

CERTIFIED AR-15/M4 RIFLESMITH COURSE TEST

(Version 2, 11/1/2023)

1 – What are the three types of trigger/sear engagements?

- A. Aligning, Non-aligning, Positional
- B. Negative, Neutral, Positive
- C. Off-centered, Neutral, Centered
- D. Primary, Neutral, Secondary

2 – In a neutral angle trigger system

- A. The hammer/sear angles are the same and neither positive nor negative
- B. Actually positive – there is no such thing as a neutral trigger system
- B. The sear is negative to offset the positive angle of the hammer notch
- C. The sear angle is 5 degrees less than positive

3 – A negative trigger system is

- A. Acceptable in any weapon
- B. Not acceptable in any weapon
- C. Acceptable in Assault Weapons only
- D. Not acceptable unless the trigger pull exceeds 12 lbs

4 – Which hammer / sear engagement will most commonly result in a “creepy” trigger?

- A. Negative
- B. Neutral
- C. Positive
- D. All triggers are “creepy” and it cannot be prevented

5 – What is the rule “that is not to be broken”? According to Bob Dunlap a firearm should NEVER have:

- A. A positive sear with a neutral hammer
- B. A positive sear / hammer engagement
- C. A negative sear / hammer engagement
- D. A neutral sear / negative hammer engagement

6 – A tool that is necessary for a trigger job requiring accuracy within ounces is a

- A. Brownell’s trigger pliers
- B. Inch-pound torque wrench
- C. Trigger pull gauge
- D. Dial calipers

7 – In the AR-15 system, when the hammer is cocked while the trigger is pulled, what catches the hammer?

- A. The trigger
- B. The disconnecter
- C. The trigger cam
- D. The hammer cog

8 – The disconnecter is also known as the _____.

- A. Secondary sear
- B. Primary sear
- C. Secondary hammer latch
- D. Claw sear latch

9 – When altering the sear area at the front of the trigger, the result should be

- A. 25 degrees less positive than the original angle
- B. 20 degrees more positive than the original angle
- C. Just slightly more positive than the original angle
- D. Just slightly less positive than the original angle

10 – Where should the disconnecter be cut to move the disconnecter hook toward the hammer?

- A. The underside of the front tab of the disconnecter
- B. The entire front tab of the disconnecter should be removed
- C. The disconnecter should never be cut
- D. The rear of the disconnecter hook

11 – On an AR-15, with the upper receiver removed and the lower receiver still assembled and off safe, one way to determine if the hammer / sear engagement is positive is to slowly pull the trigger – what will happen?

- A. The hammer will move slightly rearward
- B. The hammer will move slightly forward
- C. The hammer will not move
- D. There is no way to tell until the hammer and trigger are removed

12 – The primary sear on the AR-15 is

- A. The disconnecter
- B. The trigger cam
- C. The front of the trigger
- D. The rear of the trigger bar

13 – Reducing the trigger sear angle will make the hammer/sear engagement slightly less positive. The result should be

- A. A lighter disconnecter spring weight
- B. A lighter trigger spring weight
- C. No noticeable difference
- D. A lighter trigger pull weight

14 – If the primary sear system on an AR15 were neutral or negative, you would have to change the angle on what?

- A. The hammer only
- B. Either the hammer or sear, whichever is the “offending” component
- C. The sear only
- D. Neither the hammer or the sear

15 – What tool(s) should be used to change the angle on the sear surface at the front of the trigger?

- A. Medium stone and fine stone
- B. Electric grinder or sander
- C. Dremel rotary tool with a carbide burr
- D. Safe edged 00 Swiss file and 120 grit sandpaper

16 – The goal of an AR-15 trigger job is to have a moderately light first stage trigger pull with a crisp let-off. This is best achieved when the disconnecter hits the hammer just before the sear releasing the hammer. This will cause a slight increase in trigger pull and a clean “breaking” release.

- A. True
- B. False

17 – The Hammer/Sear system is only as positive as the...

- A. sear and disconnecter
- B. hammer and disconnecter
- C. least positive component, either the hammer or the sear
- D. hammer, sear, and disconnecter combined

18 – If the disconnecter and hammer do not disengage, you should:

1. Cut the hammer notch limiting tab to allow the trigger increased travel
2. Cut the disconnecter hook to a negative angle
3. Cut the disconnecter notch on the hammer to a neutral angle

- A. True
- B. False

19 – Bob Dunlap recommends lubricating the hammer notches, sear, and disconnecter.

- A. True
- B. False

20 – In Bob Dunlap's AR15 trigger job video, he recommends the following for a more distinct change between the first stage and second stage of the AR-15 trigger pull to...

