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25 March 1970
SUPERSEDING
MIL-R-26672
24 April 1959

MILITARY SPECIFICATION

RIFLE, .22 HORNET AND .22 CALIBER LONG RIFLE RIM FIRE, SURVIVAL, TYPE MA-1

1. SCOPE

1.1 Scope. This specification covers the requirements for a survival rifle capable of firing caliber .22 Hornet ammunition and caliber .22 rim fire ammunition.

2. APPLICABLE DOCUMENTS

* 2.1 The following documents, of the issue in effect on date of invitation for bids, form a part of this specification:

SPECIFICATIONS

Federal

PPP-T-60	Tape; Pressure Sensitive Adhesive, Waterproof--For Packaging and Sealing
PPP-B-601	Boxes, Wood, Cleated-Plywood
PPP-B-636	Box, Fiberboard
PPP-B-843	Cushioning Material, Cellulosic
VV-L-800	Lubricating Oil, General Purpose

Military

MIL-P-116	Preservation, Methods of
MIL-B-131	Barrier Material, Water Vapor-proof
MIL-C-372	Cleaning, Compound Solvent for Bore of Small Arms and Automatic Aircraft Weapons
MIL-P-3420	Packaging Materials, Volatile Corrosion Inhibitor Treated, Opaque
MIL-E-5272	Environmental Testing, Aeronautical and Associated Equipment, General Specification for
MIL-P-7936	Parts and Equipment, Aeronautical, Preparation for Delivery

STANDARDS

Military

MIL-STD-129	Marking for Shipment and Storage

MIL-STD-130	Identification Marking of U. S. Military Property
MIL-STD-831	Test Reports, Preparation of
MS33586	Metals, Definition of Dissimilar

PUBLICATIONS

Air Force-Navy Aeronautical Bulletin

No. 143	Specifications and Standards; Use of

(Copies of documents required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as specified by the contracting officer.)

3. REQUIREMENTS

3.1 Preproduction. This specification makes provisions for preproduction testing.

3.2 Materials.

* 3.2.1 Metals. All materials, including those used in the magazine and all springs and pins, shall be corrosion-resistant to fuels, salt spray, and atmospheric conditions likely to be met in storage or normal service.

3.2.1.1 Dissimilar Metals. Unless suitably protected against electrolytic corrosion, dissimilar metals shall not be used in intimate contact with each other. Dissimilar metals are defined in MS33586.

3.2.2 Selection of Specifications and Standards. Specifications and standards for necessary commodities and services not specified herein shall be selected in accordance with ANA Bulletin 143.

* 3.3 Design. The rifle shall be a caliber .22 bolt action clip fed repeater with a capability of firing 5 rounds of caliber .22 Hornet ammunition without reloading. The rifle shall be designed to single shot fire short, long, and long rifle .22 rim fire ammunition. The rifle shall conform to the envelope dimensions of figures 1 and 2.

3.3.1 Stock. The stock of the rifle shall serve as a floating waterproof container for the disassembled rifle (receiver with bolt assembly and magazine, and one barrel). The stock shall be constructed so that either the Hornet barrel or the rim fire barrel can be stowed inside it. The stock, with the exception of the action attaching hardware, shall be of nonmetallic construction, capable of withstanding contact with fuels, salt spray, or atmospheric conditions likely to be met in storage or service.

