

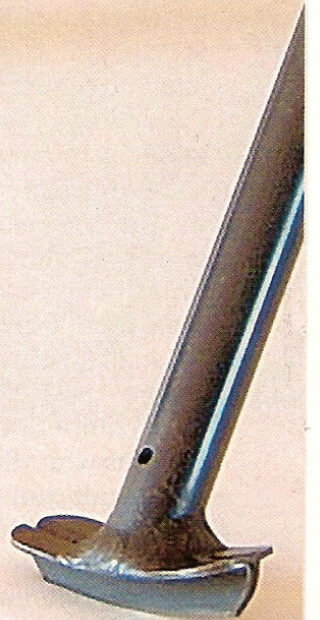
The Chinese Type 81

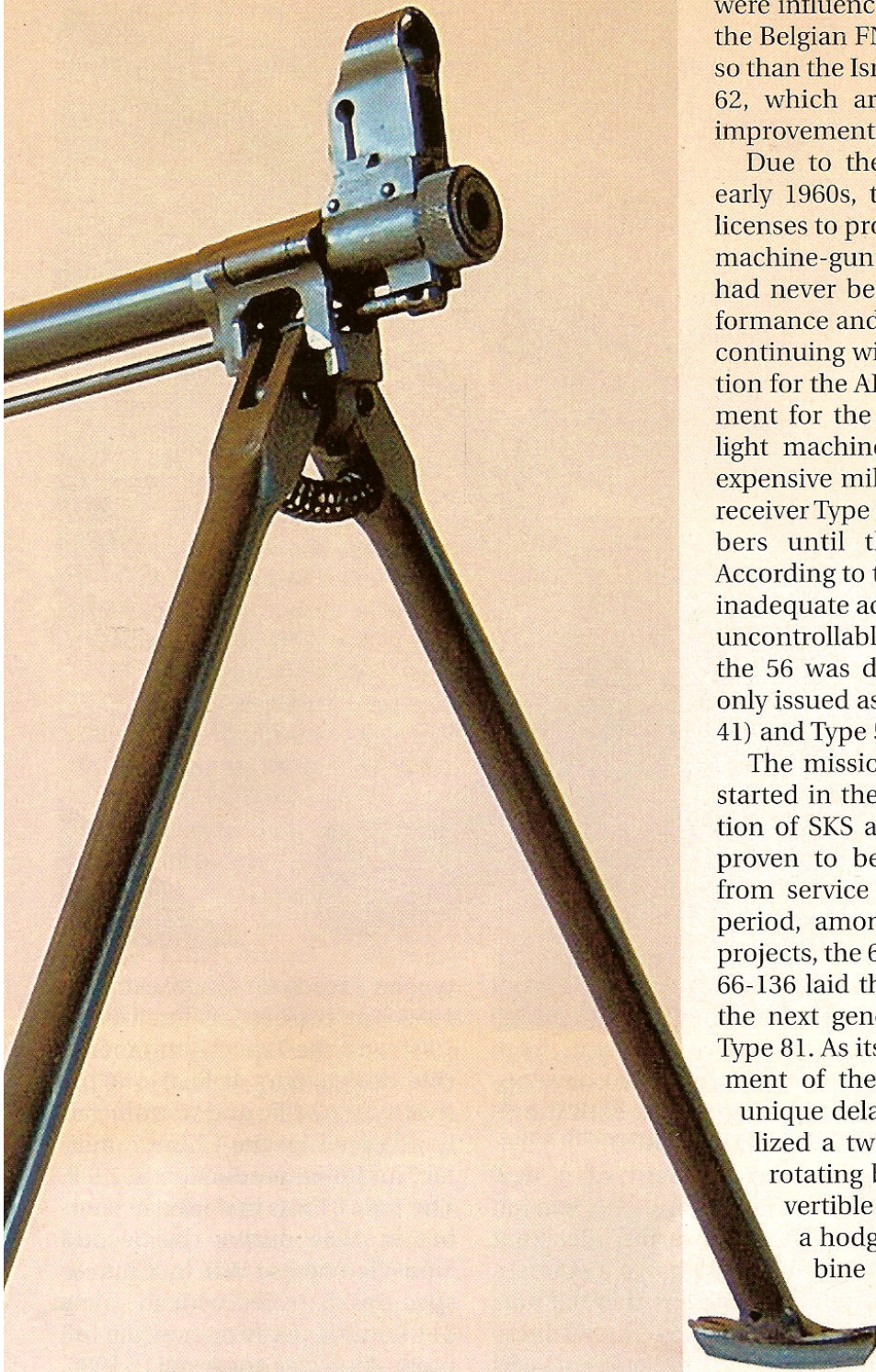


More than just another AK clone

By Timothy T. Yan

The standard-issue rifle for the Chinese People's Liberation army for the past 20 years has been the Type 81 assault rifle, and it is often incorrectly labeled as a Chinese Kalashnikov variant.





