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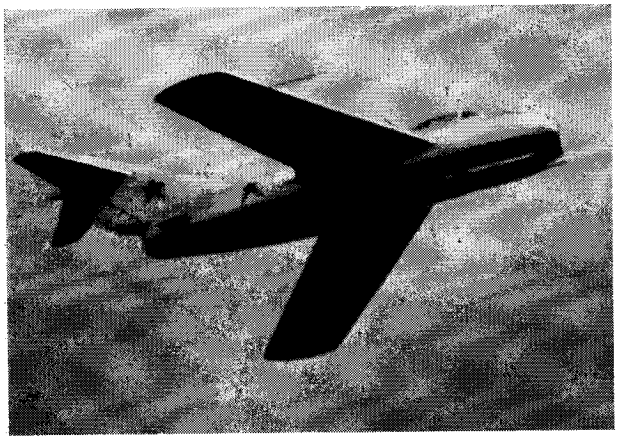
Rise of the Chinese Air Force

The Chinese Communist Air Force, only a skeleton organization in 1950, has been bolstered by Soviet guidance and equipment into strong new enemy weapon. This is the story of its birth and recent growth.

THE CHINESE Communist Air Force possesses one of the largest jet fighter forces in the world. In attaining this position of strength, the CCAF has become almost entirely a creature of the Soviet Air Force. While the initial development of the CCAF is obscure, an embryonic force was formed some time before 1937 when a small number of reliable Communist youths were selected to receive pilot training under Soviet tutelage. Their training was discontinued when the political leaders of Sinkiang chose to renew their allegiance to the Chinese Nationalist Government (*Kuomintang*). In the following decade, no known attempt was made to establish an air unit.

The second phase came in 1946 when the Chinese Communists again attempted to establish an air force. As a result of this attempt, at least one training unit was established in eastern Manchuria. Because equipment was inadequate and in poor condition, the rate of progress was very slow and little training was actually accomplished. During 1947–48 training virtually came to a standstill; however, a change was apparent when a number of trained Chinese Nationalist air personnel and aircraft either defected or were captured. During the latter part of the phase, the air force began to take form; and soon after the establishment of the so-called People's Government on 1 October 1949, in Peiping, the General Headquarters of the CCAF was established.



COMMUNIST'S *best fighter is Russian-built Mig–15.*

Prior to 1950 the CCAF existed only as an embryonic force. It was equipped with a varied collection of discarded American, British, and Japanese World War II aircraft. The third phase was marked by the true development of this nucleus into the force as it is today. This change did not begin until immediately after the signing of the Sino-Soviet treaty of 1950, which provided a force of Soviet officers and technicians for command and tutelage of the proposed indigenous force. With the treaty, the Chinese received both World War II piston planes and modern jets.

THE ACTUAL agreement as to the extent of Soviet support and the resultant strength of the Chinese Communist Air Force has never been known. It was presumed, during the early period of development, that the goal of the CCAF was to establish an air arm of sufficient strength to neutralize effectively the offensive and defensive capability of the Chinese Nationalist Air Force. Thus, its mission was to activate tactical units, conduct operational training and continue to train additional aircrew and ground personnel. Because of its Soviet origin and training, and the present type of aircraft equipment, it is probable that the CCAF is being developed as a tactical force in support of the People's Liberation Army.

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Organization.—Control and guidance of the Chinese Communist armed forces are vested in the People's Revolutionary Military Committee under the chairmanship of Mao Tse-tung. Subordinate to the Committee, and at the top of the military hierarchy, is the People's Revolutionary Army Headquarters headed by Chu Teh. Immediately subordinate to this military high command is the headquarters of the Air Force. While the organization of the CCAF is assumed to resemble closely that of the Soviet Air Force, some changes in the present organization may occur as the CCAF attains greater maturity. The Commanding General of the CCAF is Liu Ya-lou.

