



# *M14 Rifle History and Development*

By  
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## PREFACE

This work is an honest and reasonable attempt at capturing the history and development of M14 type rifles. The reader is encouraged to check the facts for himself. Development of the M1 Garand into the M14, gunsmithing procedures, match conditioning, stock refinishing, hand loading ammunition, rifle marksmanship, close order drill, and other such topics have purposefully been omitted. Discussion of optics for the M14 rifle is only touched on lightly. Those subjects have been addressed at length by others much more capable.

The information contained herein is the result of research from sources listed in the Bibliography and the author's observations. The author can be contacted at [leeace99@hotmail.com](mailto:leeace99@hotmail.com) regarding any concern about any particular source of information. The research has progressed so that a much more accurate story is now presented to the reader.

Thank you to members of [BattleRifles.com](http://BattleRifles.com) and [m14forum.com](http://m14forum.com) for all your contributions. Special thanks go to Smith Enterprise, SparrowHawk Stocks, Troy Industries and William J. Ricca Surplus.

Always handle all firearms in a safe manner. Consult with law enforcement officials or an attorney if you are unsure of the law where you live.

Lee Emerson  
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## About the Author

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# Chapter 1

## The Beginning

### Introduction

The U.S. Rifle 7.62 mm M14 was adopted for military service by the United States on May 1, 1957. The M14 rifle was developed to replace four military firearms, M1 Garand rifle, M1 Carbine, M1918 Browning Automatic Rifle and the M3A1 submachine gun. The “M” in M14 stands for Model. It is a rotating bolt, gas operated, air cooled, magazine fed, shoulder fired weapon. As adopted, the M14 was 44.14 " long and weighed 8.7 pounds. With a full magazine and sling it weighed 11.0 pounds. The maximum effective range was 460 meters (503 yards). The M14 has seen hostile service with the American military from the 1963 Cuban missile crisis to the Second Gulf War. The M14 rifle has been employed as a battle rifle, squad automatic weapon, competition match rifle, grenade launcher, sniper rifle and ceremonial rifle.

1,380,358 M14 rifles were ordered between 1958 and 1963 by the U. S. government from four entities. These were the U. S. Army Springfield Armory in Springfield, MA, Winchester (Olin-Mathieson Chemical Corp.) in New Haven, CT, Harrington & Richardson Arms Co. in Worcester, MA and Thompson-Ramo-Wooldridge (TRW) in Cleveland, OH. 1,376,031 M14 rifles were delivered between 1959 and 1964.

### Engineering Background Information

Some basic background information is presented here to assist the reader later on. This will be helpful in understanding the importance of material selection, heat treatment and dimensional geometry in the production of M14 type rifle receivers and parts. There are three important factors in determining the quality of the M14 type rifle receiver and parts. These factors are material, heat treatment and dimensional geometry.

If the proper material is not used, each of the specified (and desired) values for each mechanical property (hardness, strength, toughness, etc.) are not likely to be achieved for a given part, with or without heat treatment. If the incorrect material is used to make the part, it will result in a shorter service life at best and personal injury or death at worst. The same goes for heat treatment of parts not performed according to design specifications and procedures. If dimensional geometry is incorrect, the part will function either poorly or not at all or the part will not last as long as it should.

The following terms are described as follows:

**Carburizing** – “When steel contains insufficient carbon to attain the desired surface properties by selective heating, an alternative approach is to alter the surface chemistry.” (1) Carburizing is a “group of surface-hardening techniques by which carbon diffuses into steel.” (2) Carburizing creates a high carbon content at the surface of the steel. When the steel is “quenched and tempered, the surface becomes” hard while the center (or core) remains softer and ductile after carburizing. (3)

**Case Depth** – “The depth below the surface of a steel to which hardening occurs by surface hardening and carburizing processes.” (4).

**Hardness** – Hardness can be thought of resistance to permanent indentation. Hardness is measured using various tests, e.g., Brinell, Knoop, Rockwell, and Vickers.

**Heat Treatment** – “Heat treatment is the controlled heating and cooling of metals for the

purpose of altering their properties.” (5) It is one of many methods that can be used to change the mechanical properties of metals.

**Magnetic Particle Inspection** – Magnetic particle inspection is a method of non-destructive examination that detects surface and subsurface flaws in ferromagnetic metals (iron, steel, nickel and cobalt alloys).

**Rockwell Hardness Test** – This hardness tester uses a small diameter steel ball or diamond cone depending on the material to be sampled. “The depth of penetration of the indenter is automatically measured by the testing machine and converted to a Rockwell hardness number (HR)” (6). HRC means the hardness value on the Rockwell C scale. HRD means the hardness value on the Rockwell D scale. The Rockwell C and D scales are used to measure the hardness of high strength steels. A diamond cone indenter is used for these hardness scales.

**Toughness** – “Toughness is defined as the work per unit volume required to fracture a material.” (7) Mathematically, it is often measured as the total area under the stress versus strain curve for a given material. In layman’s terms, toughness is the resistance of a material to failure by impact.

### **M14 Rifle Development Highlights –**

**December 1958** – Springfield Armory begins making production M14 parts

**July 1959** – First fifty Springfield Armory M14 rifles completed.

**August 1959** – Ten of the first fifty M14 rifles shipped to Fort Benning, GA for testing. All shipment of production M14 rifles was suspended pending test results.

**September 1959** – M14 rifle testing completed with satisfactory performance.

**October 1959** – First Springfield Armory production M14 rifle presented to Master Sergeant George C. Ferguson by Secretary of the Army Wilbur C. Brucker at Aberdeen Proving Ground, MD.

**January 1, 1960 – June 30, 1960** – the decision was made that, every M14 rifle would have a hinged butt plate, plastic hand guard and bipod.

**July 1, 1960 – December 31, 1960** – A blank firing attachment and breech shield were successfully developed at Aberdeen Proving Ground, MD. Engineering tests on a plastic hand guard were completed at Aberdeen Proving Ground, MD.

**Mid-December, 1960** – Three Harrington & Richardson M14 rifles (one receiver and two bolts) failed during range firing at Fort Benning, GA.

**January 1, 1961 – June 30, 1961** – First production of birch M14 stocks occurred. Walnut became the alternate standard for the M14 stock.

**January 11, 1961** – Ordnance Weapons Command Engineering Order No. 164 was released. This document provided additional quality assurance provisions for the bolt, receiver, barrel and rifle. This Engineering Order was the result of investigations conducted by Springfield Armory, Watertown Arsenal, Rock Island Arsenal, Frankford Arsenal and Aberdeen Proving Ground into the H&R M14 rifle failures of December 1960.

**April 1961** – First plastic hand guards produced at Springfield Armory.

**September 21, 1961** – The M12 blank firing attachment and M3 breech shield were officially classified as Standard A.

**January 1, 1962 – June 30, 1962** – The preservation procedure for birch stocks was finally adopted. It required only one dip in Class II oil whereas the walnut stocks had been dipped twice.

**January 21, 1963** – Secretary of Defense Robert S. McNamara announced the end of M14 rifle procurement with that fiscal year’s contracts.

**October 1963** – Springfield Armory fabricated and demonstrated five prototype M14E2 rifles.

**November 1963** – Authority was given to Springfield Armory for 8,350 M14E2 conversions



**June 30, 1964** – Official end of new M14 rifle production. TRW made their only run of M14 NM rifles.

**July 1, 1964 – June 30, 1965** TRW delivered the last 200 M14 rifles to the U. S. Army.

**December 1964** – Delivery of M14E2 rifles was completed.

**July 1, 1965 – June 30, 1966** Springfield converted 2,094 M14 rifles into M14 NM rifles.

**December 1965** – The final revision drawing for the synthetic M14 stock was issued.

**July 1, 1965 – June 30, 1966** – The following M14E2 design improvements were incorporated into the procurement system: M2 bipod, winter trigger assembly, muzzle stabilizer with positive locking mechanism, stock back plate, better hand grip, and improved bipod jaws. “Design improvements were completed on a synthetic rubber stock plad [sic] to smooth out function fire under all environmental conditions.” (8) Springfield Armory produced 2,395 M14 NM rifles by rebuilding rack grade rifles.

**July 1, 1966 – December 31, 1966** – Springfield Armory completed a rebuild program on 24,000 M14 rifles.

**July 1, 1966 – June 30, 1967** – Rock Island Arsenal rebuilt 2,462 rack grade rifles into M14 NM rifles.

**M14 Rifle Factory Inspection** – The following is a description of the requirements each M14 rifle had to pass to be shipped to the military.

From the October, 1961 American Rifleman:

Every rifle, after a high-pressure proof round, must successfully pass a functioning test of semi-automatic, burst automatic, and sustained automatic fire and its speed in automatic fire must be within narrow limits. It must deliver its center of impact within a certain limited area around point of aim at 100 yds with rear sight set 8 clicks up from zero elevation, and zero windage. It must make 5-shot groups within 5.6 " at 100 yds with Service, not Match, ammunition (the present average of all rifles is about half that) . . . Rifles which fail are returned to manufacturer tagged to show the failure and the parts apparently involved. After replacement of parts and re-inspection, most rifles pass second firing test. Information on the tags is transferred to records, which are analyzed to detect manufacturing processes needing attention.

In addition to test firing which every rifle must undergo, rifles are withdrawn at intervals and subjected to endurance firing for 6000 rounds with only a small percentage of failures of any kind allowed. Some rifles have fired the 6000 rounds without malfunction.

While a five shot group of 5.6 " at 100 yards may not seem terribly accurate this includes the inaccuracy of the M80 ball ammunition factored in. The Boston Ordnance District found that the service ammunition alone had an average spread of 3.57 " at 100 yards within every ninety rounds fired.

**Raritan Arsenal** – Some changes in the design of the M14 rifle occurred after the earliest rifles had been shipped to the Army. This included adoption of a plastic ventilated hand guard and hinged butt plate. The earliest production M14 rifles were inspected, reworked if needed and modified to incorporate the latest changes. This work was being done at Raritan Arsenal in Middlesex County, NJ as of August 1961. Raritan Arsenal was decommissioned by the Army in 1963.

### **M14 Production at Springfield Armory**

Springfield Armory had 400 of 3100 employees involved with the M14 rifle in August 1961.

A) Springfield Armory Machine Tools - The following is a list of some of the various machine tools in use by Springfield Armory in August 1961 and the function of each:

Barrel installation machine – barrel and receiver are held and screwed together with exact prescribed torque in seconds

Broaching machines – used for high speed removal of metal from the receiver forging

Grinder – used to grind the rear faces of the M14 bolt lugs

B) Manufacturing Highlights – Springfield Armory was the first of four M14 rifle manufacturers for the U. S. government. They were tasked with setting up a pilot production line. Start up of parts production began in December 1958. The first five parts to be started on were the receiver, the bolt, the gas cylinder, the operating rod handle and the trigger housing. “Production problem areas included getting satisfactory precision castings for the flash suppressors, proper welding techniques for the operating rod, and achieving satisfactory heat treatment for the receiver.” (9). Thus, it is inferred that Springfield Armory made operating rods from two pieces of steel.

### **M14 Production at Winchester**

Winchester was the first of three companies to be awarded a M14 rifle contract. Winchester designed special machinery to make the M14 receivers and wood stocks. They were delayed several months getting the bugs worked out of the receiver making machine tools but were successful in meeting their required monthly production rate by August 1961. The automated high-speed woodworking machinery was successful from the beginning of operation.

A) Winchester Machine Tools – The following is a list of some of the various machine tools used by Winchester in August, 1961 to produce the M14 Rifle and the function of each:

Barrel drilling installation – eight machines of six spindles each perform barrel bore drilling

Gorton straight-line transfer machines – performs thirty-two high precision machining operations on the receiver automatically

Sixteen station stock inletting machine – replaced sixteen single purpose woodworking machines in making wood M14 stocks

B) Winchester Production Differences – Receivers were machined using special milling machines. The other three rifle manufacturers formed their receivers by extensive broaching. Winchester had the most automated stock making machinery of the four manufacturers.

### **M14 Production at Harrington & Richardson**

In August 1961 there were about 1000 employees working on the M14 project at Harrington & Richardson.

A) H&R Machine Tools – The following is a list of some of the various machine tools used by Harrington & Richardson in August, 1961 and the function of each:

Cincinnati special milling machine – multi-station mill for finish machining operations on the M14 receiver

Crush grinder – used to grind gas cylinder threads on the M14 barrel

**B) H&R Parts Failures** – One H&R receiver and two HRL bolts failed during range firing at Fort Benning, GA in mid-December, 1960. The fractured receiver was made of the incorrect material, AISI 1330 steel instead of AISI 8620 steel. “It was learned that a limited quantity of an unauthorized steel had inadvertently been used by H & R . . . . Subsequent heat treatment resulted in such receivers being weak and brittle.” (10) The incorrect steel had been for several days of production of receivers.

One bolt had “sheared right lugs” and the other one had “visibly cracked lugs.” (11) Bolts that failed were made by one subcontractor and marked HRL. (12)

Rayle's discussion of the bolt failure is very instructive:

A thorough metallurgical investigation was conducted, not only by government metallurgists, but also by those of the Armour Research Foundation. Sections were cut through bolts which had failed, and these were studied through microphotographs. It turned out that the main problem was the failure to observe meticulously the prescribed heat-treating steps. For example, in order to obtain a tough, hard core to the bolt, it is heat treated white hot to a specific, rather narrow, temperature range, then cooled rapidly by plunging into an oil bath. Trouble develops if the white-hot bolt is allowed to cool slowly for a short period before plunging into the oil bath or if the temperature never goes high enough in the first place. In such a case, an excessive amount of free ferrite is formed, which is practically pure iron, soft and weak. This also results in an excessive amount of carbon going into the rest of the steel, which becomes a very hard and brittle type of martensite. The result is that cracks can form and propagate under repeated severe loadings, and the bolt lugs eventually break off.

Examination of Springfield Armory bolts in test rifles, which had gone thousands of rounds, indicated that even though minor cracks may start in the hardened surface, they do not propagate through the core of the bolt if the bolts are properly heat-treated. Good bolts were found generally to have less than ten per cent free ferrite, whereas those which had failed had as much as fifty per cent free ferrite. Specifications were changed by tightening up on procedures to follow and metallurgical requirements that sample bolts must pass when inspected.

"A task force was established to determine cause of and initiate corrective action necessary to preclude failures of this type." (13) The end result was additional quality assurance provisions as required by Ordnance Weapons Command Engineering Order No. 164 on January 11, 1961. This included installation of new heat treatment equipment and a magnetic analyzer to check receiver material at the Harrington & Richardson plant. The magnetic analyzer was developed by Springfield Armory with assistance from Watertown Arsenal.

### **M14 Production at TRW**

TRW was the fourth of the M14 Rifle manufacturers. Their operation is briefly described:

- A) TRW Machine Tools - The following is a list of some of the various machine tools in use at TRW in November 1962 and their function:
  - a. Allen multi-station drilling machine - all small holes drilled in the receiver
  - b. Bolt assembly fixture - completely assembles the bolt except for the roller
  - c. Colonial fifteen station pull-type broach - receiver magazine slot cutting
  - d. Footburt 144 " chain broach - first stage in machining of the receiver
  - e. Krueger lateral transfer machine - thirty machining operations done on two bolts at a time including precision boring, reaming, gun drilling, hollow milling, and automatic gauging and inspection
  - f. Seneca Falls tracer lathe - complete barrel outside contour turning in two passes
- B) Principal Stages of TRW M14 Receiver Manufacture - 1) steel slug cut off from bar stock 2) drop forging after warm size 3) chain broaching and qualification broaching 4) machining through three dimensional mills 5) additional broaching 6) coating.
- C) Principal Stages of TRW M14 Bolt Manufacture - 1) cut off steel slug 2) extrusion 3) warm-coining 4) thirty machining operations on the Krueger lateral transfer machine 5) ten machining operations on two five station special milling machines 6) coating.

- D) Principal Stages of TRW M14 Operating Rod Manufacture - 1) cut off steel slug 2) bump up and roll 3) warm sizing 4) finish machining 5) coating. Note that TRW made one piece operating rods.

### **TRW Parts –**

The February, 1963 American Rifleman discusses the how and why of M14 parts production at TRW:

Processes in which the [TRW] Electro-Mechanical Group considers that it possesses a special competence are the techniques of precision forging, in which pieces are forged in dies much closer to final dimensions than is the ordinary practice; and chain broaching, in which steel parts can be cut to final dimensions with high accuracy and at the same time great speed. . . . Eleven major parts of the M14 rifle, totally slightly less than 65 % of the rifle's dollar value, are manufactured by Thompson Ramo Wooldridge in its Ordnance Works. These parts were chosen on the basis of their suitability for manufacture by processes in which the corporation excels. The other parts, which were considered readily producible by conventional means, are left to subcontractors. Thompson Ramo Wooldridge as the prime contractor is responsible for assembly, test, and delivery of the completed weapon.

### **The TRW Mystique**

TRW rifles and parts have a long-standing reputation as better made than the other three M14 manufacturers. This was evident as early as 1963. Roy E. Rayle was an Army Ordnance Corps officer in charge of the Small Arms Research and Development Division at Springfield Armory in 1961. He writes,

“The first TRW rifles were delivered in October, 1962 were a month ahead of schedule . . . Their production record and the quality of their rifles drew enthusiastic praise from the Department of Defense and from the press. TRW was ahead of Winchester and H and R in several ways, and had a wider and more sophisticated production experience.” (14)

This is borne out by the American Rifleman interview of S. C. Pace, Electro-Mechanical Group Vice President. Mr. Pace explains how they applied their jet engine manufacturing experience to production of M14 rifles. They settled on making what parts they could make well and economically based on their expertise and subcontracted the rest. They made one piece operating rods. Barrel interiors were formed using a new cold swaging process. This German designed process entailed swaging the barrel blank over a mandrel to form the bore and rifling. Barrel exterior contours were formed in two turning passes versus four passes at Winchester. Their automatic barrel installation machine was similar to the other makers but had “some differences in design based on experience.” (15) There is a second hand report from a very credible source, indicating a roughly 10 % longer service life with TRW receivers (16). Later on, TRW became the only commercial contractor to ever produce the USGI M14 NM rifle.

The M14 failure rate was 5 % to 12 % from all causes among Springfield Armory, Winchester and Harrington & Richardson as of August 1961. TRW had assembled and tested their first M14 rifle in August 1962. By November 1962 TRW M14 production was 100 per day and they had had no rejections to date. The largest five shot group of any TRW rifle up to November 1961 was 5.5 “ out of a maximum allowable 6.1 “ at 100 meters. The average five shot group size for TRW rifles until November 1962 was 2.5 “ to 3.0 “ in factory testing.

With very few exceptions, e.g., Winchester barrels in their second contract, all four manufacturers were required to use the same material and meet the same specifications. The TRW mystique is further strengthened by the growing pains suffered by Winchester and Harrington & Richardson in 1960 and 1961. Overall, it is fair to say that TRW had the most

trouble free production record of the four manufacturers. Sometimes it pays to be last but it always pays to plan well.

### **Experimental USGI Items for the M14 Rifle**

Picatinny Arsenal (Morris County, NJ) designed a winter trigger with safety for the M14 in 1960. Another winter trigger without a safety known as the Colley type was made in 1961. That same year, the experimental breech loading X-1 40 mm grenade launcher was built for the M14. It attached to the gas cylinder and bayonet lug. Aiming was performed using the standard M15 grenade launcher sight. Two hundred aluminum M14 magazines were produced by Mathewson Tool Company and tested by Springfield Armory in 1962. That same year Harrington & Richardson produced experimental promethium flip-up rear and front night sights. Springfield Armory experimented with black, brown, gray, olive drab, tan and white colored stocks in the first half of the 1960s during development of the synthetic M14 stock. Rock Island Arsenal designed and manufactured an experimental two point scope mount for the XM21 in 1970. Some disposable plastic pre-filled thirty round M14 magazines were reportedly made and tested by Rock Island Arsenal in the early 1970s.

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16. Culver Shooting Page Lane's Tips [www.jouster.com/lanestips/](http://www.jouster.com/lanestips/) Gus Fisher's FAQ discussion of USGI M14 receivers and parts. Gus Fisher former (USMC shooting team armorer for two years) states he was told by a very trustworthy source that TRW receivers were good for 450,000 rounds whereas the other USGI receivers lasted about 400,000 rounds.

# Chapter 2

## The M14 In US Service

### The Issue M14 Rifle

After final testing at the factory each M14 rifle (NSN 1005-00-589-1271) was lubricated according to government packaging specifications. This was accomplished by completely dipping each rifle in lubricating oil since that was the most economical means of doing so. After lubrication, each M14 rifle was packed inside a cardboard box. White plastic protectors for the front sight and muzzle, rear sight, and operating rod handle were placed on the rifle prior to closing the box. A white plastic indicator placed in the chamber signified the rifle was empty. Additionally, the packing carton contained an in-the-wrap four pack of twenty round M14 magazines and a cardboard tube known as the Basic Initial Issue (BII) kit. The BII contained the following items: four M3 cleaning rod sections, cleaning rod carrying case, oiler, patch tip, bore brush, chamber brush and combination tool. There was an exception to the BII inventory. BII kits made up at Letterkenny Army Depot (PA) in 1968 included the selector switch and selector spring. When the new-in-box M14 rifles were received by the Army and Marine Corps, oil was present in the gas cylinders because of the factory lubrication procedure. Thus, the U. S. Marine Corps issued Technical Instruction TI-02648A-15/6 to deal with the problem. This Technical Instruction references [U. S. Army TM 9-1005-223-12 which requires that each M14 Rifle to be completely field stripped, cleaned and lubricated prior to firing. The first time the rifle is cleaned the gas cylinder, piston and gas cylinder plugs should be thoroughly cleaned and dried.

In the U. S. military, the selector shaft lock is installed on most M14 rifles so that only semi-automatic fire can be employed. However, the Table of Organization for the U. S. Marine Corps required three automatic rifleman per rifle squad when the M14 was the issue rifle. In Viet Nam, U. S. Marine Corps units such as the 1<sup>st</sup> Marine Division's 1<sup>st</sup> Reconnaissance Battalion and the Combined Action Platoons (CAP) were equipped with selector switches on their M14 rifles in Viet Nam. Automatic fire was used in ambush situations and by the patrol point man when making enemy contact.

The following description serves to demonstrate the ruggedness and reliability of the M14 rifle. "During sustained-fire tests at Ft. Benning, an M14 was fired continuously at 60 rounds per minute for 3080 rounds. The test was terminated because of the chambered rounds being pre-ignited by the hot barrel. At no time did the barrel fail to stabilize the bullet in flight. The front ends of the stock and hand guard eventually burst into flames, but the rifle continued to fire." (1)

### M14 in Service with the U. S. Army and U. S. Marine Corps

In the U. S. Army infantry squad of the early 1960s, the M14 rifle was standard issue. Each ten-man infantry squad had two automatic riflemen and two grenadiers. The U. S. Marine Corps infantry rifle squad consisted of a squad leader and three four man fire teams. Each fire team had one M14 with a selector switch. In the U.S. Marine Corps of 1965, the issue combat ammunition load for each M14 rifleman was five twenty round magazines and eight twenty round magazines for each M14 automatic rifleman. At that time, the Marine rifleman carried the M14 magazines in canvas single magazine pouches on his web belt. The M16 type rifle was introduced into service as the standard arm of the U. S. Armed Forces in the mid-1960s. For example, the M14 rifle was replaced by June, 1966 in the 22nd Infantry Regiment 4th Infantry Division of the U. S. Army. The M16A1 officially replaced the M14 as "Standard A" in the U. S.

Army on February 28, 1967. The decision to replace the M14 rifle in Marine Corps units in the western Pacific was made in March 1966. In Viet Nam, the M16 replaced the M14 in U. S. Marine infantry units during March, April and May 1967. The Marine 3<sup>rd</sup> Reconnaissance Battalion had exchanged their M14 rifles for the M16 by November, 1967. Apparently, not all M14 rifles had been turned in by infantry units of the U. S. Marine Corps as late as February 1968. Film footage of the battle for Hue in the Republic of Viet Nam reveals U. S. Marines engaging the enemy with M14 rifles. Marines assigned to Air Wing helicopter squadrons in Viet Nam still carried the M14 in 1968. The M14 was certainly still in use as of April, 1968 in Viet Nam. (2) One member of BattleRifles.com carried an M14 rifle "when setting up field radio sites near Hue up to May, 70." (3)

After the war in Viet Nam, the M14 remained in use for training and barracks duty. The U. S. Army issued the M14 to new recruits until December 1969 and the U. S. Marine Corps did as well until at least December 1971. Marine Corps Office Candidate School classes trained with the M14 as late as June 1972. The M14 rifle was issue equipment for Marines assigned to the 32nd Street Naval Station in San Diego, California until some time in the first half of 1978. As of August 2002 the M14 rifle was still in use by aggressor forces at the U. S. Army Ranger School.

The U. S. Army and Marine Corps have put the M14 rifle to combat use in Afghanistan, Kuwait and Iraq in support of the War on Terrorism. The M14 rifle offers greater range and punch than M16 variant rifles and carbines. Select members of the following units used the M14 rifle in those countries: U. S. Army 2nd Infantry Division, 10th Mountain Division, 25th Infantry Division, 82nd Airborne Division, 101st Airborne Division and Special Forces and the U. S. Marine Corps 1st Marine Division. Some 82nd Airborne soldiers in 2002 Afghanistan had ACOG TA01-NSN 4x32 scopes mounted to their M14 rifles. The M14 rifle as a battle rifle is far from obsolescence.

Scott R. Gourley writes in the November, 2003 Army Magazine,

Another historically proven addition using the RFI [Rapid Fielding Initiative] for the Stryker brigade is the 7.62 mm M14 rifle. According to SFC Myhre, the M14s allow squad-designated marksmen a large caliber rifle that will cover more area and provide capability that was only available in very limited numbers within the individual sniper sections.

The M14s, which are equipped with Leopold Mk IV scopes, are fielded at a rate of one per squad, with additional weapons going to specific slice elements within the brigade.

In February 2004, the U. S. Army established a new school called Squad Designated Marksman School at Camp Bullis (San Antonio, TX). The U.S. Army issued orders to a group of civilian shooters to serve as the faculty for this school for a period of two weeks. Designated as Volunteer Military Instructors, these civilians were all distinguished competition match shooters and members of the Texas State Rifle Association. Two groups of forty soldiers from the U. S. Army First Cavalry Division (Fort Hood, TX) were put through a one-week course on operating and maintaining the M14 rifle as a Squad Designated Marksman.

### **The M14 in the U. S. Navy**

U. S. Navy ships inventory the M14 rifle for several purposes. They are or were maintained by Gunner's Mates on surface ships and Missile Technicians or Fire Control Technicians on submarines. The M14 rifle is used to shoot a line (rope for landlubbers) from one ship to another during underway replenishment, arm the Shark Watch during swim call, repel boarders, and arm the security detail during loading and off loading of nuclear weapons on submarines.



Navy SEAL Team 1 operating out of the Rung Sat Special Zone in the Republic of Viet Nam was equipped with the M14 rifle until November 1967. The Navy SEAL Teams equip themselves with M14 and M25 rifles when the needs of the mission dictate.

There are times when use of the M14 rifle is totally unexpected but very useful. One such instance occurred while the ballistic missile submarine USS Nathan Hale SSBN 623 was on deterrent patrol in 1985. As a Lafayette Class SSBN, the Nathan Hale was equipped with a device known as the "towed array." The towed array was a black steel box about the size of an automobile. It contained an assortment of radio and sonar equipment. The towed array was attached to a steel cable that could be reeled in or out from its compartment within the steel decking just aft of the missile tube hatches. With the towed array deployed the submarine was limited to the speed, depth and dive angle it could do to prevent losing it. The benefit was that the submarine could remain submerged but continuously receive radio messages. While on deterrent patrol one day somewhere in the Atlantic Ocean, the Officer of the Deck forgot that the towed array was reeled out. He ordered a bell (order to change speed) too fast for the steel cable attached to the towed array. The towed array detached from the boat (submariner term for submarine) and was quickly floating on the ocean surface. Considering the tactical situation and the sensitive nature of the equipment lost, the Captain ordered the boat to surface. After the ship had ventilated, the Captain and a Missile Technician Second Class armed with a M14 rifle laid (hurried quickly) to the bridge. The Captain ordered the Missile Technician to sink the towed array. After cycling 134 times, the M14 rifle had put enough holes in the towed array casing to sink it to the bottom of the Atlantic Ocean. The boat quickly dove (submariner term for submerged) thereafter and carried on its deterrent patrol without further incident.

### **The M14 in Other Service**

The M14 rifle remains in use today with U. S. Air Force pararescue jumpers, at West Point Military and Annapolis Naval Academies, Virginia Military Institute and JROTC units nationwide. M14 rifles in the inventory of JROTC units have been demilitarized. The barrels are plugged and welded to the receiver, the firing pins removed and the bolt firing pin front end hole welded over. The M14 rifle is frequently used as a ceremonial rifle by drill teams and color guards and at Arlington National Cemetery. The Tomb of the Unknown Soldier at Arlington National Cemetery is guarded round the clock by U. S. Army soldiers in Company E of The Old Guard. The Tomb Guard uses M14 rifles. Some federal, state and local law enforcement agencies in the United States also have them in inventory on loan from the U. S. Army through the 1033 program. The Law Enforcement Support Office is tasked by the Defense Logistics Agency to transfer excess DOD equipment to law enforcement agencies. The 1033 program was previously known as the 1208 program.

