

Professional Gunsmithing Test: RIFLES

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HIGH POWER RIFLES

1. In a rifle chambered for a hi-intensity cartridge like a .30-06, what is the maximum permissible diameter for the firing pin and hole?
 - a. .065"
 - b. .075"
 - c. .085"
 - d. .100"

2. What is the maximum allowable firing pin protrusion in a rifle chambered for .30-06?
 - a. .010" more than the firing pin diameter
 - b. The same as the firing diameter
 - c. .010" less than the firing pin diameter
 - d. Anything up to .100"

3. What could happen if a hi-intensity rifle is fired with the firing pin hole .075" in diameter and the pin .060" in diameter?
 - a. The primer could flow around the pin and into the hole
 - b. The firing pin could pierce the primer
 - c. The primer could blow out, damaging the firing pin tip and its hole in the bolt
 - d. All of the above
 - e. None of the above

4. What is headspace?
 - a. The distance between the base of the chambered round & the bolt face
 - b. The distance between the datum line and the base of the chambered round
 - c. The distance between the shoulder and the bolt face on the chambered round
 - d. The distance from the base of the bullet to the bolt face

5. Why is it important for a rifle to be tightly breeched?
 - a. So it will maintain correct headspace longer
 - b. So the cases won't bulge when fired
 - c. So the primers won't leak in the event of an overload
 - d. So the gun won't blow up in the event of an overload

BRNO ZKW 465

6. The dual cocking cam on the ZKW 365 makes the bolt really easy to cock.
 - a. True
 - b. False

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7. Why must you have clearance or play between the sear lever and the sear on the ZKW 465?

- a. So that the sear can be reassembled back into the gun.
- b. so that the trigger return spring does not coil bind.
- c. so that the sear spring does not coil bind
- d. because the gun could fire if you cock it fast and hard.

8. Can the ZKW 465 be fired without using the set trigger?

- a. Yes
- b. No

9. The recoil lug on the ZKW 465 is located...

- a. in the front bottom section of the receiver, like many other bolt action rifles. Though it is comparatively small on this rifle, it is very effective.
- b. the rear bottom section of the receiver.
- c. There is no recoil lug on this model of rifle because of the caliber.
- d. The recoil lug is of the dual-slit design and is located in the bottom mid-section of the receiver, just under the ejection port.

Walther .22 Hornet

10. The Walther .22 Hornet rifle has a smooth two stage trigger that utilizes two rollers, one roller for the first stage and a second roller for the second stage.

- a. True
- b. False

11. How many safeties does the Walther .22 Hornet bolt-action rifle utilize?

- a. Your trigger finger is the only safety. There are no safeties on the Walther.22 Hornet bolt-action rifle.
- b. One cross bolt safety.
- c. One Mauser type safety
- d. Two safeties, one cross bolt safety and a Mauser type safety.

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Vetterli

12. How can you quickly tell the difference between a Swiss and an Italian Vetterli rifle?

- a. You can quickly discern that a Vetterli is of Swiss manufacture because there were never any Vetterli rifles made in Italy.
- b. The Italian Vetterli model feeds from a clip fed fixed box magazine and the Swiss Vetterli utilizes a tube magazine.

13. The Vetterli rifle utilizes two rear lock lugs on the bolt rather than forward locking lugs found on more traditional bolt action designs.

- a. True
- b. False

Schmidt Ruben

14. The Schmidt Ruben rifle is a fast, manually operated, straight pull, Swiss service rifle.

- a. True
- b. False

15. Why is the Schmidt Ruben rifle not a good candidate for mounting a scope?

- a. Actually, it is a great candidate for scope mounting.
- b. because the steel on the top of the receiver is too thin to support the weight of the bases, rings and scope together.
- c. because it is a top ejector.
- d. because it is chambered for the 7.5 x 55mm Swiss cartridge, which is not a good long distance round.

Mossberg 810

16. How many locking lugs does the Mossberg 810 have on its bolt?

- a. one large robust locking lug
- b. two locking lugs
- c. three locking lugs
- d. four locking lugs

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17. The 810's safety blocks the trigger so that the trigger can't be pulled far enough to release the sear.

- a. True
- b. False

18. What are the two grooves on each side of the magazine box there for?

- a. They give the bases of the cartridge cases room to move around in the magazine box by pinching the shoulders of the cartridges together.
- b. They push the shoulders of the cartridges together to prevent the shoulders and bases of the cartridges from floating around in the magazine box.
- c. They are the grooves for the stripper clips.
- d. They prevent any fore and aft movement of the cartridges by pinching the area around the bullet and the case mouth.