Air divisions are the main tactical organization in the CCAF. At the present time, divisions are designed to include three regiments; however, only two regiments have been activated. The air regiments of the CCAF correspond roughly to the wartime groups of the USAF. They are of homogenous aircraft composition, with aircraft strengths varying with the roles of the regiments. Jet fighter regiments are believed at this time to be equipped with 37 aircraft.

Each regiment in turn appears to be composed of three or four squadrons, at least from the standpoint of flight operations. While the function of the air squadron is obscure, it appears to be primarily tactical.

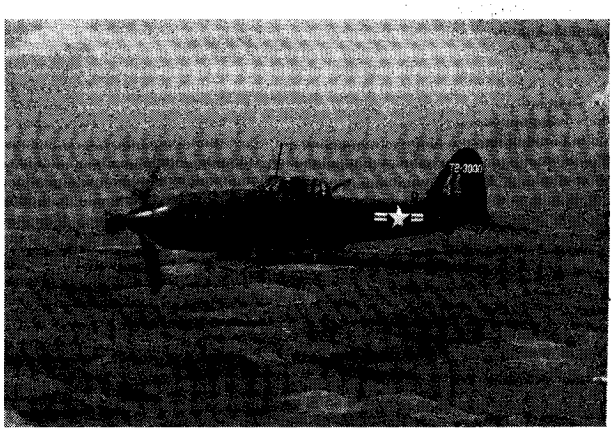
The mission of each CCAF tactical unit is determined by its type. Fighter units are primarily charged with the mission of providing air defense for China, including Manchuria and Communist-held North Korea. The Korean War has provided secondary missions for jet-fighter units which include combat training and the development of jet air-to-air tactics.

The missions of the other types of tactical units are less apparent than those of fighter units. It is probable, however, that light-bomber units are primarily responsible for conducting offensive air operations against hostile land and sea forces and installations adjacent to China and Manchuria.

Ground-attack units probably are charged with providing the close support for the Chinese Communist ground units in front-line areas. Transport units have the mission of flying air lifts of critical materials and air personnel throughout China and Manchuria in support of routine and specific operations.

Strength.—Because of the demands of the Korean War, a large part of the CCAF's tactical strength, particularly jet-fighter strength, has been allocated to the southern-Manchuria area. Probably some pattern of combat rotation among CCAF jet-fighter units in this area has been established during the past year. Using the boundary of the Yalu as a sanctuary line, fighter units based in the Antung-Tatungkou-Takushan complex, supported by additional aircraft staged through these fields from the Mukden complex, are able to mount regular and heavy flights of MIG–15's in the North Korean area to engage UN fighters and fighter-bombers. It has been estimated that some 500 MIG–15's are in the Mukden-Antung area.

The remainder of the CCAF until very recently has been disposed primarily near Shanghai, with tertiary strength in the Peiping-Canton areas. In the meanwhile, bases are being developed along the northwestern shores of the Yellow Sea near Tsingtao, and the Bay of Chihli near Tientsin and Yangtsun, screening Peiping; and in the interior of central China near Hankow.



SOME *150 IL–10 Stormovik ground-support airplanes are in operation with the CCAF. Vulnerable when opposed by modern fighters, IL–10, with a two-man crew, is still effective against ground positions.*

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In addition to the air units which have been established as indigenous CCAF units, there are certain units belonging to the North Korean Air Force *and still other units which cannot be definitely associated with either the CCAF or the NKAF.* All of these units, in combination with the indigenous CCAF, as far as the Communist Korean air operations are concerned, probably operate under a combined operational headquarters located in the Mukden-Antung complex.

It is estimated that the indigenous Chinese Communist Air Force (exclusive of other Communist air units involved in Korean operations—such as the North Korean Air Force) has a strength of approximately 1,500 combat aircraft of all types. This total includes approximately 900 jet fighters, predominantly first-line Soviet-built MIG–15 and some IL–28 twin jet light bombers.

