLBACK

Zara ★



Dugi

Uljan

Zut

12-1

De

De

De

De

De

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Tito par-

olumn to

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columns

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by Par-

city.

town or

Guerrilla



$\frac{1}{2}$ 1



$\frac{1}{2}$ 1




$\frac{1}{2}$ 4




$\frac{1}{2}$



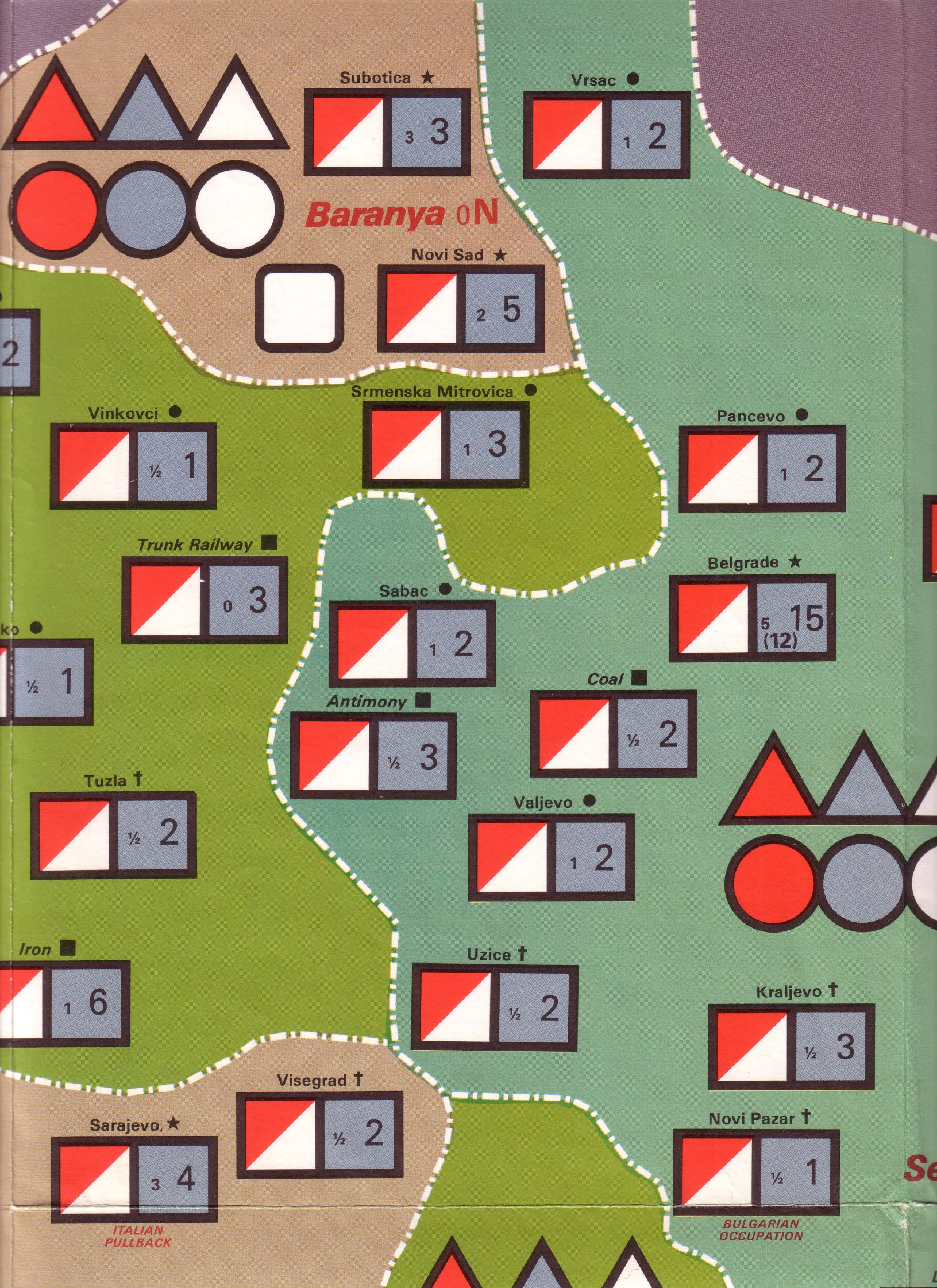

$\frac{1}{2}$ 2

A blank, cream-colored slide mount with a dark brown border. The mount is rectangular with rounded corners and a slightly textured surface. The border is a solid, dark brown color, and the central area is a light cream or off-white color. There is no text or other markings on the slide.