- A. Put in a stronger disconnecter spring
- B. Stretch the existing disconnecter spring
- C. Replace the disconnecter spring with a reverse helix compression module
- D. Either A or B

AR-15 Armorer Course

21 – The AR-15 gas system “dumps” gas into the bolt group. The original design problem found in humid climates was _____ and was resolved by _____ the bolt carrier and barrel bore.

- A. Corrosion, chrome plating
- B. Tar deposits, cleaning
- C. Gunpowder residue, Parkerizing
- D. Electrolysis, demagnetizing

22 – The Colt .22 LR version has a unique bolt catch that is

- A. External – a round button on the left side
- B. External – a round button on the right side
- C. Internal – the magazine must be lowered
- D. Internal – operated by a push rod

23 – When a standard AR-15 is fired, gas from the barrel operates the bolt. How does the gas get to the bolt?

- A. Barrel to gas actuation block to gas tube to bolt carrier group
- B. Barrel to pressure valve to gas tube to bolt carrier group
- C. Barrel to front sight block (or gas block) to gas tube to bolt carrier group
- D. Barrel to front sight to actuator valve to gas tube to bolt carrier group

24 – The firing pin retaining pin can be replaced with a standard cotter pin/key.

- A. True
- B. False

25 – What part causes the bolt to rotate and unlock when the bolt carrier group goes rearward?

- A. Firing pin
- B. Cam pin
- C. Rotation lever
- D. Operating rod

26 – Disassembly of the bolt carrier group follows what sequence?

- A. Firing pin, retaining pin, bolt release, bolt
- B. Firing pin retaining pin, firing pin, cam pin, bolt
- C. Firing pin retaining pin, firing pin, ejector, bolt
- D. Firing pin, retaining pin, cam pin, gas rings, bolt

27. The slots in the bolt gas rings should always be aligned.

- A. True
- B. False

28 – What activates the bolt catch?

- A. The bolt
- B. The magazine follower
- C. A cartridge
- D. Gas from a fired cartridge

29 – The safety lever blocks what component?

- A. Hammer
- B. Trigger
- C. Disconnecter
- D. Firing pin

30 – The firing pin retaining pin is specially hardened and should never be replaced with a standard cotter pin.

- A. True
- B. False

31 – If there is too much space between the secondary sear and the primary sear, the weapon may fire when the trigger is pulled and again when the trigger is released.

- A. This is normal and completely lawful
- B. This is a common defect but completely lawful
- C. This was the original design but was later changed to the current design
- D. This is a dangerous defect and highly unlawful

32 – If the bolt doesn't close completely, due to a stuck cartridge or dirty chamber, the bolt can be forced forward by the forward assist device.

- A. True
- B. False

33 – The bolt catch (stop) is spring loaded to keep it in the Up position (engaged).

- A. True
- B. False

34 – The recoil spring, also known as the action or buffer spring is contained by the receiver extension tube.

- A. True
- B. False

35 – The buffer controls the cyclic rate on the full-auto version.

- A. True
- B. False

36 – A heavier buffer will increase the cyclic rate (speed it up) on a full-auto version.

- A. True
- B. False

37 – The ejector on an AR-15 is a...

- A. spring loaded lever located under the bolt
- B. spring loaded plunger in the bolt face
- C. fixed blade on the left side of the receiver
- D. spring loaded lever located at the rear of the magazine well

38 – The rubber piece under the extractor is essential for the full-auto M16 because...

- A. It reduces harmonics and increases extractor tension
- B. It slows extraction and reduces tension on the cartridge
- C. It increases extraction speed
- D. It prevents damage to the cartridge case

39 – When reassembling the bolt carrier group, the firing pin must go into the bolt carrier before the cam pin.

- A. True
- B. False

40 – In full-auto mode, the safety moves the disconnecter into position to act as the primary sear

- A. True
- B. False

41 – The full-auto bolt carrier is different from the semi-auto version. Why?

- A. Increased bolt weight to slow the cyclic rate
- B. To act on the full-auto sear in full-auto mode
- C. Decreased bolt weight to increase the cyclic rate
- D. To act on the secondary sear (disconnecter) in full-auto mode

42 – Gas piston (push rod) systems do not require bolt gas rings because gas never enters the bolt carrier group.

- A. True
- B. False

43 – Short cycling can occur if the gas rings are too loose (worn).