While not related to military service or law enforcement the M14 type rifle has been used dramatically in entertainment industry television shows and films over the years. The M14 rifle probably got its entertainment debut on the CBS broadcast television situation comedy Gomer Pyle, USMC that aired from September 25, 1964 to September 19, 1969. The M14 type rifle is also seen in scenes of fictional 1960s Viet Nam combat on the NBC broadcast television drama American Dreams. The M14 type rifle has also been featured on the History Channel cable television weekly program Mail Call hosted by former U. S. Marine, Viet Nam veteran, actor and M14 fan R. Lee Ermey. A list of big screen films with the M14 type rifle includes The Green Berets (1968), Raw Deal (1986), Full Metal Jacket (1987), Gardens of Stone (1987), Distant Thunder (1988), The Siege of Firebase Gloria (1988), Born On The Fourth Of July (1989), Forrest Gump (1994), On Deadly Ground (1994), The Shawshank Redemption (1994), The Postman (1997), Rogue Force (1998), Black Hawk Down (2001), Tears Of The Sun (2003) and The Rundown (2003).

## Springfield Armory Historical Museum

A number of Springfield Armory and Harrington & Richardson M14 rifles were transferred to the Springfield Armory Historical Museum (Springfield, MA). For the most part, these transfers occurred between September 14, 1959 and May 9, 1967. M14 rifle receiver serial number 2085 was transferred to the Museum on January 22, 1986 from Rock Island Arsenal. Some of the M14 rifles at the Springfield Armory Museum were transferred back to the Army (Rock Island Arsenal, Watervliet Arsenal, and Fort Lee) between April 26, 1966 and May 18, 1972. The museum is operated by the U. S. Department of Interior National Park Service. A perusal of the online notes for the Museum reveals the following rifles among the inventory:

<b>Serial Number</b>	<b>Comment</b>
D.D.E. 1	One of two presentation M14 rifles made for President Eisenhower
X-45	Harrington & Richardson M14 Guerrilla Rifle made in 1962
2000	First production M14 off the manufacturing line
10117	M14E2 rifle
106436	M14 rifle with the experimental X-1 40 mm grenade launcher
539712	M14E1 Type V rifle
545480	M14 rifle used as an endurance test piece for 30,000 rounds

## Chapter 2 NOTES

1. Howe, Walter J. and E. H. Harrison. "The M14 Rifle." American Rifleman October, 1961. p. 21.
2. Weller, Jac. "U. S. Rifles Do the Job in Vietnam." American Rifleman November, 1968. p.18.
3. www.battlerifles.com June 17, 2004 post by rwp.

# Chapter 3

## The M14 in Foreign Service

### Israeli Defense Force

The Israeli Defense Forces used the M14 as a sniper weapon system from 1973 to 1997 when it was replaced the M24 SWS. Israeli Military Industries built 10,000 sniper rifles out of the 35,000 rifles given to them by the United States. The remaining M14 rifles were disassembled for spare parts. The Israeli Defense Forces used M14 sniper rifles for fire support during the 1982 invasion of Lebanon. Optics on the Israeli M14 rifles was either El-Op Nimrod 6X40 mm day or Litton AN/PVS-2 night scopes. In 1994, the El-Op Nimrod day scope was replaced with the Svarowski Futonic 6X42 mm scope. The M14 is still in use by the IDF Reserve. Fifty M36 bull pup rifles were purchased by the IDF in the late 1980s.

### Columbian Army

The Colombian Army has used the M14 and M14K rifles in action against drug traffickers known as FARC. The Philippine Army, Marines, CAFGU (regional militia) and the rebel New Peoples Army have used American and Chinese M14 rifles. M14 rifles were in use by both Haitian government forces and insurgents during the February, 2004 uprising. M14 rifles were turned in by rebels to the government of Honduras at La Ceiba during the summer of 2003.

### Taiwan

**Taiwanese Type 57 Rifle** – The Memorandum of Understanding between Taiwan and the United States grants license to the Government of Taiwan to produce M14 rifles. The January 23, 1967 memorandum states that Taiwan will “purchase tools, components, material, documentation, technical assistance and assemblies. . .during the period [FY67] through [FY69].” As agreed to in the Memorandum of Understanding, the U. S. Government sold some of the M14 rifle production machinery used by Harrington & Richardson to Taiwan in 1968. The Memorandum of Understanding also required “that items produced. . . will be interchangeable logistically with items produced by or for the” United States Government. The State Arsenal of the Republic of China (Taiwan) made approximately 1,000,000 Type 57 rifles from 1969 to the late 1980s. (1) The Taiwanese government has at least 600,000 Type 57 rifles in inventory. (2) There are two models of Type 57 rifles. Both the first and second model receiver heels are marked in Chinese with the exception of the serial numbers use Arabic numerals. First model Type 57 rifles were assembled with many USGI parts including stocks, flash suppressors and magazines. The Taiwanese government did not receive the tooling to make flash suppressors and magazines when they received the H&R production machinery. Thus, they had to make the tooling to manufacture these parts to continue production. The first models had serial numbers 000001 to 048655. The second model began with serial number 048666. The Taiwanese developed a simplified rear sight for the second model Type 57 rifle and the receiver heel information is rearranged. There has not been any collaboration whatsoever of any kind between the People’s Republic of China and Taiwan on M14 type rifle design or manufacture.

### Destruction and Export of USGI M14 Rifles

M14 rifles have been given or sold to foreign governments under U. S. military aid programs since the early 1970s. As of 1996, at least 450,000 M14 rifles had been transferred to foreign armies while another 750,000 were destroyed by the United States. The Naval Surface Warfare

Center (Crane, IN) and Anniston Army Depot (Anniston, AL) were two facilities used to demilitarize M14 rifles in the 1990s. After each rifle is destroyed a certificate is signed, dated and kept indefinitely. Destroyed M14 receiver halves have sold to collectors and those who work on M14 stocks.

A partial list of foreign governments that have received M14 rifles from the United States includes Belize, Chad, Chile, Colombia, Dominican Republic, Estonia, Greece, Haiti, Israel, Jordan, Latvia, Lithuania, Philippines, South Korea, Taiwan, and Turkey. Some examples of such transfers are as follows:

<b>Nation</b>	<b>Amount</b>	<b>Year(s)</b>	<b>Transfer Method</b>	<b>Cost</b> If Available
Belize	15	1995	EDA	\$828.00
Chile	12	1995	EDA	\$662.00
Colombia	10,000	1990-92	FMS	
Estonia	40,500	1998	EDA	Free
Israel	35,000	1973		Free
Latvia	10,000	1996	EDA	Free
Lithuania	40,000	1998	EDA	Free
Philippines	3,638	1994	EDA	\$200,817.60
Taiwan	30,450	1995	EDA	\$1,680,840.00
Turkey	200	1995	EDA	Free

EDA = Excess Defense Articles program  
 FMS = Foreign Military Sales program  
 MAP = Military Assistance Program

124,815 M14 rifles were exported under the EDA program between 1995 and 1998. Some were given at no cost under the EDA and MAP programs while other M14 rifles were sold under the FMS program. The Excess Defense Articles program is authorized under the Federal Assistance Act of 1961. Other M14 rifles were transferred to foreign nations under Military Assistance Programs. An estimated total inventory of less than 200,000 existed as of 1996 (3). A Total Army Assets database query performed during the first half of 2001 found a total U. S. Army inventory of 120,021 M14 rifles. This query did not account for M14A1, M14M (Modified) and M14 NM (National Match) rifles in the possession of the U. S. Army or any M14 rifles in the inventory of the U. S. Navy, Marine Corps or Air Force.

The reader may be puzzled regarding why M14 rifles (and other small arms) should be destroyed or exported by the United States. The discussion below provides some interesting background. (4) The present author is not endorsing this point of view or government policy. It is presented here for the benefit of the reader.

During the Cold War, the US military contained a huge stockpile of weapons that would enable it to fight two wars simultaneously. From the Second World War to the late 1980s, this roughly equated to 2.3 small arms for each member of the Armed Forces. The shift during the 1990s, towards flexible, high-tech rapid-reaction forces meant that a large floating reserve of small arms was no longer required.

Initially, the US Armed Forces destroyed large quantities of these newly surplus weapons, including 479,367 M14 rifles in 1993-94 and roughly 350,000 M16A1 rifles in 1996. But under increasing pressure from gun advocates in Congress, an amendment was passed to the 'Defense Authorization Act' in 1996 to prohibit the Army from destroying further 'collectable' guns. The amendment has been passed every year since, creating a growing stockpile of surplus weapons that gun advocates hoped would be made available for sale at a later date.

In a change of tack in 1995, the Army began to transfer its surplus stocks to foreign

governments. Between 1995 and early 1998, 321,905 surplus arms were exported to foreign militaries under the Excess Defense Articles program. The main recipients were the three Baltic states of Estonia, Latvia and Lithuania, Israel, Philippines and Taiwan.

From the perspective of the US Government, this policy of exporting surplus stocks to friendly governments has the twin benefit of strengthening vulnerable allies while simultaneously reducing the surplus stockpile. The blanket prohibition on the re-transfer of US military equipment without prior approval from Washington is also said to prevent the weapons from being diverted to third countries.

### **Foreign Sales of USGI M14 Rifles**

Israel has exported U. S. Government Issue (USGI) M14 rifles to New Zealand and Canada for commercial sale and to Italy for government use. A BattleRifles.com member and resident of Isle of Jersey, United Kingdom has been the owner of a USGI Winchester M14 rifle since about 1989. A member of The M4/M1A Firing Line discussion board living in Barbados legally owns a Harrington & Richardson USGI M14 rifle. A small number of M14 rifles remain in the Socialist Republic of Viet Nam. At least two, a M14 and a M14A1, are on display at the War Remnants Museum 28 Vo Van Tan District 3 Ho Chi Minh City. Some M14 rifles have been exported from Viet Nam to the Netherlands, Finland, Germany, Luxembourg, and Norway where they are available for sale to private individuals. For example, Mr. van Veen of Amsterdam imported M14 (and M1 Garand and Carbine) rifles into the Netherlands during the 1980s. Countries that allow the commercial importation of USGI M14 rifles do not allow the owners to have automatic fire capability so the rifles and / or parts are regulated to prohibit select fire. For example, M14 rifles are legal for civilians to own in Germany but the selector lever is milled off and the USGI flash suppressor is replaced with a faux suppressor.

### **Chapter 3 NOTES**

1. Stevens, R. Blake U.S. Rifle M14 from John Garand to the M21 Collector Grade Publications: Cobourg, Ontario, Canada. 1991. P. 317 and Springfield Armory National Historic Site [www.rediscov.com/spring.htm](http://www.rediscov.com/spring.htm) Catalog Number SPAR 8318 referencing Military Small Arms of the 20<sup>th</sup> Century by Ian Hogg and John S. Weeks Krause Publications Iola, WI 2000.
2. Other Source # 12. Telephone interview. April 28, 2004.
3. Duff, Scott A. and CWO John M. Miller. The M14 Owner's Guide and Match Conditioning Instructions Scott A. Duff Publications: Export, PA. 1996. P. 20.
4. Davis, Ian. "Disposal of Surplus Weapons in OSCE."  
[www.smallarmssurvey.org/copublications/DisposalofsurplusweaponsinOSCE/01OSCE\\_USA.pdf](http://www.smallarmssurvey.org/copublications/DisposalofsurplusweaponsinOSCE/01OSCE_USA.pdf)

# Chapter 4

## The Refined M14

### **M14E1**

In 1962, Springfield Armory developed five versions of a folding stock designated as the M14E1 at the request of the Army. Such a rifle was to be carried by paratroopers, tank crews and vehicle drivers. The designs included both under-folding and side-folding stocks for the M14 rifle as follows:

M14E1 Type I - no information available, tool room model

M14E1 Type II – under folding style with left side mounted front and rear sling swivels

M14E1 Type III – under folding Soviet AKM style with left side mounted front and rear sling swivels

M14E1 Type IV – under folding style with folding front and rear pistol grips and hinged butt plate

M14E1 Type V – left side folding with folding front and rear pistol grips and hinged butt plate

The M14E1 Type IV was outfitted with a clip on muzzle stabilizer that was also capable of mounting a bayonet. One M14E1 Type V rifle was made in January 1963. The Type V stock had an aluminum bar stock arm, aluminum butt plate and swivel bracket. “Difficulties in production of forged aluminum arms were not solved because of lack of funds and programs.” (1) The M14E1 Type V was shown to the Army and Marines (Fort Belvoir, Fort Knox, Fort Campbell, Fort Benning and Quantico) by representatives of Springfield Armory during the first six months of 1963. Fort Benning recommended that the Type V stock be changed to a right side folder and that the front pistol grip fold to the rear instead of to the front. The Marines Test Center recommended acceptance of the M14E1 but it was not meant to be.

### **M14E2 and M14A1**

The M14 rifle assigned to the automatic rifleman had an M14E2 stock and sling, stabilizer assembly and M2 bipod. His rifle would have a selector switch and selector shaft spring installed in place of the selector lock. In this configuration, the rifle was designated as the M14E2 in 1963. Captain Durward Gasney of the U.S. Army Infantry Board is credited with the M14E2 design. Between July and December 1964, 8,350 M14 rifles were converted to M14E2 rifles and delivered to the military. Originally, TRW and Winchester were tasked with the M14E2 conversions but General Tire was late in delivering the rubber coated metal fore grips. When the fore grips were finally delivered, Springfield Armory (Springfield, MA) did the conversions in order to speed delivery of the M14E2 to military units. By April 1966, the M14E2 had been designated as the M14A1 (NSN 1005-00-072-5011).

The M14E2 as a Sniper Rifle - Less than 100 M14 rifles were fitted with walnut M14E2 stocks for use as sniper rifles that could also fire M198 duplex ammunition in automatic if need be. This work was performed at Anniston Army Depot and Rock Island Arsenal. An example of these M14E2 sniper rifles is discussed in the article entitled "Snipers in Vietnam Also Need Firepower" by Army Lieutenant Louis A. Garavaglia in the January, 1968 American Rifleman. Prior to 1968, a sniper detachment was created within the Long Range Reconnaissance Patrol (LRRP) Company of the U. S. Army 4th Division in Viet Nam. The LRRP Company sniper detachment tested the following for use as a sniper weapon: Winchester 70, Remington 700, M14, M16A1 and three versions of the AK47. The M14 was chosen because it was reliable,

capable of long distance shots and could deliver volume of fire if needed. These M14E2 sniping rifles were used in the Central Highlands of South Viet Nam and configured as follows: 1) all Harrington & Richardson models 2) equipped with M14E2 stocks 3) equipped with M84 2.2 X scopes 4) lighter M16A1 bipods mounted on the gas cylinders just forward of the spindle valves and 5) the selector switches were installed. The M14E2 proved sufficiently accurate for sniping use. It was found that "seasoned marksmen, firing from the prone position at 700 meters, had no trouble hitting the Army "E" type silhouette targets, which correspond roughly to a man in kneeling position." (2) Snipers equipped with these M14E2 rifles took nine 20 round magazines of ammunition with them. The nine magazines were loaded to eighteen rounds each. Two magazines contained M118 match grade cartridges and the other seven magazines held M198 duplex rounds. Should the three-man sniper team get into a firefight, "snipers would eject the match-grade, switch to "duplex" and flip the selector switch to full-automatic for volume fire." (3)

### **M14 Grenadier**

Until it was replaced by the M79 around 1965, the grenadier's rifle was equipped with the M15 grenade launcher sight and the M76 grenade launcher. M14 rifles equipped as such did see combat service in Viet Nam until as late as June 1966. The grenadier prepared the M14 rifle by turning the spindle valve, loading a grenade blank into the magazine and placing a grenade on the M76 grenade launcher. The grenadier could propel a one and one-half pound grenade out to a distance of 250 meters depending on the angle at which he held the rifle and the launcher position to which the grenade was placed. Grenade types included smoke, signaling, anti-tank, white phosphorous and training.

### **M14 M**

A very few M14 rifles were permanently rendered semi-automatic. This was accomplished by welding the selector shaft lock, selector lock pin, selector shaft, sear release and the receiver. This prevented installation of the selector switch. Otherwise, the M14 M (Modified) rifle was a rack grade M14. This modification was officially announced in the Director of Civilian Marksmanship 1963 Rifle National Matches bulletin according to Stevens. The Army announced it in Army Regulation 920-25 dated 8 February 1965. "It was the intention of the U. S. Army to issue modified M14 rifles to shooting clubs and to sell them through the Director of Civilian Marksmanship (DCM) program . . . Apparently, these rifles were never released." (4) The Gun Control Act was signed by President Lyndon B. Johnson on October 22, 1968 and it went into effect on December 16, 1968. This law, among other things, prevented distribution of the M14 rifle to the public. The M14 M rifle was identified by stamping the letter "M" after "M14" on the receiver heel. Springfield Armory (Springfield, MA) had converted 1009 rifles were converted to M14 M by June 30, 1963.

### **M14 NM**

A development program to turn the M14 into a competition match rifle was begun at Springfield Armory in 1959. Springfield Armory and TRW made such M14 rifles from scratch. They were designated M14 NM. Additionally, Springfield Armory and Rock Island Arsenal converted some M14 rifles to M14 NM models. M14 NM rifles received the same welding operation as the M14 M rifles.

A) M14 NM Production - 18,325 M14 NM rifles were produced from 1962 to 1967 with 6,500 of them produced in 1962 and 1963 by Springfield Armory. (5) Duff writes "an order for delivery of 3,000 M14 National Match rifles by August 1, 1962 was received by the Armory" and "Springfield reportedly delivered 3,550 new National Match rifles in 1963." (6) This makes Duff's

accounting fifty more than Poyer for 1962 and 1963. 7200 M14 NM rifles were manufactured in 1962 and 1963 at Springfield Armory. (7) Additionally, the National Rifle Association reported 4,874 M14 NM rifles made by TRW. (8) However, TRW reported production of 7,609 M14 NM rifles. (9) Using the smallest numbers available, the minimum number produced was 18,325 (10). The maximum number produced would be (7200 built for '62 and '63 + 7,609 built for '64 + 6,951 rebuilt for '65, '66 and '67) is 21,760.

B) M14 NM Distinctive Features - The receiver heels were stamped M14 NM. The NM stamping appears just to the right of M14 or on the flat surface next to the rear sight. The major differences between the M14 NM and the M14 were: 1) NM barrel is held to half the tolerances of the rack grade barrel and is not chrome plated 2) NM rifle receiver is glass bedded to the stock 3) specific parts are hand fitted and assembled 4) NM rear sight is adjustable in ½ MOA increments and 5) select fire parts are welded to prevent operation.

C) M14 NM Issue - M14 NM "rifles were made available at the 1963 National Rifle Matches for shooter orientation" and "became a regular issue item at the 1964 and 1965 Matches." (11) The M14 type rifle was popular in competition shooting until the early 1990s. The M14 was used by the U. S. Marine Corps at Camp Perry as late as 1996. However, U. S. DCM shooting clubs such as the Alabama State Service Rifle Team still inventory M14 NM rifles at the time of this writing.

D) M14 NM as a Sniper Rifle - The first M14 rifles for sniping duty were used by the U. S. Army. In March, 1967 125 M14 NM rifles mounted with M84 2.2 X scopes were shipped to Viet Nam. There were M14 rifles equipped with M84 scopes in use in Viet Nam even after the XM21 with ART scope was fielded.

E) Civilian Ownership of the M14 NM - The court case, U. S. v. One U. S. (TRW) 7.62mm M-14 National Match Rifle, Serial No. 143711, 1980 WL 95647 (S. D. Ohio, May 20, 1980), is worthy of mention. Though this case applies only to this particular M14 NM rifle, it does establish that the M14 NM rifle as manufactured by TRW (Cleveland, OH) and Springfield Armory (Springfield, MA) is not capable of and is not designed for automatic fire. Robert Sauerman purchased the TRW M14 NM rifle serial number 143711 in 1973 or 1974. It was not registered as a NFA firearm. In order to set the question of the legal status to rest, Mr. Sauerman informed the BATF that he was in possession of the TRW M14 NM. This TRW M14 NM was confiscated from the owner, Robert Sauerman, by the BATF on September 27, 1977 at his gun shop near Dayton, Ohio. This TRW M14 NM was judged not to be a machine gun and ordered to be returned to Mr. Sauerman. The TRW M14 NM serial number 143711 was sold by Mr. Sauerman around 1986 or 1987 to the current owner. Later, Robert Sauerman met an untimely death when a drunk driver crossed lanes and hit him head on at a stoplight. The current owner of TRW M14 NM serial number 143711 also possesses the court case documents and a Springfield Armory M14 NM.

## **M15**

From 1955 to 1959, the M15 (T44E5) rifle was developed as a heavier version of the M14 (T44E4). The M15 (T44E5) weighed 13.5 pounds and had a cyclic rate of 750 rounds per minute. The M15 (T44E5) had a bipod, butt plate, heavy non-chromed barrel and wood hand guard. These developmental rifles were stamped T44E5 on the receiver. A rate reducer for the M15 was eliminated since tests showed comparable accuracy at both rates of fire in automatic. The butt plate and bipod ideas were borrowed from the M15 design and added to the M14. During this time, the decision was made to chrome plate standard contour M14 barrels. The M15 was declared obsolete in December 1959 without any USGI rifles ever stamped M15. The M15 (T44E5) had the following parts that differed from the M14: flash suppressor, barrel, gas



cylinder, gas cylinder lock, front band, heavier wood stock with a different liner, heavier and triangular front sling swivel base, bipod, and a M1 Garand butt plate with a BAR hinge carefully inletted and secured with welds.

One commercial M15 rifle was made. Prior to May 1986, a doctor in Ohio custom ordered a select fire M1A™ receiver from Springfield Armory, Inc. The doctor had Springfield Armory, Inc. stamp the receiver M15. To this receiver he added M14 and T44E5 parts he had accumulated to create the only known M15 rifle ever built.

## **XM21 and M21**

Colonel Conway was the Ordnance Officer at The United States Army Marksmanship Training Unit (TUSAMTU) at Fort Benning, GA from 1966 to 1970. Colonel Conway is the author of the original late 1968 edition of the TUSAMTU Accurized National Match M14 Rifle "M14 (MTU-NM)." This manual became the build manual for the XM21. At the request of Army Major General Julian Ewell, commander of the 9th Infantry Division, fifty-four scoped M14 MTU-NM rifles were delivered to the division's sniper school in Viet Nam in late 1968. The Army Weapons Command provided an additional seventy-four M14 NM rifles equipped with the M84 2.2 X scope to the sniper school.

The scoped M14 MTU-NM was designated the XM21 by the U. S. Army Weapons Command at Rock Island Arsenal in 1969. This designation remained until 1972 when it became the M21. The M21 was equipped with an auto-ranging variable power telescope (ART) and National Match iron sights. In 1969, Rock Island Arsenal converted 1,435 M14 NM rifles for sniping duty in Viet Nam. The XM21 rifles were supplied with M118 match grade ammunition.

The variable 3X to 9X scopes used on the XM21 rifles were conceived by Army Lieutenant (later Captain) James Leatherwood and developed by the Army Limited Warfare Laboratory. The Limited Warfare Laboratory at Fort Benning, GA modified Redfield Gunsight Company Accu-Range scopes for the first and second versions. The third version of the original ART scope was wholly manufactured by Redfield with the mount made by Frankford Arsenal. The third version became known as the ART TEL or ART I. James Leatherwood's design improvement consisted of using a cam to adjust the vertical stadia to create a bullet drop compensator. The Viet Nam era Leatherwood scopes were cammed for the M80 and M118 cartridges. Early scope mounts used a single mounting screw developed by the Army MTU and the Limited Warfare Laboratory at the Aberdeen Proving Ground. The 9th Infantry Sniper School students were issued a starlight scope with their XM21 rifle. The AN/PVS-2 starlight scope replaced the AN/PVS-1 for night shooting by 1969. By April, 1970 more than 1300 XM21 rifles were in Viet Nam.

After 1970 USGI National Match barrels were no longer available. Consequently, the U. S. Army Weapons Command purchased match grade barrels from Douglas, Shilen and Hart for the XM21 and M21 rifles. (12) XM21 and early M21 rifles had a bedded and epoxy impregnated wood stock. Later M21 rifles were issued with a fiberglass stock. The Leatherwood Bros. ART II scope was developed by 1978. Various cams were available for the ART II scope according to the ammunition in use. Mounts for the ART II scope had a second mounting screw secured to the stripper clip guide. The Redfield / ART I scopes were replaced in 1981 and later by Leatherwood Bros. ART II scopes. The M21 remained the Army's sniper rifle until 1988 when it was replaced by the M24 bolt action rifle.

## **M14 Product Improved Rifle**

The U. S. Army Material Command funded a project at Rock Island Arsenal to further improve

the M14 rifle. Robert E. Snodgrass headed the project. Three prototype rifles were produced. These rifles had 24 " stainless steel barrels, improved gas systems and no select fire components. These rifles "produced less than two minutes of angle dispersion at 100 yards using M118 Match ammunition. This represents approximately 100 % improvement over the current acceptance standard of the M14 NM specifications." (13) By 1975 the funding for this project was stopped. (14)

## **XM25 and M25**

The M25 rifle is an improved version of the M21. It serves admirably as the spotter's rifle in a military sniper team. According to Dean Michaelis, the concept began with Master Sergeants Amelung and Kapp of the U. S. Army 10th Special Forces Group while at Fort Devens, MA. With the assistance of Brookfield Precision Tool (BPT), the 10th Special Forces Group developed the XM25 rifle between 1986 and 1988. In 1991, the U. S. Army designated it the M25. The XM25 / M25 saw combat service in Panama and the 1990-1991 Gulf War. The XM25 design specification required the rifle to have a mediumweight match grade barrel, Harris bipod and the following Brookfield Precision Tool parts: stock liner, operating rod spring guide, titanium nitride coated gas piston and scope mount. The advantages of a titanium nitride coated gas piston are longer gas cylinder life and accuracy retention. The XM25 rifle had a steel liner placed inside the stock to allow removal of the stock without loss of scope zero. The BPT parts were made from 1988 to 1996. The M25 rifle typically sports a McMillan M2A bedded stock without the steel liner. Brookfield Precision Tool made two different titanium nitride coated gas pistons. Both have drawing number 7267047. The Revision 1 gas piston has the standard diameter gas inlet. The Revision 2 has a smaller diameter gas inlet. Only a relatively few 7267047 Revision 2 gas pistons were made. They were designed for use in sound suppressed M14 type rifles. The U. S. Navy purchased 7267047 Revision 2 gas pistons but the U. S. Army and U. S. Marine Corps did not.

Optics on the M25 varies according to unit preferences. The Army Special Forces favor the Leupold M3A 10X scope whereas the Navy SEALs prefer the Bausch & Lomb Tactical 10X scope. (15) Brookfield Precision Tool also produced an adapter for their scope mount to accommodate the AN/PVS-4 night scope. A scope mount designed by Atlantic Research Marketing Systems (ARMS) was tested by the 82nd Airborne Division and the 10th Special Forces Group but the Army settled on the Brookfield Precision Tool design. The BPT scope mount utilizes three points to secure the mount to the receiver, the mounting area on the left side, the stripper clip guide and the barrel ring.

## **M14 DMR**

During the mid-1990s the concept of a Designated Marksman was discussed within the ranks of the United States Marine Corps (USMC). The Designated Marksman Rifle (DMR) would enable the shooter to deliver accurate semi-automatic fire against multiple targets at greater distances and with greater lethality than with a M16A2. The concept became reality in 1998. The U. S. Marine Corps chose the M14 rifle to become their DMR. In August, 1998 the U. S. Marine Corps Systems Command negotiated three sole source commercial item contracts for scope mounts and rings, barrels and stocks. McMillan Fiberglass Stocks (Phoenix, AZ) supplied 253 M2A stocks for the M14 DMR. To each M14 DMR stock, a Harris bipod was mounted under the forearm. GG&G (Tucson, AZ) provided 253 M1A1 scope mounts and 253 pairs of Sniper Grade Medium 30 mm scope rings. Cooper Precision Manufacturing (Oak Ridge, TN) sold 278 barrels for the M14 DMR. The Cooper barrels were found to not meet the external dimensional specifications so they were not used. Optics on the M14 DMR have been Unertl and Leupold Mk4 10 X scopes. The initial ammunition issued for these rifles was the M118 round but that

was later replaced with the M118LR cartridge. Designed to be effective to 300 meters, the M118LR round makes the M14 DMR effective to a much greater distance. Some M14 DMR rifles have been equipped with OPS, Inc. combination sound suppressor and muzzle brake attachments. This work is done by the USMC Precision Weapons Shop in Quantico, VA. The M14 DMR (NSN 1005-01-458-6235) has seen use in combat with the 26th Marine Expeditionary Unit during 2001 and 2002 in the vicinity of Kandahar, Afghanistan. In Afghanistan, the U. S. Marines had M14 DMRs with OPS, Inc. sound suppressor and muzzle brake attachments and AN/PVS-10 day / night scopes. Currently, the M14 DMR is assigned to Fleet Antiterror Security Teams of the Security Force Battalion within the 4th Marine Expeditionary Brigade. The M14 DMR is also used by USMC Explosive Ordnance Disposal and Military Police units.

### **Semi-automatic Only USGI M14 Rifles**

Three semi-automatic only M14 receivers were manufactured at the Springfield Armory in 1962. Two of the receivers were assembled into complete rifles. They differed from the M14 in the following manner: 1) no selector lug or operating rod rail cuts for the connector 2) M1 Garand design operating rod dismount notch 3) no stock selector cutout 4) M1 Garand butt plate on the stock 5) no spindle valve in the gas cylinder 6) no connector-tripping notch in the operating rod 6) M1 Garand sear installed on the trigger 7) ten round magazine in lieu of a twenty round magazine. These semi-automatic M14 receivers were numbered X500, X501 and X502. X500 remained at Springfield Armory as a bare receiver. Receivers X501 and X502 were assembled into complete rifles. These two rifles were examined by the Chief of Army Field Forces, the Director of Civilian Marksmanship and the Department of Treasury. The Department of Treasury concluded that these rifles were suitable for sales to civilians. Major General Nelson M. Lynde, Chief of Army Field Forces, decided that these modifications deviated too far from the original design. These semi-automatic M14 rifles could not be converted back to the issue rifle in the event of a national emergency. Thus, the project was abandoned. Disposition of these three receivers is unknown.

