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COME DOWN SHOOTIN'



Here, gathered behind German front lines by Collier's W. B. Courtney, is the first complete story of the paratroops—how and why they were created, their rigorous training, the organization and fighting methods which produce a cocky new aristocracy of killers

W. B. COURTNEY

LA**TE** one blustery, rain-smear'd afternoon you are approaching Stendal, 70 miles west of Berlin, in a car with a German staff officer. You hear a plane and look up to see a trimotor Junkers-52 brushing along under the low ceiling. Neither an unusual sight nor sound in Germany these days. But just before you look away in boredom, novelty explodes into the misty twilight.

So low, so close, you can see every detail—seven boys come tumbling out of the plane's door, each with a traveling kit of some description: one an old-fashioned portmanteau, another a family carpetbag of the Bismarck era, a third a snappy modernistic number.

Any group descent by parachute always seems to you like a sudden garden in the sky. You expect to see this one quickly scattered by the turbulent wind. On the contrary, although the soldiers oscillate severely, they steer, manipulate and time their chutes so deftly that when they reach the ground they are so close together it's like the collapse of a huge seven-petaled flower.

As you drive in upon the airfield the parachutists are walking toward their barracks. You might think they had just stepped from a bus.

The colonel says: "It's Tuesday. They're just back from Easter leave."

You learn it is a custom at all parashools every week end, or at least whenever enough men are going on leave to justify it, to disperse the soldiers all over the nation to their homes by parachutes. Planes—those customarily employed by the schools for training—fly regular schedules. Each plane-load is grouped for convenience according to his small brother on the ground,

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"Gussy, run tell Ma to put supper on!" as he floats down into the rhubarb patch.

For return journeys, groups assemble at their own expense at airports nearest to their homes. Inasmuch as Germany, for military purposes, has more than a thousand airfields, big and little (in an area smaller than Texas), this means a short walk for many soldiers; a bus, tram or bike ride for the others. If plane "collections" are to be made in sections where airports may be comparatively far apart, then designated places on the *Reichsautobahnen*, or national highways, are utilized. While at home the soldiers have repacked their chutes, because arrival back at the schools must be made by jump.

"This program," the colonel says, "is not a mere domestic propaganda stunt, although it serves that purpose too, by arousing local interest. The parasoldier is an object of curiosity to the elders, of envy to the youth. He is bound to be questioned, and bound to do a sales job in educating the public, as you would say.

"Most important, however, it is sheer indoctrination, very carefully planned. It is not mere generosity or thoughtfulness toward the soldiers: it is a reasoned part of their schooling. It quickly applies to their personal needs what has been hitherto for most of them an unfamiliar, or at the most a circus, measure. The men are not denied leave if they wish to go home by other means. There is no compulsion. Still we find them standing around begging for the rides. And this is what we aim at in the schools—make it the natural thing to do. Bring them to mental acceptance of their chutes as a routine, almost casual, useful and precise instrument.

"Chute leave not only gives the soldiers more time at home in any case; it also enables many to travel distances that would be impracticable by surface means for brief holidays. This makes paraservice attractive. It helps to relieve the strain imposed by soldiers on leave on railroads and other surface lines that are badly needed for food and equipment movement. I think you must already find this a considerable factor even in the United States. We are repaid in every way. There is no extra strain on our gas supply because the double purpose is served of training pilots to find objectives and drop chutists with reference to them, and it fulfills the practice-jump quotas to precision landings which the chutists would have to make anyway!"

You will hear a lot about "precision landings" today, much talk of the para-

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chute as a precise instrument. Listen, because it's an important part of the whole German theory of paratroops, and of profound interest to Americans who want to see their own defense preparations forwarded.

The colonel talks frankly of the German paratroop background:

"The lesson of 1914-18 was that defense by trenches and other positional measures backed by machine guns had immobilized the old-style warfare of mass movement and maneuver. Such war could only result in total waste of men, national resources and time without possibility of decision—in a military sense. Air warfare promised a loophole; but how to employ it?