- A. True
- B. False

44 – The spring that is held in place by the pistol grip is the

- A. Safety detent spring
- B. Selector detent spring
- C. Pistol grip retainer spring
- D. Trigger return spring

45 – The spring at the rear of the lower receiver, held in place by the buttstock (or receiver plate) is the

- A. Safety detent spring
- B. Rear takedown pin detent spring
- C. Disconnecter spring
- D. Auto sear spring

46 – The number and weight of the components inside the buffer act to control the cyclic rate of the full-auto M16

- A. True
- B. False

47 – The receiver extension (action spring or buffer tube), according to Colt, is torqued to...

- A. 35-39 ft/lbs
- B. 55-59 ft/lbs
- C. 25-29 ft/lbs
- D. 45-49 ft/lbs

48 – The legs of the trigger spring should face rearward and the U-shaped bend should be under the rear of the trigger

- A. True
- B. False

49 – How is the magazine catch held in the lower receiver?

- A. Held in by the magazine catch roll pin
- B. Held in by the magazine catch C-clip
- C. Held in by the magazine catch set screw
- D. Held in by the threaded magazine catch button

50 – The carrier key screws are installed to what torque setting?

- A. 3 ft/lbs (35-40 inch/lbs)
- B. 10 ft/lbs (120-125 inch/lbs)
- C. 7 ft/lbs (80-85 inch/lbs)
- D. 5 ft/lbs (60-65 inch/lbs)

51 – The carrier key screws are staked in place

- A. True
- B. False

52 – If the carrier key comes loose what will happen?

- A. Nothing, it is a common occurrence
- B. They never come loose, the screws are staked to prevent loosening
- C. The weapon will go full-auto
- D. The weapon will short cycle

53 – The forward assist pawl is designed to pivot away from the bolt when the forward assist is in rearward position. What might happen if it did not pivot away?

- A. The forward assist would be driven out of the receiver by the bolt
- B. Nothing would happen
- C. It would cause the weapon to go full auto
- D. The bolt would stay forward, making the weapon a single shot

54 – According to Colt, the flash hider should be installed with 25 ft/lbs of torque. Bob Dunlap (and others) disagrees with that torque setting. Why?

- A. The flash hider should be tighter than 25 ft/lbs of torque
- B. The flash hider should be snug and green Loc-tite used to prevent damage to accuracy
- C. The flash hider should be soldered or brazed in place
- D. The flash hider should be discarded, they don't really work

55 – If the flash hider or any muzzle brake are installed and torqued to 25 ft/lbs. or more, accuracy will be increased.

- A. True
- B. False

56 – Front sight housings are generally held on by two tapered pins that are very tight.

- A. True
- B. False

57 – Gas tubes are generally made from

- A. Aluminum
- B. Stainless steel
- C. Nickel plated carbon steel
- D. Titanium

58 – On a standard gas impingement system, the carrier key is machined to be integral with the bolt carrier and cannot be taken apart.

- A. True
- B. False

59 – What component generally holds the barrel onto the receiver?

- A. Slip ring
- B. Delta ring retainer
- C. Barrel extension pin
- D. Barrel nut

60 – When installing the bolt into the bolt carrier, the extractor should be facing toward the left side of the bolt carrier

- A. True
- B. False

61 – The cam pin can be installed into the bolt carrier in any direction.

- A. True
- B. False

62 – To function test an assembled AR-15/M16, the weapon must be unloaded. Cycle the bolt to cock the hammer and start with weapon off safe, then...

- A. Pull trigger (hammer fall), hold trigger to rear, cycle bolt, release trigger (disconnecter releases but hammer does not fall), put on safe and pull trigger (hammer must not fall).
- B. Pull trigger (hammer fall), cycle bolt and pull trigger (hammer fall), cycle bolt, put on safe and pull trigger (hammer must not fall)
- C. Pull trigger (hammer fall), cycle bolt, put on safe, pull trigger (hammer must not fall), take off safe, pull trigger (hammer fall).

63 – On the collapsible buttstock models, the receiver extension nut (castle nut) should be tightened to 75 ft/lbs of torque

- A. True
- B. False

64 – The old style (A1) rear sight is adjustable for windage with a tool or a bullet tip.

- A. True
- B. False

65 – The new style (A2) rear sight has three detent balls and springs. They are...

- A. One for the windage knob and two for the elevation knob
- B. One for the windage knob, one for the elevation knob and one for the rear sight housing
- C. Two for the windage knob and one for the elevation knob
- D. One for the windage knob, one for the elevation knob, and one for the flip sight

66 – The rear sight elevation spring prevents up and down movement or at least returns the sight housing to a consistent position.

- A. True
- B. False

67 – The new style (A2) sight housing detent spring and ball normally prevents the rear sight housing from returning to a consistent position and removal is recommended.