### **Hahn Machine Company M14 Rifles**

In the 1990s Hahn Machine Company (St. Charles, MO) legally manufactured semi-automatic only M14 rifles by cutting and welding USGI M14 receivers. This was done according to a letter of approval signed by then BATF Chief, Firearms Technology Branch Edward M. Owen, Jr. dated June 8, 1994. The letter was addressed to Mr. Lloyd Hahn of the Hahn Machine Company in St. Charles, Missouri. It was the BATF response to Mr. Hahn's May 11, 1994 submission of a modified USGI TRW M14 receiver for ruling on the assembly of a semi-automatic only USGI M14 receiver. The approval letter granted permission to manufacture semi-automatic only M14 receivers from "properly destroyed" USGI M14 receivers. The destruction procedure first required a specific torch cut procedure on the receiver followed by removal of the selector lug and weld fill in of the operating rod rail cuts. After these steps were completed, the receiver could be weld repaired into one piece. The letter also required Hahn Machine Company to permanently engrave the company name, city and state on the receiver. A second letter from the BATF dated March 22, 1995 and signed by Technical Section ATF Specialist Naomi L. Rubarts was the cover document for an approved Application for Registration for Tax-Free Transactions under 26 USC 4221. The receivers were heat-treated after all welding operations had been completed. The quality of the welding on Hahn Machine receivers is reputed to be very good. The number of Hahn Machine welded semi-automatic M14 receivers is unknown but is thought to be in the hundreds.

## Ignore the Petition!

Ignore any petition regarding public sales of M14 rifles. Here is the documentation supplied by azski of BattleRifles.com. His name has been obscured for privacy reasons.

From: Orest Michaels <omichaels@odcmp.com>  
Reply-To: <omichaels@odcmp.com>  
To: <xxxx@xxxxxxxx.org>  
Subjects: RE: M14's  
Sent: Tuesday, June 17, 2003 6:42 AM

Xxxx, I sincerely appreciate everything that you are trying to do.

However, what you are reading on the Internet is total crap. No matter how many times we say it - the Army does not have any M14s that are surplus. The petition that is floating around is over 20 years old, many of the "facts" in it are incorrect, and it is being circulated without CMP permission or even coordination with the CMP. The folks who are pushing this issue have not bothered to find out from the CMP if we are even interested in obtaining M14s. There is a lot of baggage associated with the M14s that we may not want to get involved in, or even be allowed to get involved in because of our corporate status.

Facts are that the Army only has a relatively few thousand M14s in inventory, the M14 is not obsolete, it is an active weapon for the Navy and USMC and other government agencies, there is an active program ongoing for sale of the M14 to law enforcement agencies, no M14s are being destroyed or have been destroyed for almost ten years.

I sincerely do appreciate you asking. You're one of very few. We would appreciate not getting any assistance from the public concerning the M14.

Orest Michaels  
Chief Operating Officer

-----Original Message-----

**From:** Xxxx Xxxxxxxx [mailto:xxxx@xxxxxxxx.org]  
**Sent:** Monday, June 16, 2003 8:26 PM  
**To:** custserve@odcmp.com  
**Subject:** M14's

There seems to be a lot of talk around the gun-boards that the government may be making available to CMP M14's. Is there anything we as citizens can do to assist with this process?

Xxxx Xxxxxxxx  
ID# XXXXXXXX

## U. S. Civilian Ownership of USGI and Chinese Select Fire M14 Type Rifles

There are between seventy-five and one hundred National Firearms Act (NFA) registered USGI M14 rifles (including legally welded USGI receivers) in the United States according to an ATF Agent who conducted an audit of the NFA Registry. The Agent conducted the audit with the

specific purpose of determining the number of USGI M14 rifles in the Registry.

In March, 1986 Harrington & Richardson registered a group of eight to twelve H&R USGI M14 rifles with the BATF. These M14 rifles had never left the factory and were registered in time to become legal for civilian possession. Mr. R. J. Perry later purchased these H&R M14 rifles from Harrington & Richardson. Subsequent to the passing of Mr. Perry, these have been sold to other individuals.

Additionally, a group of USGI M14 rifles were released for sale by the U. S. Department of Energy. These USGI M14 rifles were obtained and subsequently sold by Class 3 FFL Charlie Logan. The number of DOE M14 rifles released for sale has been reported as fifteen by a very credible source. Many of these DOE M14 rifles have "#" and a number etched on the left side of the receiver above the stock line. A second very credible source has observed one DOE M14 rifle etched with "# 29." Another four of these DOE M14 rifles are etched with the following: # 8, # 19, # 21 and # 34. At least one of these DOE M14 rifles are not etched with a number on the receiver.

Specialty Arms (Springfield, OH) and SOT/FFL Bill Fleming (Collinsville, OK) legally welded USGI receivers and registered them in time to remain transferable. H&R Gun Co. serial number 0556 is a select fire USGI M14 receiver rifle. It was originally registered with the BATF on a NFA Form 1. On March 31, 2003 this rifle sported a USGI birch stock, USGI M2 bipod, 18 " barrel and lugless flash suppressor just before it was sold by Elite Firearms quickly thereafter. A small number of Chinese Norinco select fire M14 rifles were imported after 1986 into the United States as post-'86 dealer samples for sale to law enforcement agencies. Serial numbers for three NFA Registered post-'86 ban dealer sample Norinco select fire M14 rifles are as follows: 620035XX, 620401XX and 640026XX.

**Select Fire M14 Rifle Rate of Fire Changes** - During the Viet Nam War, American soldiers experimented with different means of changing the rate of fire of a M14 rifle in automatic. Soldiers in Viet Nam developed modifications which could make the M14 fire at either rate of 550 or 1100 rounds per minute. By milling a 0.060" wide and deep channel along the top of the cylindrical portion of the gas piston the rate of fire was slowed to 550 rounds per minute. The author has been able to slow the rate of fire in his select fire M1A™ to 500 rounds per minute by drilling a hole in the center of the gas cylinder. The drill bit size used for this is 0.0400 ".

## Chapter 4 Notes

1. Springfield Armory National Historic Site [www.rediscover.com/spring.htm](http://www.rediscover.com/spring.htm) Catalog Number SPAR 3300.
2. Garavaglia, Louis A. "Snipers In Vietnam Also Need Firepower." American Rifleman January, 1968. p. 19.
3. Ibid, p. 19.
4. Duff, Scott A. and CWO John M. Miller. The M14 Owner's Guide and Match Conditioning Instructions Scott A. Duff Publications: Export, PA. 1996. p. 12.
5. Poyer, Joe. The M-14 Type Rifle A Sporter's and Collector's Guide North Cape Publications: Tustin, CA. 1997. p 10.
6. Duff, Scott A. and CWO John M. Miller. p. 12.
7. Harrison, E. H. "The M14 National Match Rifle." American Rifleman May, 1966. p. 48.
8. Poyer, Joe. p. 10. and Stevens, R. Blake. p. 337.
9. Stevens, R. Blake U.S. Rifle M14 from John Garand to the M21 Collector Grade Publications: Cobourg, Ontario, Canada. 1991. p. 337.
10. Poyer, Joe. p. 10.
11. Harrison, E. H. "The M14 National Match Rifle." American Rifleman May, 1966. p. 46.
12. Stevens, R. Blake. p. 282. Stevens quoting Colonel Conway.
13. Ibid, p. 309. Stevens quoting a report by Robert Snodgrass dated July 10, 1975.
14. Ibid, p. 309.
15. Duff, Scott A. and CWO John M. Miller. p. 10.

# Chapter 5

## The Commercial M14 Types

### U. S. Commercial Production of the M14 Type Rifle

Commercial production of the M14 type rifle began in 1971 and continues to the present. After September 12, 1994, new commercial production M14 type rifles assembled in the United States after September 12, 1994 do not have a telescoping or folding stock or bayonet lug. Such rifles are assembled after enactment of the Violent Crime Control and Law Enforcement Act. This federal law restricts the number of specified military style features a semi-automatic detachable magazine fed centerfire rifle may possess. Unless new legislation is signed by the President of the United States this law will sunset on September 13, 2004. The following list is not complete but based on observation of serial numbers U. S. commercial manufacturers have produced at least this many M14 type receivers:

A. R. Sales Co. (South El Monte, CA) Mark IV - 163

Armscorp (Silver Spring and Baltimore, MD) M14 NM, M21 - 17,100

Enterprise Arms (Irwindale, CA) M14A2 - 1053 (serial numbers are preceded by E, EA or ABNI)

Federal Ordnance (El Monte, CA) - M14, M14A, M14SA, CM14SA - 60,000

Fulton Armory (Savage, MD) M14, M14 NM, M21, XM25 - 500 (serial numbers began at FA 00000)

Hesse (CT) - 002

LRB Arms (Bellerose, NY) M14SA - 89 (serial numbers less than 01200) + 150 (serial numbers 01200 and greater)

Mauntz / H&R Gun Co. (Toledo, OH) Semi Auto - 1126

Maunz Mfg. (PA) U. S. RIFLE – 1000 (serial numbers are preceded by EX-)

Sarco (Stirling, NJ) M21 - 002

Smith Enterprise (Mesa and Tempe, AZ) M-14, M-14 NM - more than 176 (select fire pre-'86 ban, FA series serial numbers) + 2,505 (pre-'94 ban) + more than 50 (post-'94 ban, 5000 series serial numbers)

Smith, Limited M-14 - 237

Springfield Armory, Inc. (San Antonio and Devine, Texas and Geneseo, Illinois) M1A, M-1A - 164,881 + 200 (IDF series serial numbers) + 191 (WF serial numbers) + 500 (VME serial numbers)

### Current Commercial Receiver Manufacturing

Presently, only Armscorp, Enterprise Arms, LRB of Long Island, Inc. and Springfield Armory, Inc. are producing M14 type receivers in the United States. Smith Enterprise, Inc. has definite plans to manufacture M14 type receivers in the future.

### U. S. Commercial Manufacture Select Fire M14 Type Rifles

Civilians may own select fire M14 type rifles in the USA by civilians as long as federal, state and local laws are complied with. However, the May 19, 1986 McClure-Volkmer Act ceased production of select fire M14 type rifles allowed for civilian possession under the NFA. Since 1971, U. S. commercial manufacturers have produced more than 245,000 M14 type rifles but less than 1 % of them are select fire capable. An estimated 1000 to 2000 factory made

Springfield Armory, Inc. (Geneseo, IL) and a few more than 176 Smith Enterprise select fire rifles were produced prior to May 19, 1986. At least three Springfield Armory, Inc. M1A™ rifles made by the Texas company have been identified as NFA registered select fire conversion models. One of them is serial number 000908 and another is 001691. The third Texas M1A™ was converted by SOT/FFL Stan Andrewski. A few Illinois M1A™ rifles were converted to select fire after they left the factory and registered under the National Firearms Act. Rock Island Armory (Geneseo, IL) and SOT/FFL Neal Smith (Smith Firearms in Mentor, OH) were businesses who legally performed such work. The highest serial number Springfield Armory, Inc. NFA registered select fire M1A™ observed is 038770. It is a 1986 factory built select fire model.

### **Springfield Armory, Inc. M14 Type Rifles**

Springfield Armory, Inc. is the oldest and largest commercial manufacturer of M14 type rifles. In 1994, they were renamed Springfield, Inc. for a time. Springfield Armory, Inc. has been located in Geneseo, Illinois since 1974.

### **Texas Production**

The Springfield Armory, Inc. story begins with Mr. Elmer Balance of the L.H. Gun Co. in Devine, Texas. Mr. Balance spells his name with one lower case letter "L." The U. S. Army Springfield Armory had closed down in April, 1968. After the armory closure, Mr. Balance "laid plans to acquire "Springfield Armory" as a trademark." (1) So, the name of his company was changed to Springfield Armory, Inc. The change was a successful marketing strategy. Mr. Balance began selling the Springfield Armory M1A™ in September 1971. They were assembled from USGI M14 parts except for the receiver and select fire parts. The Texas business warranted M1A™ rifles for one year.

Mr. Balance built less than 2780 rifles using USGI and NM M14 parts. Some of the machinery and parts purchased by Mr. Balance came from the Harrington & Richardson M14 project. The M1A™ became eligible for use in NRA High Power shooting matches on January 01, 1974. The NRA modified Rule 3.1.1 in the High Power Rifle Rule Book "to include commercially manufactured rifles having the same configuration as the M14 rifle." (2). Mr. Balance states that he never made or converted any M1A™ or M14 type rifles to select fire. He also never stamped any receivers with "X" in the serial number. All of the Texas M1A™ serial numbers start with a zero. It is not possible to know by serial number what the model was originally for each rifle. The serial numbers were logged in as "manufactured complete" regardless of model type, standard, National Match or E2 or as a receiver if shipped unassembled. Some of the Texas M1A™ rifles were assembled at Fort Benning, GA by U.S. Army armorers. All Texas M1A™ complete rifles were assembled with Texas stamped barrels.

### **Texas M1A™ Models**

From a L. H. Gun Co. brochure, the original M1A™ prices were as follows:

Standard model with fiberglass stock \$200.00

Standard model with walnut stock \$225.00 or used walnut stock \$215.00

Standard model with beech stock \$215.00 or used beech stock \$200.00

M1AE2 with birch stock \$250.00

M1AE2 with bipod \$275.00

Match grade model with walnut stock \$250.00

New issue bayonet \$5.00



The choices and prices for the M1A <sup>TM</sup> in January 1973 were as follows:

Issue Grade, test fired, fiberglass stock, \$200.00

Issue Grade, test fired, wood stock, \$215.00

Match Grade, test fired and group tested, glass-bedded stock, \$250.00

E2, test fired with M14A1 birch stock assembly, \$250.00

## **Transition from Texas to Illinois**

Due to financial difficulties, Mr. Balance sold his business to the Reese family in Illinois. However, Elmer Balance retained the right to use the product name, M1A <sup>TM</sup>, in Texas. The sale occurred in the fall of 1974. (3) All inventory, including receivers and barrels, and all serial numbers above 002780 were sold to Bob Reese. The Reese family transferred the new company headquarters and production facilities from Texas to Geneseo, Illinois. There were production problems that troubled the Reese family for some time. These problems were sorted out and M1A <sup>TM</sup> production resumed in 1975.

The bare receivers, barrels and other parts left over from the Texas firm were used to help start production of the M1A <sup>TM</sup> in Illinois. The serial number transition from Texas to Illinois occurs between 002700 and 002780. All receivers below 002700 were sold as either complete rifles or bare receivers by Mr. Balance. Only a few receivers, approximately twenty-five, between 002700 and 002780 were given to Bob Reese. The owner of M1A <sup>TM</sup> serial number 002734 was told by Springfield Armory, Inc. Customer Service that his rifle shipped from Geneseo, Illinois on April 28, 1975. Geneseo III is electro-penciled on the barrel of M1A <sup>TM</sup> serial number 002734. Most likely, serial number 002734 was one of the few receivers between 002700 and 002780 that went to Illinois.

## **Texas Barrel Stampings**

From Poyer and owners of various model Texas M1A <sup>TM</sup> rifles it has been determined that there were three-barrel stampings for the Texas company. The first 100 barrels were hand stamped. After that, Mr. Balance used a pantograph to mark the barrels because it was faster and nicer type. He had 500 barrels stamped at a time. The marking L H Gun Co, S. A. TX 78226 was found on the first rifles. From a photograph, the barrel marking changed to RT I BX 210 DEVINE TEX. This marking is found on serial number 0002XX. In June, 1974 Springfield Armory, Inc. moved production back to San Antonio to cut costs. The last Texas M1A <sup>TM</sup> rifle barrels were stamped 12106 RADIUM SA TEX 78216. The last address marking (12106 RADIUM SA TEX 78216) appeared on the barrels some time between June and October 1974.

An M1A <sup>TM</sup> with serial number 0028XX has been identified with the 12106 RADIUM SA TEX 78216 marking. The barrels on the first M1A <sup>TM</sup> rifles leaving the Illinois factory were marked Geneseo III. However, these rifles were sold with a coupon to be used towards the purchase of a spare barrel. Some of the spare barrels sold by the Illinois company had Texas markings. Thus, a few individuals had these Texas marked spare barrels installed on low number M1A <sup>TM</sup> rifles and called them Devine M1A <sup>TM</sup> rifles. Any receiver with serial number higher than 002780 was sold by the Illinois company.

## **Receivers made by Valley Ordnance**

Valley Ordnance (Wilkes-Barre, PA) had re-welded over 50,000 destroyed M1 Garand receivers when the owner, Melvin Smith, found out that there was a market for a civilian version of the M14 rifle. He contacted Winchester to "ask about the machine they'd use to thread M14 receivers" and found out that "most of their M14 production tools were about to be sold." (4)

Melvin Smith purchased this equipment at government auction so that he could produce civilian M14 receivers and parts. Once this equipment was set up in his shop, he designed improvements into the civilian version of the M14 receiver. These changes included increasing the thickness of the receiver bridge, changing the operating rod rail to better support the operating rod and prevent automatic fire, removal of small amounts of material for better clearance, and relocating the operating rod dismount notch. The receiver design was approved as a Title I firearm under the 1968 Gun Control Act by the Department of the Treasury. Thus, Valley Ordnance supplied M1A™ finished receivers to Springfield Armory, Inc. in Texas. These receivers were investment cast of AISI 8620 alloy steel. These receivers are of good quality. (5)

The business relationship that existed between Valley Ordnance and Springfield Armory, Inc. is described in Guns Illustrated 1975:

In January, 1973 Valley Ordnance was "about ready to manufacture all major M1A [™] components . . . [Melvin Smith and Elmer Balance] had worked out an agreement that would make Valley Ordnance responsible for the manufacture of the components parts and for maintaining an adequate supply of spare parts. Valley Ordnance would handle all quality control on the receiver and barrel (when and if they manufacture the barrels). L&H [Gun Co.] would supervise all quality control during assembly and final testing and, besides assembling the rifles, would have exclusive M1A [™] sales rights. A chief reason for the continuing delay in assembling M1A [™] rifles was the move to Devine, Texas, forced on the L&H [Gun Co.]. A big backlog of orders had been building up that the old San Antonio plant couldn't possibly handle. Mel Smith and Elmer Balance agree that "Springfield Armory" is alone enough to make them maintain quality control on all parts and to make rifles equal to those made at the old Springfield Armory. They realize that if their quality slips they will be out of business because the serious shooter expects the best from anything stamped Springfield Armory [emphasis in the original].

A shooting test of a bedded but rack grade M1A™ with a Winchester chrome plated M14 barrel conducted by Guns Illustrated in January, 1973 consistently shot 1.5 to 2 MOA out to 500 yards using 1968 Lake City 173 grain Match and Sierra 168 grain Match hand load ammunition. Mr. Balance states that a total of 4620 receivers were manufactured before selling the company. When the Texas company receivers had been used up, Valley Ordnance (Wilkes-Barre, PA) continued to supply finished receivers for the Illinois company. They did so until 1998 when Melvin Smith passed away.

## Illinois Production

Match grade barrels installed on Illinois M1A™ rifles in the mid-1970s were made by Numrich Arms (West Hurley, NY). The M1A™ receiver design was further changed prior to serial number 030100 to include a small hemisphere on the right ear outboard side for use of a ball detent with a match windage knob. Springfield Armory, Inc. made further changes to the receiver geometry around serial number 040000. The chamber was moved very slightly forward to improve accuracy and increase bolt lock up time. Some Springfield Armory, Inc. receivers have a ridge on the bottom right hand side that may slightly interfere with the stock fit. This ridge has been identified on M1A™ rifles from serial number 000049 until somewhere between 034XXX and 043XXX. This bottom side ridge was removed from the design as part of the changes made.

Springfield Armory, Inc. M1A™ rifles with serial numbers under 084000 were reportedly made prior to the September 13, 1994 enactment of the U. S. Violent Crime Control and Law

Enforcement Act. The reader is advised to contact Springfield Armory, Inc. for serial numbers just above or below 084000 to confirm the date of assembly. Springfield Armory, Inc. sold stripped receivers which are post-'94 ban if assembled after September 13, 1994. Presently, Alpha Casting in St. Laurent, Quebec, Canada supplies the raw receiver castings to Springfield Armory, Inc.

## **M1A™ Models**

In the late 1990s Springfield Armory, Inc. bought two hundred Israeli Defense Force M14 rifles. The parts from these rifles were assembled on to their commercial receivers with match grade barrels and sold as a limited run model in 1999. The M25 White Feather™ rifle recognizes the service of Gunnery Sergeant USMC, (Retired) Carlos Hathcock. Gunnery Sergeant Hathcock was a sniper who served his country admirably in the Viet Nam War. He is credited with ninety-three confirmed kills. He wore a small white feather in his cover (Marine term for hat) while in the field. Hence the rifle name, White Feather. Gunnery Sergeant Carlos Hathcock passed away in 2000.

In 2003, Springfield Armory, Inc. produced a run of 500 Vietnam Commemorative semi-automatic M14 type rifles. M1A™ serial number 164881 is a Scout Squad model that was seen at the July, 2004 Claude Hall Las Vegas Gun Show by the author. According to the factory tag, the headspace was measured on June 17, 2004. M1A™ rifles have been exported to Canada and United Kingdom for sale to private individuals.

2004 catalog numbers are listed with the rifle model names:

Standard M1A (MA 9102, 9104, 9106)

M1A SOCOM 16 (AA 9626)

Scout Squad M1A (AA 9122, 9124, 9126)

Loaded Standard M1A (MA 9222, 9226, 9822, 9826)

National Match M1A (NA 9102, 9802)

Super Match M1A (SA 9102, 9802, 9804, 9805)

M21 (SA 9121, 9131)

M25 White Feather (SA 9502)

The MA 9103 Collector Edition M1A was a standard model with a USGI chrome lined barrel and USGI birch stock. The AA 9104 M1A Bush™ was a variation of the Scout Squad model. The Collector Edition and Bush models were offered for sale in 2002 and 2003. The standard model M1A™ has a 1:12 twist four groove chromium molybdenum barrel with standard size rear and front sights and either walnut or synthetic stock. When available, Springfield Armory installed USGI chrome plated barrels on the standard model. During times of scarcity, such as 1978 to 1986 and soon after 2003, they install commercial manufacture non-plated standard contour barrels instead. According to one of the Springfield Armory, Inc. production floor employee at the 2004 SHOT Show, they buy the barrel blanks from suppliers such as Wilson then do the finish machining themselves.

New in 2004, the M1A SOCOM 16™ has a 16.25 " 1:11 six groove twist non-chrome plated chromium molybdenum barrel and black hand guard and synthetic stock (2004 Springfield Armory product catalog). The synthetic stock has a steel hinged butt plate. The hand guard is cut out to accommodate a Scout Squad scope mount. This model has a retuned gas system and proprietary design gas cylinder plug and combination muzzle brake and gas cylinder lock assembly. The visible portion of the operating rod is stamped SOCOM 16. The front sight is a XS Sight Systems 24/7 Stripe Post. The pre-production design gas cylinder plug was flush with the gas cylinder end. It was removed and installed with an Allen head wrench. Between February and April, 2004 the gas cylinder plug design was changed. Production models of the

SOCOM 16 now use a gas cylinder plug that can be removed and installed using a M14 combination tool. After the gas cylinder plug is removed, the combination muzzle brake and gas cylinder lock assembly can be unthreaded from the barrel.

The Bush and Scout Squad models are similar to each other. Each has an 18 " 1:11 six groove twist non-chrome plated chromium molybdenum alloy steel barrel and synthetic stock. The Scout Squad has a scope mount installed on the barrel and is also available in a walnut stock. The barrel scope mount will fit on a standard model M1A™ and it is available separately. Prior to 1994, the 18 " barrel M1A™ model was known as the M1A-A1 Bush™.

The following rifles are offered with either chromium molybdenum alloy steel or stainless steel six groove barrels. The loaded standard M1A™ has a 1:11 twist medium weight match barrel, National Match flash suppressor, .0520 " non-hooded rear sight aperture and National Match front sight, National Match trigger group and either walnut or synthetic stock. The National Match M1A™ comes glass bedded in an oversized match grade walnut stock with all of the features of the loaded model plus a National Match gas cylinder, match operating rod and spring guide and hooded rear sight aperture. The Super Match M1A™ may have a standard receiver, a rear lugged receiver or a double lugged receiver. The barrel will be a 1:10 twist heavy weight Douglas barrel unless the customer selects another brand barrel. Regardless of the barrel make, the operating rod will slide through an oversized operating rod guide. The buyer also has his choice of oversized walnut or McMillan fiberglass stock. The M21 is the rear lugged Super Match M1A™ with a walnut stock that has an adjustable cheek piece. The M25 White Feather rifle has a rear lugged receiver, McMillan fiberglass stock with adjustable cheek piece, low profile custom muzzle brake, Krieger 1:10 twist heavy weight barrel and no iron sights. The M25 White Feather must be scoped to sight a target. While much has been written discussing the merits of chromium molybdenum versus stainless steel for barrels the best evidence seems to indicate that both are equal in accuracy with throat erosion occurring slightly faster in the stainless steel barrels. The advantage of the stainless steel barrel is better weather resistance.

## **Rock Island Armory**

Rock Island Armory did select fire conversions on semi-automatic Springfield Armory, Inc. M1A™ rifles. These conversions are stamped "R I A" on the receiver just to the rear of the rear sight base. From the (1986) Gun Digest Book of Assault Weapons - First Edition is a discussion of the owners:

About the Reese family, who own and operate Springfield Armory and a sister corporation Rock Island Armory. Bob Reese, the patriarch of the clan, farmed for decades in the community bordering the Mississippi River. Throughout, he had a continuing interest in firearms. Sometime after WWII, he bought some war surplus items and began to dabble in wholesale military parts. When the demand for the old military M1 rifle could not be answered among shooters and collectors, he began to weld together parts of receivers that had been cut in two, providing the basis for reassembling rifles. It wasn't long before he decided that it was simpler to machine a new receiver than attempt to weld together sections....Out of all this came Springfield Armory and its sister corporation, Rock Island Armory. The latter firm bears absolutely no connection to the government's Rock Island Arsenal located a few miles up the river. The Rock Island Armory, however, is devoted largely to supplying overseas military customers, while the Springfield Armory aims its efforts at the civilian and law enforcement markets. Bob Reese serves as Chairman of the Board, while son Dennis is President of Springfield

Armory and another son Tom, is Vice President. A third Reese son, David, is President of Rock Island Armory. The sons keep the day-to-day business running, while the senior Reese and his wife, Carol, reside in the old family farmhouse. Originally, all of the arms work was done in the farm's barns, but a modern factory is now located in downtown Geneseo, employing some forty people who machine and build the various firearms for which the firm is being noted. The fully automatic weapons are tested safely on the farm in a deep canyon. Tom Dillon is one of forty employees who build the guns for the sister corporations Springfield Armory and Rock Island Armory. Bob Reese maintains a machine shop on his farm and putters with some of the war surplus armament he has imported from around the world, the vast majority of the gun making is accomplished in the modern plant in Geneseo. Duke Ballengee is in charge of manufacturing and oversees the building of an entire line of weaponry steeped in nostalgia. In addition to the SAR 48, the Illinois firm turns out M60 machine guns, several variations of the M1 and M14 rifles and a reproduction of the Beretta BM 59. Plans are in the mill for further expansion and other firearms.

### **Maunz Mfg., H&R Gun Co. and Smith, Ltd.**

Karl Maunz lived in Ohio. Mr. Maunz retired from the military as an armorer. Mr. Maunz manufactured M14 receivers with three receiver stampings: Maunz Mfg., H&R Gun Co. and Smith, Ltd.

- A. Maunz Mfg. - Smith in Pennsylvania made receivers for Maunz. (6) These receivers were bought in quantity and marked Maunz. This same Smith made receivers for Springfield [Armory, Inc.]. It is absolutely certain Smith Enterprise, Inc. never made any receivers for Karl Maunz. It is the author's opinion that the Smith referred to in the article M14 Maunz is not Ron Smith of Smith Enterprise, Inc. but was Melvin Smith of Valley Ordnance in Wilkes-Barre, PA. If this is the case then Maunz Mfg. receivers are made by the investment cast method as that is how Valley Ordnance produced receivers for Springfield Armory, Inc. Karl Maunz built his Maunz Mfg. rifles in Toledo, Ohio. At least two Maunz rifles have been observed with the stamping Toledo Ohio on the receiver side. Maunz Mfg. receivers were made in the 1970s. The stock of one Maunz Mfg. rifle (serial number 3XX) is stamped USMC Camp Perry. The quality of Maunz rifles is reported as very good or better. Maunz rifles owned or examined by three members of BattleRifles.com all had USGI and National Match M14 parts. At least one Maunz Mfg. receiver has been found to lack the scope mount bolthole on the left side of the receiver.
- B. Smith, Ltd. - Karl Maunz sold receivers stamped Smith, Ltd. in the 1980s. Smith, Ltd. receivers are investment cast. Smith, Ltd. in Ohio made M14 type rifles in the late 1980s for a year or two and they were sold at Camp Perry, Ohio. The receiver quality is good and parts fit if using USGI and / or National Match parts based on examination of Smith, Ltd. serial numbers 0210, 0225, 0236 and 0237. A commercial manufacture bolt and commercial manufacture operating rod were found to be too thick to slide smoothly inside Smith, Ltd. serial number 0237.
- C. H& R Gun Co. - These cast receivers were produced in the late 1970s. The highest serial number observed for a H&R Gun Co. M14 is 1126.