Split ★

Iron



Subotica ★



Vrsac ●



Baranya ON

Novi Sad ★



Srmenska Mitrovica ●



Vinkovci ●



Pancevo ●



Trunk Railway ■



Sabac ●



Belgrade ★



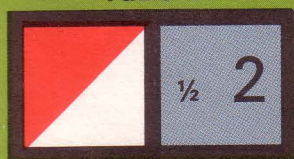
Coal ■



Antimony ■



Tuzla †



Valjevo ●



Iron ■



Uzice †



Kraljevo †



Visegrad †



Sarajevo. ★



Novi Pazar †



ITALIAN
PULLBACK

BULGARIAN
OCCUPATION

TERRAIN KEY

Objective Display

Objective Name → Trieste ★ → Terrain Type



Neutral Chetnik Box



Terrain Types

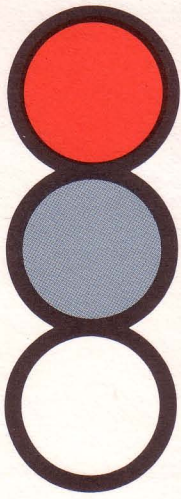
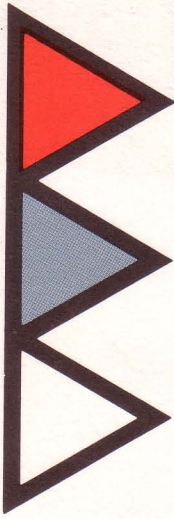
- Industrial
- ★ City
- † Village
- ‡ Town
- Market Town

Occupation Zone Name

Name → *Serbia* Garrison Value Alignment Value
4C2 Uprising Modifier

Zone Display

Mountain

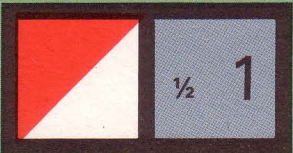


Hide-away



Border

Pozarevac ●



Copper ■



Kragujevac ●



Zajecar ‡



Krusevac ‡



Nis ★



Trunk Railway ■



Prokuplje ‡



Pirot ‡



Leskovac ‡



Kosovska Mitrovica †

BULGARIAN
OCCUPATION

Serbia 4C2

Lead ■

[6.7] OCCUPATION ZONE TABLE

Game-Turn in Which Listed Units May Enter (also see Note "a")						
Occupation Zone	German	Italian	Bulgarian(b)	Croat	Serbian	Partisan/Chetnik
Albania	(c)	All	16	-	-	All
Baranya	15	-	17	-	-	15
Bosnia	All	(d)	17	All	-	All
Carinthia	15	-	-	-	-	15
Croatia	(c)	All(e)	17	All	-	All
Dalmatia	(c)	All	-	(g)	-	All
Islands	(c)	All	-	-	-	All
Istria	(c)	All	-	-	-	All
Macedonia	15	-	All	-	-	All(h)
Montenegro	(c)	All	16	-	-	All
Serbia	All	(d)	(f)	-	All	All
Slovenia	(c)	All	-	-	-	All

Key: - = Units may never enter this Zone.
All = Units May enter in all Game-Turns.
(letter) = See Notes below.

Notes:

- For Game-Turns 1 and 2 movement restrictions, see Case 6.63.
- See Case 13.92.
- May enter after Yugoslav Player has accumulated at least 45 Victory Points or first Yugoslav brigade has been placed on map.
- Up to 3 divisions may enter Serbia or Bosnia on an Anti-Guerrilla Operation, but only after re-

quirements of Case 6.64B have been fulfilled. In addition, units must redeploy after operation into Croatia, where they may count as part of the Axis garrison.

(e) Subject to Italian Pullback (see 10.2).

(f) May enter only a limited number of Objective Displays (25th and 27th Divisions only, before Game-Turn 15).

(g) May enter after Italian Surrender (see 10.3).

(h) Limited to four Partisan and four Chetnik units (of any allegiance) between Game-Turns 1 and 13 (see 6.67).

[8.6] COMBAT RESULTS TABLE

DIE	COMBAT RATIOS (Attacker to Defender)											
	1-2	1-1	2-1	3-1	4-1	5-1	6-1	7-1	8-1	9-1	10-1	11-1
1	Ae	Ae	A4	A3	A2	A1	D1	D1	D1	D2	D3	D4
2	Ae	A4	A3	A2	A1	D1	D1	D1	D2	D3	D4	De
3	A4	A3	A2	A1	D1	D1	D1	D2	D3	D4	De	De
4	A3	A2	A1	D1	D1	D1	D2	D3	D4	De	De	De
5	A2	A1	D1	D1	D1	D2	D3	D4	De	De	De	De
6	A1	D1	D1	D1	D2	D3	D4	De	De	De	De	De

Key: Ae or De = Attacker or Defender eliminated. A or D followed by number = Attacker or Defender loses unit(s) equal in Strength Points to numerical result (see 8.22A), followed by a retreat (see 8.24). **Note:** Attacks at less than 1-2 are resolved on the 1-2 column; attacks at more than 12-1 are resolved on the 12-1 column.