- A. True
- B. False

68 – Should the hammer be cocked or un-cocked when you push out the hammer pin?

- A. Cocked
- B. Un-cocked

69 – Removing the barrel extension is something done commonly by gunsmiths and armorers and is something that should be done regularly during cleaning.

- A. True
- B. False

70 – One tool recommended by the instructor for AR-15 armorers and gunsmiths is the clamping style receiver action block. It is used for clamping the receiver in a vise without damaging the receiver.

- A. True
- B. False

AR-15 Disassembly / Reassembly Course

71 – Prior to working on an AR-15/M16, to verify a weapon is safe and unloaded, the following steps are necessary:

- A. Remove the magazine, pull the bolt to the rear, release the bolt and pull the trigger
- B. Point the weapon in a safe direction and pull the trigger
- C. Remove the magazine, pull the bolt rearward and lock open, visually check for empty chamber, and use a finger to check for empty chamber
- D. Pull the bolt to the rear and lock it open and visually check for an empty chamber

72 – Newer aluminum magazines may have a floorplate latch that must be disengaged to remove the floorplate.

- A. True
- B. False

73 – Early Colt AR-15s and M16s use a pin and threaded screw as the front pivot pin.

- A. True
- B. False

74 – The AR-15 / M16 has a J-shaped spring mounted inside the hammer. The spring is intended to increase the speed of the hammer to aid in firing a cartridge.

- A. True
- B. False

75 – The trigger and disconnecter are held in place with two pins

- A. True
- B. False

76 – It may be necessary to have the safety in the SAFE position to remove the trigger (if the safety is not removed first).

- A. True
- B. False

77 – The disconnecter spring has one end with an enlarged coil to help it stay in the trigger

- A. True
- B. False

78 – The buffer retainer plunger is held in place with a roll pin

- A. True
- B. False

79 – On a collapsible stock model, the takedown pin detent and spring are always held in place by a setscrew.

- A. True
- B. False

80 – The standard Mil-spec trigger guard has a spring loaded front plunger. What is the purpose?

- A. To allow for shooting with winter gloves
- B. To make disassembly easier
- C. For easier cleaning of the trigger
- D. To turn the trigger guard into a full-auto trigger

81 – The charging handle has two flanges that fit into corresponding slots in the upper receiver.

- A. True
- B. False

82 – The dust cover pin is retained by what component?

- A. A small C-clip
- B. A plunger
- C. A roll pin
- D. A set screw

83 – The original design of the M16 and all AR-15s included a forward assist mechanism.

- A. True
- B. False

84 – The old style (A1) rear sight has a detent and spring located in a hole at the right rear of the carry handle portion of the receiver. Where is the detent and spring hole located in the new (A2) style?

- A. In identically the same location
- B. In the windage knob
- C. On the opposite (left rear) side
- D. The new style doesn't use a detent

85 – The rear sight has a leaf spring to tension the rear sight aperture. The spring is curved (arched) and the curved side must be installed down when reassembling the rear sight.

- A. True
- B. False

86 – How is the gas tube attached to the front sight housing (gas block)?

- A. Set screw
- B. Threaded into the housing or block
- C. Roll pin
- D. Silver solder

87 – In an AR-15 with a standard handguard, the barrel nut is part of an assembly consisting of the barrel nut, delta ring (slip ring), barrel weld spring, and barrel snap ring.

- A. True
- B. False

88 – What is the pin that is installed in the barrel extension?

- A. Sight alignment pin
- B. Excessive chamber pressure indicator
- C. Barrel nut alignment pin
- D. Barrel alignment pin

89 – The alignment pin in the barrel extension is in a direct line with the gas hole in the barrel, so that the receiver is aligned with the gas hole. This helps to make sure that the front and rear sights are aligned when the rifle is assembled.

- A. True
- B. False

90 – In a standard AR-15, the front sight housing holds the three components of the front sight. The three components are the front sight, front sight lock washer, and the front sight set screw.

- A. True
- B. False

91 – According to the instructor, Ken Brooks, the forward assist “finger” (pawl) must face away from the bolt carrier for proper installation.

- A. True
- B. False

92 – Old style triangular handguards have a right and left side, while the new style handguards have a top and bottom.

- A. True
- B. False

93 – When installing an ejector into the bolt, the slot for the ejector roll pin faces away from the firing pin hole.

- A. True
- B. False

94 – The extractor spring _____.

- A. Has two ends of the same diameter
- B. Is the same as the bolt stop spring
- C. Has one end larger than the other
- D. Is the same as the disconnect spring

95 – When installing the firing pin retainer into the bolt carrier, you don’t have to worry about the position of the firing pin because you cannot install the retainer incorrectly.