### **Hesse and Sarco**

Hesse has made two batches of M14 receivers, the first in 2000 and the second in 2003. Hesse cast receivers were made in Italy. The author has not been able to confirm a production time

frame for Sarco M21 receivers but their bare receivers were available for sale in 2002. Sarco receivers were reportedly made by a company in California. Sarco receiver quality has been reported as good.

## **Armscorp**

Armscorp was formed as an American company about 1981 by Jack Friese. Armscorp began selling semi-automatic M14 receivers and rifles in the early 1980s. Smith Enterprise sold some billet-machined receivers to Armscorp but none were stamped Armscorp. Smith Enterprise sold some casting machinery and tooling to Armscorp. By 1990, Armscorp was manufacturing investment cast receivers. An Armscorp receiver with serial number A00326X has been identified as billet machined. An Armscorp receiver with serial number A0039XX is investment cast. Armscorp produces standard, rear lug and double lugged receivers. They were the first commercial manufacturer to offer lugged receivers. Some of the receivers are stamped M21 to allow for sale in New Jersey. Armscorp heat-treats the receivers to 56 to 58 HRC to a case depth of 0.012 " to 0.018 ". An Armscorp operating rod rail is 1/16 " wider than the military dimension. The operating rod rail is also machined differently than USGI specification to prevent the bolt roller from slamming back. Present day Armscorp receiver operating rod rails are deliberately undersized to accept operating rods with worn tabs since new ones are scarce. Armscorp also provides M14 gunsmithing services such as rifle assembly, barrel installation, stock bedding, NM trigger and flash suppressor, modification, and clean and lube.

## **M36 / M89SR**

Armscorp USA made approximately ten units of the M36 bull pup rifle in the mid-1980s. A company named Sardius made the M36 in the mid-1980s. In the early 1990s, Sardius went out of business. A company called Technical Consulting International (TCI) got the license to produce the M36. TCI in Israel modified the M36. They upgraded the stock with a carbon fiber model. The bull pup rifle was reintroduced as the Model 89 Sniper Rifle or M89SR. The overall length was approximately 33.5 " or 40.5 " with a sound suppressor. The M89SR had a 22 " fully floated barrel. Fully loaded with a twenty round magazine, it weighed 13.8 pounds or 15.5 pounds with a sound suppressor mounted. Fifty M89SR rifles were sold to the Israeli Defense Forces. The Israelis fitted them with Harris bipods and at least one was sound suppressed. It was used as a sniper weapon system for units concerned with concealment. It was issued mostly to two IDF Special Forces undercover units, Sayeret Duvedevan and Sayeret Shimshon. Sayeret Shimshon operated in the Gaza Strip until it was disbanded in 1994.

## **Fulton Armory**

Fulton Armory was established by Clint McKee in 1987 in Fulton, MD. Years later, the business was moved to its present location in Savage, MD. Prior to starting Fulton Armory, Clint McKee worked with Jack Friese at Armscorp. Their relationship remains cordial. Beginning in 2003, Fulton Armory began selling rifles and barreled actions with their own receivers. According to their web site,

Fulton Armory semi-auto receivers are cast & machined right here in Maryland, USA, by a sub-contractor with extensive service rifle manufacturing experience. Our contractor has agreed to make many changes to existing tooling as well as significant improvements in receiver dimensional geometries as specifically requested by Fulton Armory. This has resulted in a custom designed and uniquely manufactured Fulton Armory product.

Fulton Armory XM25 serial number FA 00500 is a rear lugged model. Fulton Armory receivers have a wider than USGI specification operating rod rail. Customers have a choice of standard or rear lugged receivers. Fulton Armory offers a host of M14 type rifle gunsmithing services. Their services include technical inspection, clean and lube, barrel installation and head spacing, Parkerizing, trigger group tuning, complete rifle assembly, and match conditioning.

### **Smith Enterprise, Inc.**

Ron Smith and Sonja Sommers own and operate Smith Enterprise, Inc. Smith Enterprise, Inc. is classified by the U. S. government as a veteran owned and operated contractor. Their CAGE Code is 3A5E1. Ron Smith is a fourth generation career professional in the ordnance industry. Ron Smith shot competitively for the Arizona Army National Guard and California Army National Guard. He is a 1986 graduate of the Israeli Defense Force Sniper School. He took over the business when his dad, Richard Smith, retired in 1992. Among countless customer requests fulfilled, Ron Smith surveyed the Jordan government M14 rifle inventory at the request of King Abdullah in 1999. Western Ordnance, which became Smith Enterprise, has designed and manufactured excellent quality firearm parts and built outstanding quality firearms for American and foreign governments and the civilian market too numerous to list in this work. Without question, they have much more knowledge of and experience with testing and working on Chinese M14 type rifles than anyone outside China. They have offered Melinite heat treatment of receivers and parts since 1985. Melinite heat treatment increases surface hardness to 60 HRC as well as reducing the coefficient of friction of the metal treated. Smith Enterprise is also a Leupold optics factory authorized distributor to government and law enforcement agencies. For the sake of brevity, only their experience with the M14 type rifle will be discussed.

### **Smith Enterprise Receiver Design Manufacture and Testing**

All Smith Enterprise receivers ever made have been out of AISI 8620 alloy steel. About 1985, Smith Enterprise began producing M14 receivers after several months of planning and evaluation. This included blueprints and engineering sketches done by themselves. Smith Enterprise M14 receivers incorporate a number of innovative features that improve upon the USGI design. The receiver locking lugs are adjusted forward to reduce the head space about 0.003 " to 0.005 ". Typically, their rifles head space at 1.633 ". The receiver bridge is adjusted a little aft (to the rear) to retract the firing pin faster in order to further prevent slam fire. The receiver barrel ring threads starting quadrant was changed to reduce barrel torque to about 50 ft-lb which is sufficient.

Their very first receivers were made by the precision investment casting method. The raw castings left a lot of metal that had to be machined to obtain the final form. All Smith Enterprise investment cast receivers have been made with virgin bar stock AISI 8620 alloy steel certified by the supplier and verified by Smith Enterprise. The Smith Enterprise "forged" billet machined receivers are made of fine grade Hart AISI 8620 alloy steel certified by the supplier and verified by Smith Enterprise. Manufacturing of receivers starting with billet allowed even more control over the receiver form. Billet was plasma cut into the starting shape. All heat treatment of all Smith Enterprise receivers have been certified by the vendor and verified by Smith Enterprise. All of their receivers have been examined by magnetic particle inspection and some were X-rayed. All receiver barrel ring threads were inspected using a USGI thread timing gauge. Post-heat treat receiver surface and core hardness was examined by spectrum analysis using test mounts (receiver specimens) every 100 rounds fired for a time then every 200 rounds for awhile and then randomly after that. They also required spectrum analysis of the receiver when their heat treat vendor changed personnel. Such testing and resultant analysis led to a standard

operating procedure for heat treatment. All of this inspection and non-destructive examination was part of their quality control program.

**Note that the reader MUST NOT perform the testing described herein.**

Personal injury or death may result. Ron Smith personally test fired the very first receiver without it having been heat-treated. He shot it for twenty rounds to prove the material integrity. The headspace had set back 0.010" by the twentieth round. Smith Enterprise had Thunderbird Cartridge Company (Laveen, AZ) make up two hand loads of proof test ammunition for them. One batch of proof test rounds was loaded to 65,000 psi and the other to 76,000 psi. Thunderbird Cartridge used nickel plated Federal cases and M118 bullets. The bottoms of the 76,000-psi cases were colored purple. Next, a second receiver with no heat treatment was shot twice with 65,000-psi proof test rounds. The headspace had set back 0.010 ". After this, ten receivers were selected out of the first lot of 100 finished receivers. Each of these ten receivers was fired with one round of 65,000-psi proof test ammunition.

Then one finished receiver was selected for destructive testing. Scott Medisha was a witness to this destructive testing. First, ten rounds of 65,000 psi proof test ammunition were fired. Next, 76,000 psi proof test rounds were fired. After four rounds of 76,000-psi proof test ammunition, there were some signs of problems but the receiver had not failed. The cases were seizing in the chamber. Therefore, Scott Medisha went home and loaded up one round of ammunition. Ron Smith states this cartridge was loaded with "Unique" and a 175-grain bullet. Taking suitable precautions, the destruction cartridge was loaded into the rifle chamber and fired. The desired result was achieved. The receiver failed with a dull, muffled boom. The cartridge case vaporized, the barrel blew out about two feet in front of the stock, and the bottom forward one inch of the bolt blew apart, the magazine blew out of the action and all magazine spot welds gave out. The back of the receiver gently rolled off to one side. The receiver on both sides behind the locking lugs cracked. However, the locking lugs on the receiver and the bolt held! The M14 enthusiast should not turn his nose up at a well-made investment cast receiver.

Smith Enterprise also made a single batch of billet machined select fire receivers prior to the May 19, 1986 ban. They later sold their casting machinery to Armscorp.

There is a pronounced difference in the shape of the receiver heel between the Smith Enterprise (and Armscorp) billet machined and Smith Enterprise investment cast receivers. The billet machined receivers have almost square heel corners whereas the investment cast receiver heel corners are rounded. A 1985 manufacture Smith Enterprise receiver with serial number 1985 is billet machined. A Smith Enterprise receiver made no later than 1988 with serial number 2099 is investment cast. Another Smith Enterprise owner reports that his Smith Enterprise receiver serial number 21XX is investment cast while he has examined another with serial number 23XX that is stamped FORGED USA. Billet machined Smith Enterprise receivers are marked FORGED USA because they thought it was a simple but not exaggerated way to state the receiver quality.

### **Smith Enterprise, Inc. Receiver Identification**

Examination of several rifles reveals distinctive markings on Smith Enterprise receivers. Note that 7790189 is the USGI part number for the M14 receiver. They are as follows:

- A. Pre-'86 ban select fire - 1) M-14 on the heel 2) serial number starts with the letters FA followed by five digits 3) MESA, AZ on the vertical surface of the operating rod rail 4) 7790189 only or 90189 and an eagle, arrow, and stars cartouche below the stock line on the right hand side near the connector lock
- B. Pre-'94 ban billet machined - 1) M-14 or M-14 NM on the heel 2) MESA, AZ on the



vertical surface of the operating rod rail at the forward end 3) FORGED USA on the vertical surface of the operating rod rail at the rear end 4) 7790189 below the stock line on the right hand side near the connector lock 5) ordnance eagle and three stars symbol below the stock line

- C. Pre-'94 ban precision investment cast - 1) M-14 NM on the heel 2) MESA, AZ on the vertical surface of the operating rod rail at the forward end 3) 7790189 below the stock line on the right hand side near the connector lock
- D. Post-'94 ban precision investment cast - 1) M-14 NM on the heel 2) serial number is a four digit number beginning with the numeral 5 3) TEMPE, AZ on the vertical surface of the operating rod rail at the forward end

## **Smith Enterprise M14 Services**

Smith Enterprise offers a host of services for the M14 type rifle. They have performed gunsmithing work for many years and continue to do so for the U. S. Army, U. S. Marine Corps and federal government agencies. Their M14 services include match tuning, assembly, receiver heat treatment, barrel or complete rifle cryogenic treatment, Chinese rifle bolt conversion, bush barrel conversion and gas piston heat treatment and hard chrome plating. The Chinese rifle bolt conversion includes reworking the receiver to accept a USGI bolt and head spacing the barrel. Smith Enterprise has offered this service since 1994. The bush barrel conversion includes finish reaming, installing and head spacing a 17 5/8 " air gauged medium weight Douglas barrel to the receiver. They also install rear or rear and front lugs to the receiver at customer request. Their rear lugs are designed with an innovative three degree release angle on all four sides. This feature has been adopted by the U. S. Marine Corps.

## **M14K**

Smith Enterprise, Inc. and LaFrance Specialties have collaborated on various projects through the years. One such venture was the M14K, a very interesting and innovative development of the M14 type rifle. The origin was a desire on the part of Richard Smith and Tim LaFrance in the 1980s to make the M14 more compact and controllable without generating excessive muzzle blast and recoil. Richard Smith and his son, Ron Smith, did all of the research and development for the M14K. After some experimentation, they found that the M60 machine gun gas system provided great promise in reducing the muzzle blast and recoil of the M14. So, Ron Smith further improved and perfected the M60 type gas system for the M14K. All M14K rifles were built by Smith Enterprise themselves. This included the woodworking necessary for the stocks.

The conversion to an M14K consists of installation of the improved M60 type gas system, adding a unique combination muzzle brake and flash hider, shortening the operating rod and wood stock fore end and installing National Match front and rear sights. The fore end of the wood stock was shortened to accommodate the new gas system. The M14K barrel length is 13 1/2 ". M14K models purchased by civilians had either 1:10 " twist four groove match barrels or 1:12 " twist chrome plated barrels. The match grade barrels proved to be markedly more accurate than the chrome plated barrels in the M14K. The M14K cyclic rate is about 600 rounds per minute and the muzzle velocity 2560 feet per second using M80 ball ammunition. Smith Enterprise has made the M14K in semi-automatic and select fire models.

During the Reagan Presidency, Smith Enterprise converted some M14 rifles to M14K models for the Colombian government. The M14K was very effective in the hands of the Colombian Army. In fact, it was so effective that the drug cartel FARC threatened bodily harm on the Smith family.

Because the Reagan Administration was not able to guarantee around the clock protection, Smith Enterprise decided to cease the conversion work for the Colombian government. In 1988 the M14K was marketed by Tim LaFrance at the Soldier of Fortune Show.

Smith Enterprise plans to reintroduce the M14K in the near future. Boyds' will supply the stocks. These M14K rifles will have Wilson Arms 16 " four groove barrels with 1:10 " twist for semi-auto models and 1:12 " twist for NFA registered models. Smith Enterprise will make all the gas system components. A turnaround time of two weeks will be the goal.

## **R. Sales and Federal Ordnance**

A. R. Sales was owned by Jack Karnes. Jack, his wife Elia, and their children ran the company. They had a brief production run beginning in October 1971. They made decent receivers according to Ron Smith. The company was sold off. When Federal Ordnance was started up by the owner, Bob Brenner, Jack Karnes went to work for Federal Ordnance. Federal Ordnance began production of their M14 type rifles in 1988. It ended in the early 1990s. Federal Ordnance receivers made while Jack Karnes was on board were of good quality. (7) All Federal Ordnance receivers were made prior to the 1994 Assault Weapons ban. The Manufacturer's Suggested Retail Price for a Federal Ordnance M14SA in 1988 was \$629.00. The rifles were sold with a one year parts and labor warranty. USGI parts were used extensively in Federal Ordnance rifles through at least S/N 008877. Through at least serial number 3058 the USGI parts were taken off USGI M14 rifles imported from Israel. By serial number 205XX if not earlier, Chinese and Taiwanese reproduction parts were used to assemble their rifles. Federal Ordnance built two types of M14 rifles, one with USGI parts and one with Chinese parts. They sold complete rifles as well as stripped receivers. Century Arms International (St. Albans, VT) assembled some of these Federal Ordnance receivers with Chinese parts and sold them to the commercial market. The Federal Ordnance marking may be located on the right receiver leg instead of the receiver heel.

## **Enterprise Arms**

Beginning in 1996, Enterprise Arms (Irwindale, CA) began offering M14 type receivers. Their standard receiver is readily available. Rear and double lugged receivers are special order items. The receivers are CNC machined from twelve-pound billets of AISI 8620 alloy steel. They are heat treated to a surface hardness of 52 to 56 HRC and a core hardness of 34 to 38 HRC. They are given a black oxide finish. Receivers are sold with an unconditional lifetime guarantee according to their web site. Their receivers have the stamping ABNI. It is the markings of a subcontractor that did some manufacturing for them previously according to Enterprise Arms customer service. Earlier Enterprise Arms receivers have the serial number stamped on the left side near the rear sight. Latter receivers have a wider than USGI specification operating rod rail than earlier receivers and the serial number is on the receiver heel. Enterprise Arms also provides M14 gunsmithing services such as rifle assembly, barrel installation, Parkerizing, NM trigger modification, and clean and lube.

## **G2 Series**

In the late 1990s, AWC Systems Technology (Phoenix, AZ) converted some M14 type rifles into a bull pup short barrel rifle design. They made three models, G2, G2A and G2FA. They were outfitted with muzzle brakes and the trigger was moved forward of the magazine well. The G2 and G2A could be scoped above the barrel. The G2A is a heavy barrel version of the G2 rifle. Presumably, the G2FA was a full automatic fire version. All three models require NFA Registration in the United States.

## **Troy Industries, Inc.**

The M14 was further refined in 2002. The SOPMOD M-14 was designed by Mike Rock under contract from the U. S. Naval Surface Warfare Center at Crane, IN. The original design featured an aluminum stock and steel telescoping rails. Troy Industries (Lee, MA) has added their input and converts the M14 type rifle into a Close Quarter Battles (CQB) carbine known as the Rock SOPMOD M-14™. This conversion is available to civilians with American receiver pre-'94 ban or NFA registered M14 type rifles.

Troy Industries supplies a telescoping stock for their Rock SOPMOD M-14™ models. The stock allows the barrel and gas system to free-float. The gas system has been redesigned to reduce barrel whip. The gas piston pushes directly in line with the bolt roller. The barrel is replaced with a 1:11.27" twist 5R heavy barrel that is 16.5" long. These barrels are supplied by Mike Rock. The new stock and rail system include four military standard 1913 Picatinny accessory rails. The USGI flash suppressor and front sight are replaced with a combination flash suppressor and muzzle brake that is also threaded to accept the optional sound suppressor. A M203 grenade launcher will attach to the SOPMOD M-14 stock at the 6 o'clock rail. It is removed by engaging a quick release device. This rifle weighs 9.5 pounds per company literature. The overall length is 29" with the stock collapsed and 35" with the stock fully extended.

In 2003, Troy Industries introduced the Rock SOPMOD Calimando™. This conversion can be performed on post-'94 ban or California resident M14 type receivers. The conversion includes a 16.5" barrel and traditional style butt stock without a pistol grip. Overall length for the Rock SOPMOD Calimando™ is 35".

Both Rock SOPMOD M-14 Carbine and Calimando™ models use the stripper clip guide as an attachment point for the accessory rails. The Rock SOPMOD models have the visible portion of the operating rod marked with all the Troy Industries model information. Several optional items are available for the Rock SOPMOD M-14™ models including single point CQB sling, soft or hard case, muzzle brake, suppressor, and bipod. Standard surface finish for the stocks and pistol grips is textured black.

At the 2004 SHOT Show there were several Rock SOPMOD M-14™ carbines on display at the Troy Industries booth. One of these models was dressed in a medium brown color Rock SOPMOD M-14™ stock. The receiver, rear sight assembly, all rails, the trigger group parts, and the operating rod were all nickel-boron plated. The benefit of nickel-boron plating is wear resistance superior to chromium. The nickel-boron plated parts had a color darker than gold but lighter than bronze. This model was a special order item. Nickel-boron plating is no longer available.

## **LRB of Long Island, Inc.**

In 2003, LRB of Long Island began selling semi-automatic receivers. All LRB receivers are machined at a shop in Connecticut, USA using U. S. government Rock Island Arsenal blueprints for part number 7790189 Revision February 1975. Extruded AISI 8620 alloy steel bar stock is cut into ingots, heated and drop forged into shape. The raw forgings are then CNC machined. Dimensional tolerances are held to within one thousandth of an inch. Next, their receivers are heat treated to a core hardness of 28 to 42 HRC and a surface hardness of 52 to 55 HRC with a case depth of 0.012" to 0.018". The final step is a Parkerizing that duplicates the color and finish of the original M14 receivers. Their receiver design was approved by the BATFE in January 2003. Their receiver is known as the LRB Arms M14SA.

To understand the M14SA receiver numbering sequence the following background is given. In

2002, Mike Kelly Specialties (West Grafton, WV) was marketing the sale of newly manufactured semi-automatic receivers. According to the company's web site at the time, the receivers were forged in Taiwan and machined in the United States. LRB was the distributor for these MKS newly manufactured M-14 receivers. These raw MKS receiver forgings were in a Seymour, CT machine shop. The machine shop was doing work for Mike Kelly Specialties (MKS). These receiver forgings were in lots of various stages of the machining process. Then one day, the then BATF made a visit and seized a number of the receivers. The semi-finished MKS receivers that were seized had features such as a lug on the rear right bottom side, an operating rod center notch and a groove on the forward bottom side of the operating rod rail. So, after the BATF left the building the machine shop was left with some of the MKS forgings in various stages of machining. What receivers were left had none of the select fire features mentioned above. Some had a little machining done and some quite a bit. In 2003, LRB was able to have the machining finished on the former MKS forgings and sell the receivers marked as LRB Arms M14SA. Based on how many receivers were in each stage of the machining process they were divided into groups for numbering, i.e., ten in one group, five in the second group, forty-four in the third group, and thirty in the fourth group.

The first ten LRB receivers sold had the least amount of machining needed for completion. These are marked as X00101 through X00110. The next five M14SA receivers are marked as 00101 to 00105. These needed a little more machining to complete than the first ten. The third group of M14SA receivers starts at 01001. These required more machining than the first two sets. The fourth group of M14SA receivers starts at 01100. These required even more machining than the first three sets. The fifth group of M14SA receivers starts at 01200. These receivers are forgings made after the machine shop had used up all the forgings previously made for MKS. Receivers starting with serial number 01200 are forged at a forging house in Connecticut, USA. Between receivers 01212 and 01245, the serial number marking was changed from a dot matrix to a die stamping.

At the 2004 SHOT Show, LRB displayed two prototype M14SA receivers each with two integral Picatinny rail pads. The receiver rail pads are located on top of the barrel ring and at the stripper clip guide dove tail mount. Estimated availability of these M1913 integrated mount M14SA receivers is December 2004.

## **Chapter 5 Notes**

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M14 Maunz [www.alpharubicon.com/leo/m14maunz.htm](http://www.alpharubicon.com/leo/m14maunz.htm)

Smith, Ron. Personal discussion. April 09, 2004.

# Chapter 6

## The Chinese M14

### People's Republic of China M14 Type Rifles

A) Origin of Chinese M14 Rifles - A persistent rumor is that M14 rifles produced by the People's Republic of China were reverse engineered by enemy captured M14 rifles in Viet Nam. (1) "Somehow, by the early 1970s, the megalithic China North Industries Corporation (Norinco) of Beijing (Peking) had also gathered sufficient technical data to turn out what is by all accounts a very creditable copy of the M14 rifle." (2) The story continues that 100,000 Chinese M14 rifles were produced "to arm a communist uprising in the Philippines which never took place." (3) A very reliable source with extensive first hand knowledge of Chinese and Taiwanese production and export of small arms. This gentleman wishes not to be identified. He is identified in this work as Other Source # 12.

It was policy of the Chinese government until 1978 to export Marxist revolution much like the former Soviet Union. This policy changed dramatically in 1978 when Deng Xiaoping assumed leadership in China. After 1978 the Chinese government pursued economic development and trade for their country whereas before they promoted and supported communist movements around the globe. In the late 1960s, the Chinese government reverse engineered the design for the U. S. Rifle M14 from captured weapons in Viet Nam. 100,000 M14 rifles and the necessary magazines and ammunition were produced by the Chinese for export to arm rebels in other countries. These Chinese select fire M14 rifles were made to look just like captured American M14 rifles including the serial numbers. The 7.62x51 mm NATO ammunition made by the Chinese was identical to British issue except that the primers were corrosive. This 7.62x51 mm British head stamped Chinese made ammunition was exported to the United States and sold on the commercial market in the 1980s. The rifles and ammunition were manufactured with U. S. and British markings so as to avoid any connection to the People's Republic of China.

Two attempts were made to ship Chinese manufactured select fire M14 rifles to the Philippines. The first attempt was largely unsuccessful and the second, a total failure. In 1971, Jose Maria Sison, founding chairman of the Communist Party of the Philippines, chose Ricardo S. Malay, then a columnist for the Manila Chronicle, to "negotiate the delivery of weapons from China to the New People's Army (NPA) in anticipation" of an armed revolt against Ferdinand Marcos. (4) So, Malay and his family made their way to China in July 1971. Malay and his family were later joined in China by Sison's closest colleague, Ibara Tubianosa, and four "activists." (5) After the arrangements were made and the cargo loaded, the ship MV Karagatan sailed from the Chinese naval base at Swatoy headed for a "landing point in Digoyo Bay, in Isabela" Province in the Philippines. (6) However, the Philippine armed forces intercepted the shipment. A firefight ensued between "the NPA band of Victor Corpus (Ka Eming) that was waiting for the cargo" and the Philippine military. (7) The NPA was only able to "salvage 200 of the 1,200 M-14 automatic rifles and other auxiliary military equipment Chairman Mao Zedong had approved as China's internationalist aid to the Philippine armed struggle." (8)

In 1973, Sison tasked Malay to attempt another delivery of M14 rifles from China. He "proposed that the Chinese prepare a shipment of M-14s encased in plastic bags to be dropped off the Pangasinan coast, which would be retrieved by scuba-diving teams." (9) Months later in December 1973, Malay and Tubianosa flew to Sanya, Hainan. Hainan is the southernmost island of China. Sanya is the capital of Hainan as well as the location of a naval base. When Malay and Tubianosa arrived at Sanya, they were briefed by a Chinese military officer regarding the packaging of the M14 rifles. The rifles were vacuum packed inside reinforced plastic bags

with three rifles to a sack, each also containing ammunition. The Chinese military officer had a team that conducted experiments to test the packaging to make sure it would hold in the ocean environment. Malay and Tubianosa flew the next day to Beijing. The ship MV Andrea was tasked to transport the M14 rifles to the Philippine Pangasinan coast. Enroute to Sanya, the ship "hit a reef in the Pratas Islands of the South China Sea." (10) The twelve men aboard (four crewmembers and "eight NPA fighters hand picked by Bernabe Buscayno") the stranded vessel were picked up and taken to Hong Kong by "a passing Hong Kong salvage ship, Oriental Falcon." (11) In exchange for passage to Hong Kong, the Oriental Falcon was allowed to keep the MV Andrea for scrap. After a stay in a Hong Kong jail, the Filipino NPA fighters were released due to intervention of the Chinese Red Cross and the ship's Chinese crew were quickly moved to Chinese mainland.

In the early 1980s, Other Source # 12 traveled to China. He was shown the approximately 100,000 Chinese manufacture select fire M14 rifles. They were packed in crates in a warehouse with the British marked Chinese produced 7.62x51mm ammunition in a separate warehouse. Subsequent to this, the select fire M14 rifles were disassembled and the receivers only were destroyed. Since there was no machinery in the local vicinity to melt the receivers the receivers were mixed with concrete to make concrete blocks for building projects. The parts from the select fire M14 rifles were later exported to the United States as M14 parts kits for use by Federal Ordnance and other companies to build rifles with American made receivers.

## **Production and Export of Chinese M14 Type Rifles after 1978**

### **Norinco and Polytech Industries**

M14 type rifles exported to the United States have been stamped as two brands, Polytech Industries and Norinco. Norinco M305 rifles have been exported to Canada and Norway. Polytech Industries is a subsidiary of the People's Liberation Army. Norinco is a "collection of 150 separate factories banded together in a marketing arrangement and is a subsidiary of the Ministry of Ordnance Industries." (12) Norinco is a government owned conglomerate of factories producing all sorts of military ordnance. (13). However, Other Source # 12 explained what Norinco is in this way. Norinco was set up as a committee decades ago to supply war materials to prosecute the war in Viet Nam against the United States. Viet Nam was heavily dependent upon China during the war. After the change in government policy in 1978, there was no need for Norinco. So, Norinco was turned into an export corporation since Chinese arms factories cannot sell directly to anyone but the Chinese government. Thus, Norinco has exported small arms for sale in the commercial market of various countries since the 1980s.

### **Production of Chinese M14 Type Rifles**

All Chinese semi-automatic M14 rifle receivers and new (post-1978) production parts have been manufactured at Factory 356 in Yunan Province, People's Republic of China. All Chinese receivers are drop forged. Norinco has made select fire and semi-automatic only M14 type rifles. "Norinco also produced a semi-auto sporting version of the M14 called the model M305, in two versions: "Type I" with standard stock and flash suppressor, and "Type II" featuring a full-pistol-grip stock and a recoil stabilizer akin to the . . . M14A1." (14) Chinese semi-automatic M14 rifles have been exported to Canada, Norway and the United States for sale to private owners. A few number of Norinco select fire M14 rifles are available for sale in the United States as post-'86 dealer samples.

## **Export to the United States**

There have been three importers of Chinese M14 type rifles into the United States: 1) Keng's Firearms (Stone Mountain, GA) 2) Century Arms International (St. Albans, VT) and 3) CJA (Southfield, MI). The Chinese M14 type rifles were imported from 1988 until September 1994. The quality of the Chinese M14 rifles would have improved had they been allowed to continue importation into the United States. (15)

## **Keng's Firearms**

Keng's Firearms (Stone Mountain, GA) imported Polytech Industries M14 type rifles. Keng's Firearms was the only company that imported Chinese M14 type rifles (Polytech Industries M14/S models) into the United States prior to the March 14, 1989 import ban. The Chinese M14 (Polytech Industries M14/S) rifles first appeared in the United States as part of the Keng's Firearms exhibit at the January, 1988 SHOT Show.