3.3.2 Action. The rifle shall have a bolt (Mauser type) action.

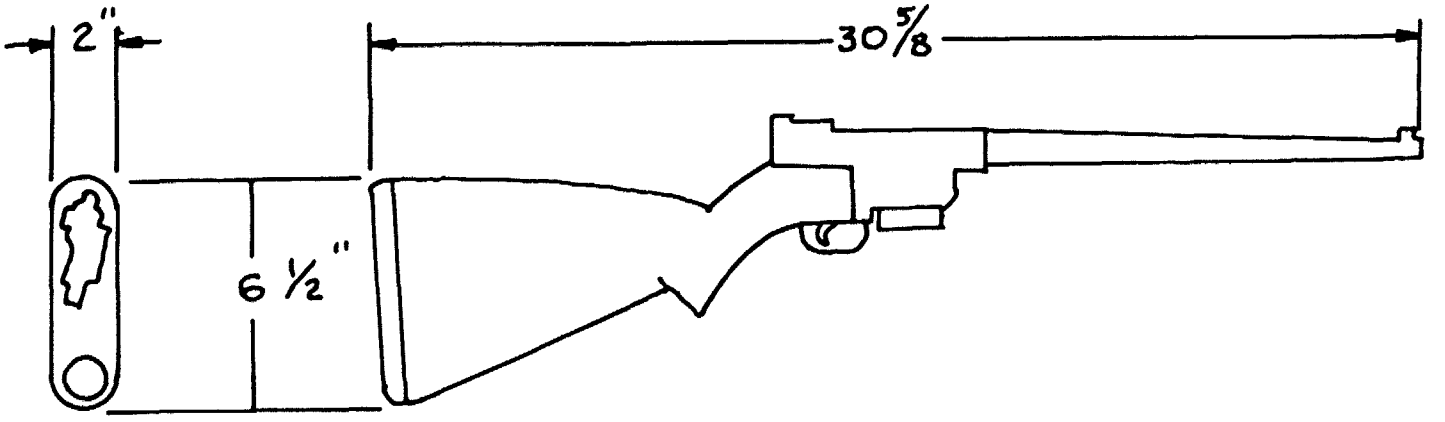
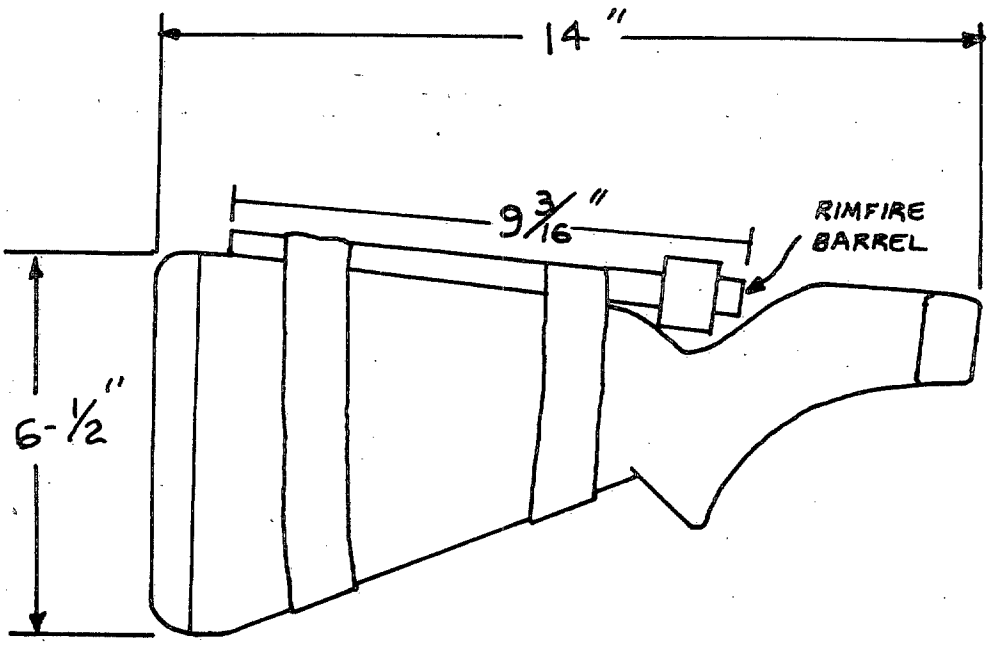