- A. True
- B. False

96 – The carrier key rides inside the charging handle

- A. True
- B. False

97 – You must be careful when installing the roll pin for the trigger guard because you can snap off the thin aluminum tabs that hold the roll pin (Note: You should use a block to support the bottom tab while driving in the roll pin).

- A. True
- B. False

98 – The safety selector detent spring is retained in a hole in the grip.

- A. True
- B. False

99 – The trigger spring's U-shaped leg must ride under the front of the trigger and the two open legs point forward when assembled properly on the trigger.

- A. True
- B. False

100 – Some old style triggers have two holes for the disconnecter spring and the correct location of the spring is dependent on the length of the rear of the disconnecter.

- A. True
- B. False

101 – How many gas rings are on the bolt?

- A. 4
- B. 3
- C. 1
- D. 2

102 – When the hammer spring is installed correctly, the U-shaped end rests against the rear of the hammer and the two open legs face down and slightly forward.

- A. True
- B. False

103 – During reassembly, to check that the trigger, disconnecter, and hammer are properly installed, do the following: cock the hammer, safety on FIRE, pull the trigger and hold the trigger to the rear, and the hammer should fall (go forward). Keeping the trigger pulled, cock the hammer again and the hammer should be caught by the disconnecter. Release the trigger and the hammer should fall to the primary sear and stop. Repeat as necessary.

- A. True
- B. False

104 – After reassembly, if you have done everything correctly, there shouldn't be any need to function check the weapon.

- A. True
- B. False

Building the AR-15 Rifle Course

105 – A torque wrench should be used to install the barrel and receiver extension (buffer tube).

- A. True
- B. False

106 – If an AR-15 barrel has excessive headspace, the barrel extension must be removed, the barrel is set back one turn, and the chamber must be cut to the proper depth.

- A. True
- B. False

107 – When installing the bolt stop roll pin, thick tape will help protect the side of the receiver.

- A. True
- B. False

108 – The magazine button can go in with either side out because both sides are identical.

- A. True
- B. False

109 – The magazine catch threaded shaft should end up flush with the magazine release button when installed properly.

- A. True
- B. False

110 – The hammer pin and trigger pin are different and must not be interchanged.

- A. True
- B. False

111 – The safety detent is the same on both ends, so it can go in either way.

- A. True
- B. False

112 – If the AR-15 fires when it is on SAFE, how can it be repaired?

- A. Weld a tab on the safety and fit to the trigger
- B. Weld up the rear of the trigger and fit to the safety
- C. Replace the trigger pin and re-test
- D. A and C above will repair the weapon

113 – The disconnecter/hammer (secondary sear system) engagement must be _____.

- A. Positive
- B. Neutral or positive
- C. Negative
- D. Neutral or negative

114 – The primary sear system must be _____.

- A. Negative or neutral
- B. Positive
- C. Negative
- D. Neutral

115 – The rear takedown pin has a slot and two detent holes. The helps make the pin stay in when pushed in or stay out when pushed out.

- A. True
- B. False

116 – The bottom buttstock screw threads into and is held by the receiver extension spacer.

- A. True
- B. False

117 – If the carrier key is loose, the weapon will short cycle.

- A. True
- B. False

118 – The gas tube and carrier key must have a tight fit and be perfectly aligned to prevent short cycling.

- A. True
- B. False

119 – The carrier key screws must be staked to prevent them from loosening.

- A. True
- B. False

120 – The firing pin retainer is a cotter pin and any cotter pin from a hardware store will work.

- A. True
- B. False

121 – The rear sight elevation knob is two pieces held together with a screw.

- A. True
- B. False

122 – The dust cover hinge pin has a small C-clip at one end. The C-clip must be on the end toward the rear of the receiver.

- A. True
- B. False

123 – The barrel alignment pin and slot in the receiver are on the opposite side of the sights.

- A. True
- B. False

124 – The standard barrel nut assembly consists of...

- A. Barrel nut, Delta (slip) ring, flat spring, and E-clip
- B. Barrel nut, Delta (slip) ring, coil spring, and E-clip
- C. Barrel nut, Delta (slip) ring, weld spring, and C-clip
- D. Barrel nut, Delta (slip) ring, Helical spring, and C-clip

125 – The gas tube passes through the barrel nut assembly and enters the receiver through a hole in the front of the receiver.

- A. True
- B. False

126 – The barrel nut has a torque specification of

- A. 30-80 in / lbs
- B. 30-80 ft / lbs
- C. 50-125 in / lbs
- D. 50-125 ft / lbs

127 – For better accuracy, the fit of the barrel to the receiver should be loose.