The light-machine-gun model with the longer heavy barrel, folding bipod and carrying handle. Photo courtesy of Craig Adams

The Type 81 did incorporate many AK design features, but overall it is no more an AK than those that were influenced by the Kalashnikov design, such as the Belgian FNC or the Swiss Sig 550 and much less so than the Israeli Galil and the Finnish Valmet-Sako 62, which are well-made AK clones with some improvements.

Due to the Sino-Russo ideological split in the early 1960s, the Russians never gave the Chinese licenses to produce the AKM and the RPK, the light-machine-gun variant of the AKM. The Chinese army had never been wholly pleased with the AK's performance and chose to design a new rifle instead of continuing with the existing Type 56, their designation for the AK. They were also in need of a replacement for the aging and expensive Type 56 (RPD) light machine guns. The Chinese were using an expensive milled-receiver Type 56-1. The stamped-receiver Type 56 model did not appear in large numbers until the Type 81 was in development. According to the Chinese military, the 56 design has inadequate accuracy in semiautomatic mode and is uncontrollable in full automatic. As matter of fact, the 56 was designated as a submachine gun and only issued as a replacement for the Type 50 (PPSh-41) and Type 54 (PPS-43) in infantry units.

The mission for a new indigenous military rifle started in the 1960s. The Type 63 rifle, a combination of SKS and AK features, came initially. It was proven to be unsatisfactory and was withdrawn from service by the mid-1970s. During the same period, among numerous other obscure research projects, the 66-136 experimental rifle emerged. The 66-136 laid the foundation for the development of the next generation of Chinese infantry rifle, the Type 81. As its project name indicated, the development of the 66-136 rifle started in 1966 with a unique delayed-blowback-action feature that utilized a two-piece bolt assembly with multi-lug rotating bolt. It was designed to be easily convertible to gas-operated action and built with a hodgepodge of parts from the Type 56 carbine (SKS) and the Type 63 rifle. The short-stroke gas system developed for the 66-136 was used for comparison testing with the delayed-blowback action. Conversion between the action types was a simple matter of adding or removing the gas-piston assembly. The 66-136 project was eventually canceled because construction of the delayed-blowback action required tight tolerance and fine machining, requirements that the Chinese military was unwilling to accept. Furthermore, Chinese ammunition producers were incapable of producing clean-burning 7.62x39mm ammo with the consistent pressure that the delayed-blowback action required.

The Chinese Type 81 Assault Rifle



The Type 81's receiver is made from 1.5mm steel stamping. Its massive barrel trunnion protrudes out of the front of both sides of the receiver.

A well-used Type 81 rifle at the range. Fired cases eject up and to the right at about 60 degrees up and toward the front of the rifle.

A new catalyst for the rifle's development came during the Sino-Vietnamese War of 1979. The Chinese army went into combat essentially with WWII-style small-arms distribution: the Type 56 carbine (SKS) in place of the bolt-action rifle backed up by the Type 56-1 light machine gun (RPD) as a squad automatic weapon. The Type 56 (AK47) was used as a submachine gun and only given to officers and cadres. It was perhaps one of the most backward infantry TOEs in the world at the time. In comparison, the AK was general issue for all combat troops on the Vietnamese side. Not surprisingly, the Chinese were at a firepower disadvantage in most of the fire-fights. After the war, the conservatively minded leadership realized its mistake and at last

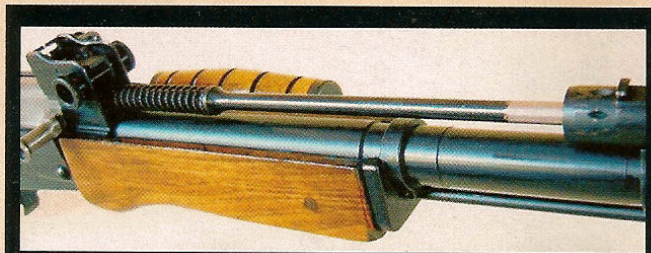
accepted the concept of assault rifles for all troops. The carbine was quickly withdrawn from service amid an urgent development plan to replace both the 56 (AK) and the 56-1 (RPD).