FIGURE 1

UNLESS OTHERWISE SPECIFIED,
DIMENSIONS ARE IN INCHES
FRACTIONS
± 1/32

W



RIFLE IN STOWED CONFIGURATION

FIGURE 2

UNLESS OTHERWISE SPECIFIED,
DIMENSIONS ARE IN INCHES
FRACTIONS
± 1/32

* 3.3.3 Receiver. The receiver shall be designed to accommodate a double locking lug bolt. It shall accept a quickly detachable barrel capable of chambering caliber .22 Hornet ammunition, a barrel capable of chambering caliber .22 rim fire ammunition, and a magazine. A positive safety, a bolt stop, and an integral rear peep sight shall be parts of the receiver.

3.3.4 Bolt Assembly. The bolt assembly shall have at least 2 locking lugs. Provisions will be made to prevent firing the weapon until all the lugs are fully locked. Primary extraction of the round shall be accomplished by a camming action of the bolt handle working against the receiver. The firing pin (striker) shall be cocked on the upward movement of the bolt handle. Loosening of the firing pin retainer shall not occur upon repeated opening or closing of the bolt.

3.3.5 Bolt Stop. A readily accessible bolt stop shall be provided to retain the bolt and to permit bolt removal when required.

3.3.6 Magazine. The magazine shall hold 4 rounds of caliber .22 Hornet ammunition and shall fit into the bottom of the receiver. A suitable spring loaded clip release shall be included to provide positive positioning, retention, and release of the magazine.

* 3.3.7 Safety. The receiver shall be equipped with a thumb operated positive safety of the type that blocks the trigger mechanism. The safety lever shall be attached to the receiver in a position to be operated with the thumb while the hand is in correct firing position with the trigger finger on the trigger.

* 3.3.8 Trigger Guard. The trigger guard shall be of a conventional type.

3.3.9 Barrels. The rifle shall be equipped with a barrel capable of chambering the .22 Hornet cartridge and a barrel capable of chambering short, long, and long rifle .22 rim fire ammunition. Each barrel shall be capable of being attached to the receiver and detached from the receiver without the use of tools. The method of attaching each barrel to the receiver shall utilize a pin and slot and screw coupling to maintain proper headspace and sight alignment.

3.3.10 Rear Sight. The rear sight shall be a peep type. It shall be located at the top of the receiver and shall be an integral part of the receiver. It shall be designed and constructed in a manner to prevent accidental change from the factory setting by any condition likely to be met in service use.

3.3.11 Front Sight. The front sight shall be a non-adjustable blade type. The sight shall be strong enough to assure against breakage or bending due to dropping or similar abuse to be expected in use. It shall not utilize wing guards such as those installed on the M-1 carbine.

* 3.3.12 Butt Cap. The butt cap shall provide a watertight seal when used as a closure. The butt cap shall be capable of withstanding contact with fuels, salt spray, extreme cold, and atmospheric conditions likely to be

met in storage or service.

3.3.13 Assembly. Parts used in attaching the barrel to the receiver and the receiver to the stock shall not be capable of being removed from the barrel, receiver, and stock. Assembly and disassembly of the stock, action and barrel shall not require the use of tools. As initially assembled, headspace shall be 0.002 ± 0.001.

3.3.14 Trigger Mechanism. The trigger mechanism shall not respond to loads applied to the rear or sides of the trigger. With the safety set at the "F" position (to fire), the sear shall allow the firing pin to fall.

3.4 Performance.

3.4.1 Breeching Space Proof Firing. Rifles shall withstand the proof firing test specified in 4.5.2.

3.4.2 Functional Firing. Each rifle and magazine shall function smoothly and properly under firing conditions.

3.4.3 Targeting and Accuracy. Each rifle shall have its sights set by the manufacturer (zeroed in). Two series of 5 rounds of .22 Hornet ammunition fired at 100 yards, and two series of 5 rounds of .22 rim fire ammunition fired at 50 yards shall group within or cut the circle specified in 4.5.4. The circle shall be centered at the point of aim.