- A. True
- B. False

128 – What is the specification of the firing pin protrusion gauge used in the video?

- A. .026" to .036"
- B. .019" to .059"
- C. .026" to .049"
- D. .019" to .025"

129 – The bolt must never close on the _____ headspace gauge.

- A. Go
- B. No-Go
- C. Field

130 – The bolt must close on the _____ headspace gauge.

- A. Go
- B. No-Go
- C. Field

131 – According to the instructor, Bob Dunlap, the actual breech face of the barrel, inside the barrel extension, should be about _____ from the front of the bolt, when the bolt is closed and locked.

- A. One-eighth inch
- B. Two to five thousandths of an inch
- C. One-quarter inch
- D. Zero to one thousandth of an inch

132 – If a gunsmith re-cuts the barrel, the instructor, Bob Dunlap, recommends a radius transition from the barrel face to the chamber, instead of the mil-spec angled chamfer.

- A. True
- B. False

The AR-15: Practical, Tactical or Tacti-Cool Course

133 – The receiver set that will assist in obtaining the most accuracy is an upper and lower receiver that are matched from the factory.

- A. True
- B. False

134 – One inexpensive method of removing excess play or movement between the upper and lower receivers is

- A. A synthetic rubber wedge, such as the Accu-wedge
- B. Weld the rim of the upper receiver and trim to fit
- C. Epoxy the upper and lower receivers together
- D. Nothing will help a sloppy receiver

135 – Next to a matched receiver set, the barrel is one of the most important components for accuracy.

- A. True
- B. False

136 – A practical trigger is one that is the most expensive available.

- A. True
- B. False

137 – One inexpensive method recommended in the video that may take the creep out of a standard military style trigger.

- A. A dab of Bearing grease
- B. Shorten the trigger spring
- C. Short squirt of Break Free aerosol
- D. KNS anti-rotation pin set

138 – According to the video, you must use anti-rotation pins with the Geissele Automatics triggers and throw away the pins that come with the trigger.

- A. True
- B. False

139 – Three types of triggers shown in the video are

- A. Military, Law Enforcement, and Civilian
- B. Steel, Aluminum, and Titanium
- C. Type I, type II, and type III
- D. Standard (military), two-stage, and drop-in

140 – The standard for flash hider efficiency that all others are judged against, is the military style A2 “birdcage” flash hider.

- A. True
- B. False

141 – Compensators and muzzle brakes reduce felt recoil.

- A. True
- B. False

142 – The major problem with compensators and muzzle brakes is the noise that is directed to the side, which can cause hearing damage.

- A. True
- B. False

143 – Standard military style handguards are free-floating for increased accuracy.

- A. True
- B. False

144 – What is the purpose of quad-rail handguards?

- A. To cut your hand as often as possible on the sharp edges
- B. To look and become as “Tacti-Cool” as possible
- C. For mounting rubber strips to prevent cutting your hands
- D. For mounting lights, lasers, forward grips and other accessories

145 – The original M16 was designed with handguards in what shape?

- A. Round
- B. Triangular
- C. Oval
- D. Quad-rail

146 – On a full-auto M16/M4, what is the proper way to slow down a weapon that is running “hot” (a cyclic rate that is too fast)?

- A. A heavier buffer
- B. Cold water to cool it down
- C. Low power ammunition
- D. Cotton in the gas tube

147 – What is “bolt bounce” on a AR-15 / M16 / M4?

- A. The distance a bolt will return when dropped on the floor
- B. The wobble or “bounce” that occurs when a bolt is going rearward
- C. The wobble or “bounce” that occurs when a bolt is going forward
- D. The bolt/carrier bouncing open slightly when it hits the barrel extension

148 – What is one possible problem that can occur when an AR-15 / M16 / M4 rifle cycles too fast?

- A. Cartridges in the magazine may not move up fast enough to feed properly
- B. You use too much ammo
- C. The extractor is too weak to operate properly
- D. The weapon won't eject the spent cartridge cases properly

149 – Flip-up front and rear sights are much faster to acquire a target than standard fixed sights.

- A. True
- B. False

150 – One advantage to 45-degree off-set sights on a scoped rifle is

- A. Rapid target acquisition at close range
- B. How cool they look
- C. Better ejection of spent cartridges
- D. Easy target acquisition when they are to the right side

151 – According to the video, what is a potential problem in gas piston AR-15 style rifles?

- A. The bolt never warms up
- B. The piston needs special gas rings made of titanium
- C. Bolt tip or tilt can cause excessive wear to the buffer tube
- D. Bolt bounce increases

152 – In a standard gas impingement system (the original design), the gas forces in the bolt carrier group are operating in line with the bore, which does not produce bolt tilt.