Close-Support Planes.—Included in tactical units of the CCAF are some 150 IL–10 *Stormovik* attack bombers for support of ground troops. This plane is well-armored to protect its vital parts and its two-man crew from ground fire at low levels. The IL–10 propeller-driven airplane is relatively slow and would be unable to defend itself against modern jet fighters. With air protection, it would be effective against ground troops.

The IL–10 carries two 23-mm. cannon and two 7.62-mm. machine guns in the leading edges of its wings, and a 12.7-mm. machine gun in the rear end of the cockpit. Beneath the wings and fuselage, it can carry several 132-mm. rockets and about 900 pounds of bombs. For short-range missions, ground-attack aircraft could increase their bomb load by reducing their fuel load. The IL–10 ground-attack plane, however, is now obsolescent and may be replaced eventually. Jet aircraft such as the MIG–15 or the IL–28, twin-jet light bomber, might be accepted for ground-attack missions as interim weapons pending the development and delivery of a new ground-attack aircraft from the USSR.

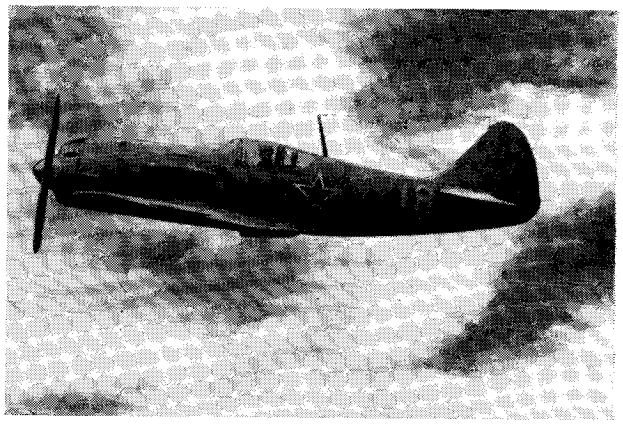
In contrast to the rapid and consistent buildup of jet-fighter strength for defensive purposes, the buildup of light bombers and ground-attack strength has proceeded at a much slower pace. In fact, the strength of the ground-attack (IL–10) forces, backbone of the Communist ground-support weapon, has remained relatively static since 1951.

Augmenting the IL–10's in the ground-attack role are TU–2 light bombers. The TU–2 is a twin-engine, conventional, all-metal, shoulder-wing monoplane of World War II vintage. It proved itself time and again in the light-bomber rôle during the last war, and was perhaps one of the Soviet's best bombers. These light bombers are available for operations in the Korean theater. Flying from bases in the Antung area, TU–2's are capable, within their maximum combat radius of 500 nautical miles, of reaching all of Korea. TU–2 armament consists of two 20-mm. guns in the wing roots and three 12.7-mm. guns arranged in turrets. The TU–2 can carry 2,200 pounds of bombs.

Because of the difficulties involved in providing this obsolescent aircraft with effective jet-fighter protection, TU–2 strikes into areas protected by jet fighters probably would not be very successful. For example, in the sole encounter with TU–2's over Korea, close cover was provided by LA–11 prop fighters, while high cover was provided by MIG–15's. The subsequent interception by USAF F–86's resulted in heavy losses to the TU–2 force.

The CCAF also acquired by defection or capture from the Chinese Nationalists, a few United States B–24's and B–25's as well as a few Canadian *Mosquitoes.* But except for some training use, these planes are no longer operational.

As already pointed out, the Soviets have supplied the CCAF with MIG–15's as well as some older MIG–9 jet fighters. In addition to jets, the CCAF has many piston types. These are believed to be LA–9's and LA–11's. They are post-war vari-



LA–9, believed inferior to our piston fighters in performance, is ground-support fighter-bomber craft.

