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1 OF 1

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**HEADQUARTERS
UNITED STATES CONTINENTAL ARMY COMMAND
Fort Monroe, Virginia**

ATDEV-3 474/9(C)(19 Sep 58)

19 September 1958

SUBJECT: Report of Project Nr 2787, Evaluation of Small Caliber High Velocity (SCHV) Rifles (U)

**TO: Chief of Research and Development
Department of the Army
Washington 25, DC**



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1. (U) Inclosed are the following evaluation

a. Report of US Army Infantry Board, Project Nr: 2787, 27 May 1958, subject: "Evaluation of Small Caliber High Velocity Rifles - ArmaLite (AR-15) (DA Project 502-08-006) (U)," (incl. 1). *AR-15/115*

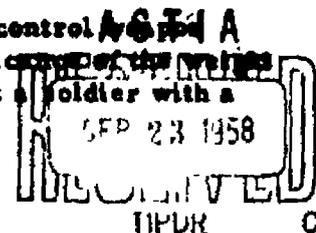
b. Supplemental Report of US Army Infantry Board, Project Nr 2787, Evaluation of Small Caliber High Velocity Rifles - ArmaLite (AR-15), 13 August 1958 (incl. 2).

c. Report of US Army Infantry Board, Project Nr 2787 (Winchester), 14 July 1958, subject: "Evaluation of Small Caliber High Velocity Rifles - Winchester (U)" (incl. 3). *AR-15/111*

2. (C)

a. The evaluations indicated in subparagraphs 1a and c were conducted to determine the potential of a high velocity small caliber rifle to replace the M-14 and M-15 rifles. Control for the evaluation consisted of the M-14 rifle using 7.62-mm, M-59 ball-ammunition. The AR-15 and Winchester rifles were tested with the Winchester caliber .224 round. Remington caliber .222 was also fired from the AR-15 in penetration tests.

b. Both test weapons were superior to the control ~~AR-15~~ **AR-15** in lightness of weight and ease of handling. The significance of the results saving in the rifle-ammunition combination is such that a soldier with a



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battle load of 22.39 pounds, including his weapon and magazines, carries three times as much ammunition with either (SCHV) weapon as with the M-14 (actually about 650 rounds versus 220 rounds).

c. The AR-15 was superior to the control weapon and the Winchester rifle in ease of assembly and disassembly and reliability under simulated combat conditions.

d. Both test rifle-ammunition combinations were inferior to the control rifle-ammunition combination with regard to penetration and position disclosing effects.

e. In other tests the control and test weapons were about comparable, except that the sights on the test weapons are indicated to be inferior to those of the M-14 rifle.

3. (C) The AR-15 (SCHV) rifle failed rain tests at Aberdeen Proving Ground and at the US Army Infantry Board (subpar. 1b). The rifle was badly damaged during supplemental test firing because drops of water from artificial rain collected in the bore around and near the cartridge. During the tests at Aberdeen Proving Ground, it was revealed that the barrel ruptured during firing when a few drops of water collected in the bore near the muzzle. The same results were experienced by Aberdeen Proving Ground in testing the Winchester rifle. Supplemental rain test of the Winchester by the US Army Infantry Board was deemed unnecessary in view of the results determined by Aberdeen Proving Ground.

4. (C)

a. This headquarters concurs in the conclusions expressed by the US Army Infantry Board except those stated in subparagraphs 7c and e of subparagraph 1b above. Engineering tests conducted at Aberdeen Proving Ground indicate that the rain-in-the-bore deficiency may exist in .25 caliber or larger weapons. In addition, tests conducted at Aberdeen Proving Ground indicate that it is not feasible to correct the deficiency through partially extracting the cartridge and draining the weapon.

b. The Armalite and Winchester rifles have demonstrated sufficient potential to justify continued development but are not acceptable for Army use at this time.

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ATDEV-3 474/9(C)(23 Sep 58)

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c. Although current testing has pointed up the Armalite AR-15 more favorably than the Winchester rifle, both developers should be given full opportunity to correct the deficiencies noted in testing and to provide completely modified weapons for retest as early as possible.

d. The rain-in-the-bore and "ammunition disintegration/penetration" deficiencies are major deficiencies.

e. The deficiency of rain-in-the-bore should be corrected mechanically, and if possible, without resort to a muzzle protector not a part of the weapon.

5. (C) This headquarters recommends that:

a. Pertinent results of evaluation and testing by the US Army Infantry Board and Aberdeen Proving Ground be released to the developers of the Armalite AR-15 and Winchester (SCHV) rifles.

b. Both developers be encouraged to modify their weapon to correct all deficiencies enumerated in attached reports and those reports as a result of Ordnance testing.

c. Engineering tests on the modified AR-15 and Winchester rifles be conducted concurrently with service testing.

d. The quantities of AR-15 and Winchester rifles listed at inclosure 4, modified to correct all deficiencies as indicated in b above, be provided at the earliest possible date to USCONARC for further evaluation and service test by the US Army Infantry Board and the US Army Arctic Test Board.

FOR THE COMMANDER:



WILLIAM A. KEIL
Major, AGC
Asst Adjutant General

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(Over)

3

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- 4 Incl
1. Rept of USA Inf Bd, Proj Nr 2787, 27 May 58, W/app I-III
 2. Ltr, ATBC 474, USA Inf Bd, 13 Aug 58, subj: "Supplemental Rept of Proj Nr 2787. Eval of SCHV Rifles - Armalite (AR-15)." W/4 incl
 3. Rept of USA Inf Bd, Proj Nr 2787, 14 Jul 58
 4. Listing of Rifles, Ammo and Eq Rqr for Testing at USA Inf Bd and USA Arctic Test Bd

Copies furnished:

F1 (USA Inf Bd WO incl. 1-3)

CG's

Third USA (WO incl)

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Comdt

USACGSC

USAARMS

USAIS

USCONARC Ln Off

Aberdeen PG

Pentagon (WO incl)

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**LISTING OF RIFLES, AMMUNITION AND EQUIPMENT
REQUIRED FOR TESTING AT USA INFANTRY BOARD AND
USA ARCTIC TEST BOARD**

1. Service test and evaluation materiel required by US Army Infantry Board.

a. Armalite AR-15 rifles.

5 AR-15 Armalite rifles
3 AR-15 Armalite rifles with hinged butt plate and bipod
80 Magazines (10 per each rifle)
8 Cleaning rods (1 per each rifle)
8 Combination tools (1 per each rifle)
16 Chamber brushes (2 per each rifle)
8 Spare parts kits (1 per each rifle)
56,000 Rounds of modified, improved ammunition

b. Winchester (SCHV) rifles. - Requirement is exactly the same as for AR-15 rifle in a above.

2. Service test and evaluation materiel required by US Army Arctic Test Board.

a. Armalite AR-15 rifles. - Requirement is exactly the same as for AR-15 rifle in 1a above, except that ammunition requirement is reduced to 40,000 rounds.

b. Winchester (SCHV) rifles. - Requirement is exactly the same as for AR-15 rifle in a above.

3. Recapitulation of major items required.

- a. AR-15 rifles - 16 (6 W/hinged butt plate and bipod).
- b. Winchester rifles - 16 (6 W/hinged butt plate and bipod).
- c. Ammunition for AR-15 rifle - 96,000 rounds.
- d. Ammunition for Winchester (SCHV) rifle - 96,000 rounds.

INCLOSURE 4

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