Tim LaFrance noted that he had a concern with the Chinese bolts after examining the Polytech Industries rifles at the 1988 SHOT Show. He suggested to Keng's Firearms that these rifles be evaluated because of his concern with the bolts. Consequently, Polytech Industries representatives from the People's Republic of China contacted Smith Enterprise, Inc. shortly thereafter discuss the manufacturing of M14 rifles. Representatives from Polytech Industries met for five days with Smith Enterprise, Inc. with David Keng of Keng's Firearms acting as translator. The Polytech Industries representatives were supplied with a set of USGI drawings for the M14. After this first meeting, Polytech Industries sent raw forgings and assembled M14 rifles (Polytech serial numbers 00001 through 00005) to Smith Enterprise for evaluation and testing. Ron Smith personally test fired these first five Polytech Industries M14 type rifles. The Polytech Industries receivers and rifles were thoroughly examined and tested by Smith Enterprise. The receivers were found to be made of the Chinese equivalent of AISI 8620 alloy steel using spectrum analysis. The testing included hardness testing of the Polytech Industries receiver at the core by cutting it apart. One Polytech Industries receiver was tested to destruction by loading ammunition to create excessively high chamber pressure. The readers MUST NOT exceed powder charges as listed in reloading manuals if hand loaded ammunition is used. Personal injury may occur if done so. The very first Polytech Industries receivers were very hard, harder than a file in fact. This was quickly corrected by strictly adhering to the receiver heat treatment procedure. After the evaluation was completed by Smith Enterprise, a second meeting of the parties involved was held. Even after this second meeting, Polytech Industries did not correct the concerns of Smith Enterprise and Keng's Firearms regarding the bolt. Specifically, 1) the bolt locking lugs remain too narrow 2) the carburizing and hardness remain unsatisfactory because they did not change the material to equivalent AISI 8620 steel but continued to use equivalent AISI 4135 steel. This was in spite of the fact that Keng's Firearms offered to supply Polytech Industries with USGI M14 bolts until they could manufacture their own bolts according to USGI specifications. Polytech Industries refused this offer from Keng's Firearms.

## **Century Arms International**

Century Arms International (St. Albans, VT) imported both Polytech Industries rifles and Norinco M14 type rifles and receivers. Norinco rifles imported by Century Arms International had the least aesthetic appeal of all the Chinese M14 type rifles imported into the United States. Typically, the chu wood stocks are serviceable but not pleasing to the eye. The flash suppressors were cut just forward of the front sight to comply with the March 14, 1989 ban. The Polytech Industries rifles had better looking chu wood stocks and finish.

## **CJA**

The third importer, CJA (Southfield, MI) imported Chinese rifles for a short time just prior to the September 13, 1994 ban. CJA SLFD MICH appears on some Norinco rifles and the marking IDE USA SLFD MICH appears on some Polytech Industries receivers. The best looking Chinese M14 rifles were those imported by CJA. Representatives from CJA traveled to Factory 356 in China to discuss the assembly process of M14 rifles they wished to import. These rifles were assembled with walnut stocks and new production parts with very good finish.

4) Export to Canada - Marstar (Vankleek Hill, Ontario) at present imports Norinco M305 rifles into Canada. The Norinco M305 rifles imported by Marstar have the slotted flash suppressor and scope mount recoil lug. The fit and finish of Norinco M305 rifles entering Canada today are judged to be better than the 1980s and 1990s rifles exported to the United States.

## **U. S. Law and the Chinese M14 Rifle**

The U. S. Department of Treasury import ban of March 14, 1989 affected the Chinese M14 rifles brought into the United States. After the import ban, Chinese M14 type rifles entered the US market with a rubber recoil pad instead of the butt plate, the bayonet lug ground off, the flash suppressor castle nut welded on and the flash suppressor either removed or installed without the open slots. Until November 30, 1990 though one could install imported parts that would restore the Chinese M14 type rifle to a configuration prohibited from export after March 14, 1989. On November 30, 1990 the assembly of imported rifles using imported parts to circumvent the import ban became illegal. The BATF published regulations "to implement 18 U. S. C. section 922 ( r )." (16) These regulations prohibit the assembly of a semi-automatic rifle (or shotgun) using more than ten specified imported parts if that firearm was banned from importation after March 14, 1989. So, after November 29, 1990 the importer or owner of a Chinese M14 type rifle could have replaced a sufficient number of Chinese parts with USGI parts to domesticate the rifle thereby allowing the installation of a slotted flash suppressor with bayonet lug, and pistol grip stock or folding stock. This would have been legal under federal law until September 13, 1994. On September 13, 1994, the Violent Crime Control and Law Enforcement Act went into effect. After September 13, 1994 all semi-automatic M14 type rifles are allowed only one specified feature if assembled on or after that date. Typically, this is the lugless slotted flash suppressor. If a sufficient number of specified Chinese parts are replaced with USGI parts on a Chinese M14 type rifle after September 13, 1994 a lugless slotted flash suppressor would be permissible under federal law. Chinese (and American) semi-automatic M14 type rifles must otherwise comply with the September 13, 1994 ban on features. Consult federal, state and local laws prior to replacing any parts. Additionally, after the March 14, 1989 import ban Armscorp, Federal Ordnance and Century Arms International assembled M14 type rifles using American made receivers and Chinese parts sets.

Polytech Industries M14 type rifles in the United States are generally regarded as pre-94 ban. Reportedly, some Norinco M14 type rifles were sold prior to September 13, 1994 and some were warehoused by Century Arms International and then sold after September 13, 1994. It is best for the owner of a Chinese M14 type rifle to check with the U. S. Bureau of Alcohol, Tobacco, Firearms and Explosives regarding whether it was assembled before or after September 13, 1994.

## **Markings of Exported Chinese M14 Rifles**

Early import Polytech Industries and Norinco manufacturer and model markings are marked on the receiver heel. Heel markings have been observed on Polytech Industries M14/S rifles with serial numbers as high as 028XX. Serial numbers of Chinese M14 rifles are usually stamped



above the stock line on the scope mount side. A typical Chinese export M14 is Norinco serial number 9914. The serial number is stamped on the left hand side of the receiver and electro-penciled on the left receiver leg. There are no other markings on the receiver. The importer markings, Century Arms in this case, are stamped on the barrel. A very few Norinco rifles imported into the United States have no manufacturer stamping whatsoever. Norinco M14 type rifle model numbers are M-14, M14 Sporter and M305. Some Norinco M14 type rifles have the marking CJA SFLD MICH on the side of the receiver. This marking has been found on Norinco M14 type rifles imported into both the United States and Canada. The Polytech Industries model number is denoted M14S or M14/S. Polytech Industries rifles have a better reputation for receiver surface machining and finish over the Norinco stamped rifles.

The following range of serial numbers have been observed on Norinco and Polytech Industries M14 type rifles in the United States:

Norinco M-14, M14 Sporter - 00006 to 960XX

Polytech Industries M14/S, M14S - 00001 to 234XX

## Chapter 6 Notes

1. Poyer, Joe. The M-14 Type Rifle A Sporter's and Collector's Guide North Cape Publications: Tustin, CA. 1997. p 25.
2. Stevens, R. Blake and Edward C. Ezell. The Black Rifle M16 Retrospective Collector Grade Publicatons: Cobourg, Ontario, Canada. 1994. p. 327.
3. Stevens, R. Blake and Edward C. Ezell. p. 328.
4. through 11. Malay, Ricardo S. "Now it can be told: '71 NPA arms deal with China failed" [www.inq7.net/nat/2203/dec/11/text/nat\\_5-1p.htm](http://www.inq7.net/nat/2203/dec/11/text/nat_5-1p.htm)
5. Poyer, Joe. p 25.
6. Stevens, R. Blake and Edward C. Ezell. p. 327.
7. Stevens, R. Blake and Edward C. Ezell. p. 328.
8. Other Source # 12. Telephone interview. April 28, 2004.
9. Bardwell, James. "Modifying Semi-Automatic Firearms or "What can I do to my SKS rifle?" [www.titleii.com/Bardwell/semi\\_auto\\_faq.txt](http://www.titleii.com/Bardwell/semi_auto_faq.txt)

# Chapter 7

## Receivers and Barrels

### Receiver Materials

All American and Chinese M14 type receivers are made of AISI 8620 or equivalent low carbon alloy steel. There is no substantive difference between Norinco and Polytech Industries receivers although they have found the surface hardness to vary from 41 to 60 HRC. AISI 8620 steel contains trace percentages of chromium, molybdenum, manganese, nickel and silicon. Chinese receivers are not made of high carbon alloy steel such as AISI 52100 or other such high chromium alloy steel. Smith Enterprise, Inc. has done extensive inspection and non-destructive and destructive examination of Chinese receivers.

### Receiver Heat Treatment

According to USGI M14 receiver (part number 7790189) blueprints the treatment procedure is as follows:

1. Recommended Heat Treatment - Normalize before machining (oil quenching followed by tempering at not less than 450 degrees Fahrenheit may be used in lieu of air cooling). Carburize at 1550 to 1600 degrees Fahrenheit to specified case depth. Oil quench from 1550 to 1600 degrees Fahrenheit. Temper to hardness specified.
2. Mandatory Requirements:
  - a. Normalize before machining.
  - b. Carburize to case depth 0.012" to 0.018".
  - c. Temper one hour minimum at 350 to 450 degrees Fahrenheit.
  - d. Core hardness 28 to 42 HRC. Surface hardness 68 to 71 HRD.
  - e. Microstructure of core shall not contain more than 10 % free ferrite after heat treatment.
  - f. The use of a straight cyanide bath or gas processes shall not be permitted.
3. Inspection after Heat Treatment - After heat treatment each receiver shall be free from cracks, seams and other injurious defects as determined by magnetic particle inspection using a standard five turn magnetizing coil with a current of 400 to 500 Amperes.

Smith Enterprise did some surface hardness testing of Chinese receivers in 1999. The results varied from 41 to 60 HRC. Soft receivers can be brought up to USGI specification by Melinite heat treatment. The USGI specification for M14 receiver surface hardness is 49 to 56 HRC. A receiver core hardness of 35 HRC is the optimum value.

### Development of Magnetic Particle Inspection

According to a ASNT Level III certified individual who audited U. S. DOD aerospace parts contractors for compliance with government specifications in 2004, the procedure for magnetic particle inspection has changed since the late 1950s. He states [minor spelling errors corrected]

The listed procedure [see above] would only detect flaws oriented in the transverse direction of

the receiver. On a forged or billet receiver, it would only detect flaws perpendicular to the grain flow of the metal. Most often, flaws will run in the direction of grain flow, not perpendicular to it. If the receiver was made from a casting, the procedure would, at best, only detect 50% of the possible flaws.

The amperage values listed are also below the requirements of MIL-STD-1949A and ASTM E 1444. The formula for determining coil shot requirements in the coil described is:  $NI = 45000/(L/D)$ , where I is the required amperage, N is the number of turns in the coil, L is the length of the part, and D is the diameter (or major outside dimension). However, L/D (called the length to diameter ratio) can never exceed 15. If L/D exceeds 15, then 15 must be substituted for L/D. What this means is, when working the formula, the applied amperage through a five-turn coil should never be less than 600 Amps. The length to diameter ratio can never exceed 15, if it does, then 15 must be used. It is impossible to use the prescribed formula and come up with 400 to 500 Amps and by today's standards, the proper inspection might include a couple of coil shots plus a couple of direct contact shots and probably a central conductor shot. Any qualified magnetic particle inspector would most probably look at an M14 receiver and say at least two shots were required, and possibly as many as five. If I were inspecting it for myself, I would say five shots (by shots I mean applications of electric current).

### **Disclaimer:**

The above information is for educational purposes. The author does not suggest or recommend the machining, heat treat or inspection of any firearm receiver or frame by anyone without possessing a Firearm Manufacturing SOT / FFL. The author is not responsible for any consequence resulting from any attempt by anyone to manufacture, heat treat or inspect a firearm or parts thereof. Such activities should only be performed by businesses licensed and credentialed to do so.

### **Receiver Geometry**

Semi-automatic M14 type receivers will not have the selector lug and operating rod rail machining cuts as described below. Springfield Armory, Inc. M25 White Feather™ and some Norinco M305 receivers do not have the scope mount recoil lug. Armscorp, Smith Enterprise, Springfield Armory, Inc. and Enterprise Arms also make rear lugged and double lugged receivers for competition shooting. Fulton Armory offers rear lugged receivers. Springfield Armory, Inc. has offered a rear lugged receiver since 1989 and LRB Arms since 2003. Smith Enterprise has added lugs to receivers at customer request since at least 1991.

A) Comparison of Select Fire and Semi-Automatic Receivers - The functional differences between USGI and commercial M14 type semi-automatic receivers are slight but important. The USGI M14 receiver has a notch cut in the center of the receiver rail. This allows for dismounting of the operating rod during disassembly and fore and aft movement of the connector assembly during full automatic fire. The forward end of the USGI receiver rail has a groove cut into it on the under side to allow the front end of the connector assembly to slide back and forth. The USGI receiver is also manufactured with a selector lug on the rear right hand bottom side. The selector and connector assemblies are attached to the rifle by this selector lug.

The commercial semi-auto M14 type receivers have no selector lug and no center notch in the operating rod rail or groove on the under side. The dismount notch for the operating rod is located at the rear end of the operating rod rail on U. S. commercial and Chinese receivers. Many of the U. S. commercial receivers (Springfield Armory, Inc., Armscorp, Fulton Armory, etc.) have operating rod rails wider than USGI specification. The wider operating rod rail provides more bedding surface and complicates conversion to select fire. The select fire

Springfield Armory, Inc. receiver operating rod rail is 8 / 64 " wide while their semi-auto receivers are 12 / 64 " or 13 / 64 " wide. Springfield Armory, Inc. and Smith Enterprise select fire receivers have both rear and center operating rod dismount notches as well as the cut on the under side of the forward end of the operating rod rail. If a receiver is USGI manufacture, it will not have this rear dismount notch.

American Barrel Ring - USGI, Chinese, LRB Arms, Fulton Armory and some Springfield Armory, Inc. receivers have a distinct machined flat surface with a longitudinal right edge in on the top of the barrel ring. After the first 4620 receivers, the presence of this flat surface on the top of the barrel ring is found sporadically until a serial number just above 030000. The flat surface on the barrel ring is present on serial numbers 0062XX, 00623X, 00724X and 01899X but is not on 015XXX, 020XXX, 0210XX and 0301XX.

Chinese Barrel Ring - Chinese receivers have a threaded hole in the barrel ring for a setscrew. The Chinese rifles are built with a setscrew threaded far enough through the barrel ring to contact the barrel. The barrel set screw is unnecessary for securing the barrel in the receiver. However, the Chinese manufactured their receivers this way because it is their psychological mindset. (1)

Caliber Marking - Springfield Armory, Winchester, Harrington & Richardson and TRW used "MM" to denote millimeter in their receiver heel stampings. Springfield Armory, Inc. did as well initially. Since at least serial number 000567, millimeter has been denoted as "mm" on Springfield Armory, Inc. receivers. Springfield Armory, Inc. used to include "7.62-mm" as part of the receiver marking. This marking has been identified on M1A™ rifles from serial number 000049 until a serial number somewhere between 062857 and 063112. The "7.62-mm" marking was dropped because Springfield Armory, Inc. began making the M1A™ in different calibers.

Millimeter is stamped as "MM" on Armscorp, Enterprise Arms, Fulton Armory, LRB Arms, Smith, Ltd., Smith Enterprise, and some Century Arms International imported Polytech Industries receivers. On most Chinese M14 type rifles imported into the United States the caliber is typically denoted ".308."

B) Comparison of Select Fire Receivers - There are six minor differences between the commercial Springfield Armory, Inc. select fire receiver and a USGI receiver: 1) the commercial receiver has a rear dismount notch, the USGI receiver does not 2) receiver heel stampings 3) the USGI receiver has a drawing number, 7790189, stamped underneath the operating rod rail forward of the center dismount notch 4) the USGI receiver has a machining fixture alignment hole in the right receiver leg 5) the commercial receiver selector lug is neatly welded on and 6) some, if not all, factory Springfield Armory, Inc. receivers have a small hemisphere machined on the outboard side of the receiver right ear. Otherwise, they look the same. An examination of both select fire receivers under the heel, rear sight base and stripper guide show the same under side machining cuts. Examination of a Smith Enterprise M-14 select fire receiver reveals the following: 1) it has a rear dismount notch 2) it has a drawing number, 7790189, at the same location as the USGI receiver 3) it has no hole in the right receiver leg 4) the selector lug is a homogeneous portion of the receiver and 5) MESA AZ is marked on the operating rod channel vertical surface at the forward end of the receiver.

### **Forged and Billet Machined Receivers**

USGI, Chinese, Taiwanese and LRB Arms receivers are drop forged. The manufacturing process for USGI M14 receivers was as follows. The raw receivers were formed by the impression-die drop forging method. The flashing was removed and the finish machining completed on special broaching, milling and drilling machines. A Worcester, MA based

subcontractor specializing in forgings made the M1 Garand and M14 receiver and component forgings for Harrington & Richardson. Wyman Gordon is possibly the subcontractor but the author has not been able to confirm this with the company. Wyman Gordon was the only forging plant in the vicinity of Harrington & Richardson in the 1950s and 1960s. The Wyman Gordon plant was located within two miles of the Harrington & Richardson Main Plant on Park Avenue in Worcester, MA. The H&R, Springfield Armory and Winchester receivers would last 400,000 rounds and the TRW receivers were good for 450,000 rounds. (2)

Chinese receivers are drop forged into forms of larger bulk and less definition than the USGI receivers were. Then, like the American manufacturers, machine tools cut away at the metal from the raw forging to create the final desired shape prior to carburizing and heat treatment. Enterprise Arms and some Armscorp and Smith Enterprise receivers are machined from raw billet. Information on how Sarco M21 receivers were manufactured has not been available to date.

### **Investment Cast Receivers**

A. R. Sales, some Armscorp, Federal Ordnance, Hesse, Maunz Mfg., some Smith Enterprise, Smith, Ltd. and Springfield Armory, Inc. receivers are made by the investment casting method. The material of choice is AISI 8620 alloy steel, which is the same as the USGI M14 receivers. The method of manufacture for H&R Guns Co. receivers has not been discovered though investment casting is most likely.

### **M14 Barrel Manufacture**

The manufacturing procedure used by Winchester to make USGI M14 barrels is described as follows. Re-sulphurized AISI 4150 chromium molybdenum alloy steel is hot extruded and sheared into barrel blanks. The barrel blanks are furnace heated and oil quenched in a twenty minute cycle time for the heat treatment. Next, the barrel blank is machined by drilling the bore then turning the exterior contour by four passes on lathes. The barrel is then prepared for chrome plating by electro-polishing the bore. The chromium plating is then applied. The plating is 0.0015 " thick at the breech end of the rifling. The plating thickness intentionally tapers very slightly to a thickness of 0.001 " at the muzzle. The final step is Parkerizing. USGI chrome plated M14 barrels weigh 31.7 ounces. They were designed for a minimum service life of 15,000 rounds. The USGI M14 chrome plated barrels have a maximum rate of fire listed in both editions of FM 23-8.

### **M14 Barrel Length**

The following is a list of standard barrel lengths for the M14 type rifle. Troy Industries has installed barrels less than 16.5 " on their Rock SOPMOD M-14 carbine upon special request (all NFA rules apply).

22 " - USGI National Match, commercial match grade, and USGI, Chinese, and Taiwanese chrome plated

18 " - Springfield Armory, Inc. M1A Bush and Scout Squad <sup>TM</sup>

17 5/8 " - Smith Enterprise, Inc. Bush Barrel Conversion and Chinese Bush barrel sold by Numrich Gun Parts Corporation

16.5 " - Troy Industries Rock SOPMOD M-14 <sup>TM</sup>

16.25 " - Springfield Armory, Inc. M1A SOCOM 16 <sup>TM</sup>

13.5 " - Smith Enterprise, Inc. M14K

## **Rack Grade M14 Barrels**

Military service barrels are made of chromium molybdenum alloy steel. They are chrome plated, standard (lightweight) contour and have a 1:12 " twist rate. There were many contractors for USGI M14 chrome-plated barrels such as H&R, TRW, Winchester, Springfield Armory, and Saco-Lowell. TRW made chrome plated M14 barrels until at least May, 1964, Harrington & Richardson until at least February, 1963, Springfield Armory until at least August, 1967, Winchester until at least May, 1964 and Saco-Lowell / General Dynamics until at least February, 1983.

Chrome plating of barrel chambers and bores increases barrel life, sustained fire capability, and corrosion resistance and make cleaning easier. The chrome plated chamber aids extraction and allows the rifle to function when soiled. The disadvantage of a chrome bore is a slight loss of accuracy compared to a bore that is not plated. The loss of accuracy is not an amount the average shooter will notice.

## **USGI M14 National Match Barrels**

USGI match grade M14 barrels were made to much stricter dimensional standards than the rack grade barrels. Gene Barnett (using Douglas Premium blanks), Canadian Arsenal, Harris Graphics, Hart, Krieger, Nomura Machine, Saco-Lowell, SGW, Springfield Armory, and TRW made National Match GI barrels. TRW made National Match M14 barrels until at least April, 1966 and Canadian Arsenal until at least June, 1983. Saco-Lowell National Match M14 barrel markings indicate dates of manufacture from at least July, 1965 until June, 1985. Dates of production observed for SGW lightweight match barrels are August, 1982 until November, 1982. Nomura Machine made M14 medium weight National Match barrels in 1992. Likewise, New Arc Welding and Steel made heavy weight National Match barrels the same year. These barrel dates have been observed by the author either in person or by photograph. Saco-Lowell made both lightweight (standard) and medium weight contour National Match M14 barrels. Gene Barnett has supplied the U. S. Marine Corps and U. S. Army National Guard with M14 National Match barrels since at least the early 1980s.

The USGI match barrels were either made in the lightweight or medium weight contours but they were all 1:12 twist for the most part. One exception was several Lackland AFB U. S. Air Force built M14 NM rifles rebuilt by Ted Brown in the past for the Oregon Air National Guard. These Barnett barrels had a twist rate of 1:10 " and were stamped "USAF" on the right side of the chamber. The NSN for the M14 lightweight National Match barrel is 1005-00-018-3255. The NSN for the medium weight National Match barrel is 1005-01-272-0970. A USGI contract M14 National Match barrel that has passed all quality assurance inspections will be stamped "NM" near the muzzle. Typically, match grade M14 type rifle barrels begin to lose competition level accuracy after 5000 to 9000 rounds depending on use and cleaning regimen.

## **Chinese M14 Barrels**

Chinese barrels are lightweight (standard) contour chrome plated barrels. They are generally very good and the chrome plating is well done. The Chinese have extensive experience in chrome plating parts because of manufacturing AK type and SKS rifles. Chinese barrels are chambered for 7.62x51 mm NATO ammunition. Shooters have obtained 1 " groups with Chinese barrels.

## **U. S. Commercial M14 Type Barrels**

Commercial and match barrel makers include Barnett, Citadel, Criterion, Douglas, Hart, Krieger,

Obermyer, Snyder and Wilson Arms. U. S. match grade and some commercial barrels are not chrome plated. Barrel makers such as Krieger offer M14 type barrels in different twist rates and choice of chromium molybdenum or stainless steel. The standard twist rates are 1:10", 1:11" or 1:12". Troy Industries installs a 1:11.27 " twist barrel for their Rock SOPMOD M-14 conversion. Commercial match barrels will be medium weight or heavyweight. 1:10 " twist barrels are better for stabilizing heavier bullets, e.g., 168 grain Sierra HPBT Match. The commercial manufacturers listed above all produce high quality barrels with the lone exception of Citadel. Citadel is no longer in business. They were "a low end maker of cheap barrels" and "my experience with two were both disappointing." (3)

Beginning in November, 2003 Fulton Armory is selling chrome plated and non-plated commercial manufacture standard contour M14 barrels. Lightweight (standard) and medium weight M14 barrels sold by Fulton Armory are made to their specifications by a highly reputable barrel maker. Fulton Armory barrels are sold with a limited lifetime warranty on materials and workmanship. Similarly, LRB Arms is selling Wilson Arms chrome plated and non-chrome plated standard contour M14 barrels as of May, 2004.

Smith Enterprise, Inc. will be supplied with barrels from Wilson Arms in 2004 for their M14K rifles and to fulfill a request from the Philippine government for 1400 M14 barrels (Ron Smith). The barrels will be made to Ron Smith's specification. This specification requires the barrel to be 22 " long, four groove standard (lightweight) contour with a 1:10 " twist rate and 7.62 mm Navy chamber. The 7.62 mm Navy chamber is sized for heavier bullets. Some will be chrome plated and some will not.

## **Chapter 7 Notes**

1. Smith, Ron. Personal discussion. April 09, 2004.
2. See Chapter 1 Note 16.
3. BattleRifles.com Bill Ricca April 27, 2004 post.

# Chapter 8

## Stocks and Muzzle Stuff

### USGI M14 Wood Stocks

Springfield Armory, Harrington & Richardson and Winchester made wood stocks. Standard size wood stocks were made from 1959 to 1963. Wood stocks on TRW M14 rifles were not marked with the manufacturer. As automated as the production process was for the M14 rifle the USGI wood stock makers all hand sanded every stock one at a time with a rotary sander. This was done to smooth the stock and ensure all surfaces were true and all corners sharp. The first M14 stocks were made of black walnut. Beginning in 1961, yellow birch became the standard wood with black walnut as the alternate. The manufacturers' markings were stamped in the butt end of the wood stocks as follows: H for Harrington & Richardson, S A for Springfield Armory and W-W for Winchester. Sometimes it is necessary to remove the butt plate to see the manufacturer stamping. Wood stocks were marked with a DOD cartouche on the left side near the receiver and a proof mark on the underside of the grip if they were used to assemble a M14 rifle at the factory. Replacement USGI wood stocks will not have these markings.

Prior to final assembly, each wood stock was dipped in oil. The walnut stocks were dipped twice but the birch stocks only once. It was found during the first half of 1962 that two coats of oil left excessive oil and residue on the birch stocks due to its different grain and "slower capillary action in absorbing oil" as compared to walnut. (1) Consequently, the procedure was changed to one coat of oil for birch stocks. Commercial producers of the M14 rifle sprayed a stain on the birch stocks prior to the dipping in oil. This produced a color very close to that of black walnut. After several days of draining and drying, sample stocks were tested for resistance to smoke and water. The last M14 rifles assembled with wood stocks left the manufacturer in July 1963. The birch stocks are lighter and twenty percent stronger than the walnut stocks. Some beech and a few cherry stocks were made as well.

Oversized walnut, birch and laminated stocks were made for match grade M14 rifles. Fajen was one of the USGI M14 stock makers. They made M14 stocks in the early 1990s. Fajen made three styles of M14 stocks in two materials, walnut and laminated. Style I was the USGI standard contour and Style III was the oversized National Match stock (NSN 1005-01-233-8635). Latter made oversized National Match stocks do not have stock liners. They were made to be bedded and have been routed for the rear lug. Later on, Fajen bought out Bishop Stocks and grew rapidly but later went out of business.

### USGI M14 Synthetic Stocks

Springfield Armory and General Tire and Rubber Company conducted research into a synthetic stock for the M14. Development of this lighter, stronger stock made of fiberglass for the M14 proceeded in stages from 1960 until late 1965. The drawing for the final version M14 fiberglass stock is dated December 1965. Beginning in 1962, fiberglass stocks were installed on M14 rifles at the factory. The early fiberglass stocks had no checkering. The hole for the upper butt plate screw had a wood insert to which the screw was anchored. The early issue fiberglass stocks were milk chocolate brown in color. USGI fiberglass stocks were made as late as 1967.

### USGI M14E2 Stocks

The M14E2/M14A1 rifle was fitted with a walnut or birch straight-line stock. One rare laminate M14E2 stock was made and it was issued for service. The first of approximately 10,000 M14E2



stocks were made in late 1963. Most of the M14E2 stocks were made of birch at Canadian Arsenals in Ontario, Canada in 1964. The few walnut M14E2 stocks were made at Springfield Armory, Rock Island Arsenal and Anniston Army Depot. Winchester made at least one cherry M14E2 stock. The M14E2 stock has a recoil pad, smooth surface flip up butt plate, pistol grip and fore grip. Early model fore grips were made of Bakelite whereas latter grips were rubber coated metal. The fore grip locks into place when in use. It retracts upward by pulling on a latch on the rear side of the grip. The position of the fore grip is adjustable. Prior to 1994, M14E2 birch and walnut stocks were available from Springfield Armory, Inc. In 2000, Fred's of Shotgun News (Ramseur, NC) was the winning bidder on a U. S. government auction of 2,701 M14E2 stocks. Currently, Fred's of Shotgun News is the only known surplus dealer of M14E2 stocks in the U.S.

### **Commercial Synthetic Match Grade Stocks**

The U. S. Marine Corps approached McMillan Fiberglass Stocks around 1987 to develop a synthetic stock for their M14 type rifles. The Marines wanted a more durable stock to replace the wood stocks that were cracking and splitting. The McMillan M1A stock was developed to meet their request. The National Rifle Association changed the High Power Shooting rules to allow the use of this new stock since the U. S. Marine Corps was using it. In the present day, McMillan makes three models of synthetic stocks for the M14 type rifle, M1A, M2A and M3A. The obvious difference between the three models is the grip style but they all must be bedded prior to use. These stocks can be fitted with or without a steel liner. The M2A and M3A models have adjustable cheek pieces. The McMillan M1A stock is a traditional design sized for heavy barrel M14 type rifles. McMillan M2A stocks have been fitted on M25 rifles for the Army 10th Special Forces Group and M14 DMR rifles for the U. S. Marine Corps. The U. S. Navy SEALs are reported to have M14 rifles dressed in McMillan M3A stocks. The M2A and M3A stocks are not allowed per the rules for NRA High Power Competition matches.