"Traditionalists insisted that the plane was just a new addition to war's arms—that air force was merely auxiliary to either naval or land force. The enthusiasts, as always, made the mistake of claiming everything for air power. Imperialistic growth was predicated on sea power. And veteran seamen insisted that only sea power could control water lines of communication. While army men said that air power could never win wars alone, because you must actually occupy a country in order to conquer it.

"The Italians, misled by the sheer brilliance of General Douhet; the Russians, equally misled by the requirements of their geography and their lack of adequate or efficient surface transportation, foolishly put most of their military eggs in the aviation basket. Neither was fitted by industrial background, engineering or research personnel—Italy, moreover, lacked the natural resources and national wealth—to make this great experiment. Both came to disaster. Both made a too-belated swing to a more balanced concept.

"We remembered there is always truth in tradition. We looked for a middle way; listened more to your General Mitchell than to General Douhet. Mitchell was the first high officer to see that air power was more than a new auxiliary; that it was a genuinely new arm which, to blossom to tactical and strategical fullness, required independence of command and administration—



German paratroops during maneuvers have freed themselves from their chutes and rush to secure their rifles, which, fully loaded and enclosed in a metal container, have been dropped from the same plane that carried the chutists.

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a paratroop unit in Crete is greeted by what Germany calls "a representative of the populace"—probably a fifth columnist

while, of course, submitting to that co-ordination between arms, that unity of supreme command, which is fundamental for national success.

"At any rate, presently we believed we had worked out the answer to the two main contentions of the traditionalists: First, our medium-range bombers to co-operate with submarines in the harassment of enemy sea lanes. Our High Command statistics for this war show that one fourth of the total enemy tonnage sunk by us has fallen to the Luftwaffe; sixty per cent to the submarines; the rest to surface raiders. Second, air power through paratroops can occupy a country—thus conquer it. By complete independence of each command, yet perfect co-operation and timing by all concerned, we think we have co-ordinated into one arm a combination of the facilities and effectiveness of three arms—that is, land, sea and air!"

Germany Keeps Her Secret

Aside from her general strategical plans, the preparation and strength—not the existence, which couldn't be hidden—of Germany's paratroops has been one of her two greatest war secrets. The other is the size of her war reserves. Even the number of her planes and her capacity for producing them can be guessed with greater accuracy.

Perhaps the greatest mystery is how Germany concealed from the foreign attachés in Berlin—whose job it is to gather telltale statistics of this sort—her importation of enough silk for enormous numbers of parachutes, for pilots and air crews as well as for paratroops. Yet no one seemed to tumble to the fact that silk for any civil or household purpose was always a rare luxury in Germany, and that silk shirts were always the scarcest item of male attire there—what the well-dressed man couldn't afford to wear.

Since the war began, a humble worker in a factory at Hanover discovered a new material or processing of which the Luftwaffe people will give you no closer description than "It's a kind of silk blend!" At any rate, he was handsomely rewarded and is now operating director of a factory in mass production on parachutes. They are being made also out of flax, and from wool.

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Germany's World War ace, Ernst Udet, had a large share in the organization and development of the new "air infantry." Now a general in the Luftwaffe, he is shown here in his own sailplane

The origin of parachute usage in warfare is obscure. They were extensively employed in the Great War to land spies and saboteurs. It is also of record that in 1917 General Mitchell tried to persuade General Pershing to permit him to form an experimental troop of parachute fighters. Thus Mitchell was probably the first man professionally to express the notion of paratroops.

Grandstand quarterbacks of all staffs will tell you now that it was an inevitable idea. But the Soviet Union, stimulated by national youthfulness, was the first modern power to do something more than talk about it. During Russia's great surge of air-mindedness in the 'twenties dozens of captive jump towers were erected—the contraption at the New York World's Fair was an adaptation—and parachute battalions were formed, trained and demonstrated. The Soviet airmen nicknamed the parachutes "death roses." There is no evidence that Russia pressed her development very far. France considered paratroops next. However, the French conception early turned away from mass parachute attacks. Instead, they emphasized tactical plans for jumping single fighters, each capable of speaking several languages and thus of operating as secret agent as well as soldier. This was an unfortunate reversion toward Great War ideas. Major André Langeron, foremost French military scholar, wrote of the parachutists as "air legionnaires."