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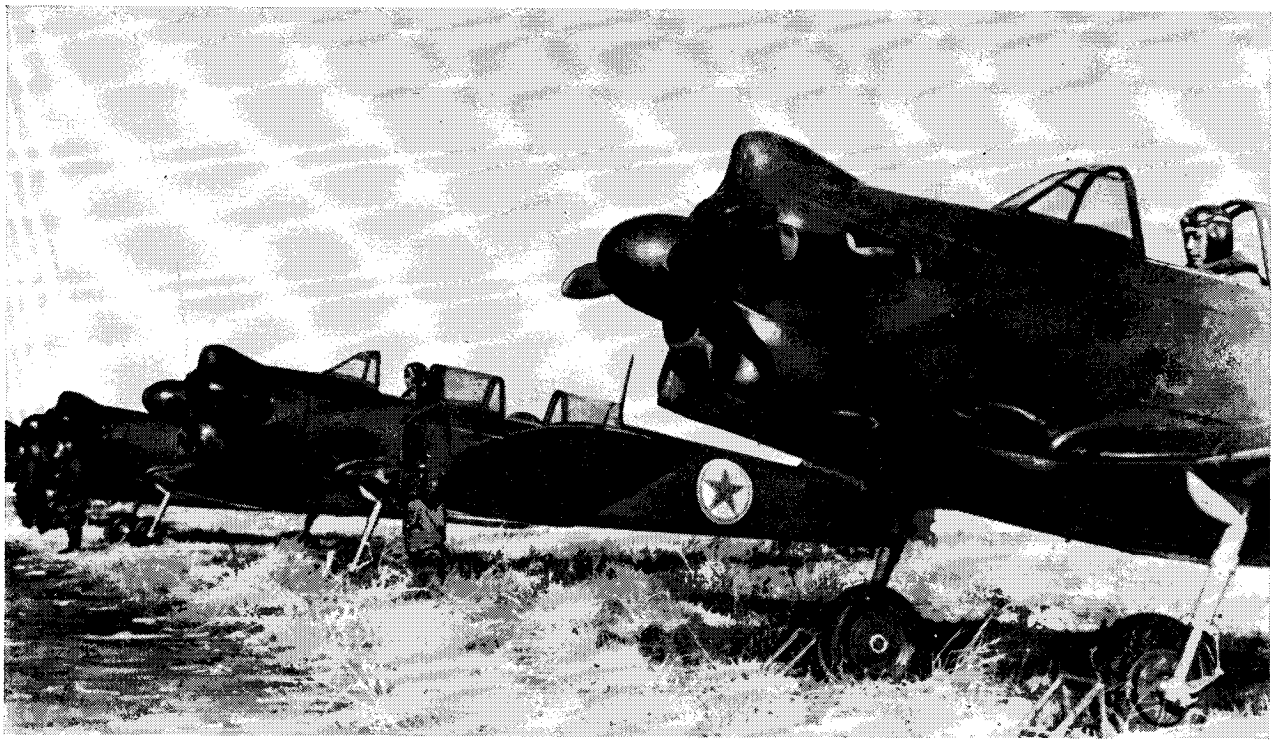

CHINESE *aviation cadets seem squared away for some sort of inspection. The planes are Yak–11's. Training, believed to follow Soviet practice, emphasizes producing units ready for combat in minimum time.*

ants of a line of Lavochkin fighters, which are believed to be slightly inferior in performance to the F–51 *Mustang* and British Hawker *Fury*. Although these propeller-type fighters are not considered first-line combat planes, they are capable of effective operations in conjunction with ground troops, provided they are unopposed by aircraft such as jet fighters of greatly superior performance. In addition to the Lavochkin fighters, the CCAF reportedly acquired by defection or capture, a number of F–51 *Mustangs*.

Some transport types were acquired through defection from the Chinese Nationalists. These include twin-engine, US-built C–46's and C–47's. In addition, a number of twin-engine Soviet-built IL–12's and LI–2's (C–47) have been supplied by the USSR. These transports are used by the CCAF and also for civil air transport.