The development of a new assault rifle started with veteran Chinese small-arms designer Wang Zi Jun, in charge just weeks after fighting stopped at the border in April 1979. The Chinese military's design criteria was accuracy of 1.78 inches R50 at a range of 100 meters, controllability in full automatic, the same level of reliability but longer weapon life than the AK and production with the existing AK and SKS tools and facilities.

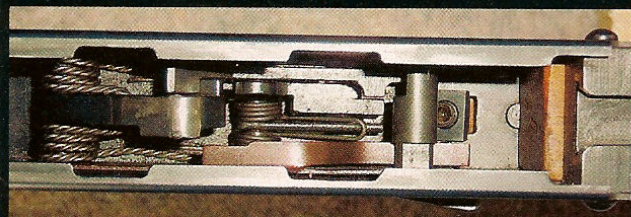
In order to save development time, many of the 66-136 rifle design features were integrated into the new rifle, and the proto-

type was ready for range testing in 1980. The project was finalized in 1981 with the Type 81 automatic-rifle designation. It beat out the rival Type 82 rifle and was officially accepted by the Chinese military for initial production in 1983. The Type 81 was first used in combat in 1984 during the Second Sino-Vietnamese War by Chinese spec ops. Satisfied with the Type 81's combat performance, the full production was approved in 1986. On an interesting note, the Type 81 was supposed to be used merely as an interim until development was completed on the 5.8x42mm cartridge.

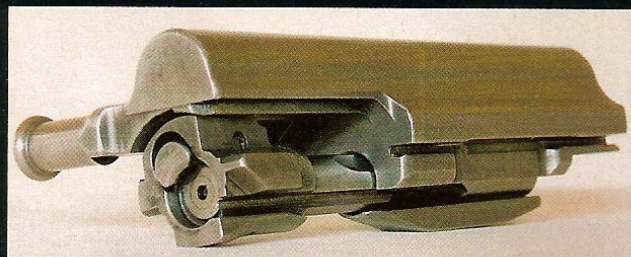
The design uses an improved short-stroke gas system and a long receiver from the 66-136 rifle to achieve the accuracy and controllability requirements. The short-stroke gas system gener-



The short-stroke gas system consists of a gas regulator, gas piston and opt-rod unit and the gas-piston return spring. Photo courtesy of Craig Adams



The Type 81's trigger mechanism was originally developed for the 66-136 experimental rifle in the late 1960s. Photo courtesy of Craig Adams



The bolt group of the Type 81 rifle. The Kalashnikov-style two-lug rotating bolt features a large extractor and a bottom left cutout for the solid ejector to pass through. Photo courtesy of Craig Adams



The Type 81 has a fully adjustable front sight. As with many conscript-based armies, only officers and cadres are allowed to adjust sights. Photo courtesy of Craig Adams



The Type 81, right, with its forerunners—the 66-136 experimental rifles.

ates just the right amount of energy to cycle the weapon without the problem of overcompensating and slamming the entire bolt assembly into the rear of the receiver like the Kalashnikov long-stroke gas system. The long receiver gives the bolt assembly an extra inch of travel to further slow it down. The Type 81's one-inch-longer barrel also helps to improve accuracy to some extent by increasing the muzzle velocity by 33 fps over the 56. The 66-136

rifles' multi-lug bolt assembly was deemed too complicated for the new rifle. Instead, the Type 81 uses a rather conventional Kalashnikov-style two-lug rotating design and a large bolt carrier that resembles the Dragunov SVD. The return spring and guide rod are based on that of the AK. With these design features the range test showed the 81 to be 40 percent more accurate than the AK family at 300 meters and much more control-

lable in full automatic.

The durability and reliability requirements were met in several ways. The receiver of the 81 is made from 1.5mm steel stampings instead of the AKM's one millimeter, with an extra latitudinal folding added to the sides for strength. A massive trunnion connects the barrel to the receiver, and it also provides the locking slots for the bolt to lock the action. The entire gas system plus the barrel are hard chromed, the

The Chinese Type 81 Assault Rifle



The aftermarket rail forehand guard provides three long rails and one short one on top for mounting optics like the EOTech seen here.

bolt group is Parkerized, and everything else is blued. The 81's gas regulator can also be placed on a high setting when more energy is needed to cycle the weapon under adverse conditions. The 81 was built to last

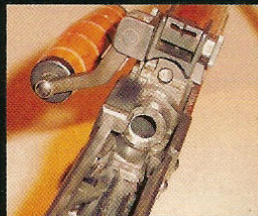
20,000 rounds. It is built with the same machines that manufacture the 56 and has the same loose tolerance, hence the same level of reliability in adverse conditions.