3.4.4 Trigger Pull. The trigger pull shall be smooth and free from objectionable "creep" and within the range of 4-1/2 to 7 pounds and shall not vary through the travel of the trigger by more than 1/4 pound.

Note: The word "creep" is interpreted to mean any perceptible dragging or slipping action of the trigger which prevents the normal releasing of the hammer immediately when the proper pressure is applied.

3.4.5 Endurance. Rifles, assembled to fire Hornet ammunition, shall have dependable endurance lives of 5000 rounds, and rifles, assembled to fire rim fire ammunition, shall have dependable endurance lives of 1000 rounds of long rifle ammunition. Malfunctions, or nonacceptable conditions shall not be in excess of the limits shown in table I.

3.4.6 Impact Resistance. Stocks and assembled rifles shall be capable of withstanding the impact test specified in 4.5.7.

3.4.7 Low Temperature Operation. Rifles and magazines shall function smoothly and properly under firing conditions while at a temperature between minus 40 and minus 50 degrees Fahrenheit.

3.4.8 Salt Spray. Rifles and magazines shall function smoothly and properly under firing conditions after being exposed to salt spray in accordance with 4.5.9.

3.4.9 Floatability. Rifles shall float in water for not less than 15 minutes when tested as specified in 4.5.10.

3.5 Weight. The total weight of the complete rifle, including one empty magazine, but exclusive of the caliber .22 rim fire barrel, shall be not more than 2.5 pounds. The rim fire barrel shall weight not more than 0.3 pounds.

3.6 Finish.

3.6.1 Machine Finish. Machine finishes shall be in accordance with commercial practice for first-class rifles.

3.6.2 Final Protective Finish. The exterior metallic surfaces shall be black, non-reflective. The finish shall be uniform in texture and appearance and it shall not wipe or chip off. The stock shall be black or dark brown, non-reflective.

3.7 Assembly Instructions. A decal showing step-by-step assembly of the rifle shall be provided by the contractor. The decal shall be cemented to the inside of the butt cap and shall be acceptable to the procuring activity.

TABLE I

Malfunctions and Nonacceptable Conditions

	Number Permitted in the Endurance Test			
	Hornet		Rim Fire	
	1st 2500 Rounds	2nd 2500 Rounds	1st 500 Rounds	2nd 500 Rounds
Malfunctions and Nonacceptable Conditions				
Hangfire (noticeable) (due to rifle) (see 4.4.3)	2	3	1	2
Uncontrolled fire	0	0	0	0
Failure of bolt to close (due to any rifle component)	0	0	0	0
Failure to eject	1	2	0	1
Failure of cartridge to enter chamber	2	3		
Failure of cartridge to enter chamber when manually inserted			1	2
Misfire (due to rifle)	1	1	0	1
Pierced primer	0	1	0	1
Ruptured cartridge cases	0	1	0	1
Failure of trigger to release (any cause)	0	0	0	0

Note: Malfunctions traceable to defective ammunition shall not be counted against the rifle being tested.

3.8 Marking. The receiver of each rifle shall be marked with the following nomenclature, as defined in MIL-STD-130:

RIFLE, SURVIVAL, MA-1
MIL-R-26672 (USAF)
Manufacturer's Part No. (Name or Trade-Mark)
U.S.

In addition, serial numbers shall be stamped on the barrels, bolt assembly, and receiver of each rifle.

* 3.8.1 Special Marking. The letters "S" (for safety) and "F" (for fire) shall be provided on the receiver above the safety lever in ¼ inch white letters. The safety lever in the extreme rear position shall not cover the "S," and the rifle shall not fire. The safety lever in the extreme forward position shall not cover the "F," and the rifle shall fire when the trigger is pulled.

3.9 Workmanship. Finished rifles shall be free from defects that may affect appearance, serviceability, operation, and functioning.