The Germans, studying their neighbors' trials, then harking back to General Mitchell, saw that paratroops must be self-contained fighting units and a major branch of war effort, not casual adventurers. Great War Ace Ernst Udet (you remember his stunt flying at Cleveland and other air races; also in the famous motion pictures *The White Hell of Pitz Palu*, and *S.O.S. Iceberg*) probably did most to midwife paratroops in Germany. Udet—short, pudgy,

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a bachelor who trains parakeets and holds target practice in his apartment, good-natured and full of beano—is known and liked by most American flying old-timers. He sent a sympathetic telegram to Eddie Rickenbacker when the latter was hurt in an accident last winter. He is now a colonel general, in charge of technical procurement and production—next only to Goering in Luftwaffe importance and influence.

It was in 1935 that Hitler ordered Goering to organize paratroops. Goering had his own "house regiment," a sort of glamorous parade troop which he had developed from the police force. With an eeny-meeny miney-mo finger he selected the third battalion of this regiment to be the first paratroop unit.

The officers were startled, of course, but willing. The noncoms and privates, most of them sedate married fellows, needed persuasion. So Propaganda Minister Goebbels was summoned to weave his arts upon the third battalion. He delivered to them an inveigling description, plus alluring movies, of Soviet parachute antics. A professional stunt jumper came along to demonstrate the ease and delights of parachuting. Unfortunately, he broke his collarbone and his thigh, and was carried from the premises of the reluctant third battalion on a stretcher. Nothing more was said about the subject that day.

Next day, however, the third battalion was paraded. Its commander said: "Who wants to volunteer?" Twelve men stepped out. The sergeant major then asked permission to say a few words to the men. It was granted. The sergeant major was a throwback to imperial army days; his brief speech not only came from memorable wells of authority but showed appreciation of history in the making. "The captain and the lieutenants have volunteered," he said. Then, after a dramatic pause, "Parachutists, to the right, march!" he cried.

One hundred and eight stepped out to join the original twelve, leaving only twenty unimaginative souls behind of the third battalion's peacetime strength of 140. Rotterdam, Corinth, Eben Emael, Crete—all were linked by destiny with that morning in 1935.

Stendal, primarily because of favorable climate and terrain, was selected to garrison Germany's first parachute troops. It had a secondary value in being not too far from Berlin's air ministry, yet far enough so that its work would not be under the eyes of the foreign military attachés, the correspondents, the tipsters.

A Jolt for the Attachés

Exactly *eight days later* the initial maneuver was held, with Goering, Udet and other aviation leaders on hand to watch the intrepid third battalion blossom whitely in the sky. Transfer, housing, organization, equipment, training, preliminary tactics—all these things had been accomplished meanwhile. That, your military friends will tell you, was a chore. Progress and numbers of the paratroops was kept more or less confidential for three years. Not until Chancellor Hitler's fiftieth birthday, in the

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spring of 1939, was there a public demonstration. Then, during a huge military review, to which all the foreign attachés, diplomats and unattached experts were invited, hundreds of specially uniformed soldiers dropped from an armada of planes, shooting with pistols and yelling like Indians as they came down, forming swiftly into bewildering patterns of machine-gun "islands" as soon as they had reached the ground.

The German civil population was taken entirely by surprise. The great throng of unofficial witnesses, once the impact had sunk in, broke into frenzied applause. The effect upon the foreign attachés was quite different. This was no haphazard show, like the famous "jump of the five thousand" at the Russian maneuvers of 1932. Here was a sobering insight into a new and terrible war potentiality. It was said that one ambassador expressed fear that if he forwarded his attaché's report on the matter he would be laughed at.

While General Udet and his aides labored on the purely technical aspects of paratroop development, the general staff worked on the larger problem of fitting the new arm into their plans. The result is what German officers refer to as "plane-panzer" offensive and what the world calls "blitzkrieg." Roughly, this concept divides the major traditional arms as follows: Artillery has been put into planes and on wheels, cavalry into motorcycles, infantry partly into the air but largely into trucks for a follow-up role of mopping and policing. Watch the communiqués from Russia and you will see this clearly expressed.