TERRAIN EFFECTS

A. **Hide-away circle:** Units doubled in Strength when attacked.

SUMMARY OF SHIFTS TO

RATIO COLUMNS

A. **Mountain units:** Shift one column to *right* if German or Italian mountain unit is participating in attack against Mountain triangle, Hide-away circle or village box (maximum one shift per combat).

B. **Tito:** Shift one column to *right* if Tito participates in Partisan attack; shift one column to *left* if Tito participates in Partisan defense.

C. **Anti-Guerrilla Operations:** Shift two columns to *right* during Combat Segment of Axis Anti-Guerrilla Operations Phase.

D. **Tito's elimination:** Shift one column to *right* in all Axis attacks against any Partisan units, and one column to the *left* in all attacks made by Partisan units (see 9.23).

NUMERICAL LOSS RESULTS

A. **Tripled** if combat takes place within a city.
 B. **Doubled** if combat takes place in a town or market town, or during an Axis Anti-Guerrilla Operation.

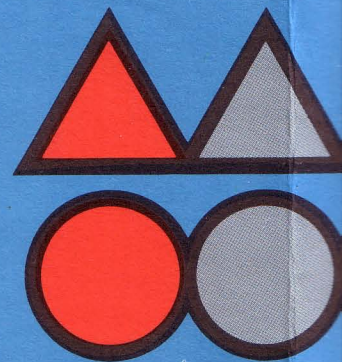
[14.13] VICTORY POINT TRACK

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

GAME-TURN RECORD TRACK

1	2	3	4	5	6	7	8	9	10
Spring 1941	Summer 1941	Fall 1941	Winter 1942	Spring 1942	Summer 1942	Fall 1942	Winter 1943	Spring 1943	Summer 1943
MR	MR, YR	AR	AR	AR	AR		AR	AR, ASW	AR, ASW

11	12	13	14	15	16	17
Fall 1943	Winter 1944	Spring 1944	Summer 1944	Fall 1944	Winter 1945	Spring 1945



11	Fall 1943	ASW
12	Winter 1944	AR, ASW
13	Spring 1944	AR, ASW
14	Summer 1944	AR
15	Fall 1944	AR, YR,MRL
16	Winter 1945	MRL
17	Spring 1945	MRL

Abbreviations: **MR** = Movement restrictions (see 6.63); **AR** = Axis reinforcements (or transfers or upgrading — see 13.91); **YR** = Yugoslav reinforcements; **ASW** = Allied Support Withdrawal calculation during Chetnik Collaboration Phase (see 7.2); **MRL** = Movement restrictions lifted (see 6.6).

[10.14] ALLIED PROGRESS TRACK

1	Battle of Alam Halfa	+1			
2	Axis Loses Egypt	+1			
3	Morocco Landings <i>Italian Pullback</i>	+1			
4	Battle For Tunisia	+1			
5	Axis Loses Africa	+1			
6	Sicily Landings <i>Italian Withdraw</i>	+1			
7	Italian Surrender (see 10.3)	+1			

TITO ABBREVIATED SEQUENCE OF PLAY

A. SPECIAL EVENTS STAGE

1. Allied Progress Phase (Game-Turn 6 and after)
2. Weather Phase (Game-Turns 2, 6, 10, and 14)
3. Tito Phase (? – Game-Turn 14)
4. Axis Reinforcement Phase
5. Chetnik Collaboration Phase (Game-Turns 2-17)
6. Italian Surrender Phase (Game-Turn of Italian Surrender only)
7. Axis Anti-Guerrilla Operations Phase (Game-Turns 3 – 14)