4. QUALITY ASSURANCE PROVISIONS

4.1 Classification of Tests. The inspection and testing of rifles shall be classified as follows:

a. Acceptance Tests
b. Preproduction Testing

4.2 Acceptance Tests. Acceptance tests shall consist of:

a. Individual tests
b. Sampling plans and tests

4.2.1 Individual Tests. Each rifle shall be subjected to the following tests, as described under 4.5:

a. Examination of product
b. Breeching space proof firing
c. Functional firing
d. Targeting and Accuracy

4.2.2 Sampling Plans and Tests.

4.2.2.1 Lot. Unless otherwise specified, a lot shall consist of not more than 500 rifles for the initial lot and 1,000 rifles for each subsequent lot.

4.2.2.2 Sampling Plan A. Five rifles shall be selected from each lot or fraction thereof, and subjected to the following tests listed below and described under 4.5:

a. Trigger pull
b. Endurance (Three rifles shall be endurance tested with Hornet ammunition, and two rifles tested with rimfire ammunition). Rifles used for these tests will not be accepted as part of the lot.

4.2.2.3 Sampling Plan B. Four rifles shall be selected from each lot or fraction thereof, and subjected to the following tests as described under 4.5:

a. Impact resistance
b. Low temperature operation
c. Salt spray
d. Floatability

4.2.2.3.1 Rejection and Retest. When one or more items from a lot fail to meet the specification, acceptance of all items in the lot will be withheld until the extent and cause of failure are determined. After corrections have been made, all necessary tests shall be repeated.

4.2.2.3.2 Individual Tests May Continue. For production reasons, individual tests may continue pending the investigation of a sampling test failure. However, final acceptance of the entire lot shall not be made until it is determined that the lot meets all the requirements of the specification.

4.2.3 Defects In Items Already Accepted. The investigation of a test failure could indicate that defects may exist in items already accepted. If so, the contractor shall fully advise the procuring activity of all defects likely to be found and methods of correcting them.

4.3 Preproduction Testing.

4.3.1 Preproduction Test Sample Tested by the Contractor. The contractor shall subject rifles to the preproduction test specified in 4.3.4.

4.3.2 Preproduction Test Report. After the contractor completes the preproduction test, he shall prepare a preproduction test report according to MIL-T-9107 and furnish three complete copies of the report to the procuring activity.

4.3.3 Preproduction Test Sample for the Procuring Activity. Along with the preproduction test report, the contractor shall submit one sample to the procuring activity.

4.3.4 Preproduction Tests. Preproduction tests shall consist of all tests described under test methods.

4.4 Test Conditions.

* 4.4.1 Proof Rounds. The caliber .22 Hornet definitive proof cartridge shall be used in proof firing. (This cartridge develops approximately 35 per cent

minimum excess pressure over the normal caliber .22 Hornet average and the standard caliber .22 long rifle rimfire definitive proof cartridge).

4.4.2 Standard Rounds. Unless otherwise specified, the standard caliber .22 Hornet 35-grain, M-65 cartridge and the standard caliber .22 long rifle rimfire cartridge shall be used in firing tests other than proof firing.

4.4.3 Hangfires and Misfires. If hangfires and misfires occur during any of the tests, the rifle shall be checked for proper firing pin protrusion and shape. The main spring shall also be checked for correct tension. If these tests reveal a nonacceptable condition, the rifle shall not be accepted until properly corrected.

4.5 Test Methods.

4.5.1 Examination of Product. Rifles shall be visually inspected for completeness of manufacture, assembly, finish, and workmanship. Chambers and bores shall be examined for rust, pits, powder fouling, burrs, and other defects. All working parts shall be tested by hand to ascertain that the final adjustments have been made to assure proper operation. Serial numbers for the bolt, receiver, and barrels shall be checked for proper assembly of parts.