In descriptions of our United States Army paraschool at Fort Benning, Georgia, certain references to the corresponding German paratroops have been widely published in America. One is that all our men are volunteers whereas Germans are "forced" into parachute service. A second is that the United States has not followed German practice. A third is that German planes have a so-called "jump master," who kicks out any who hesitate, where American paratroops "will be so highly trained they will not have to be urged to jump." German officers smile when they read such misconceptions. You know why. It's the sort of foreign thinking that has played into their hands since this war began.

As a matter of fact, there was no other *military* precedent for the Americans—organized six months after paratroops at Rotterdam convinced army men they were "here to stay." Some practical hints were obtained from the two-year-old parachute fire-fighting of our Forest Service. But of military experience not enough has been reported by our attachés in Russia, France or Germany. Once actual combat usage of any new weapon occurs, fundamental data is quickly collectible. Thus, after the West, we had a "chart." Our paraplanes carry twelve paratroops, as the Germans do, knit into a self-contained squad equipped to wage a miniature war all by itself. We have a chute-tripping device similar to theirs. Our altitude practices and timing follow suit. It is in details of technique that varia-

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Lt. Max Schmeling

tions in the development of any weapon take place, due to differences in national psychology, temperaments, problems and resources.

After Stendal, other schools were established, chiefly in the bombing-free country east of Berlin, latterly in former Polish territory. Stendal has remained Udet's favorite. Its cautious, yet intense, routine is of his devising, and has become standard paraschool curriculum. Scores of thousands have been trained in Stendal's five years. Only Stendal among the dozen schools has this perfect record: injuries have occurred there, but *not a single fatality*. All the other schools have had fatalities. At one public demonstration I know of, one chute failed and killed its soldier. In Crete twenty-five men were killed through chute failure.

Nothing But the Best

German paratroops must come from some other branch: this is the first requirement — a thorough elementary military training.

All paratroops are strictly volunteers. It is obvious that for psychological and morale reasons they must be. In no other way could be obtained the audacity, freshness, mental and physical initiative required for the split-second time-tabling of chute offense. The safety of every man, the success of every battle, requires the lack of hesitation which can only be expected in very carefully hand-picked volunteers, whether in the German army or any other army. So great has become the prestige of the corps that it has a waiting list wholly in excess of its apparent requirements. The somewhat dubious nature of the volunteering of Goering's third battalion is laughingly admitted by German officers, who point out that

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parasoldiering was then an unknown and untried mystery; besides, these were veterans of the line, not likely to be enthusiastic for new tricks.

Propaganda effort to attract volunteers was concentrated, upon making it the more elite and cocky branch of the service. Distinction was granted in special privileges, in diet, in extra pay, in all the little ways of army pampering.

Paratroops must pass psychological, educational and physical tests which in principle and severity are the same as for pilots. Tests to detect inclination to giddiness are especially stern. It was found that men who excel in active sports were most suitable. The paratroops include virtually the whole roster of Germany's 1932 and 1936 Olympic teams. All prize fighters who can qualify mentally are in the paratroops, likewise bright, middle and dim lights of basketball, fencing, hockey, swimming, diving and track. Practically, without exception, professional and amateur jockeys are paratroops. The boys who mount the ponies at Ruhleben, Berlin's famous race track, each Sunday morning are nearly all on week-end leave from a paraschool.

They Ride Through the Air—

Horsemanship seems to give special aptitude. Famous gentlemen jockeys and steeplechase winners and international poloists are among the officers. Willi Klucke, renowned soccer goalie of Leipzig's champion team; Werner Paresemann of Erfurt, who scored 43 goals in the last prewar football season; Olympic winner Alfred Schwartzmann; Count Wonder Schulenberg, international pistol star; Assistant Reich Sports Chief Tschammer Osten; men you have watched in Forest Hills and Los Angeles—are now dropping out of the skies over Russia. And, of course, there is Max Schmeling, who fought bravely in Crete until he was knocked out by tropical fever.

A soldier, then, to begin with, the paratrooper gets a special training course of eight weeks at Stendal or one of the other schools before going into a division.

First, he is taught to pack, unpack, pack, unpack his chute until he can do it in his sleep.