Training.—Under the impetus of the Sino-Soviet Pact of February 1950, a training system was created which was capable of converting politically reliable manpower into air crews and supporting elements for an operational air force in Communist China. Still further impetus to this training followed in the wake of the outbreak of hostilities in Korea, particularly after the commitment of Chinese Communist ground-force "volunteers" late in 1950.

It is not definitely known, but intelligence indicates that the training program laid out for the Chinese closely follows that of the Soviet Air Force. Training emphasis is on producing combat units in the shortest possible time by stress on the flying and technical schools and on operational training within the tactical air divisions. Cadets for the Chinese Communist pilot schools in general are required to have at least a senior-middle-school education (comparable to a US high-school education), or pass an equivalent examination. Applicants are accepted from all strata of society, but they must either be Communist Party members or vouched for by a party member. Age requirements are from 17 to 27. After these requirements have been satisfied, the candidates are then subjected to mental and physical examinations. Physical requirements are similar to those demanded of U. S. air cadets.

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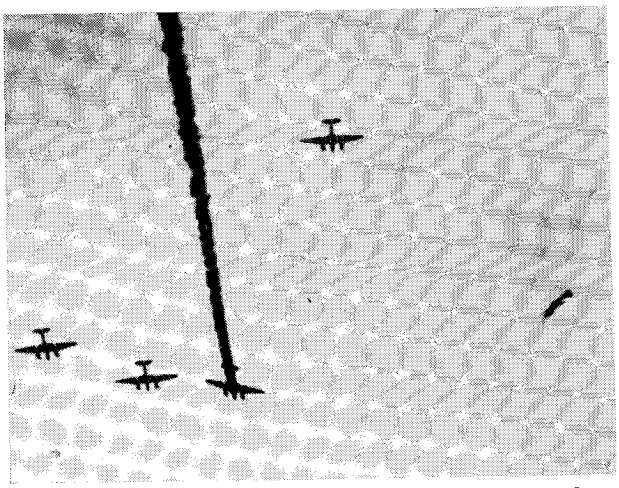


MIG–9 *making mock run on its back against bombers in Soviet air show over Moscow is used by Chinese as transitional trainer in operational squadrons.*

AFTER the recruit has been accepted as a cadet, a period of pre-flight training begins. This includes political indoctrination and orthodox ground-school training. This phase lasts from nine months to a year. After the completion of preflight, the cadet is given primary flying training for a period of approximately four months. During this phase, he solos and attains an average of from 40 to 50 hours of flying time, normally in a Soviet YAK–18 primary trainer. Basic training normally requires a period of about four months, a time during which some 30 to 50 hours of flying time in Soviet YAK–11 aircraft are acquired.

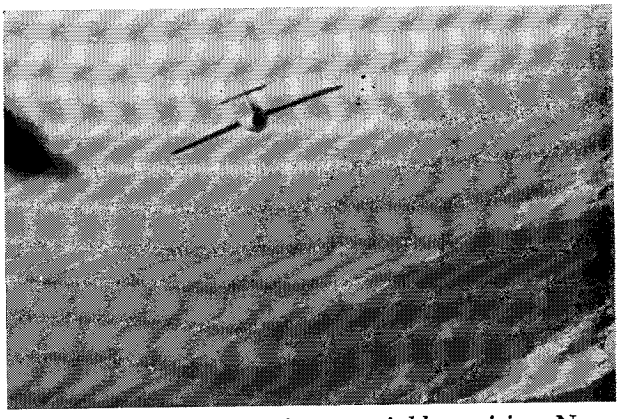
In advanced training, the Chinese Communist cadets specialize in ground-attack, fighter, or bomber aircraft. Approximately 40 hours of flying time are acquired during advanced training. Thus a graduate pilot will have received during his cadet training a total of from 110 to 140 hours of flying time, of which from 70 to 100 will have been solo time. Fighter trainees receive more training in acrobatics and air-to-air gunnery. Approximately 30 hours of flying time is acquired, for a total of about 100 hours upon graduation. The aircraft utilized for this training are the LA–9 and LA–11 types.