- A. True
- B. False

153 – On a gas piston system, when the bolt tips or tilts, what component(s) could potentially be damaged?

- A. The buffer and buffer spring
- B. The receiver extension tube
- C. The receiver, in the area of the receiver extension tube
- D. Both B and C are possible

154 – Gas piston systems will eventually replace the original gas impingement systems because it works better and has no problems?

- A. True
- B. False

155 – Gas piston systems

- A. Keep hot gasses from the shooter's face
- B. Are slower than gas impingement systems
- C. Deposit debris in the bolt
- D. Require a more complicated bolt

156 – Two types of barrel nut wrenches shown in the video are

- A. The multi-tool type and strap wrench type
- B. The strap wrench and breaker bar type
- C. The military and the commercial types
- D. The multi-tool type and the dedicated barrel wrench type

157 – The clam-shell type receiver block has an insert to prevent crushing the receiver.

- A. True
- B. False

158 – The Geissele Automatics "Reaction Rod" receiver tool goes inside the receiver to remove the barrel, but it puts a lot of torque on the receiver.

- A. True
- B. False

159 – Roll pin holders (also known as roll pin holding punches) makes starting roll pins much easier.

- A. True
- B. False

160 – A front sight housing block or a lead block are great to have when removing the taper pins holding front sight housings to barrels.

- A. True
- B. False

161 – The video recommends anti-seize compound or high temperature grease when installing the barrel nut on an AR-15 type rifle.

- A. True
- B. False

162 – When applying torque to the barrel nut, it is NEVER OK to back off the barrel nut to line up a gas tube hole or notch.

- A. True
- B. False

163 – What can happen if the barrel nut is backed off to line up a hole or notch?

- A. The torque setting may fall below the minimum
- B. The barrel may be loose in the receiver
- C. Accuracy may suffer because of barrel wobble
- D. All of the above are possible

164 – If a free-floating handguard is installed that is longer than the original handguard, one way to solve the dilemma is to use a low profile gas block.

- A. True
- B. False

165 – One way to help line up the hole in the front sight housing or gas block with the hole in the barrel is to use a pencil mark on the barrel that is in line with the gas hole.

- A. True
- B. False

166 – When an extension or barrel nut wrench is used on a torque wrench, the applied torque does not change, so there is no need to adjust the torque wrench.

- A. True
- B. False

167 – The formula for determining the correct torque setting when using an extension is

- A. $(A^2 + B^2) / C^2 = T^2$ (actual torque)
- B. $3.25 \times 4 + (2 \times T^2 / 3) = T1$ (actual torque)
- C. $(T1 \times L) / (L + E) = T2$ (actual torque)
- D. $\pi \times R^2 + T1 = T2$ (actual torque)

168 – The original AR-15, as designed by Eugene Stoner and team, was adopted by the U.S. military as the M16A2.

- A. True
- B. False

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169 – The AR-15 design is better than the AK-47 system because it has loose tolerances and can handle any ammunition in any environment.

- A. True
- B. False

170 – The AR-15 is more expensive to make than the AK-47, requires tighter tolerances and has strict ammunition tolerance requirements.

- A. True

B. False

171 – The M16 (full auto version) has how many sear systems

- A. 1
- B. 2
- C. 3
- D. 4

172 – On full-auto, what hits the auto-sear to disengage it?

- A. Disconnecter
- B. Bolt carrier
- C. Trigger
- D. Auto-sear disconnect lever

173 – If the disconnecter (secondary sear) does not have enough engagement with the hammer, what should be modified?

- A. The auto-sear tab
- B. The hammer pin
- C. The rear of the trigger
- D. The front tab on the disconnecter

174 – If the disconnecter (secondary sear) releases the hammer near the end of the trigger return stroke, what will happen?

- A. The primary sear will have minimum engagement
- B. The hammer will fall and fire a cartridge
- C. The primary sear will have maximum engagement
- D. The primary sear will not catch the hammer

175 – When should the disconnecter (secondary sear) release the hammer?

- A. As soon as you start to release the trigger
- B. As soon as the hammer starts to move forward
- C. As close as possible to the end of the trigger return stroke
- D. When the bolt releases the hammer on return

176 – On semi-auto, if the disconnecter (secondary sear) and hammer engagement angles are too negative, the weapon may fire multiple rounds on a single pull of the trigger or the hammer may follow down and misfire.

- A. True
- B. False

177 – On an AR-15 with a Colt hammer that is notched, if the bolt carrier catches on the hammer notch, the bolt carrier group may not always lock closed.