Second, he receives indoctrination in soldierly initiative; in the qualities of "rugged individualism" which might be required of a man on an important mission who might conceivably find himself suddenly alone. We'd call this "scout training."

Third, expert and thorough instruction in automatic-pistol marksmanship at moving targets, to simulate firing in a drop. He practices from the ground, while suspended in harness, from the top of a speeding automobile and lastly while making actual descents.

Fourth, body-building exercises—gymnastics, contortions, tumbling, acrobatics, somersaults, rolling, ground-obstacle hurdling and sprinting with heavy packs, falling backward and forward from a standing position, first on a mattress then on bare ground. This latter seems the hardest thing for the men to "let themselves go" at. It is the medical

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experience at paraschools that trainees—even professional athletes already in tiptop condition—lose weight. But they develop an extraordinary catlike quickness.

Fifth—most of these stages, of course, are simultaneous or overlapping—is suspension above the ground or floor in parachutelike harness of especially designed machines, in front of great blower fans. The recruit learns how to get in the direction of the wind by movements of his legs and oscillations of his body.

Sixth, he makes practice jumps, without a chute, of course, from roofs of automobiles moving at moderate speed. The theory of the parachute is to arrest the law of falling bodies. In physics we learn that a falling body falls 16 feet in the first second, 32 in the second and thus keeps increasing its speed to so-called terminal velocity—the highest speed at which it will fall. Terminal velocity differs with objects of different masses and weights. The average human body falling unimpeded will build up a speed of 257 miles per hour. The parachute, simply, holds the speed at the initial mark—16 feet per second. That is equivalent to a jump from the roof of a freight boxcar; but automobiles are easier to practice with! In either case it's quite a jolt and you can get nastily banged up—commonly with broken ankles—if you aren't trained. This is one of the many reasons why commercial transports in their earlier days of unreliability were never equipped with parachutes: It was a choice between killed passengers and badly crippled ones.

Moreover, even safe landings might become disastrous in high winds, because chutes will not collapse but will drag their victims. Thus part of the training is wrestling with billowing chutes in front of the blowers.

No Room for the Inept

Those are the six phases of preliminary training. At the beginning, only a small percentage of volunteers were accepted. Now even from those, the inept, the slow, the timid have been weeded out and returned to line outfits. No more disgrace attaches to this failure than to the washing out of student pilots, who, in our practice, customarily are sent back in droves from Randolph Field and Pensacola to the Army or Navy. It's entirely a matter in which the safe-being and usefulness of the man is governed by his aptitude, not alone his courage or intelligence.

The remaining candidates now begin real practice jumps with captive chutes from high towers, in which diving from plane cabins is fully simulated. His technique is zealously coached. Then he is ready for actual free jumps. Now comes his *Fallschirmschützenprüfung*, or professional examination. To pass he must do a series of six jumps from altitudes beginning at 50 meters and going up by fifties to 300 meters. One jump must be on a pitch-dark night. One must be under sham-battle conditions.

Lastly comes unbelievably intensive drilling on the ground and aloft in the two fundamental principles of paratroop fighting. General Udet himself

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worked these out, and he insists upon 100 per cent perfection. These are basic:

1. The entire squad of twelve must be out of the plane within eight seconds after the buzzer horn sounds. Work that out with a pencil if you want to appreciate how really fast it is, or get twelve of your friends or relatives to pass through any door in eight seconds—two thirds of a second each. It means the man farthest from the plane door must exit at high running speed! There is a squad leader, of course—usually several noncoms to each squad, and perhaps a commissioned officer; but no “jump master!” If one were needed at this last critical moment before actual combat, the squad might as well have stayed home.

2. Landing must be made, the men disengaged from their chutes (which are abandoned for later salvage, if possible) and the entire squad must be gathered into battle formation and be ready to fight *within two minutes after the buzzer went off*. The position each squad assumes is called the “porcupine formation,” because it forms back to back, facing outward in a small circle, like twelve quills.

The paratroops—and this is a fact not generally known abroad—are not part of the German army. They are officially known as “air infantry,” and they are an integral part of the independent Luftwaffe or “air arm.” The chief of air infantry is General Students, who leaped with his men at Rotterdam, broke both legs, recovered and is now back in active combat service.