4.5.2 Breeching Space Proof Firing. Each assembled rifle, spare barrel, receiver, and bolt assembly shall be subjected to the firing of one high pressure proof cartridge under supervision of the inspector (see 6.3). Suitable fixtures shall be provided by the contractor. The person doing the proof firing shall place a proof-mark (the letter P) on each accepted barrel, immediately after the test. The breeching space shall not increase more than 0.001 inch in proof firing. Components and assemblies shall be visually checked for cracked conditions.

* 4.5.3 Functional Firing. Each rifle shall be tested by firing five rounds of caliber .22 Hornet ammunition. During this test, the cartridges shall feed properly from the clip to the chamber (bolt closing), fire, and then the cases shall be extracted from the chamber and ejected. After every fourth round fired, the safety lever shall be set at "S" and the rifle shall not fire when the trigger is pulled. Immediately following this procedure, the safety lever shall be set at "F" and the rifle shall not fire until the trigger is pulled. Rimfire capability shall be determined by firing five single shot rounds each of short, long, and long rifle ammunition. With the cartridge in the chamber and the bolt closed, the rifle shall fire, extract, and eject the spent casing. After every fourth round fired, the safety lever shall be set at "S" and the rifle shall not fire when the trigger is pulled. Immediately following this procedure, the safety lever shall be set at "F" and the rifle shall not fire until the trigger is pulled.

* 4.5.4 Targeting and Accuracy. Each rifle assembled to fire caliber .22 Hornet ammunition shall be fired from a machine rest. At 100 yards, it shall place two groups of 5 consecutive rounds within or cutting the edge of a 4 inch diameter circle centered on the point of aim. Each rifle assembled to

fire caliber .22 long rifle rimfire ammunition shall be fired from a machine rest. At 50 yards it shall place two groups of 5 consecutive rounds within or cutting the edge of a 4 inch diameter circle centered on the point of aim.

4.5.5 Trigger Pull. Rifles shall be tested for trigger pull using a dead weight attached to a hooked wire. The prescribed weights shall be applied pendant and parallel to the axis of the bore when the rifle is held with the barrel in a vertical position. The trigger shall be carefully checked for "objectionable creep."

4.5.6 Endurance. Rifles, assembled for firing .22 Hornet ammunition, shall be subjected to an endurance test of 5000 rounds without substitution of any components, and without malfunctions or nonacceptable conditions in excess of the limits shown in table I. Endurance tests shall be fired in series not to exceed 50 rounds at a rate of approximately 5 rounds per minute. Barrels may be cooled after each series. Cleaning and oiling after each 500 rounds is permissible. The rifles shall then be subjected to the test specified in 4.5.4, except that the diameter of the circle shall be 4-1/2 inches, centered on the point of aim. Rifles, assembled to fire rimfire ammunition, shall be subjected to the above tests, except that the number of rounds fired shall be 1000. At the beginning of each endurance test, and at completion, headspace shall be checked with "Go-No Go" gages and shall not increase more than .004 inch.

4.5.7 Impact Resistance. The assembled rifles shall be held so that the butt of the stock rests firmly against a rigid support. A series of 5 rounds of Hornet ammunition shall then be fired in not more than 20 seconds. Any splintering, cracking, or breakage of the stock, loosening or breakage of any other rifle component shall be cause for rejection of the lot.

4.5.8 Low Temperature Operation. Rifles, with sufficient magazines and ammunition to meet the requirements of 4.5.3, shall be subjected to a temperature between minus 40 and minus 50 degrees Fahrenheit, for not less than 24 hours. At the conclusion of this exposure, and while still being maintained at this temperature, the rifles shall be subjected to the test specified in 4.5.3.

4.5.9 Salt Spray. Assembled rifles, with sufficient magazines and ammunition to meet the requirements of 4.5.3, shall be subjected to the salt spray test specified in MIL-E-5272. At the conclusion of the test, the rifle shall be subjected to the test specified in 4.5.3.

4.5.10 Floatability. The rifles shall float in fresh water for a period of not less than 15 minutes in both the stowed configuration and in the completely assembled configuration. There shall be no leakage of water into the stowed weapon which would permit water to come in contact with the stowed components, or with the inside of the barrel stowed outside the stock.