Future bomber pilots are trained along the same general lines as those employed at the fighter and ground-attack schools, with emphasis on bombing and navigation. Bomber cadets graduate with an estimated 150 hours of flying time, including from 50 to 80 hours in UTU–2 trainer-bombers and TU–2 bombers.

Transitional Training.—Chinese Communist pilots apparently undergo jet training after they have completed training in conventional fighters and have received their wings. Transition to jets appears to be accomplished primarily in operational jet-fighter units with MIG–9 jet fighters. Some UMIG–15 jet-fighter trainers are also employed. The Chinese Communists have depended heavily on the training offered within the USSR. During the early stages of development in 1949 and 1950, several hundred pilot and technical trainees were sent to the USSR and apparently achieved varying degrees of proficiency before being recalled to China.

Since in no instance has it been possible to identify definitely the enemy engaged by UN pilots as Chinese Communist, North Korean, Soviet, or other, it has not been possible to evaluate their combat efficiency by nationality. The Korean air war has undoubtedly presented the enemy with an invaluable opportunity to gain actual combat experience.

In general, the combat efficiency of enemy pilots has progressed from "fair" during the middle of 1951 and early 1952, to an over-all rating of "good" at the present time. Reports received from UN fighter and bomber units which have been engaging enemy aircraft over Korea indicate a steady general improvement in air tactics. Although the degree of individual pilot aggressiveness has fluctuated periodically, the caliber of enemy pilots now being encountered is considerably higher than that of one year ago.



CHINESE *Mig–15 seems in unenviable position. Navy pilots have downed six Migs against a loss of one.*

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ONE *of Soviet's best World War II bombers, Chinese Air Force Tu–2's are capable of reaching all of Korea with their maximum combat radius of 500 nautical miles.*

Combat Tactics.—Significant information concerning CCAF tactics has been provided by analysis of MIG–15 jet-fighter operations over Korea. The haven offered the Communists by the air sanctuary in Manchuria has enabled MIG–15 units to operate from bases immune to attack; to select the time, place, and tactical conditions under which they engage United Nations' fighters; and to break contact from unfavorable combat conditions merely by fleeing across the Yalu. By operating over Communist-controlled territory, the *Migs* have operated close to their home bases. This advantage allows the *Migs* to remain in the combat area for longer periods while the F–86's patrol is limited because of the greater distance it must travel to reach the area. An enemy tactic is to time their takeoff to put them over the combat area at the precise time that the F–86's have a minimum of fuel left to keep them over the area.

THESE ADVANTAGES have been exploited by the Communists and have influenced their combat formations and tactics. During the course of the air war, the Communists have frequently changed their formations and tactics in order to cope better with the USAF F–86 jet fighters. Since December 1950, when the F–86 was first used in combat against the MIG–15, the Communist pilots have frequently varied their formation. Basically, they have adhered to an offensive type of formation, with their flights in trail, and with no lateral or mutual support deployment.

Formation sizes vary considerably from flights of four through various combinations up to 30 when a relatively large air effort is undertaken. They often stack these large flights down from the lead formation, having as many as three groups of 20 to 30 *Migs* flying in trail, with about 3,000 feet of separation horizontally, and about 1,000 feet of separation vertically. On some occasions, they have flown into the battle area in line-abreast formations. It appears that they have now adopted the basic two-airplane element.

Skill.—The MIG–15 combat formations often have shown a high degree of technique and precision. Generally the trend has followed the line of gradual over-all improvement. Formation weaknesses are those of any fighter operations, and large formations are similar to those used by the USAF. One distinct difference is that the spacing of the *Mig* elements and wingmen is closer than that of the USAF F–86 jet fighters.