There are approximately 12,000 men to each air-infantry division, including supply, medical and other service units. This requires for each division a basic plane force of 1,000 trimotor Junkers-52 transports, from which all seats and other normal fittings have been cleared and one bench installed, parallel to each cabin wall, together with the large spring hook near the door—the paratroops call it a “carbine bucket”—to which their parachute ropes must be snapped before jumping.

Germany has at least ten divisions of paratroops with full replacement depot facilities. It is significant that the Ju-2, slow and old-fashioned by American commercial airline standards, is one of three plane types in mass production in Germany today, the others being a Stuka and a fighter.

Paratroops get double the regular army pay; and in combat service, double again. They also get extra cigarettes and cigars, which to all German army, navy and air personnel are a free daily ration. The paratroops noncoms and officers are proportionately higher paid than other branches.

German paratroops wear a uniform that, in the green-gray skiing trousers and blue-gray blouse, combines the colors of land infantry and Luftwaffe. They wear thick, high-laced leather boots to give ankle protection, and a special flat-round steel “dive” or crash helmet. For combat jumps each paratrooper wears a green linen zipper combination smock and shorts over his regular uniform. This is snagproof and

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protects his uniform and personal equipment. It is discarded the first moment he finds time to zip it off. This smock, unsightly and shapeless, might have caused the misapprehension that paratroops wore enemy uniforms—a ruse that would be two-edged, for many reasons.

Paratroops Aren't Good Targets

The German chutes seem to be smaller in diameter than American types, and somewhat deeper. They have a secret type of "air rudder" by which they can be steered or delayed or accelerated. Each squad, during its descent, endeavors to bunch together—not close enough for the convenience of enemy gunners, but so that landing may be effected in a group and maneuvers swiftly undertaken. The paratrooper is not the target he would seem while hanging in the sky. He is oscillating, falling rapidly, shooting defensively, and is only in sight for an average of 15 seconds. Combat jumps are made as low as possible—from altitudes of 150 feet to a maximum of 1,000 feet. Conditions requiring jumps from above 1,000 feet would not be considered favorable to attack.

Each parasoldier is additionally equipped with a gas mask, automatic pistol, a supply of hand grenades in a rubber sack, emergency rations, which include unspoilable bread and vitamin-energy pills called "Pervitin," which keep him wakeful by increasing blood pressure.

Each air-infantry division has a complete sanitary or medical unit similar to that standard for ground divisions. This includes a full complement of doctors, Red Cross men and stretcher bearers—who jump along with the rest of the division. Instead of weapons the doctors carry specially designed emergency medical and operating kits, including scalpels, morphine, artery clamps and stimulants. The Red Cross men carry stretchers and first-aid packs. Further medical equipment is thrown down in padded containers, marked with red crosses. Still more is brought by later transports, including those sanitary conveniences which are normally provided for soldiers of all armies.

Such thorough provisioning for their care naturally has a great morale-strengthening effect upon the paratroops.

It exemplifies, moreover, the persistent German contention with regard to air infantry—that it comprises an exact arm, and is not a desperate "lost battalion" sort of military undertaking. Further, that the parachute is a "precision" instrument, every bit as much so as a machine gun, a fieldpiece, a sapper's mine; and that parachute attack is a precise maneuver with reference to a precise objective, quite as much as a grenade rush upon a pillbox.

With this German theory in mind, and considering the lessons it may bear for us, it is now interesting to examine the method of a parachute offensive. The whole of this technique is not necessary in the Russian campaign, where there is no sea below to modify Panzer

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co-ordination. It is, however, with two important qualifications, the model that will be used against England if an invasion should be attempted. The exceptions are (1) extra help expected from a barrage by long-range cannons on the Channel shore, and (2) naval-army surface co-operation.

The Twelve Steps of Conquest

Here, then, revealed for the first time, is the complete standardized manner in which a paratroop attack is made. It was used full-scale in Crete: it comprises twelve separate and distinct steps, and usually sets as its primary objective the occupation of at least one essential airport *within one hour*—unless the whole affair is to fall behind schedule.