Mosin-Nagant

19. The locking system found on the Mosin-Nagant utilizes...

- a. one locking lug.
- b. one locking lug and a safety lug.
- c. two locking lugs.
- d. two locking lugs and a safety lug.

20. The Mosin-Nagant uses a standard two stage military trigger.

- a. True
- b. False

21. What acts as the bolt stop on a Mosin-Nagant?

- a. The Mylar buffer in the back of the receiver.
- b. The stud on the rear of the ejector.
- c. The sear.
- d. The bolt handle.

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22. If the firing pin hole is too large on a Mosin-Nagant rifle, what could happen if you shoot a really hot load on a really hot day?

- a. The firing pin can float around and cause a misfire.
- b. The primer could pierce and squirt hot gas rearward out of the bolt and into the shooter's eye.
- c. The tip of the firing pin would break and possibly jam up the action.
- d. The firing pin hole is meant to be oversized so that the gun could be shot under water without the firing pin losing velocity and causing a misfire.

23. What does the long bowed part on the left side of the receiver do?

- a. That is the bolt stop/release.
- b. It is a cartridge stop.
- c. It is the bolt guide.
- d. It is the secondary extraction cam.

24. What gives spring tension to the sear?

- a. The trigger spring is also the sear spring
- b. The part called the sear spring.
- c. The sear acts as its own spring
- d. This trigger system does not require any spring tension on the sear, so there is no spring tension on the sear.

25. Could a barrel set back correct headspace on a Mosin-Nagant rifle?

- a. Yes
- b. No

Italian Carcano

26. Where are the feed lips located on the Italian Carcano?

- a. On the left side of the fixed box magazine.
- b. On the left side of the receiver, just above the box Magazine.
- c. Above the box magazine on both sides of the receiver.
- d. On each individual ammunition clip.

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27. What acts as the bolt stop on an Italian Carcano?

- a. The sear
- b. The part called a bolt stop.
- c. The raised knob inside of the rear of the receiver.
- d. The two studs on the back of the right and left guide rails inside of the receiver.

Ruger M77

28. Three screws hold the gun into the stock on a Ruger M77, why is one of the screws driven in at an angle?

- a. The tip of the angled screw fits into a recess in the bottom of the barrel's shoulder. That contact pillar beds the rifle to the stock to achieve greater accuracy.
- b. There are only two screws that hold the gun into the stock, neither of which are driven in at an angle.
- c. In order to get enough wood to screw into, the screw is driven in at an angle because if it was vertical it would quickly bump into the bottom of the receiver.
- d. To draw the receiver back against the stock to achieve better contact between the recoil lug and the stock.

29. Why would you want to relieve a small area behind the rear tang when stock bedding a Ruger M77?

- a. So you don't chip out the wood behind the rear tang when you fire the gun.
- b. To not hinder Ruger's safety breeching system, which gives a safe path for escaping gas in case there was a case blow out or a ruptured primer.
- c. Actually, there should be no relief cut in the area behind the rear tang, as the fit should be wood to steel in this particular area.

30. The M77's trigger is adjustable for...

- a. weight
- b. weight and over travel
- c. over travel, engagement, and weight
- d. The M77's trigger is not adjustable. It is perfectly and safely set to factory specs.

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KRICO

31. The KRICO uses double set triggers. The front trigger is the release trigger and it uses a coil spring as a trigger return spring.

- a. True
- b. False

32. The KRICO rifle cocks when you...

- a. open the action.
- b. close the action.

Howa 1500

33. If the firing pin hole in the bolt face is too big in diameter and you begin to pierce primers or get flow back when firing the gun, what would be the best fix for this problem?

- a. TIG weld up the hole, making sure not to disrupt the heat treat in the outer edges of the bolt face and the locking lugs, drill a new firing pin hole to the correct diameter. The hole should be no larger than .070" and the firing pin should be .069" in diameter.
- b. You can drill and tap the firing pin hole and screw in a steel screw and drill a new firing pin hole to the correct diameter. The hole should be no larger than .070" and the firing pin should be .069" in diameter.
- c. You can use JB weld to decrease the diameter of the hole by filling the hole with JB Weld. Put release agent on the firing pin tip and reform the hole with the tip of the firing pin from the bolt face inward. This will allow the bolt face to be smooth.

34. Why does the bolt of a Howa 1500 lock up so that the front portion of the bolt goes into the barrel?

- a. It doesn't, as this would interfere with extraction and in turn ejection.
- b. This is the rifle's safety breeching.
- c. This is the 1500's unique primary extraction cam.
- d. This creates a floating chamber so that the powerful magnum cartridge cases do not get stuck in the chamber.