a. Planning Segment

- b.** Yugoslav Reaction Segment
- c.** Deployment Segment
- d.** Combat Segment

B. YUGOSLAV PLAYER-TURN

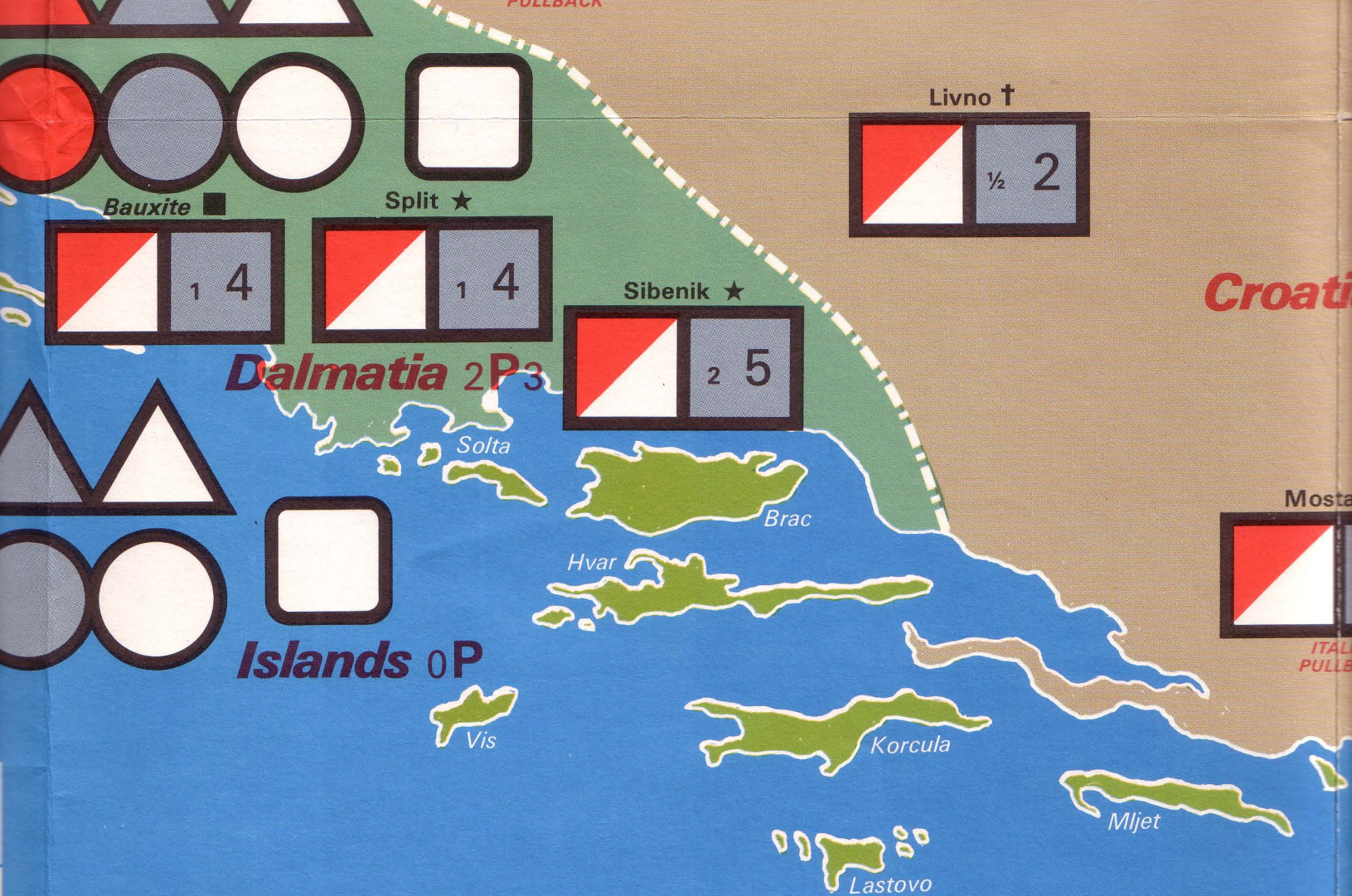
1. Movement Phase
2. Combat Phase

C. VICTORY POINT STAGE

- D. AXIS PLAYER-**
1. Movement Phase
2. Combat Phase

E. TERMINAL STAGE

- Guerrilla Reinforcement Phase



E. TERMINAL STAGE

1. Guerrilla Reinforcement Phase
 - a. Recruitment Segment
 - b. Tito Segment
 - c. Uprising Segment (Game-Turn 3 and after)
2. Guerrilla Status Phase
3. Axis Anti-Guerrilla Operations Redeployment Phase
4. Game-Turn Indication Phase

TITO

and his Partisan Army Yugoslavia, 1941-45

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Serbia 4C2

BULGARIAN
OCCUPATION

Leskovac †

Pirot †

Lead ■

Kosovska Mitrovica †

BULGARIAN
OCCUPATION

BULGARIAN
OCCUPATION

Vranje †

Pristina †

Coal ■

Chrome ■

Trunk Railway ■

Djakovica †

Skopje ★

Kumanovo ●

Macedonia 3N3

Antimony ■

ania 3N3

Stip †

Debar †

Prilep †

Strumica ●

Kicevo †

Monastir ★

Tirana ★