1. Selection by the High Command of the objective, and intensive study and plotting of the campaign against it by the general staff of the Luftwaffe.

2. Prolonged and careful reconnaissance *by air*, leading to a selection of the specific primary objective and the most favorable and useful landing places with reference to it.

3. High-altitude bombing of defensive areas and field positions, such as harbors and airfields.

4. Stuka attack.

5. Destroyer plane sweep to clear off enemy aviation: the destroyer plane is a sort of long-range fighter or pursuit.

6. The actual invasion from the air, by the *Fallschirmjaeger*, or parachute troops. At first they have only pistols and grenades. In Crete each man had a second or emergency, parachute—in the breast position.

7. The planes from which the paratroops jumped now come over the combat zone again—as quickly, in fact, as they can circle in orderly traffic; meanwhile, of course, exposed to and dodging as best they can enemy flak, or anti-aircraft. On this second trip over the area the crews of the planes drop the additional equipment of the paratroops. This includes, chiefly, a rifle for each man, also one or more machine guns. The machine guns are a special type, built of lightweight manganese alloys, dropped in three sections, which can be quickly bolted together. The rifles are packed, fully loaded, in a long metal, cushioned case which has an attached rubber-wheeled "dolly" so that it can be rolled on the ground to the position where it is required. Some of the equipment cases are let down by a triple parachute, each component, of course, being much smaller than the single chute used by the men. Different-color parachutes denote different equipment; to a small experimental degree only, camouflage coloration has been used in the chutes of the troopers.

No gliders, by the way, are used for the transportation of paratroops, although this is a fallacy which seems to die hard abroad. For obvious technical reasons which every airman knows, gliders for this purpose would be impracticable. They cut the speed of the planes dangerously, making the whole expedition a setup for enemy anti-aircraft. In the event of a long overwater

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hop, such as Crete, they would lessen the paraplans' range beyond safety.

Scout Car, with Wings

The Germans, however, have a novel and completely unpublicized use for the glider principle. It comes, when used, in the next, or eighth, stage. It is a small scout car, much in appearance like the one Ford is building for us, but made almost entirely of manganese alloy. A man can heft one by the end easily. It carries two men and an antitank gun as well as a machine gun, both of lightweight alloys. The glider wings are affixed to it and it is towed by transports. The scout car is thus really the fuselage of the glider. Upon landing, the glider wings are detached in a jiffy, and the scout car rolls into action as a land instrument.

8. Landing of the first Junkers-90 transports upon the airfield objective. This transport carries the following list of equipment: Portable field radio, extra munitions, food, bandages, mine throwers, a folding gun carriage with a rapid-fire manganese alloy 75 mm. cannon—and, to allay the fierce thirst expected in the men under the conditions of battle yet not take up as much weight and room as liquid, a box of lemons.

9. Arrival of the second transport, carrying a bicycle detachment—twelve men with rifles, grenades, a flame thrower, bicycles complete. The third and succeeding transports are nonparatroops; in the attack on Crete these were *Gebirgsjaeger*, or mountain soldiers.

10. Union of the paratroops and the nonparatroops. Here is the point where usage of enemy uniforms might cause fatal mix-ups.

11. Landing of further supplies of all nature by waves of transports. This includes gasoline drums and lightweight tanks and motorcycles.

12. Landing of heavier equipment and supplies by surface vessels. In Crete this was effected by two ships seized from the Greeks and quickly cleaned out inside. The ships were beached under full steam. Their bows were blown off by an especially skillful detachment of engineer troops; the lumber for ramps, carried inside, was quickly nailed into place and the heaviest tanks, waiting inside, motors going, simply stepped on the gas and ran ashore and into action.

That's all—except for what a German paracommander said to me: "Military effort has always been to 'lengthen muzzles.' Basically, the battleship is a lengthening of the range of coastal batteries; the tank a lengthening of army artillery; the pursuit plane a lengthening of machine gun, and the bomber of cannon muzzles. Thus the paratrooper is a lengthening of the striking power of infantry. And whatever the outcome of this experiment, whether the plane-panzer design is successful or not—bear in mind that the military science is a highly experimental one—this much is certain:

"We have just come to the threshold of air power's use in the art of warfare!"