### **Bell and Carlson**

Bell and Carlson is a designer and manufacturer of synthetic material rifle stocks. Their offering for the M14 type rifle is one model in their special purpose line of stocks (catalog number C190). The stock is built with structural urethane, aramid, graphite and fiberglass. It is offered in a choice of seventeen finishes. This stock will accommodate a heavyweight contour barrel and the magazine well is flared to facilitate quick magazine changes.

### **Folding and Telescoping Commercial Stocks**

Folding and telescoping design stocks have been available for the M14 type rifle since about 1980.

- a. Springfield Armory, Inc. and Reese Surplus, Inc. - In the 1980s and early 1990s Springfield Armory, Inc. offered commercial M1A-A1™ folding stocks. Springfield Armory, Inc. made two versions of the M1A-A1™ folding stock. The earlier version was either a modified M14 or modified M14E2 stock. These stocks were cut just behind the receiver well to which a BM-59 Alpine metal butt stock was added. These BM-59 butt stocks had butt plates with a rubber pad on the upper half and two braces for supporting the butt plate. The M1A-A1™ early version stock using a modified M14 stock had a plastic pistol grip added to it. The plastic pistol grip had a storage space accessed by a metal cover on the bottom. The early version of the M1A-A1™ stock will have the selector cutout. The later version does not have the lower butt plate supporting brace or selector cutout. It has a hardwood pistol grip and full length rubber butt pad. This

version is still available from Reese Surplus (Colona, IL) as a modified BM-59 folding stock fitted to the M1A™ or M14.

- b. Choate - Choate offered folding stocks for the M1A™ prior to the 1994 Assault Weapons ban in the United States. Choate folding stocks for the M14 type rifle are USGI fiberglass stocks that had the butt stock cut off and replaced with a folding butt stock and pistol grip. Springfield Armory, Inc. sold the Choate folding stocks as late as 1999 with the stipulation that they were to be installed on rifles assembled prior to September 13, 1994. Choate folding stocks are black color and have a rubber butt pad.
- c. SparrowHawk Stocks - In the fall of 2003, SparrowHawk Stocks introduced the M-14CM4 stock to the market. The M-14CM4 stock is the mating of an AR-15 four position telescoping stock and pistol grip to a synthetic M14 stock for use on pre-'94 ban M14 type rifles. The same stock can be used on post-'94 ban rifles if the stock is fixed and a muzzle brake is permanently installed. Consult state and local laws prior to installing this stock on post-'94 ban rifles. A lower front hand guard and Picatinny style accessory rails are optional. Colors available are black, white, olive drab and earth brown.
- d. Troy Industries, Inc. - Either Troy Industries stock discussed below can be used on a pre-'94 ban M14 type rifle under federal law in the United States. Consult state and local laws prior to installing this stock. The standard color for Troy Industries stocks is black.
  - I. Rock SOPMOD M-14™ Stock - Troy Industries supplies a telescoping stock for their Rock SOPMOD M-14™ conversions. The magnesium alloy stock comes with a multiple position collapsible titanium rail butt stock and adjustable cheek rest. Length of pull from the rear of the butt stock to the pistol grip is approximately 11 " when fully extended. This was designed to accommodate operators wearing body armor. The telescoping stock extends and retracts with the push of a button behind the pistol grip at the end of the stock. The stock has ambidextrous sling swivel studs.
  - II. Drop-In Modular Battle Stock - LAW483 Stocks designed the Drop-In Modular Battle Stock for Troy Industries. Troy Industries had two prototype Drop-In M14 Battle Stocks on display at the 2004 SHOT Show. Both prototype stocks were made of fiberglass and incorporated a magazine well that opened up lengthwise making magazine insertion much easier. The enlarged magazine well also provided a grip point on the stock. The Drop-In M14 Battle Stock prototypes had a telescoping AR-15 stock that also folded to the left side, an AR-15 type grip with a textured surface and ambidextrous sling swivel studs. The prototype models had Picatinny style rails at three, six and nine o'clock on the fore end. The company had planned to add a twelve o'clock rail to the production model. As of June, 2004 the Drop-In Modular Battle Stock is in production. The Drop-In Modular Battle Stock folds and / or collapses for an adjustable length of pull. It can be configured for bottom or side sling attachments and is equipped with rails at the three, six and nine o'clock positions on the fore end. Each stock includes the proprietary LAW483 Enhanced M-14 Magazine Well™ (patent pending), LAW483 CQB Pattern Fore End Texturing™, AR15A1 pistol grip and clear coat surface treatment. The Drop-In Modular Battle Stock is offered in several colors and styles, folding, collapsing or both and with or without fore end rails.

Sage International, Ltd - The Sage EBR stock is a telescoping pistol grip stock with adjustable cheek piece and adjustable butt pad. It has ambidextrous sling swivels. The Sage EBR stock has four Mil-Std 1913 rails around the barrel and one behind the receiver heel. It will fit a M14 type rifle with a standard contour barrel but not one with a medium weight or heavy weight

barrel. The standard operating rod guide must be replaced with the operating rod guide supplied by Sage International. Once that is done it is a matter of reassembling the rifle with the stock bolting to the new operating rod guide. These pistol grip stocks are legal to install in the United States on M14 type rifles assembled prior to September 13, 1994 under federal law but consult state and local laws as well. The Sage EBR stock has seen service on M14 rifles in use by U. S. Army soldiers in Afghanistan.

## **Other Stocks**

Typically, Springfield Armory M1A™ rifles are outfitted in textured and painted USGI synthetic, commercial walnut or USGI birch stocks. The commercial made walnut stocks will not have a selector cutout. Black colored crinkle texture synthetic stocks are fitted with a rubber butt pad. This softens the recoil and the overall length is increased by an inch. Some black color crinkle texture stocks have the selector cutout. The Springfield Armory M1A Bush and Scout Squad™ rifles are now offered in a Mossy Oak painted synthetic stock. Wenig, Boyd's' and Fajen have manufactured wood stocks for the M1A™ at one time or another. The Fajen Style II was a medium contour stock available in walnut or laminated. After Fajen went bankrupt, Boyd's' bought the stock inletting equipment from Fajen. Prior to 1994, Springfield Armory, Inc. offered extra fancy AAA grade walnut stocks as an option for the M1A™.

The USGI M14 fiberglass stock lends itself to camouflage patterns by anyone with an imagination, a steady hand and paint. The flip up butt plate on the M14 and M14E2 stocks was adopted from the M15 rifle that was declared obsolete in 1959. An M14 stock can be fitted with an M1 Garand butt plate to shorten the overall length by about 1/4 ". However, the hinge area should be filled in with suitable material. An alternate solution provided by SparrowHawk M14 Stocks is to remove the hinge and roll pin from the butt plate. The stock is preserved and the storage compartment is still readily accessible. A USGI M14 stock should be fitted to a Chinese M14 rifle, as there are small dimensional differences. For long-term storage, the trigger guard should be unclamped from a wood stock. This will allow the wood stock to expand and contract as the weather changes.

The Chinese stocks on rifles imported into the United States by Keng's Firearms and Century Arms are made of chu wood. Chu wood only grows in Manchuria, China. Chinese M14 type rifles imported by CJA into the United States have walnut stocks. The walnut for these stocks was harvested in the Yunan Province of China. Chu is softer and lighter than black walnut.

Israeli Military Industries modified the supplied USGI M14 stocks for the Israeli Defense Forces. An integral cheek rest and rubber butt pad was added to each stock for sniper duty. There were two versions of the Israeli M14 stock. The early version had a shorter length cheek rest whereas the late version used a longer cheek rest. These stocks and the hand guards were painted black. Some of these stocks have been exported back to the United States for commercial sale.

Sage International offers the EBR stock with a fixed Remington 870 shot gun butt stock or in conjunction with Fulton Armory, a wood M14 butt stock. This stock can be used on post-'94 ban receivers and by California residents. The standard finish for both EBR stocks is smooth black with a black textured under side fore end hand guard. Both EBR stock models are CNC machined from 6061-T6 aluminum and supplied with a replacement operating rod guide. Paladin Republic Armory has plans to produce wood and synthetic California legal, thumbhole style and pistol grip style M14 type rifle stocks later in 2004.

## **Hand Guards**

The very first hand guards for the U. S. M14 were made of black walnut. These were changed

to a slotted fiberglass model in April 1961. Later, the under side of the hand guards were painted silver to help dissipate barrel heat. Apparently, some of the slotted hand guards stayed with the rifles for some time. From a photograph taken in September or October 1966 of PFC John F. Dugan, USMC near An Hoa, Viet Nam one can see a slotted hand guard on his M14 rifle. The slotted fiberglass hand guards were found to be fragile and caused mirage over the barrel on rapid fire. So, a solid fiberglass hand guard was developed and became the standard in 1962. USGI solid hand guards were made in at least four-color variations, coffee, brown, dark brown and black.

A more rugged solid fiberglass hand guard is available from Fulton Armory. Prior to 1994, Springfield Armory sold heavy walnut match, extra fancy AAA grade walnut and laminated walnut/maple hand guards for the M1A™. Some Chinese M14 rifles were imported into the USA with a marbled brown fiberglass hand guard. Boyd's sells matching hand guards for their walnut stocks.

## **USGI Sights**

The M14 type rifle has three sizes of front sights and three sizes of rear sights. The front sights are classified by the blade width. The standard or GI front sight is .084 " wide. The military National Match front sight is .062 " wide. The rear sight aperture has a standard USGI diameter (.069 " + .005 ") and two National Match sizes, .0520 " and .0595 ". Either National Match rear sight can be fitted with a hood. Use of the hood on the rear sight allows for one-half minute adjustments in elevation. Without a hood on the rear sight aperture, the elevation knob moves point of impact one minute per click. The windage knob will either be the standard one-minute per click adjustment or the National Match model of one-half minute per click adjustment. The M14 type elevation knob will have an "M" inscribed on it. This denotes calibration in meters. If the elevation knob does not have an "M", the knob is calibrated in yards and was made for an M1 Garand rifle.

The USGI and NM M14 front sights can be used as a range finding device by the shooter. Assuming a 22" barrel length, a 20" wide target (frontal view of a deer) will appear to be the same width of the front sight post at the following distances:

0.062" NM sight - 230 meters (251 yards)

0.072" NM sight - 198 meters (216 yards)

0.084" GI sight - 169 meters (185 yards)

## **Commercial Sights**

Chinese rear sight aperture diameter tends to be larger than the USGI standard model. Tooltech (Oxford, MI) can install a 1/8 " tritium insert into the M14 type front sight for use in low light conditions. Brownell's sells an Alley Supply globe style front sight and set of inserts for the M14 type rifle. This type of front sight is useful in reducing eyestrain in target match shooting. Smith Enterprise offers a proprietary combination gas cylinder lock and post style front sight for short-barreled M14 type rifles. The Rock SOPMOD M14™ can use flip up type AR-15 sights.

Springfield Armory, Inc. - Springfield Armory, Inc. made a 0.072 " NM front sight for their match rifles in the 1980s. It is marked NM 072 on the side. Springfield Armory M1A™ Scout and Bush rifles are fitted with slightly different front sights to compensate for the shorter barrel. The Scout / Bush front sight blade height is no different but the base is four millimeters taller. In 2004, XS Sight Systems introduced a M14 type rifle front sight for Close Quarters Battle situations. It is the factory issue front sight for the M1A™ SOCOM 16. The front sight is a tritium dot halo style sight. This sight set is designed for faster acquisition of targets over the

traditional sights. Sight sets for 16 ", 18 " and 22 " barrels are available. The rear sight aperture on the M1A™ SOCOM 16 has been enlarged from the standard military diameter.

## **Muzzle Attachments**

There are different muzzle attachments available for the M14 type rifle. They can be classified into four categories, flash suppressors and hiders, muzzle brakes and stabilizers, grenade launchers and sound suppressors. Sound suppressors are discussed in separate sections below. The reader should consult federal, state and local laws prior to removing or installing any muzzle attachments to his M14 type rifle. Some muzzle attachments may be illegal to attach to the rifle.

A) Closed Prong Flash Suppressors / Flash Hidere - The USGI flash suppressor was fitted on all USGI M14 rifles except for match M14s. Match grade M14 rifles have been fitted with flash suppressors that have been reamed out to National Match specification. Brookfield Precision Tool also made a special flash suppressor for the Navy. It had a front sight machined into it as it was to support a silencer. The silencer hid or interfered with the standard front sight and the standard suppressor would not work. Some Chinese made M14 type rifles imported into the United States after March 1989 have faux flash suppressors or the suppressors completely cut off at the muzzle. They also may be tack welded to the barrel. The Chinese faux flash suppressors were made without milling out the slots between the prongs. Enterprise Arms sells a M16A2 birdcage style flash suppressor for M14 type rifles. This has the advantage of shortening the rifle overall length by about one and one-half inches.

B) Open Prong Flash Suppressors / Flash Hidere - The following is a description of the Sommers Vortex Flashhider. The straight prong flash hider design is susceptible to loosening under fire unless very tightly torqued on to the barrel. The Sommers Vortex solves this problem. The Vortex was invented, designed and refined by Sonja Sommers of Smith Enterprise, Inc in early 1995. It is a patented accessory (U.S. Patent Number 5,596,161). The Sommers Vortex is machined from AISI 8620 bar stock alloy steel then case-hardened to provide a tough core and hard surface for maximum strength. It is given a black Parkerized finish. The dimensions are 2 ¼ " long and 0.861 " diameter. It is sound suppressor capable. The Vortex is secured to the barrel by threads but it is not a timed item. When it is tightened that's where it is and it does not need a lock washer. The Vortex conceals the flash essentially 99.999% even on full automatic. Four specially angled flutes dissipate the gas but contain the unburned powder allowing increased residual burn for less visible flash. The Vortex incorporates a helix design essentially tightening itself when the weapon is fired and helps align exiting barrel gas to improve accuracy with all bullet types. The Sommers Vortex will have "left hand" slots for barrels with left hand threads and "right hand" slots for barrels with right hand threads. The Vortex carries a conditional lifetime guarantee. The Vortex is in service with many U. S. law enforcement agencies and has been used in combat by the U.S. military. The Sommers Vortex eliminates all flash and greatly reduces muzzle climb on M14 automatic fire. Enterprise Arms lists a Vortex flash hider on their web site for sale.

B) Muzzle Brakes - Muzzle brakes are installed on M14 type rifles for reducing muzzle climb, felt recoil and / or compliance with state law, e.g., California. Fabian Brothers made their M14 DTA MIL BRAKE muzzle brake in the early 1990s. It is a two piece muzzle attachment consisting of a muzzle brake and flash hider. It is threaded on to the rear portion and secured with a lock nut. The flash hider is narrower than the muzzle brake section. The rear portion is secured to the barrel with the traditional flash suppressor nut. The rear portion has a bayonet lug and dove tail mount for the front sight. Jim Clark of Clark Custom bought the rights from Fabian Bros. and produced another Fabian design muzzle brake for a time.

Springfield Armory, Smith Enterprise and Enterprise Arms offer muzzle brakes for the M14 type rifle. Springfield Armory, Inc. also installs their muzzle brake on the M1A™ Scout Squad model and all M1A™ rifles shipped to California. The Smith Enterprise muzzle brake is machined from AISI 8620 alloy steel. The Enterprise Arms muzzle brake is made from "top grade steel and finished in black oxide." (2) Troy Industries makes a CQB muzzle compensator for their Rock SOPMOD M14 Carbine™. The front surface of the Troy Industries muzzle compensator consists of many pyramid shaped points. The purpose of this is to prevent slippage of the muzzle when pressed against an opponent in CQB.

C) USGI Muzzle Stabilizer - The M14E2/M14A1 was fitted with the M2 bipod clamped to the gas cylinder and a stabilizer assembly fitted over the flash suppressor. The stabilizer assembly has holes drilled in it which direct the majority of the muzzle gas to exhaust to the left side and slightly upward of the flash suppressor. This helps reduce muzzle climb during full auto fire. USGI M14E2 stabilizer assemblies will be marked on the operating rod side with the drawing number 7791661. The original 1962 design of the M14E2 stabilizer did not include a locking mechanism. Later a locking mechanism was added and then improved upon. The early style locking mechanism did not lock well enough to keep the stabilizer on the rifle. Consequently, the locking mechanism was redesigned to what is available today.

D) Commercial Stabilizer – The following information was provided by member cw at m14forum.com regarding the Springfield Armory, Inc. muzzle stabilizer. Springfield Armory, Inc. very briefly made a muzzle stabilizer with bayonet lug for its folding stock M1A-A1 Bush™ rifle prior to the 1994 ban. The front portion of the Springfield Armory, Inc. muzzle stabilizer has a short bird cage style flash hider. It threads on to the rear portion but is held in place by a 10-32 set screw on the bottom. Removal of the flash hider reduces the length of the rifle by 2.75". The rear portion of the muzzle stabilizer consists of the front sight base, bayonet lug, and a cylindrical section perforated with gas venting holes. It is marked Muzzle Stabilizer Springfield Armory on the bottom. The outside diameter is 0.6" for the entire length of the stabilizer.

E) Grenade Launcher - The X-1 was an experimental 40 mm grenade launcher made for the M14 rifle in 1961. The M76 grenade launcher was developed for the M14 rifle and produced in 1961. It became obsolete with the introduction of the M79 grenade launcher. Consult federal, state and local laws prior to installing a grenade launcher on a M14 type rifle. Troy Industries M14 type rifle stocks can accommodate the M203 40 mm grenade launcher. Civilians may own 40 mm grenade launchers in the United States in accordance with the National Firearms Act of 1934.

F) Barrel Vibration Reducer - AWC Systems Technology (Phoenix, AZ) has in the past modified the M14 type rifle for the purpose of increasing accuracy by reducing barrel vibration. This modification included removal of the front sight and flash suppressor, cutting the gas cylinder just forward of the spindle valve, welding a HK91 front sight just forward of the front band and threading an adjustable bird cage style flash hider on the barrel. The adjustable flash hider works similar to the Browning B.O.S.S. The flash hider is turned on the threads to find the optimum spot where accuracy is maximized for a given cartridge load.

**Military Suppressors** - Sound suppressors are used to deceive enemy troops of the origin of sniper fire by minimizing the muzzle blast. During the Viet Nam War, the XM-21 rifle was sometimes equipped with the Sionics M-14 SS-1 suppressor. Forty Sionics SS-1 suppressors were sent from the U. S. Army AMTU in February, 1969 to the U. S. Army 9th Infantry Division Sniper School for testing in combat. Additional Sionics SS-1 suppressors were shipped to the U. S. Army in Viet Nam after April, 1969. This suppressor consisted of a series of counterclockwise and clockwise metal spiral shapes abutting each other around a smooth perforated barrel extension core with rings fore and aft. At the rear end of the SS-1 suppressor

was a gas relief port. Some M21 rifles have been outfitted with Brookfield Precision Tool sound suppressors.

M14 DMR and M25 rifles are at times suppressed using Phil Seberger designed OPS, Inc. 12<sup>th</sup> model muzzle brake suppressors. They are designed to drain water in six seconds or less. The muzzle brake suppressors are made of fusion welded 300 series stainless steel. The sound attenuation is listed as 40 dB. The military version muzzle brake suppressor includes a barrel sleeve and thread protector. The gas piston hole is welded shut then drilled to a diameter of approximately around 0.055 “. “The small size hole acts as a gas restrictor valve, so that when the silencer is installed the bullet will clear the end of the silencer before the [operating] rod starts flopping around and causes all kinds of weird accuracy problems.” (3) Use of the OPS, Inc. muzzle brake suppressor results in an average accuracy increase of 0.25 MOA and an increase of 20 to 50 feet per second bullet velocity. The muzzle brake portion of the assembly acts to reduce recoil and muzzle climb. They are self-cleaning, maintenance free and are rated for more than 30,000 rounds. The OPS, Inc. suppressors have seen service in Afghanistan during the War on Terrorism.

**Commercial Suppressors** – Installation of a sound suppressor on a M14 type rifle will require modification of the gas system to prevent parts damage and compliance with the National Firearms Act in the USA. Note that the BATFE considers a sound suppressor as a flash hider as well. Thus, it may be illegal to install a NFA registered sound suppressor on a post-'94 ban rifle. Consult all laws and an attorney knowledgeable in firearms laws prior to purchasing a sound suppressor.

American Suppressors - AWC Systems Technology (Phoenix, AZ) in the past made the M30 suppressor that used two mounting points to attach to a M14 type rifle. Today, they offer a smaller sized but very efficient sound suppressor for the M14 type rifle based on their Thundertrap model. South Central Research Corporation (Katy, TX) makes a suppressor for the M1A <sup>TM</sup>. It is called the Mk23 and can be taken apart for cleaning. Troy Industries sells an optional sound suppressor for the Rock SOPMOD M14 <sup>TM</sup>. It screws on the barrel with left hand threads and tightens as the rifle is shot. The conversion takes into account that a suppressor may be attached. So, their suppressor has a back chamber to accommodate the gas. The rifle will not be hurt with their suppressor in use.

Foreign Suppressors – BR-Tuote (Joensuu, Finland) produces a line of suppressors for pistols, rifles and automatic weapons known as the Reflex Suppressor <sup>TM</sup>. Their all steel construction T6M14 Reflex Suppressor <sup>TM</sup> screws on to the M14 barrel once the flash suppressor assembly is removed. Reflex Suppressors <sup>TM</sup> are self-cleaning.

## Chapter 8 Notes

1. Springfield Armory National Historic Site [www.rediscov.com/spring.htm](http://www.rediscov.com/spring.htm) Catalog Number SPAR 4077.
2. Enterprise Arms 15861 Business Center Drive Irwindale, CA 91706 [www.entreprise.com](http://www.entreprise.com)
3. [m14forum.com](http://m14forum.com) Steve k post of e-mail from Phil Seberger to Steve k posted at [m14forum.com](http://m14forum.com).

# Chapter 9

## All About Parts

### USGI M14 Technical Documentation

Parts and accessories for the M14 rifle were manufactured according to government drawings and specifications. The following information was provided by Bill Ricca on m14forum.com in response to a question regarding the M14 magazine specification.

I looked up some drawings and unfortunately; the magazine comprises quite a few drawings. The only drawing I saw that has the steel specifications is the floor plate. I am sure each part has a different specification of steel for production purposes.

As the steel type, thickness, etc for the magazine body and follower are not listed on the drawings, that means the manufacturer would have gotten a copy of the Military Specification. The Mil Spec term as used in collecting is distorted. The Military Specification for the magazine will be a specific number, which has listed all the required information, testing, etc that is not in the ordnance drawing.

Many times companies use the term Mil Spec for items that would never pass the Military Specification testing requirements and items that are not even military. It sounds good in their sales pitch, but some making the claim have no idea what Mil Spec means.

Years ago you could purchase what were known as Technical Packages. They consisted of previous histories, all drawings including drawing for tools, and a lot more. They were in the neighborhood of \$750.00 back in the early 1980s.

Then we had the Iran Contra thing happen and things tightened up. Now to get anything you need a cage number, a need for it, and the people have to be able to find what you are looking for. The only other way is to ask to be invited to bid on an item being contracted. The particular item will have all the drawings and requirements of the contract. Unfortunately, some items will never be made again, while others are made once every 10 to 15 years so this process is not the best. It is geared toward manufacturers who are in the business of production, not you and me.

### USGI Parts

Parts for the US Government M14 rifles were made from 1959 onward until at least 1992. The bulk of the parts production was done though from 1960 to 1967. The last government contract for M14 magazines was fulfilled in 1996 by Check Mate Industries.

The government contractors were held to strict quality control standards. For instance, out of every lot of 100 barrels made nine were selected for inspection. If any of the nine barrels failed, inspection the entire lot of 100 barrels was scrapped. However, there are often slight but significant differences in how USGI parts fit, e.g., bolts and operating rods with respect to the receiver. USGI bolts have been found to differ by as much as 0.004 " even though made by the same manufacturer.



## Part Materials

The specified steel material for the following parts is listed as follows:

**Barrel** – chromium-molybdenum-vanadium or 4150 re-sulpherized

**Bolt** – 8620

**Extractor** – 8645

**Firing Pin** (October 20, 1965 drawing) – 8640 or 8645 with complete chrome plating

**Gas Cylinder** – 416 stainless steel

**Gas Cylinder Plug** – 416 stainless steel

**Gas Piston** – 416 stainless steel

**Operating Rod** – 8645

**Selector Shaft** - 8645

**Spindle Valve** – 440A stainless steel

**Stripper Guide** – 4140 or 8620

## Parts Stamped With Part Numbers

A few parts were also stamped with the part number. They are listed as follows:

**Barrel, Chrome Plated** - 7790190

**Barrel, National Match, Standard Contour** - 7791362

**Barrel, National Match, Medium Weight Contour** - 9345206

**Barrel, National Match, Heavy Weight Contour** - 9349847

**Bolt Issued Without Roller** - 7790185

**Bolt Issued With Roller** - 7790186

**Hammer** - 5546008

**Operating Rod** - 7267064

**Receiver** - 7790189

**Trigger Group Housing** - 7267030

## Manufacturer Codes

Some of the parts are marked with manufacturer codes. Typically, the manufacturers stamped the operating rod, bolt, elevation and windage knobs, trigger housing, and hammer. Sometimes, the manufacturer is identified on the stock, butt plate flapper, operating rod spring guide, trigger guard, front band, gas cylinder, rear sight base and safety. Examples of such are the Harrington & Richardson front band, rear sight base, and safety, Killeen Machine & Tool operating rod spring guide, butt plate flapper and trigger guard, wood stocks (except TRW), and Springfield Armory and Winchester gas cylinders.

## DOD Acceptance and National Match Stamps

The DOD acceptance stamp (eagle, arrow and three stars) is usually found on USGI M14 chrome plated barrels, M6 bayonets and M2 bipods. The DOD acceptance stamp or cartouche is sometimes found on wood stocks, gas cylinders and operating rods. USGI National Match parts such as the barrel, front sight, and rear sight parts will be marked NM or NM/2A.

**Bolt Markings** - A USGI bolt (and receiver) will have a dimple from a prick punch after proof round testing. An inscribed "M" on a USGI bolt means it was magnafluxed. USGI M14 bolts have additional stamps besides the part number and bolt manufacturer. The other markings are lots of the heat treatment and steel. Such an example can be found on a bolt marked 7790186 HRT A20 CDR. These are in order: 1) part number 2) manufacturer code 3) heat lot number and 4) steel supplier code. If a manufacturer had only one steel supplier then just the heat treating lot was stamped on the bolt. Other manufacturers consolidated their markings including

both heat lot and steel maker.

**Firing Pins** - There were three types of M14 firing pins made. The original firing pins were made of completely Parkerized steel. The next version was a Parkerized steel firing pin with a chromed tip. These were only made in 1962. The last version is a fully chrome plated steel firing pin. These were manufactured from 1965 to 1969. The benefits of chrome plating the firing pin are improved wear resistance and lubricity.

**Operating Rods** - Some Harrington & Richardson, Springfield Armory, and Winchester operating rods do not have a vent hole drilled in the forward end of the cylindrical portion. Three 1961-manufacture new-in-tube operating rods (two Harrington & Richardson and one Winchester) were opened by a member of BattleRifles.com. All three of these operating rods had no vent hole. The USGI M14 drawing for part number 7267064 call for the operating rod handle and cylinder to be welded together. As discussed above, only TRW made one piece operating rods.

**Gas Cylinder** - Two versions of the M14 gas cylinder were manufactured. The early version does not have a lip just aft of the bottom gas port to support the front band. The late version gas cylinder was manufactured with a support lip for the front band. These early version gas cylinders were used in the production of T44E4 and some M14 rifles. (1)

Other Parts and Accessories - The latest dates of manufacture for the items below were found in photographs of the original packaging:

**Bayonet** - November, 1968

**Bolt Stop** - December 1966

**Chamber Brush** - October 1967

**Combination Tool** - December 1974

**Flash Suppressor** - 1970

**Gas Cylinder Lock** - May 1966

**Gas Piston** - June 1972

**Operating Rod Spring Guide** - October, 1966

**Rear Sight Base** - October 1970

**Spindle Valve** - August 1969

**Stripper Clip Guide** - December 1971

**Trigger Guard** - January 1968

**Trigger Housing** - December 1966

## **USGI Parts Sales**

USGI parts were sold to the American public after termination of M14 rifle production in 1964. Harrington & Richardson, TRW and Winchester all sold off their M14 parts inventory to the commercial market. This was done in an attempt to recoup some of their investment in the M14 program. Additionally, in the 1960s the U. S. Army declared much of their M14 parts inventory surplus and released them to the public for sale. Mr. Elmer Balance of Devine, Texas purchased the parts inventory to begin production of the M1A™ rifle from companies who manufactured the M14 and "from foreign nations that had been furnished M14 rifles and parts under U. S. military assistance programs." (2) In 1973, USGI M14 bolts and operating rods could be had for \$5.00 each and USGI M14 barrels for \$10.00 to \$15.00 each at gun shows.

Around 1985 or 1986 the owner of Armscorp, Jack Friese, imported approximately 2000 M14 parts kits from Israel. Gerald Drasen, a surplus dealer, purchased the bulk of these parts kits. Some of these M14 parts kits were sold by Bill Ricca on a consignment basis. In the 1980s, Bob Reese also brought into the United States a large quantity of M14 parts a few times. During the 1990s other companies imported M14 parts from Israel.