The trigger mechanism is another major feature that the 81

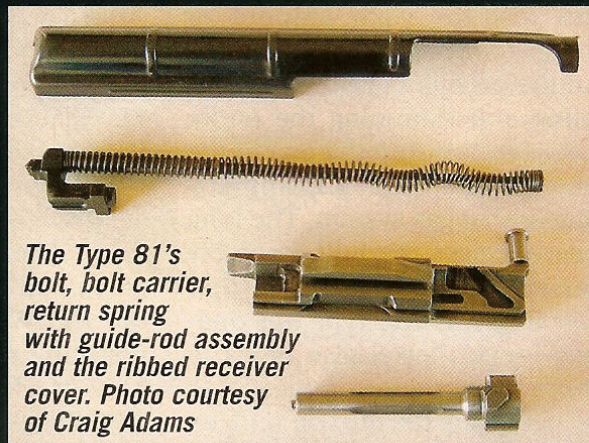
inherited from the 66-136. Although it is loosely based on the AK's trigger, which itself is a copy of the American Garand's trigger, the 81's selector is much more conveniently located on the left side of the receiver and above



Both the rifle and light machine gun use the same receiver, rated for a 20,000-round service life. The latitudinal bend in the middle of the receiver helps to stiffen it. Photo courtesy of Craig Adams



The breech view of a light-machine-gun variant. The extra notch on the rear sight's cross bar, which is absent in the rifle, is calibrated for 800 meters. Photo courtesy of Craig Adams



The Type 81's bolt, bolt carrier, return spring with guide-rod assembly and the ribbed receiver cover. Photo courtesy of Craig Adams

TYPE 81 ASSAULT RIFLE

Maker:

State Arsenal 266 in Hilongjian Province (rifle), State Arsenal 356 in Yunnan Province (LMG)

Caliber:.....7.62x39

Weight:.....Rifle: 7.7 pounds, LMG: 11.4 pounds

Overall Length: Rifle: 37.6 inches, 28.74 inches with stock folded; LMG: 39.53 inches

Barrel Length: Rifle: 17.32 inches, LMG: 20.47 inches

Sights:.....Hooded post front, hooded tangent rear

Sight Radius: ..Rifle: 12.4 inches, LMG: 21.26 inches

Operation:Adjustable short-stroke gas system, rotating bolt, hammer fired

Furniture:Wood or orange-color heat-resistant plastic

Feed:.....Thirty-round box magazine, 75-round drum, 20-round special-purpose magazine

QBZ-87 ASSAULT RIFLE

This Type 81 derivative was developed for conducting large field trials on the 5.8x42. The overall design was strengthened to handle the higher-pressure, smaller-caliber ammo. It features polymer furniture, aluminum side-folder stock and a redesigned rear sight, and the rifle-grenade adapter was replaced by a flash suppressor. All the metal components are chromed or in the more durable Parkerized finish.

While it is a limited-production rifle, it is estimated that enough QBZ-87s were made to equip two mechanized infantry divisions and an airborne brigade. All of the QBZ-87 rifles have been withdrawn from active service and are now in use by military academies and the paramilitary.

It's estimated that 50,000 QBZ-87 assault rifles were made, which is an insignificant production number according to the Chinese military but quite sizable by other nation's standards.



the pistol grip in a similar fashion to the M16. Compared to the selector on the AK, the 81's smaller thumb selector is much less clunky and faster to use. However, the selector settings are ergonomically incorrect, and it is the reverse of those found on the M16. The Safe setting points to the rear with the auto straight up and Semi to the front.

There are three types of magazines: the 30-round box magazine for the standard rifle, the 75-round drum for the light machine gun and the odd 20-round special-purpose mag. The 30-round-er seems to be similar to the regular AK mag, but it's slightly wider and will not fit into an AK. Kalashnikov mags are not compatible with the 81. The 75-round

drum was originally designed for another earlier cancelled project, the Type 74 light machine gun. Internally, the drum resembles a mixture of the designs found in the Thompson and PPSH-41. It can be quickly loaded by opening up its cover, dropping the rounds directly into the slots inside and cranking up the drum spring by turning the winding handle six times. The drum can be stored loaded as long as the spring is unwound. The downside of the drum is the rattling of internal parts and susceptibility to jam-inducing dents in the thin sheetmetal.