- A. True
- B. False

178 – If the problem in Question 177 occurs, you can chamfer the sharp edge on the hammer notch as much as possible and it will not cause any problems with the weapon.

- A. True
- B. False

179 – The AR-15/M16 has a plunger type ejector.

- A. True
- B. False

180 – If the extractor hook angle is negative, extraction will be smoother.

- A. True
- B. False

181 – The AR-15/M16 extractor angle must be _____ for best extraction.

- A. Positive
- B. Negative
- C. Neutral

182 – If the cartridge case sticks in the chamber and doesn't extract easily, the problem could be a rusty chamber or over-pressure load.

- A. True
- B. False

183 – If the extractor doesn't extract a fired case, the case rim is partially ripped off by the extractor, but the case comes out of the chamber easily when you put a cleaning rod down the barrel. What is likely the problem?

- A. Soft brass cases
- B. Extractor angle too negative
- C. Bolt opening too late
- D. Bolt opening too soon

184 – The AR-15/M16 extractor is a “snap-over” the cartridge rim type.

- A. True
- B. False

185 – If the AR-15 / M16 short cycles, but the gas port in the barrel is the correct size, the carrier key is tight, the gas rings are tight and installed properly, and the bolt and carrier chamber is working properly. What could cause the short cycle?

- A. Front sight housing gas hole is off-set
- B. The gas tube is damaged
- C. The operator is “limp wristing”
- D. Either A or B above

186 – The problem in question 186 exists, but the gas hole in the front sight housing and the gas tube are correct, but the owner installed a .22 rimfire conversion unit. The gas hole in the barrel could be clogged with lead from bullets.

- A. True
- B. False

187 – If the barrel, barrel extension, and receiver are not concentric (aligned properly), the weapon can short cycle or jam when fired.

- A. True
- B. False

188 – Short barrel AR-15/M16 rifles, where the gas port is closer to the chamber, are more affected by gas pressure changes (mild or high power ammunition) than are standard rifles where the gas port is farther from the chamber.

- A. True
- B. False

AR-15 General Knowledge Questions

189 – You fire the AR-15 (or M16 in semi-auto mode) and keep the trigger pulled rearward, the bolt goes forward and locks up. Which sear system is holding the hammer?

- A. The primary sear system
- B. The full-auto sear system
- C. The secondary sear system

190 – If you fire the AR-15 (or M16 in semi-auto mode), the bolt returns forward and locks up, you then release the trigger. Which sear system is holding the hammer?

- A. The primary sear system
- B. The secondary sear system
- C. The full-auto sear system

191 – What prevents the cam pin from rotating in, or coming out of, the bolt carrier?

- A. The extractor pin
- B. The ejector pin
- C. The bolt
- D. The firing pin

192 – The safeties on the semi-auto and full-auto versions of the AR-15/M16 are identical and can be interchanged.

- A. True
- B. False

193 – When installing a barrel nut, why should you use a high-heat lubricant or anti-seize on the receiver threads?

- A. To reduce friction between the steel and aluminum parts
- B. To aid in reaching the proper torque setting
- C. To prevent the parts from adhering and becoming stuck
- D. All of the above

194 – Short cycling can occur if the bolt gas rings wear and become too loose.

- A. True
- B. False

195 – The standard military (and most manufacturers) specification for the M16/AR-15 firing pin protrusion is .028" to .036."

- A. True
- B. False

196 – You check the headspace of an AR-15 and find the following:

1. The bolt closes on the Go gauge
2. The bolt closes snugly on the No-Go gauge
3. The bolt does not close on the Field gauge

- A. This is not acceptable because it closes on the No-Go gauge

- B. This is acceptable because it does not close on the Field gauge
- C. This not acceptable because it should close on the Field gauge

197 – Same scenario as Question 196, EXCEPT the bolt closes on the Field gauge

You check the headspace of an AR-15 and find the following:

1. The bolt closes on the Go gauge
2. The bolt closes snugly on the No-Go gauge
3. The bolt closes on the Field gauge

- A. This is acceptable
- B. This is not acceptable

198 – The two small holes in the side of the bolt carrier (facing the ejection port) are there for what purpose?

- A. Reducing the bolt carrier weight for proper cycling
- B. To allow for oiling the firing pin
- C. To assist with disassembling the carrier if the bolt ever gets stuck
- D. To vent gas from the bolt/carrier chamber

199 – The AR-15 cycle of operation is: Cocking, Feeding, Chambering, Locking, Firing, Unlocking, Extracting, and Ejecting

- A. True
- B. False