The Office of the Director of the Civilian Marksmanship Program received a shipment of USGI M14 parts in 1996 as part of their normal routine. These parts were sold to members of DCM affiliated shooting clubs in the United States until the end of 2003. The sales ended because they sold out of what they had according to Orest Michaels, Chief Operating Officer. In February 2004, he did not know when or if CMP would be able to sell any M14 parts in the future. USGI M14 parts remain available for sale but in limited quantities and at increasingly higher prices from various gunsmiths and parts houses. As of 2004, USGI barrels, bolts, gas cylinders, operating rods, and flash suppressor are not widely available on the commercial market.

### **USGI Parts Manufacturers and Identification**

The following is a list of contractors and government facilities that have produced USGI M14 parts. The individual entity is listed first followed by any identifying marks or CAGE Code and what parts they are known to have made. Real USGI stampings are 1/16 " tall on the bolt and trigger housing. Ron Smith of Smith Enterprise, Inc. has seen two M14 bolts stamped TRW that were not made by TRW. Note that not all USGI M14 parts were made by forging or extrusion. Some were made by investment casting, e.g., flash suppressors and M14E2 stabilizers. Some times a casting can be easily identified by the raised line(s) on the surface of it "where the parts of the mold were fitted together." (3) USGI flash suppressors will have barrel splines with square ends not round like commercial reproductions.

Springfield Armory made all parts for the M14 rifle but also used subcontractors for various parts in later years. They made a production run of gas cylinders between July 01, 1964 and June 30, 1965. Between July 01, 1965 and June 30, 1966 the Armory began production to deliver an order for spare M14 parts including 64,000 bolts, 35,000 operating rods, and 12,000 stock assemblies. This spare parts run was expected to be completed by April, 1967. They also received a production order for 52,700 M14 barrels between July 01, 1966 and June 30, 1967. The first of these barrels were delivered in June 1967 and continued into August, 1967 at least.

Winchester made all the major parts and most of the small parts with the exception of springs, pins and screws. The M14 parts they made equaled 80 % of the value of the rifle at the time. TRW made eleven major parts that equaled 65 % of the value of the rifle. They purposefully produced what they thought they could make well and economically. Harrington & Richardson subcontracted parts production to a large extent.

MXR was a contractor for Winchester and possibly Springfield Armory. Borg-Warner, Saco-Lowell and Union Hardware Company made parts for Springfield Armory. Bostich, General Tire, Saco-Lowell, Textile Machine Works, Torrington Company, Westinghouse and Wright Manufacturing Co. were contractors for Harrington & Richardson. The marking BRW S-1 indicates the part was made at the Spring Division plant of Borg-Warner. From observation of USGI packaging Borg-Warner made magazines from as early as December 1961 until at least November 1967. Mechanical Component Corporation made gas cylinders in 1969. Dennison Machine Tool made hammers some time between 1968 and 1972. Harris Graphics made NM barrels in 1983. Mercury Tool & Machine made M14 parts from 1983 to 1986. Watervliet Arsenal made about 500 bolts under emergency procurement in the 1980s. Tong Industries is located in South Korea.

**Aerial Cutlery Co.** - M6 bayonet

**Allied Precision Products, Inc. (24249)** - NM windage knob

**American Pin, Inc. (A)** - magazine body, [possibly stripper clip]

**Anniston Army Depot (AAD)** - walnut M14E2 stock

**Apex (APEX)** – M14E2 stock fore grip mount

**Argo Development Corporation (ARGODEV Corp)** - M14E2 stock rubber butt pad  
**Associated Spring (AO)** - stripper clip  
**Borg-Warner (BW, BRW S-1, BRW B-2, 7F259)** - magazine body, magazine follower  
**Brookfield Precision Tool (BKFLD PREC TL)** - operating rod spring guide, scope mount, gas piston, scope mount adapter for AN/PVS-4, Navy special flash suppressor, sound suppressor  
**Bruce Machine and Engineering (BME)** - windage knob, NM windage knob  
**Canadian Arsenals, Ltd. (CA, C A L)** - NM barrel, birch M14E2 stock  
**Check Mate Industries (C.M.I., 1M291)** - magazine body  
**Columbus Milpar and Manufacturing Co. (MILPAR COL)** - M6 bayonet  
**Cooper Precision Manufacturing (1JHX1)** - DMR barrel  
**Defense Procurement Manufacturing Services (40554)** – trigger housing  
**Dennison Machine Tool Co. (DM)** - hammer  
**Douglas Barrels, Inc. (0K789)** - NM barrel  
**Druge Brothers Manufacturing Co. (DRC)** - windage knob, elevation knob  
**Eastern Canvas** - M14 magazine web pouch  
**Enrex Corporation (ENREX, 0BTD4)** - NM windage knob  
**Fajen (77742, 3T616)** - NM stock  
**Farmer Supply & Tool** – M2 bipod  
**Frazier Manufacturing Co. (FZR)** - elevation knob, windage knob  
**G. G. Greene Metal (GGG, GGG 7791154, 26194)** - stripper clip, magazine charger  
**General Dynamics Armament Systems, Inc. (26978)** - chrome plated barrel  
**General Tire** - M14E2 stock fore grip  
**Harrington & Richardson (H, H R, H&R, HRA)** - receiver, rear sight base, trigger housing, operating rod, chrome plated barrel, front band, safety, gas cylinder, hammer and wood stock  
**Hart Rifle Barrels, Inc. (0FMZ6)** - NM barrel  
**Harris Graphics Corp. Commercial Press Division (20084)** - NM barrel  
**Imperial (Imperial)** - M6 bayonet  
**Killeen Machine & Tool (KMT)** - trigger guard, magazine body, operating rod spring guide, standard M14 stock butt plate flapper  
**Krieger Barrels (0DCS1)** - DMR and NM barrels  
**Lufkin (Lufkin)** - stripper clip  
**McMillan Fiberglass Stocks, Inc. (0LB99)** - DMR and NM stocks  
**Mechanical Component Corporation** - gas cylinder  
**Mercury Tool & Machine (24411)** - operating rod  
**MKS Industries** - scope mount  
**New Arc Welding and Steel (39361)** - NM barrel  
**Nomura Machine (0NWF5)** - NM barrel  
**Phila Working Home for the Blind (PWH)** - M8A1 scabbard  
**Richmond Corporation** - operating rod guide, combination tool  
**Rock Island Arsenal** - walnut M14E2 stock  
**Saco-Lowell (SAK)** - chrome plated barrel, NM barrel, operating rod, gas cylinder, gas piston  
**Seymour Products Co. (SEY, SEMCO, 78180)** - stripper clip, magazine charger, bandoleer  
**SGW (SGW)** - NM barrel  
**Smith Enterprise (3A5E1)** - scope mount, Vortex flash suppressor, extended bolt latch, combination gas cylinder lock and front sight, NM rear sight base, NM front sight, 30 mm scope rings  
**Springfield Armory (S A)** - all rifle parts and all magazine parts  
**Stewart Iron Works (SWK)** - windage knob  
**Textile Machine Works (HRT)** - bolt  
**Thompson-Ramo-Wooldridge (TRW)** - receiver, trigger housing, hammer, gas cylinder, gas piston, rear sight base, connector, operating rod, chrome plated barrel, NM barrel, bolt, flash

suppressor

**Tong Industries (T I)** - safety, windage knob

**Union Hardware Company (UHC)** - magazine body

**Unknown # 1 (COM)** - magazine charger

**Unknown # 2** [possibly County Machine & Tool] (COUNTY MACH) - M14E2 stock butt plate base

**Unknown # 3 (CPP)** – NM windage knob

**Unknown # 4 (CTX)** - magazine follower

**Unknown # 5 (HRL)** - bolt

**Unknown # 6 [possibly Nichols Machine] (HR-N)** - trigger housing

**Unknown # 7 (HR-R)** - magazine body

**Unknown # 8 (K8)** - safety

**Unknown # 9 (LPR)** – NM windage knob

**Unknown # 10 (MXR)** – safety

**Unknown # 11(N. E. INC.)** – M14E2 stock rubber butt pad

**Unknown # 12 (RFM 7791154)** - magazine charger

**Unknown # 13 (TOMCO)** – NM windage knob

**Victory Plastics Company (V.P. CO.)** - M8A1 scabbard

**Watervliet Arsenal** - bolt

**Wilco Electric Co. (WCE)** - elevation knob, windage knob

**Winchester (W, OM, 66118, Winchester, W-W)** - receiver, trigger housing, hammer, chrome plated barrel, bolt, operating rod, stock, flash suppressor, magazine body, magazine follower, safety, gas cylinder, bandoleer, rear sight base

**Worden** - M14 combination tool

**Wright Manufacturing Co. (HRA-W, WRIGHT)** - windage knob

**Wyandotte Tool Co.** - rear sight cover

The contractor name and address can be obtained by search using the CAGE Code at [http://www.gidm.dlis.dla.mil/bin/cs/begin\\_search.asp](http://www.gidm.dlis.dla.mil/bin/cs/begin_search.asp)

## **Interchangeability with the M1 Garand**

The following parts are interchangeable between the M1 Garand and the M14 type rifle: butt swivel, lower butt plate screw, rear sight aperture, elevation pinion (note that the M14 pinion is calibrated in meters, the M1 Garand pinion is calibrated in yards) elevation knob, sight base, sight cover, trigger (although the sear requires slight modification they are close enough), hammer, hammer spring, hammer spring plunger, hammer spring housing, safety, hammer pin, trigger pin, extractor, extractor spring, extractor spring plunger, hand guard clip (sometimes and as long as it has not been deformed during removal), and butt plates on certain M14 stocks.

The following operator level items are interchangeable: web sling, cleaning rod section carry case, cleaning rod sections, cleaning rod patch tip, short oiler bottle, plastic spacer for bore brush and patch tip, 7.62mm chamber brush for 7.62 mm M1 Garands only, .30 Caliber bore brush (although the drawing during the 1960's shortened the brush slightly to prevent it from hitting the inside of the butt plate), and either grease was authorized for use on both rifles.

## **M1 Garand Parts on M14 Type Rifles**

As part of the Marshall Plan after World War II, Italy was given Winchester's M1 machine tools and dies for producing M1 rifles and M1 parts for our European allies that had adopted the M1 Garand. Beretta was given the machinery for making the M1 Garand but a couple of other Italian companies made M1 rifle parts as well. Italian parts quality is as good as USGI M1

Garand parts.

Springfield Armory, Inc., Reese Surplus, AIM Surplus and a few other American and Canadian companies have imported many M1 parts kits from Italy. Springfield Armory, Inc. has used some of these Italian parts in the assembly of M1A™ rifles. Except for very small parts the Italians marked M1 Garand parts with one of three markings: 1) PB for Beretta 2) BMR for Breda Meccanica Romana Italia and 3) BMB for Breda Meccanica Bresciana.

## **USGI Parts Packaging**

Spare M14 parts were packaged in the following manner:

**Barrel** - one per black cardboard tube

**Bayonet** - one per cardboard box inside sealed plastic

**Blank Firing Attachment** - one per cardboard box

**Bolt** - individually wrapped with vapor barrier paper or packed five to a vapor barrier pack

**Bolt Stop** - one per heat-sealed pack

**Chamber Brush** - ten per cardboard box with each inside a cardboard sleeve

**Combination Tool** - one per heat-sealed pack or black cardboard tube

**Connector Assembly** - one per sealed clear plastic pack

**Firing Pin** - two per heat-sealed pack

**Flash Suppressor** - black cardboard tube or heat sealable wrap

**Flash Suppressor Nut** - ten per black cardboard tube

**Front Band** - one per heat sealed pack

**Gas Cylinder** - two per black cardboard tube

**Gas Cylinder Lock** - one per heat sealed pack

**Gas Cylinder Plug** - five per heat-sealed pack with cardboard sleeve around the threads

**Gas Piston** - one per heat-sealed pack

**M76 Grenade Launcher** - one per cardboard tube

**Magazine** - one or four per heat-sealed pack or two per cardboard sleeve

**Operating Rod** - two per black cardboard tube

**Operating Rod Guide** - one per heat-sealed pack

**Operating Rod Spring** - two per heat-sealed pack

**Operating Rod Spring Guide** - one per heat-sealed pack

**Rear Sight Cover** - twenty per black cardboard can

**Safety Spring** - one per heat-sealed pack or 100 per box

**Spindle Valve** - ten per heat-sealed pack

**Stripper Clip Guide** - one per heat-sealed pack

**Trigger Assembly** - two per heat-sealed pack

**Trigger Guard** - one per heat-sealed pack

**Trigger Housing** (with magazine catch, spring and pin) - one per heat sealed pack

Some parts such as firing pins and magazines were opened, inspected and repacked by Anniston Army Depot, Crane Naval Surface Warfare Center and other supply depots. USGI M14 parts that are coated with a white powdery substance are coated with vapor corrosion inhibitor.

## **Commercial and Chinese Parts**

Commercial manufacture and Chinese M14 parts are available in much smaller quantities than what USGI parts were back in the 1960s and early 1970s. While certain commercial and Chinese parts are available at the time of this writing that may not be the case in the future.

- A) **Springfield Armory, Inc.** - Springfield Armory, Inc. began making parts in the late 1970s as the supply of USGI M14 parts became limited. A standard model M1A™ with serial number 0093XX left the factory in 1978 with a commercial non-chromed standard contour barrel, commercial operating rod and commercial bolt. Commercial Springfield Armory operating rods are made from two pieces of steel welded together. From 1978 to 1986 Springfield Armory, Inc. was short on USGI M14 barrels so they installed non-chrome plated standard contour barrels made by Wilson Arms.
- B) **Wayne Machine, Inc.** - Since the early 1990s, Wayne Machine, Inc. of Taipei, Taiwan has made reproduction M14 parts for Springfield Armory, Inc., Sarco, Inc. and Numrich Gun Parts Corporation. These reproduction parts usually function in a satisfactory manner when fitted and assembled correctly. In 1997, Numrich Gun Parts Corporation received a shipment of cast reproduction operating rods from Taiwan. They had Winchester markings. Apparently, Wayne Machine, Inc. had been sent a Winchester M14 operating rod as a sample. Most commercial M14 type rifle parts are cast but most M1A™ bolts are forged.
- C) **Smith Enterprise, Inc.** - Smith Enterprise has or presently does make and sell the following M14 parts: flash suppressors, muzzle brakes, gas cylinder locks, stock ferrules, extended bolt latches, gas cylinder lock sights and National Match (front and rear) sight parts. The Naval Surface Warfare Center (Crane, IN) has purchased hundreds of Smith Enterprise gas cylinder lock sights, extended bolt stops and direct connect Vortex flash hiders. Smith Enterprise parts are of high quality. For example, their gas cylinder lock sights (Patent Pending), extended bolt stops and direct connect Vortex flash hiders are made of carburized and hardened AISI 8620 steel. The suppressed Vortex flash hider is made from carburized hardened and Melinite heat-treated AISI 8620 steel. Their M14 National Match front and rear sight parts are made from AISI 4140 bar stock using the wire EDM method. The rear sight aperture is the hooded type. Amherst Arms will be the distributor for Smith Enterprise, Inc. front and rear sight parts. They expect to have Speedlock CS Springs supply them with M14 operating rod and hammer springs in the near future. Speedlock CS Springs are rated for 500,000 cycles. They cut and polish chambers using Douglas blanks for medium weight and heavyweight barrels. Due to growing scarcity of quality, M14 parts Smith Enterprise may well manufacture parts in the future.
- Smith Enterprise offers an adjustable M14 trigger group to the public and they are showing it to the U. S. military. A USGI trigger group is modified by the addition of parts hidden inside the stock. The rifle stock only requires about 1/8 " of inletting to accommodate the adjustable trigger group. The trigger pull can be adjusted anywhere from two to five pounds simply and easily. The adjustable trigger remains two stage even at two pounds of pull.
- D) **Sadlak Industries** - Sadlak Industries (Coventry, CT) makes NM operating rod spring guides. A limited number of them have a hollow shaft with the rest using a solid shaft. They also manufacture NM gas pistons from 440 stainless steel. One version has the cylindrical portion highly polished. The other version is coated with titanium nitride. Sadlak operating rod spring guides and gas pistons are marked SADLAK INDUSTRIES LLC.
- E) **Rooster 33** – Laszlo Klementis doing business as Rooster33 (Chilliwack, BC) produces a M14 type operating rod spring guide and a M14 bolt stop. Their operating rod spring guide is CNC machined from a single piece of 410 stainless steel bar stock.

- F) **Other Commercial Parts Suppliers** - Gerald Drasen who did business as Nesard (IL) produced reproduction M14 items such as the flash suppressor nut wrench, bolt assembly tool, front band and sight covers in the 1980s. Brookfield Precision Tool made match grade operating rod spring guides and titanium-nitride coated gas pistons from 1988 to 1996. Badger Ordnance offers a fluted National Match operating rod spring guide designed to minimize spring binding and drag. It is made from a single piece of AISI 4142 alloy steel. DPMS, Inc. sells a lugged bayonet flash suppressor manufactured in South Korea.
- E) **Chinese Made Parts** - USGI and commercial manufacture parts are theoretically interchangeable but occasionally the fit is too tight or too loose between such parts. Most USGI and commercial manufacture parts are generally interchangeable with their Chinese counterparts but there are some exceptions. Chinese and American rear sight knobs and bases and gas cylinder plugs are not interchangeable because the Chinese sight parts have metric threads. Chinese gas cylinders and gas cylinder plugs are made of chromium molybdenum steel and gas pistons are hard chromed. Chinese butt plates, flash suppressors, and trigger housings are castings (Poyer). USGI stocks require work to fit properly on Chinese rifles. Chinese hammers and triggers are some times a little soft but this can be corrected with Melinite heat treatment.

Three kinds of Chinese operating rods have been identified. One kind has no notch for the connector at all. Another has an almost straight angle cut to the notch. The third version of Chinese operating rod has a connector notch very close to the USGI model but more circular in shape. Otherwise, the Chinese operating rods are the same. Chinese operating rods are forged.

Chinese barrels have U. S. compatible barrel shank threads but metric gas cylinder lock and suppressor nut threads. Chinese barrels will thread into American made receivers. Barrel installation and head spacing should be performed by a reputable M14 gunsmith. A USGI gas cylinder lock will not fit on a Chinese barrel due to differing thread sizes and vice versa.

For reasons unknown to Smith Enterprise, the Chinese did not use equivalent AISI 8620 steel as per the USGI specification for their bolts but elected to make them out of equivalent AISI 4135 steel. Chinese bolts have a hardness of 40 HRC which is too soft. This applies to Chinese bolts exported to the United States prior to September 13, 1994. If the bolts are heat treated to raise the hardness the hardness increases all the way through the bolt and just not at the surface. This will add a little service life to the bolt but in the long term it is still not desirable. This is because increasing the core hardness of the bolt decreases the core toughness. There are two significant problems with Chinese bolts. They are not made of a material suitable for long term use and the locking lugs are too narrow. An American made bolt requires some knowledgeable gunsmithing of the receiver, not the bolt, to fit a Chinese rifle. Thus, American and Chinese bolts are not interchangeable. Three Norinco M305 rifle bolts exported to Canada in 2003 were tested for surface hardness. The results ranged from a minimum of 45 HRC to 48.5 HRC with the average at 47 HRC. The bolt material or the core hardness of these 2003 vintage bolts is presently unavailable information.

### **Chinese Parts Identification**

Chinese M14 parts differ in their markings from U. S. parts as follows:

**Barrel** - no markings

**Bolt** - may have numbers electro-penciled on the top or bottom

**Hammer** - no markings

**Operating Rod** - no markings and the connector notch shape is different from USGI



**Trigger Housing** - five or six digit number  
**Windage Knob** - counterfeit W C E

### **Commercial Parts Identification -**

Springfield Armory, Inc. often, but not always, marked GENESEO ILL or GENESO, IL 308 on USGI and commercial manufacture barrels. Commercial manufacture parts on Springfield Armory, Inc. have the following identifying marks:

**Bolt** - 7790186-SA on the first line B00048 or F00059 or similar number on the second line and may have markings such as D and M3 on the rear end and B1 on the bottom surface

**Operating Rod** - 7267064-2 on the first line SA on the second line

**Trigger Group Housing** 7267030-G or 7267030-H or 7267030-I or 7267030-S

Springfield Armory, Inc. operating rods may or may not have a notch under the handle like USGI operating rods. A new-in-box M1A Scout Squad™ model serial number 134XXX had a Springfield Armory, Inc. operating rod with the notch under the handle while others examined by the author have not.

Smith Enterprise, Inc. installed a Douglas four groove 1:10 twist heavyweight barrel on one of the author's M1A™ rifles in January, 2003. The barrel is stamped with the following markings:

First line - 1 10 308 WIN 1 03

Second line - 4 35T SEI

Bottom at rear end just forward of the op rod spring guide slot - 1

Chrome plated standard contour barrels sold by Fulton Armory beginning in late 2003 are identified with C.B.F.A. 7790190 and the month and year of manufacture. A photograph of a Wilson Arms chrome plated standard contour barrel sold by LRB Arms shows the following markings: LRB 7790190 5/04 WA.

A rear sight base marked NM/2A on the right hand side and BST2 on the bottom is most likely a commercial reproduction. (4) A part marked NM/2A can be a commercial reproduction.

### **Chapter 9 Notes**

1. Ricca, Bill. Bill Ricca estimates that 75,000 to 100,000 of the early version gas cylinders were made by Winchester and the U. S. Springfield Armory. A very few USGI gas cylinders have been found marked with either 1) "S" then "T" inside a circle followed by "L" or 2) "G" then "T" inside a circle followed by "L." Two gas cylinders marked in the second way were removed by Mr. Bennicas from a Harrington & Richardson marked and sealed cardboard tube dated July, 1962. Based on this information and the opinion of Bill Ricca, these two sets of gas cylinder markings are most likely not those of the manufacturer. These markings may indicate completion of a particular manufacturing step.
2. Waite, M. D. "The M1A: Good News For Target Shooters." American Rifleman March, 1974. p. 36.
3. Poyer, Joe. The M-14 Type Rifle A Sporter's and Collector's Guide North Cape Publications: Tustin, CA. 1997. p. 24.
4. Ricca, Bill. post on m14forum.com.

# Chapter 10

## Accessories, Ammo and Care

### USGI Magazines

Five, ten, fifteen, twenty and thirty round magazines have been made for the M14 type rifle. A seven round magazine was produced by the U. S. Army AMTU for use with the XM21 in Viet Nam. The seven round magazine was small enough to allow the sniper to assume a lower position with the rifle yet long enough to allow the magazine to be removed quickly. The National Stock Number (NSN) for twenty round M14 magazines is 1005-00-628-9048. The NSN for five round M14 magazines is 1005-00-052-4336. The five round M14 magazines are supplied by Springfield Armory, Inc. The U.S. Department of Defense contracted with several companies to make ten and twenty round magazines. Sometimes the U. S. manufacturer initials are marked on the rear side and sometimes not. Some magazine followers are marked as well. Magazine contractors included Winchester, Borg-Warner, Killeen Machine & Tool, Springfield Armory, TRW, Check Mate Industries, Harrington & Richardson, and Union Hardware Company. M14 magazine replacement parts are available in the civilian market from companies such as Elite Firearms and Sarco. Note that assembly of a complete twenty round M14 magazine from spare parts may be a violation of the U. S. Violent Crime Control and Law Enforcement Act of 1994. The USGI magazines are generally regarded as the best made.

### Foreign Made Magazines

Taiwan and People's Republic of China also produced twenty round magazines that were imported from the late 1980s until 1994. While they are narrower than the USGI magazines, they have an excellent reputation for reliability. The author has shot thousands of rounds using a Chinese M14 magazine since 1997 and never encountered any problem with it whatsoever. Canadian thermold plastic twenty round magazines have also been imported into the United States. The thermold magazines have a good reputation for feeding reliably.

### U. S. Commercial Magazines

U. S. after market brand twenty and thirty round magazines were produced prior to 09/13/94. After market magazines do not have a reputation for reliability due to the thinner body sheet metal and flashing on the plastic follower. An individual in Virginia made a small batch (less than ninety) of seventy round Beta C style M14 magazines prior to the September 13, 1994 ban. This conversion consists of cutting then screwing a MG-34 saddle drum to a Viking Beta style magazine body. They have been seen in use at the legendary Knob Creek Machine Gun Shoot. These magazines command a premium price.

### Scope Mounts

Accuracy Speaks, A.R.M.S., Armscorp, B-Square, Brookfield Precision Tool, Enterprise Arms, GG&G, Leatherwood Bros., McCann, S&K, Sadlak Industries, Smith Enterprise, and Springfield Armory, Inc. have made scope mounts for M14 type rifles. BPT, GG&G, Leatherwood Bros., and Smith Enterprise mounts have been used by the U. S. military on M14 type rifles. GG&G made M14 scope mounts for the U. S. Marine Corps only for their M14 DMR. They were never available for commercial sale according to Mark Newhall at GG&G. Picatinny Arsenal (Morris County, NJ) did a study on the difficulties of mounting a scope on the M14 rifle. The Naval Surface Warfare Center at Crane, IN also worked on the issue. Scope mount adapters were

made for the AN/PVS-2 and 3 night scopes (NSN 5855-00-941-3036) according to GPC Night Vision (CAGE Code 1YE66) and the AN/PVS-4 night scope by Brookfield Precision Tool.

**Side Single Point Scope Mounts** - The S&K Insta-Mount™ # 1765 and Springfield Armory First Generation mounts attach to the receiver. They do not require removal of the stripper guide while the others listed do. Early Leatherwood mounts were made of aluminum and used a single point of contact to the receiver on the XM21 rifles.

**Side Two Point Scope Mounts** - Removal of the stripper guide allows an additional point of contact between the mount and the receiver. The B-Square, McCann, Springfield Armory Third Generation, and latter military issue Leatherwood Bros. mounts use the stripper clip guide area as a second point of contact for civilian and M21 rifles respectively. The McCann mount is made of steel and is supplied with two Weaver style ring bases. The rifle iron sights can be used up to about an elevation of 200 meters with a Springfield Armory, Inc. scope mount. At higher elevation settings the mount will block the shooter's vision through the rear sight aperture.

**Side Three Point Scope Mounts** - Mounts that have three points of contact with the receiver are the most reliable for keeping the scope zeroed.

- A. **Brookfield Precision Tool** - The Brookfield Precision Tool mount sits on the XM25 and M25 rifles. Brookfield Precision Tool scope mounts were sold in the commercial market for a time. They now command a premium due to their collector value. The Brookfield Precision Tool mount allows the shooter to use the iron sights with or without the scope installed. It is a Picatinny style rail with a cam-type mounting bolt. Bill Ricca describes the development of the BPT scope mount in a December 19, 2003 post on [www.battlerifles.com](http://www.battlerifles.com):

I noticed the posting about certain times mounts must be slightly altered to fit the receivers. Brookfield went thru the same problems and here is the scoop.

When the BPT mount was originally designed, they were put on many M14's. The production process was set up to fit all receivers of all makers. Then came the commercial market and the nightmares began. On the commercial market, at that time, receivers were all over the place as far as dimensions go.

Armscorp had a few problems, SA had plenty of problems and Fed Ord was totally a waste of time. Believe it or not, the Chinese versions had no problems fitting at all.

The problem was steel receivers and steel mounts have absolutely no give whatsoever. Everybody was used to aluminum mounts, which could be muscled into minor changes to fit.

SA also had the problem of the screw hole being undersized due to worn out reamers. The problem was random, but about 10% of all mounts sold ran into this problem. SA also had the problem of incorrect receiver rails, which canted the steel mount sideways.

Armscorp had fewer problems and as stated some Fed Ord were so far off the mount would not even go some rifles without major cutting of the dovetail and rails.

That was back then, but the main focus is as follows: If you purchase one of these steel mounts that have been sold to the military and it does not fit your rifle don't call the company and say "Something is wrong with your mount, it doesn't fit". The problem is in your receiver.

Mr. Ricca's sage advice apparently applies to USGI M14 receivers as well. Smith

Enterprise, Inc. states that they have found as much as 0.010 " variance in a 3 " distance on USGI M14 receivers. From a November 15, 1998 discussion thread post on [www.snipercountry.com](http://www.snipercountry.com) on the M21/25 and M1A/M14 scope mount question.

We (Marine Corps Security Force, Pac) had good luck years back with the Brookfield mounts when we were developing a version of the DM rifle. The Navy was using the same mounts on their version and they were tack welding the bolts to hold the mounts on.

The only problem we had was with the receivers we were using not the scope mounts. It seems that many of the H&R receivers that we had were not manufactured to spec as far as the dimensions pertaining to the area where the scope mount mounts on the left side of the receiver. This gave us a ton of excessive windage when the scopes were mounted. We never had a problem with Winchester receivers. Be aware of this as you put the sucker together.