* 5. PREPARATION FOR DELIVERY

5.1 Preservation.

5.1.1 Cleaning. All metallic parts which have been subjected to burned powder residue shall be scrubbed clean with a suitable brush saturated with rifle bore cleaner conforming to Specification MIL-C-372. The entire rifle shall then be thoroughly cleaned by process C-3 of MIL-P-116, and shall pass the cleanliness tests specified therein.

5.1.2 Drying. Immediately after cleaning, item shall be thoroughly dried to remove cleaning solution or residual moisture. Drying shall be accomplished by any applicable procedure of MIL-P-116, provided the procedure is not injurious to the item.

5.1.3 Preservation and Packaging. Level A. All metal surfaces of the rifle shall be preserved with general purpose lubrication oil preservative P-9, Specification VV-L-800. Application may be accomplished by any process which assures complete preservation of internal surfaces. The cleaned and preserved rifle shall be unit packaged one each in accordance with Method 1C-1 of MIL-P-116, except barrier bag material conforming to MIL-B-131, Class 1, shall be used. Cushion all projections, sharp edges, and components of the rifle with MIL-P-3420 material. Level C. Same as Level A, except the MIL-B-131 bag material will be omitted.

Note: Prior to packaging indicated in paragraph 5.1.3, all components of the rifle, except the rim fire barrel, shall be placed within the stock. The caliber .22 rim fire barrel shall be attached to the stock by means of tape conforming to PPP-T-60.

5.2 Packing.

5.2.1 Levels A, B and C. Each rifle preserved and packaged in accordance with paragraph 5.1.1 through 5.1.3 shall be packed in a close fitting PPP-C-636, V3c fiberboard container and cushioned with PPP-C-843 material as required to prevent free movement of the rifle. Forty (40) unit containers shall be over packed in an overseas type, Style A, PPP-B-601 shipping container.

5.3 Marking. In addition to any special marking required by the contract or order, marking for shipping and storage shall be in accordance with MIL-STD-129.

5.3.1 Special Marking. Provisions of paragraph 5.2.2.10 and accompanying note, MIL-STD-129, are mandatory.

6. NOTES

6.1 Intended Use. Survival rifles are intended for the killing of game for sustenance.

6.2 Ordering Data. Procurement documents should specify the following:

a. Title, number, and date of this specification

b. Level of packaging and packing desired
c. Preproduction requirements

6.3 Proof Firing. Care is essential to assure safety in proof firing. The chamber and bore should be dry, clean, and free of obstruction. The powder in proof cartridges shall be loose before firing; proof cartridges with caked powder should not be used. In the event of a hangfire, the action of the gun should not be opened for about 20 seconds, and then should be opened rapidly by means of a lanyard, using proper precaution for the safety of all personnel.

* 6.4 The margins of this specification are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

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SPECIFICATION ANALYSIS SHEET

Form Approved Budget Bureau No. 119-R004

INSTRUCTIONS

This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity.

SPECIFICATION

ORGANIZATION | CITY AND STATE

CONTRACT NO. | QUANTITY OF ITEMS PROCURED | DOLLAR AMOUNT $

MATERIAL PROCURED UNDER A

☐ DIRECT GOVERNMENT CONTRACT ☐ SUBCONTRACT

1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?

A. GIVE PARAGRAPH NUMBER AND WORDING

B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES

2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID

3. IS THE SPECIFICATION RESTRICTIVE?

☐ YES ☐ NO IF "YES" IN WHAT WAY?

4. REMARKS *(Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)*

SUBMITTED BY *(Printed or typed name and activity)* | DATE

DD FORM 1 APR 63 1426 REPLACES NAVSHIPS FORM 4863, WHICH IS OBSOLETE. 67 AFLC RAFD,GA JUN 67 • 500