The MIG–15's have been seen to take off from the airfields north of the Yalu, form up in strings of formations, then come south from a point over the Sui Ho Reservoir, or from a point about halfway between there and Antung. These formations usually come in higher than the F–86 units flying in the area. On rare occasions when the *Migs* come in at the same level as the F–86's, their formation is often so loosely spread in the rear that the USAF pilots find it easy to turn in behind what appears to be the tail end of a formation and wind up in front of another trailing element.

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The rear end of a big formation of *Migs* looks as though it is not planned; and, when the *Migs* turn, this big formation flattens out in the rear somewhat as water does when it is whirled in a tub. Whether it is planned or not, it is peculiarly effective. Any *Mig* that is singled out for attack is fairly well covered by what amounts to other *Migs* in line abreast of him. In smaller flights, if they can be caught level, there is no problem attacking them. During recent stages of the Korean air war, the Communists have shown an increasing awareness of tactics, and have fairly consistently gone to a mutual-support, or line-abreast type of formation at the 30,000-to-35,000-foot level.

If an element of two F–86's catches an element of two *Migs* in a turn, the *Migs* will often split, one pulling up while the other goes down, with the one on top attempting to place himself in a position to dive down on the attacker. Along with their improved tactics, the Communist pilots have intelligently exploited the superior altitude performance of their airplanes. They have consistently stayed at 35,000 feet or higher, diving down on formations of F–86's and pulling back up out of range.

Cover.—The utilization by the Communists of the RAF "fluid-six" formation has resulted in one element flying top cover while one of the other elements makes the attack. The attacking element then pulls up to take over top cover and the original top-cover element attacks.

Other attacks are characterized by the four-plane finger-tip formation like that employed universally by USAF fighter groups. The favorite type of attack with this successful formation has been a boxing maneuver by two flights, each composed of as many as eight aircraft arranged high and on either side of their opponents. As the F–86's break into the attackers, they in turn are attacked from the rear by the other flight of *Migs*. A second kind of attack is a dive far behind the F–86's followed by a line-abreast zoom with all *Migs* firing as they close.

Defensively, the *Mig* pilots rarely dive away from the flight; they prefer a climbing turn. Their air discipline has improved and rarely do their maneuvers become sufficiently violent to split enemy formations into singles. When attacked, depending upon the size of their formation, *Mig* pilots use an element-of-flight "fan" defense. One element zooms up and away from the attacking force while the element under attack breaks into a shallow zoom in the opposite direction. A maneuver frequently encountered over North Korea consists of a MIG–15's going into a tight spin. Some of these spins may be deliberate, while others are apparently inadvertent. Several MIG–15's have been destroyed by spinning into the ground without a shot being fired. In addition, MIG–15 pilots have been observed firing their guns when in an awkward maneuver or in a spin. This tactic is probably an attempt to increase speed or controllability by removing excess weight from the aircraft. While the MIG–15's uncontrollability in a spin might be due to lack of pilot proficiency, there is more to be said for the possibility that the MIG–15 spin characteristic might be brought on by a sudden high-speed stall.

SINCE 1950 the USSR has provided Communist China with a modern, going air force. The degree of success achieved by the Soviet training mission has been greater than what may have been anticipated from the untrained sources of manpower available in China. A large degree of this Soviet success has probably been due to the experience the Soviet military forces have acquired in training their own indigenous personnel with background similar to that of the Chinese. Complete reliance on Soviet equipment and techniques by the Chinese has placed in the hands of the Soviet advisors the reins to control every phase of the development of the CCAF.

Until very recently, the primary concerns of the CCAF leaders were organization and training. During the year of 1952, however, it has become evident that the basic organization of the force, concurrently with training of personnel, particularly aircrew training, has progressed to a point where indigenous Chinese have been charged with the responsibility for the air defense of vital continental strategic areas such as Manchuria, Peiping, Shanghai, the Shangtung Peninsula, and the south China area surrounding Canton. Since the CCAF is still a young force, both in age and experience, it may expand even further. Indications are that if large-scale expansion comes about, the CCAF will be given broader operational assignments than it has heretofore had.