- B. **Smith Enterprise, Inc.** - Smith Enterprise scope mounts are made from AISI 4140 alloy steel and heat-treated with corrosion resistant Melinite. Surface hardness is 60 HRC. They have a matte black finish. As of 2003, the Smith Enterprise MIL-STD-1913 Picatinny rail tactical scope mount is stocked by the U. S. military supply system (NSN 5855-01-506-5750). It allows the shooter to use the iron sights with or without the scope installed. The scope mount with the marking NSN 5855--01-506-5750 is manufactured using the wire electro-discharge machining (EDM) method. EDM can be described as spark erosion of metals by local heating and melting. This metalworking method holds very tight tolerances and leaves burr free surfaces. Their earlier M14 scope mounts were made using conventional machining methods but are nonetheless just as trouble free and durable. The Smith Enterprise scope mount has a three degree upward slope on the under side of the rail portion. This allows ejected brass to clear the action while minimizing any contact with the mount because of varying receiver geometries among the manufacturers. This mount utilizes a cam type mounting bolt to compensate for the differing position of the bolt hole on various makes of rifles. For demonstration purposes only, Ron Smith installed a Smith Enterprise scope mount on a commercial manufacture M14 type receiver and torqued the receiver mounting bolt in increments to 140 in-lb. There was absolutely no damage to the bolt, mount or receiver. 65 in-lb of torque is sufficient for installing their scope mount. Installation instructions are included with every scope mount sold by Smith Enterprise. The mount installation instructions are also posted at their web site.
- C. **A.R.M.S** - The ARMS # 18 has been made in two versions. The early style was first introduced in 1989. It has two pads, one at each end, for mounting a scope ring. A few of the early style have an integral stripper clip guide in the rear pad. Introduced in 2003, the new style is a full length rail running from the stripper clip guide to the top of the barrel ring. Both models are Picatinny style rails. The A.R.M.S. # 18 scope mount sits low enough on the receiver to allow use of the iron sights if the scope is removed. It sits the lowest of any scope mount available. Due to differences in commercial receiver geometry the user may find that a little judicious removal of the front end under side corner may be necessary to get an ARMS # 18 mount to fit perfectly. The new style is made of case hardened AISI 8620 alloy steel.
- D. **Sadlak Industries** - Since 2002, Sadlak Industries has made M14 scope mounts. They offer their Picatinny style rail scope mounts from two different materials, titanium and steel. The Sadlak Industries mount is similar to the Brookfield Precision Tool model. The titanium scope mounts are machined from hot rolled billet then heat treated to a hardness of 34 HRC. After heat treatment the titanium mounts are finished with a non-glare matte black

nitride coating for improved corrosion and abrasion resistance. This coating increases the surface hardness to approximately 80 HRC. The steel mounts are made from stress-relieved AISI 4140 bar stock with a core hardness of 30 HRC. The finish is military specification black manganese phosphate. The height, angle and width of the horizontal groove, barrel ring and stripper clip guide geometry and bolt hole location are factors that affect the fit of scope mounts to M14 type receivers.

- E. **Enterprise Arms** - This is a Weaver style rail three-point contact scope mount. It is machined from AISI 4140 alloy steel. The Enterprise Arms web site lists it in two lengths, standard and extended. Their mount allows the shooter to use the iron sights with or without the scope installed. The M14 mounts have a military specification phosphate finish.
- F. **Leatherwood Bros.** – Leatherwood Bros has advertised their new three-point rail mount in Shotgun News. All parts are made from steel. It allows the use of iron sights and will accept Picatinny style scope rings. They began shipping of their mount to customers in June 2004.
- G. **KFS, Leapers and T T International** - These are moderately priced side three point scope mounts for the M14 type rifle. The Leapers model is made of aluminum and utilizes a Weaver rail. The KFS unit has a Picatinny rail. The T T International model TSA scope mount is made of hardened steel with a Picatinny rail. The iron sights can be used with all of these mounts installed.

### **Scope Mounts Secured to the Rear Sight Pocket**

In 1985, Smith Enterprise designed and produced pre-production units of two models of long three point scope mounts. Both were 9.250 " long. The rear end of both models mounted to the rear sight pocket. The front end of both models went past the barrel ring. One was TIG welded to the receiver while the other was bolted on at the rear sight pocket through the sight knob holes. The heads of the bolts for the rear sight pocket were the same diameter as the sight knobs. The project was not pursued since it was found that the market was not ready for this new style of scope mount in 1985.

The Springfield Armory, Inc. M25 White Feather <sup>™</sup> and Accuracy Speaks, Inc. Picatinny rail scope mounts both mount to the rear sight pocket instead of the stripper clip guide dovetail and the barrel. The Accuracy Speaks mount will fit either the M1 Garand or M14 type rifle. The mount replaces the rear sight and firmly attaches to the barrel. Installation requires drilling and tapping the barrel and removal / modification of the hand guard.

**Rail System Mounts** - Knight's Manufacturing Company (Titusville, FL) produces a M4 Carbine style rail system known as the M14 RAS offered in two models. The rear end of the top rail for both models ends at the receiver barrel ring. The deluxe model has a rear scope mount base that replaces the stripper clip guide. The standard model is the deluxe model without the rear scope mount base. This is a very solid mount and is easy to install. It allows the use of the rifle iron sights unless the rifle has a heavyweight contour barrel. The side ribbed accessory panels will interfere with a National Match oversized stock but not the USGI contour stocks. C. J. Weapons Accessories offers the Striker-14 M-14/M1A Tactical Rail System. It has three Picatinny rails with the rear end of the top rail attaching to the stripper clip guide. The iron sights can be used with a scope installed. It secures to the rifle at three points. It is CNC machined from a single piece of aluminum and has a black anodized finish.

**Barrel Scope Mount** - Springfield Armory, Inc. offers a barrel mount for extended eye relief scopes. The M1A Scout Squad <sup>™</sup> rifle is sold with the barrel mount installed. They also sell it separately. It is made of aluminum. It attaches to a standard contour barrel using six 7/32 " Allen head screws that secure the upper half to the lower half of the mount. It will not fit on a medium weight, heavyweight or M1 Garand barrel. Springfield Armory, Inc. offers the Scout

Squad Mount in a choice of black or brown. Rooster33 (Chilliwack, BC) began producing and selling their own barrel scope mount in March, 2004. It is made of steel and configured for a lightweight (standard) contour M14 barrel. The Rooster33 scope mount attaches to the barrel by four Allen bolts.

## **Cleaning Kit**

Springfield Armory developed and tested the cleaning kit for the M14 from 1958 until 1961 when the final version was fielded. Until then, M1 Garand cleaning kit items and an intermediary gas plug hex wrench were used to clean the rifle. The USGI M14 cleaning kit consists of combination tool, chamber brush, four M3 cleaning rod sections, bore brush, patch tip, oil and grease bottle and a canvas case to hold the rod sections. The M14E2 stock does not have a butt stock compartment like the M14 stock. So, the cleaning kit for the M14E2 was placed inside a nylon pouch and carried by the automatic rifleman. In the civilian market, Dewey makes a one-piece nylon coated cleaning rod that helps the owner from scratching the bore. Creedmoor Sports offers a plastic breechblock insert that allows bore cleaning while protecting the bolt and trigger group. Alternately, the bolt can be locked back while cleaning with an empty magazine inserted into the well or an empty stripper clip inserted into the receiver stripper guide. To quiet the rattle of the cleaning kit inside the butt stock place three .30 Caliber bore patches through the hex head end of the combination tool then stow it. Sinclair International sells a Dewey Manufacturing M14 chamber brush with a hole drilled through the top ratchet portion. The advantage of this design is that it allows for a two handed pull to remove the brush from the chamber

## **USGI Tools**

An assortment of maintenance tools was made for the USGI M14 rifle. These include the combination tool, flash suppressor nut wrench, hand guard clip pliers, headspace gauges (go, no go and field), bolt disassembly/assembly tool, bolt roller greaser, bolt roller pliers, field test bolt, firing pin protrusion gauge, flash suppressor alignment gauge, throat erosion gauge, muzzle gauge, barrel reflector, ruptured case extractor and stock liner screw tool bit. All USGI flash suppressor nut pliers were made during one production run in 1962.

The M14 combination tool is very handy. The following tasks can be performed with this tool:

- 1) Tighten or loosen the gas cylinder plug
  - 2) Tighten and loosen the rear sight knobs
  - 3) Remove or install the butt plate screws
  - 4) Remove or install the muzzle stabilizer
  - 5) Remove or install the M2 bipod
  - 6) Act as a handle for the cleaning kit rod
  - 7) Disassemble and assemble the bolt
  - 8) Operate the spindle valve
  - 9) Push cartridges from a stripper into the magazine
  - 10) Disengage the connector lock from the operating rod spring guide during disassembly
  - 11) Tighten or loosen the hex head bolt of the A.R.M.S. # 18 and Sadlak scope mounts.
- The combination tool also protects the bristles of the chamber brush while stowed in the butt stock.

## **Other Tools**

Commercial .308 headspace gauges can be used in lieu of the military 7.62x51mm gauges but the bolt must be disassembled to use them. Twist drill bits (sizes P and 15) can be used by

hand to remove carbon buildup inside the gas cylinder plug and gas piston. A 1/16 " Allen wrench is used for the flash suppressor set screw. A 7/64 " Allen wrench will fit the front sight screw and Springfield Armory, Inc. Scout Squad forward scope mount screws. Some commercial manufacture front sight screws will take a 3/32 " Allen wrench instead. A 3/32 " pin punch is useful in removing the stripper clip guide pin and the magazine catch pin. The tools necessary to remove and install a barrel are available from Brownell's. Badger Ordnance offers a stock liner screw wrench.

## **USGI Accessories**

A number of accessories supported the various roles fulfilled by the M14 rifle. These included the M12 blank firing attachment, M3 breech shield, M6 bayonet with M8A1 scabbard, front and rear sight protectors, sling (canvas web, nylon web, nylon weave and M1907 leather), aiming device, bandoleer kit (stripper clip guide, stripper clips, cardboard sleeves and canvas carrier), M5 winter trigger assembly with or without safety, M15 grenade launcher sight, M76 grenade launcher, M2 bipod and water tight carrying case for the XM21 ART scope and mount. There were two models of the ART scope and mount carrying case. Some canvas slings have a MRT (Mildew Resistant Treatment) and date stamp on the metal tip such as 4 64. The leather sling was issued with the M14 NM and M21 rifles. In 2003, Smith Enterprise was supplying M14 extended bolt latches to the U. S. Navy.

The M6 bayonet "was developed and adopted prior to the actual adoption of the M14 rifle, although the bayonet itself was not placed in quantity production for some years later as it was first decided that the M14 would not be issued with a bayonet." (1) The final production drawing for the M6 is dated January 24, 1955. The M6 bayonet (NSN 1095-00-722-3097) was used for close combat, guard duty, and riot duty. It is designed to be loose when attached to the M14 rifle and was designed this way to minimize the effect on the bullet point of impact. One manufacturer of the M8A1 was Victory Plastics Company (Hudson, MA). They produced M8A1 scabbards in 1953 and 1961. The Victory Plastics 1961 scabbards "are different from the 1953 run in that they have the metal tip protector used after 1955. The Parkerizing on this run is lighter gray and more granular than the 1953 run, and the webbing is a darker green with a lighter thread used in the sewing." (2)

Magazines were carried in pouches attached to the USGI web belt. Early made pouches were made of canvas and held one twenty round magazine. Latter made pouches were made of canvas then nylon and carried two twenty round magazines. The M14 bandoleer will hold twelve stripper clips. Each stripper clip will hold five rounds of ammunition for a total of sixty rounds.

The M15 grenade launcher sight was used on the M1903 Springfield and M1 Garand rifles and carried over to the M14. The M15 sight base was mounted to the M14 stock on the left hand side with two wood screws. The M15 sight could be installed or removed quickly from the sight base by the grenadier.

The M12 BFA was issued with the M3 breech shield to the individual soldier for training purposes. The purpose of the M3 breech shield was to protect the shooter against any blow back particles when firing blank ammunition and prevented loading of live ammunition through the stripper clip guide. There were three versions of the M12 BFA and two versions of the M3 breech shield. The first version BFA was packed with the early style breech shield. These were produced around 1961 or 1962. The second and third version BFA's were packed with the late style breech shield. The second version of the BFA was produced in 1964 and again in 1968. The third version of the BFA was made in 1968 and 1969. Two companies made all the M12 blank firing attachments. The BFA is designed to operate using the U. S. made M82 blank

cartridge. It will not cycle the action using European 7.62x51mm blank cartridges.

## **Commercial Accessories**

Commercial accessories include nylon, biothane synthetic and leather slings, recoil buffer / reducer, stock comb / cheek rest, bipod, brass catcher, butt stock recoil pad, dual magazine clamp, elevation sight repair disk, keyed cable lock and gun cases. Shooters can purchase dry fire devices in the civilian market for practicing trigger squeeze. B.Jones sights makes a prescription lens insert for the hooded National Match rear sight aperture. Enterprise Arms did make an extended bolt stop for the M14 type rifle but currently does not. Smith Enterprise does offer their M14 extended bolt stop for sale to the public.

Adjustable Gas Plugs - Rich Schuster (Toledo, OH) designed and makes Schuster Nuts. These are aftermarket M14 type gas cylinder plugs that can be used in competitive shooting. The top of the plug is drilled to 0.015 " diameter. The interior diameter of the plug is larger than the standard M14 gas cylinder plug. This allows the gas pressure to drop about 2600 psi (1/2 grain of powder equivalent). The result is less wear and tear on the rifle. By adjusting the nut inside the plug the volume of gas in the cylinder is changed. This in turn changes the speed of the operating rod and the harmonics of the barrel. M14 gunsmith Clint Fowler (Barboursville, VA) and Accuracy Speaks (Mesa, AZ) can supply adjustable gas cylinder plugs for the M14 type rifle. These adjustable gas plugs use socket screws to vary the size of the opening in the top. Thus, the competition shooter can set the amount of gas venting to maximize accuracy.

Slings - Turner Saddlery and Les Tam M1907 style slings are highly regarded by M14 enthusiasts. Tactical slings are available for the M14 type rifle from CQB Solutions or Tactical Intervention Specialists.

## **M2 Bipods**

The M2 bipod design was standardized in December 1959 and improvements added later. M2 bipods have been produced in the United States, Taiwan and China. Taiwanese and Chinese copies of the M2 bipod do not have an excellent reputation as compared to the USGI model.

- A) **Taiwan models** - The author has shot over 3000 rounds in automatic mode using a Taiwanese M2 bipod mounted to a NFA registered select fire M1A™ without any failure or weakening of the bipod. The Taiwanese M2 bipod is suitable for civilian use. Some Taiwanese M2 bipods have been sold to the U. S. Navy through Sarco, Inc. Taiwanese M2 bipods are made by Wayne Machine, Inc. of Taipei, Taiwan. Taiwanese copies of the M2 bipod may have W M I stamped on the yoke. Early Taiwanese bipods were brazed but failed constantly. Otherwise, Taiwanese bipods are welded.
- B) **PRC models** - The Chinese M2 bipod is made by Norinco. The Chinese versions will have the "W M I" marking. If the yoke screw requires an Allen wrench, it is a Chinese bipod.
- C) **USGI models** - Farmer Supply and Tool was one contractor for the USGI M2 bipod. An American made USGI contract M2 bipod will have the following markings: U. S. 7790833 BIPOD RIFLE M2 for those with a sling swivel or U. S. 7790688 BIPOD RIFLE M2 for those without a swivel. It will be of brazed, not welded, construction. The early version of the USGI contractor M2 bipod does not have a sling swivel. The USGI M2 bipods left the factory with a yellow Defense Acceptance Stamp on the left hand front side of the yoke and two blue "M" markings, one on the bottom of each leg pad and on the outside of the right hand clamp. However, these markings wear off with use in the field.



## Other Bipods

GG&G and Harris bipods are typically mounted to the stock just aft of the front sling swivel. A hole is drilled in the stock to which an adapter is fitted and secured. The stock forearm may or may not be reinforced per the owner's preference. Alternately, some rifle owners use the weep hole forward of the sling swivel as the mounting point. In either case, this method of attachment avoids changes in point of impact that may occur with the M2 bipod. These bipods are also lighter than the USGI M2 bipod.

Versa-Pod is a Chinese copy of the Parker Hale bipod. The Versa-Pod bipod-mounting adapter for the M14 type rifle is catalog # 150-102. It replaces the American threaded gas cylinder plug to allow a Versa-Pod bipod to be mounted to the rifle. This mounting adapter will not work on Chinese manufacture M14 gas cylinders. A Versa-Pod bipod can also attach to a standard QD sling swivel with their universal mounting adapter (catalog number 150-100). Troy Industries offers a bipod for their Rock SOPMOD M14 Carbine™. It mounts to the six o'clock rail on the stock and has a quick release lever.

## Ammunition

USGI, Chinese and Taiwanese M14 type rifles are chambered for the 7.62x51 mm NATO cartridge (1.6350 " GO, 1.6405 " NO GO, 1.6455 " FIELD REJECT). U. S. commercial M14 type rifles are typically chambered for .308 Winchester. However, some U. S. commercial M14 type rifles will be head spaced for 7.62x51 mm ammunition. The author purchased two previously owned Springfield Armory, Inc. M1A™ rifles each head spaced at 1.6355 ". Both rifles had commercial made barrels. The majority of Federal Ordnance M14 type rifles was assembled with Chinese barrels and bolts or sold as bare receivers. Chinese M14 rifles from the factory are head spaced long. Therefore, the buyer should check the headspace when purchasing a rifle unless the factory or gunsmith supplies the headspace reading at the time of purchase. The commercial manufacturers typically head space their rifles to SAAMI specifications (1.630 " GO, 1.634 " NO GO, 1.638 " FIELD REJECT). If the headspace is from 1.630 " to 1.634 " either commercial manufacture .308 Winchester or military manufacture 7.62x51 mm NATO ammunition can be used. The headspace limits for .308 Winchester are smaller than for the 7.62x51 mm cartridge as noted above. The subject of hand-loaded ammunition is beyond the scope of this work.

The U. S. Government (Lake City and Winchester) has produced 7.62x51 mm NATO ammunition as follows:

- M59** Ball (150.5 grain bullet)
- M60** High Pressure Test (171.5 grain bullet) - silver case
- M61** Armor Piercing (150.5 grain bullet) - black tip
- M62** Tracer (142 grain bullet) - orange tip
- M62** Tracer Overhead Fire Mission (146 grain bullet) - red tip
- M63** Dummy - fluted case
- M64** Grenade Blank - crimped case mouth
- M80** Ball (146 grain bullet)
- M80** Ball Overhead Fire Mission (149 grain bullet)
- M82** Blank - double tapered neck
- M118** Special Ball (172 grain bullet)
- M118 LR** (175 grain HPBT bullet)
- M160** Frangible (108.5 grain bullet) - green and white tip
- M172** Dummy - black case and bullet
- M198** Duplex (two 80 grain bullets)

**M276** Dim (Night Vision) Tracer (140 to 150 grain bullet) - pink and green tip

**M852** Match (168 grain HPBT bullet) - knurled case

**M948** Saboted Light Armor Penetrating

**M973** Training Ball

**M974** Training Tracer

**M993** Armor Piercing (126.6 grain bullet) - black stripe at the tip

Subsonic ammunition was hand loaded at Fort Benning, GA for XM21 sound suppressed rifles in Viet Nam. This subsonic round was designed to be stable for a distance of 100 meters or less. (3)

Thunderbird Cartridge Company (Laveen, AZ) tested some M118 ammunition for Smith Enterprise in 1990. The chamber pressure measured from 53,000 to over 59,000 cupric units of pressure. The adjusted average chamber pressure was 57,000 cupric units of pressure at 78 degrees Fahrenheit. Surplus military ammunition can be of high quality. Ron Smith was a member of the Arizona and California National Guard Shooting Teams. He reports that his scores were from 490 to 495 in High Power Shooting meets with match grade ammunition. Using surplus Portuguese military ammunition, his score ranged from 485 to 490!

Commercial .308 Winchester ammunition is available in varying bullet weights of full metal jacket, soft point and hollow point. The M14 type rifle can be loaded using magazines or stripper clips. If the M14 type rifle has a scope mount on it, then it will be loaded using a magazine.

## **Other Calibers**

After Secretary of Defense Robert McNamara announced the cancellation of M14 rifle production TRW attempted a conversion of the M14 to .223 Remington in an attempt to save what they could of their involvement with the M14 Rifle. This conversion included modification of the M16 magazine follower and magazine catch and installation of a filler block located behind the magazine. After 1990, Springfield Armory, Inc. did make M1A™ rifles for a time chambered in .243 Winchester and 7mm-08. Arizona Expert arms (Gilbert, AZ) does conversions on M14 type rifles to .300 Winchester Short Magnum. This conversion includes installation of a custom Krieger heavyweight barrel, machining the bolt face and extractor, drilling the proper size barrel gas port and relieving the stock to accommodate the barrel. Standard USGI M14 twenty round magazines will hold and feed eleven rounds of .300 WSM ammunition.

## **M14 Problems**

The most common failures of the M14 rifles while in service were cracked stocks and rear sight pinions, missing rear sight nut, and misaligned flash suppressor. Less common failures were broken safety, broken firing pin, and out of specification gas cylinder. The least common problems were broken extractor and bolt stop. No problems were reported on the operating rod, trigger group (except safety), butt plate, or front sight. There were two versions of the M14 extractor. The early version had a sharp point on the lower front corner which could snag the cartridge. This caused the extractor to leave the bolt. This problem was corrected with the late version extractor which was made with a rounded lower front corner. No projectile weighing over 168 grains should be used in a M14 type rifle. (4) This is because of increased chamber pressure with heavier bullets. The user should not attempt to engage the safety unless the hammer is cocked. Otherwise, the safety can fail. Based on civilian experience, USGI gas pistons have a useful life between 10,000 and 15,000 rounds. USGI gas cylinders will require replacement after approximately 40,000 rounds.

Some Viet Nam veterans have stated that the M14 magazine feed lips could and did bend when hitting the deck hard in a combat situation. While this is a true statement, it is not unique to the M14 rifle. This is a concern with other magazine fed military rifles as well. There were M14 rifles that left the factory with loose flash suppressors. Once the suppressor nut is correctly installed, this problem seldom repeats itself. The gas cylinder plug can and has loosened during firing even in combat. The prepared M14 type rifle owner carries a M14 combination tool to check the gas cylinder plug on a routine basis. If the bolt does not cycle after the first shot is fired check the spindle valve to see if it is in the open position (slot in the vertical).

There are cases where commercial manufacture extractors fly out of the bolt while the rifle is cycling. These extractors can usually be made serviceable by further machining of the divit or replacing the extractor spring detent. An alternate solution is to replace it with a USGI extractor. Often, the commercial extractor spring tension is incorrect, the extractor spring detent is too large or the extractor stem is too long.

### **1987 Springfield Armory, Inc. Recall Notice**

Note this recall was issued by Springfield Armory, Inc. in 1987. The author suggests reading through the following notice before calling Springfield Armory, Inc. After reading the recall notice and upon determining it applies to your rifle then contact the Customer Service Department at Springfield Armory, Inc. Politely discuss your situation with the Customer Service Representative. As of February 2004, Springfield Armory, Inc. still honors this recall if applicable to the part concerned.

MODEL M1A / M1A-A1, M1 Garand and BERETTA MODEL BM-59 RIFLES - If you own an M14 type rifle, an M1 Garand type rifle, or Beretta BM-59 rifle, a certain quantity could contain safeties that can be disengaged by applying an abnormal amount of force to the trigger, thus overriding the safety. The guns will not fire when the safety is overridden in this manner, but they will fire when the trigger is released and pulled again under normal pressure. If you possess a Springfield Armory, Inc. M1A, M1 Garand, or Beretta BM-59, you are urged to perform the following inspection procedure. (Note: before beginning, be sure to unload rifle and point muzzle in a safe direction.) 1. Begin test procedure with safety in normal "off" position. 2. Engage the safety. 3. Using one or two hands, pull the trigger very hard, and then release it. Repeat this procedure several times. 4. If at any time during this test procedure you detect any forward movement in the safety, remove only the trigger group and return it to Springfield Armory, Inc. WARNING: If during the above test procedure the safety moves forward on your rifle, you are urged to remove only the trigger group and return it immediately to Springfield Armory using either of the following procedures: A. Write to Springfield Armory requesting special mailing label, shipping container, and return instructions. Write to: Springfield Armory, Inc. RE-1 420 West Main Street Geneseo, IL 61254 B. Or, call Springfield Armory on this toll-free number and request return instructions: 1-800-223-5708. Illinois residents call collect: (309) 944-5631.

**M1A Bolts** - Some M1A bolts manufactured by Springfield Armory, Inc. might not function reliably. If you have a Springfield Armory M1A bolt with any of the following markings, contact Springfield Armory, Inc. as outlined in steps A or B above for replacement. The bolts in question are marked as follows: No numerical or alphabetical characteristics on either top or back of bolt (completely unmarked). Any bolt with any numerical or alphabetical markings at all on the back of the bolt. Any bolt with the top marked "7790185" and with "SA RRR" centered below that number. Any bolt with the top marked "790185" and with "SA" centered below that number.

Springfield Armory, Inc. regrets any inconvenience caused by the return of any firearm affected by this notice. Repairs will be completed in the shortest possible time, and all service, parts, and shipping costs will be the responsibility of Springfield Armory, Inc.

Sources: Guns & Ammo, December 1987; page 91 Guns & Ammo, March 1988; page 14 Shooting Times, January 1988; page 67 California Department of Justice Firearms Safety Note 88-1

### **Accurizing Tips**

A competent gunsmith can enhance the accuracy of a M14 type rifle. Some of the procedures he may perform include: checking the operating rod spring guide for parallel, padding the hand guard, gluing the spindle valve open, measuring the operating rod spring for proper length, unitizing and shimming the gas cylinder to the front band, tuning the trigger group, bedding the stock, backing off the flash suppressor set screw, reaming the flash suppressor, polishing the gas piston, hand fitting various parts, installing National Match front and rear sights, bedding the stock and lapping the bolt. Some shooters have a National Match front sling swivel installed on their stock. The USGI riveted front sling swivel is removed and replaced with a quick detach sling swivel that is mounted to the stock with bolts and nuts. This increases the strength of the swivel attachment and allows the shooter to wrap his arm into a tighter sling when shooting.

### **Suggestions for Dealing with M14 Gunsmiths and Dealers**

Based upon the author's experience and research the following suggestions will enhance your experience with these professionals if adhered to: 1) keep a written detailed journal of problems with your firearm 2) do not whine 3) listen before you speak 4) be willing to learn 5) be patient 6) accept the fact that quality service is never the least expensive 7) submit clear and complete written information describing the problem(s) or work to be done along with your insured and unloaded firearm 8) be polite 9) educate yourself on your firearm and 10) the original manufacturer should be contacted first if possible.

### **M14 Gunsmiths**

The following is a list of gunsmiths with experience on M14 type rifles. The author is not endorsing any particular business. They are listed alphabetically. If a web site or e-mail address is not listed, consult the Yellow Pages for contact information. Some background information follows each listing.

**Armscorp USA** Baltimore, MD [www.armscorpusa.com](http://www.armscorpusa.com) See section on Armscorp.

**Arrington, Phil** Scottsdale, AZ [www.arringtonaccuracy.com](http://www.arringtonaccuracy.com) Phil specializes in M1 Garand, M14 type and AR15 type rifles.

**Brown, Ted Shooter's Den** Jacksonville, OR [tbrown@jeffnet.org](mailto:tbrown@jeffnet.org) Ted retired from military service with the U. S. Air Force and Air National Guard. He has been a team member, armorer and coach for National Guard shooting teams and successfully coached Junior Rifle Teams for several years. He earned the U. S. Air Force Distinguished Rifleman Badge and Master Class designation in 1988. He has built National Match M14 type rifles since 1978. Ted specializes in M1 Garand and Carbine, M14 type and AR15 type rifles.

**Corn, Geoffrey** Oakland City, IN [mcorn@wtvw.com](mailto:mcorn@wtvw.com)

**Enterprise Arms** Irwindale, CA [www.entreprise.com](http://www.entreprise.com) See section on Enterprise Arms.

**Evan's Gunsmithing and Shooter's World** Orange, CA [www.egsw.com/home.htm](http://www.egsw.com/home.htm) Featured in American Survival Guide.

**Ferrante, David Heart Mountain Precision** Powell, WY

**Fowler, Clint** Barboursville, VA [www.m1-m1a-ar15.com](http://www.m1-m1a-ar15.com)

**Gronning, Jim Gruning** Precision Riverside, CA Jim is featured in Joe Poyer's book The M14-Type Rifle.

**Luhmann, Tom** TLC Gunworks Clovis, CA

**McKee, Clint Fulton Armory** Savage, MD [www.fulton-armory.com](http://www.fulton-armory.com) See section on Fulton Armory.

**Morris, Ronnie Match Service Works** Madison, TN

**Pierce, Eric National Match Armory** Rendon, TX

**Rader, Dale Springfield Armory, Inc.** Custom Shop Geneseo, IL [www.springfield-armory.com](http://www.springfield-armory.com)

**Smith, Clayton West Texas Ordnance** Vealmoore, TX [www.texasordnance.com](http://www.texasordnance.com) Clayton specializes in M1 Garand, M14 type and AR15 type rifles.

**Smith, Ron Smith Enterprise, Inc.** Tempe, AZ [www.smithenterprise.com](http://www.smithenterprise.com) See section on Smith Enterprise.

**Strait, Tim Warbirds Custom Guns** Houston, TX <http://users3.ev1.net/~hd80/Warbird.htm> Tim has twenty-three years experience as a military armorer and commercial gunsmith specializing in Mauser, M1 Garand, and M14 type rifles and M1911 pistols.

**Tabor, Frank** San Bruno, CA

**Tank, Jon Tank's Rifle Shop** Fremont, NE [www.tankrifleshop.com](http://www.tankrifleshop.com) Jon specializes in M1 Garand and Carbine, M14 type, and AR15 type rifles and Remington shotguns.

## Chapter 10 Notes

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3. Stevens, R. Blake U.S. Rifle M14 from John Garand to the M21 Collector Grade Publications: Cobourg, Ontario, Canada. 1991. p. 305. Stevens quoting a letter written to him by Colonel Francis B. Conway.
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Sadlak Industries, LLC 712 Bread & Milk Street Unit 7 Coventry, CT 06238 [www.sadlak.com](http://www.sadlak.com)

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