The sight system consists of a hooded post front and a rear tangent under a rectangular hood.

Windage and elevation are adjustable only in the front sight with the proper tool. The rear sight is precalibrated for ranges from 100 to 500 meters for the rifle and increased to 800 meters for the light machine gun. The range setting can be changed by turning either of the two small knobs on each side of the rear

The Chinese Type 81 Assault Rifle



A PR image from the Chinese army. The front sight of the Type 81 was moved back to make room for the rifle-grenade adapter.

sight base. There is no provision for any kind of optic or accessory mounting. A few attempts were made to add an optic mount, but none of them was adopted. Recently, Bao Wa, a Hong Kong-based law enforcement equipment supplier, offered a 1913 rail hand-guard system for it, but it's a rather

cumbersome implementation.

The Type 81's barrel has an integrated rifle-grenade adapter. To launch a rifle grenade, a special ballistic blank is used with the gas regulator set to the gas cut-off position. Another option is mounting a Type 91B under-barrel 35mm grenade launcher

(based on the M203) in place of the lower handguard.

I had the opportunity to examine two different Type 81s and shoot one at the range. The fit and finish is about the same as a 56 or AKM. The blueing is a little thin, and in some areas it was already worn from cleaning. I found the

TYPE 81 VARIANTS

Type 81: Initial production model with fixed wooden stock. Only 40,000 were made before production switched over to the cheaper side-folder model.

Type 81-1: Main production model with the metal side-folder stock.

Type 81 Light Machine Gun: A support weapon (SAW) with a longer and heavier barrel, carrying handle, solid wood stock and folding bipod. The 75-round drum is standard issue.

QBZ-87: Limited-production model made for the 5.8x42mm small-caliber, high-velocity round.

EM356: An extremely rare Type 81 variant

chambered for the NATO 5.56x45mm. It was designed for the North American market, but the U.S. import ban effectively killed its production.

QBZ-03: The new Chinese 5.8mm assault rifle with a conventional layout that was developed as the backup for the QBZ-95 bullpup. It's basically the Type 81's action and trigger, plus a new recoil buffer, all used together in a two piece FNC-like forged aluminum receiver. The QBZ-03 is currently in trials with a few coastal defense and reserve units. It's also available for export in 5.56.



The Type 81 is long for the confined spaces of armored vehicles or aircraft. It's been replaced in the mechanized infantry, air-assault and airborne troops by the more compact QBZ-95 5.8mm bullpup.

iron sight system gives a cluttered sight picture. Its hooded rear tangent sight requires some getting use to. The rifle is longer and slightly heavier than the AKM but lighter than the milled-receiver AK47. My best group at 100 meters was about three inches with standard Chinese military ammo. Its accuracy is not bad for a stamped-receiver rifle, and it is better than most Kalashnikov variants.

The Type 81 is the main rifle of the Sri Lankan army since the 1990s, and Bangladesh recently announced the full adoption of the Type 81 as its standard rifle, obtaining license to produce 100,000 copies. In addition, small numbers of 81s also ended up in South Eastern Asia and Africa, notably Congo and Liberia. The 81 does not export well since it has no interchangeable parts with the AK and its price of \$175 a copy in large military order is

almost twice the cost of the Type 56-2 and other stamped-receiver AK copies.

The Type 81 is employed in all branches of the Chinese military and the paramilitary. With the adoption of the 5.8x42mm round and the QBZ95 bullpup by the Chinese military, many thought the Type 81 would soon be withdrawn from service. However, the new bullpup production is sluggish, with only a half-million produced in the 10 years since it went into service, and now it, too, appears to be on the verge of a phase-out. So while its military is moving to the 5.8, the Chinese's police forces have been getting large numbers of ex-military 81s. It seems like the Type 81 will soldier on with Chinese law enforcement, the rest of the military and the armed forces of a few other small countries for the foreseeable future. ©

QBZ-87 ASSAULT RIFLE

Maker:

State Arsenal 296 in Sichuan Province

Caliber:.....5.8x42mm

Weight:.....8.69 pounds

Overall Length: 37 inches, 28.82 inches with stock folded

Barrel Length: .17.3 inches

Sights:.....Hooded post front, notch rear with range-adjustment wheel

Operation:Short-stroke gas system, rotating bolt, hammer fired

Furniture:Black polymer

Feed:Thirty-round polymer box magazine, 75-round steel drum and 20-round special-purpose steel magazine