35. Is the Howa 1500 rifle a controlled or push feed gun?

- a. Control feed
- b. Push feed

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Remington 788

36. The Remington 788 has nine rear locking lugs.

- a. True
- b. False

Sako Finn Bear

37. What do you have to do to disassemble the firing pin assembly from the bolt body on a Sako Finnbear rifle?

- a. The bolt must be put in a vise so that you can pull the cocking piece back hard and turn it counter clock wise several full rotations to free the firing pin assembly.
- b. Simply unscrew the bolt head and the bolt shroud will slide off the front.
- c. Grasp the cocking piece and turn it clockwise to release the bolt assembly from the bolt body.

Browning X-Bolt

38. The X-Bolt utilizes a detachable rotary magazine.

- a. True
- b. False

39. What does the button on the bolt handle do?

- a. This is a second location for the safety. When the button is pushed and flush with the surface of the bolt handle, the safety is on and when the button is in the tactile out position, the safety is off and ready to fire.
- b. Other rifles utilize a three position safety. The X-bolt has a two position safety that enables the shooter to keep the safety on and push the button to operate the bolt and unload a live round from the chamber.
- c. The button is a manual extraction cam for stuck cases.
- d. This button releases the bolt handle from the bolt so that you can use different sized and shaped bolt handles.

40. The X-Bolt's Integrated Scope Mount System utilizes a total of how many screws to secure the scope and bases to the rifle?

- a. 2 screws
- b. 4 screws
- c. 8 screws
- d. 12 screws

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41. What is the little red tongue that sticks out the back of the gun do?

- a. It indicates that the safety is on. This way, when you are in the dark dusk or dawn hunting conditions, you can tell if the safety is on through touch. If you can feel or see the tongue, the safety is on.
- b. It is a visual and tactile cocking indicator. If you can see or feel the tongue, the gun is cocked and ready to fire.
- c. It is the bolt release.
- d. It is the decocking lever.

42. The firing pin assembly screws into the bolt body using a left-hand thread.

- a. True
- b. False

43. What is the little black knob found on the bolt body?

- a. The bolt guide
- b. This simple little device cleans the bolt raceway as long as you keep it lubricated with gun oil.
- c. In case there was a case blowout or pierced primer the gas will be funneled through the bolt body and this knob will pop out to vent the escaping gas away from the shooters face.
- d. It holds the cartridges down in the magazine when the gun is closed to prevent the bullet nose from feeding upward during recoil.

SAVAGE 99

44. The Savage 99 has a screw with a left-handed thread, which screw is it?

- a. The magazine retaining screw
- b. The rotor spindle
- c. The sear screw
- d. The stock screw

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45. The rotor does not turn freely on the spindle, what can be done to free it up? Choose the best three answers from below.

- 1) straighten the flange
- 2) straighten the rotor spindle
- 3) clean the magazine assembly
- 4) straighten the rotor
- 5) adjust the cartridge stop

a) 1, 2 and 3

b) 2, 3 and 4

c) 3, 4 and 5

d) 1, 2 and 5

e) 2, 4 and 5

46. Where is the ejector located?

- a. On the cartridge cut-off
- b. On the cartridge guide
- c. On the receiver
- d. On the bolt

47. Where is the cartridge stop located?

- a. On the right side of the receiver
- b. On the left side of the receiver
- c. On the top of the bolt
- d. Directly behind the bolt

48. After working on a Savage 99 with a tang safety, what must be done before pricing the job?

- a. Look up the price of the parts
- b. Test fire the gun
- c. Check the safety for false safe position
- d. Make sure the safety goes completely off

49. What is a common problem encountered when setting a Savage 99's barrel back?

- a. The barrels are hard to remove
- b. The threads in the receiver are sometimes tapered
- c. Sometimes the barrels are so hard they are difficult to re-chamber
- d. It's difficult to fit the extractor after setting the barrel back

50. The lever will pop open if the gun is jarred with the safety off. How can this be corrected?

- a. Bend the front of the lever assembly down a few thousandths of an inch
- b. Bend the front of the lever assembly up
- c. Put in a new detent spring
- d. Reshape the detent plunger

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51. A customer brings you a Savage 99 complaining of poor accuracy. The gun strings vertically and the barrel appears to be fine, how can you correct it?

- a. Re-bed the forearm
- b. Re-bed the buttstock
- c. Stress relieve the barrel
- d. Put a heat sink on the barrel

52. Why should you charge a little more than usual to drill and tap a Savage 99?

- a. The sides of the receiver are very thin
- b. One of the holes may be extremely hard to drill and tap
- c. The metal is so soft the screws pull out easily
- d. The receiver is so irregular that the bases always have to be modified

53. What is the prong in the top of the bolt face?

- a. The firing pin
- b. The ejector
- c. A cartridge guide
- d. A bolt guide

54. How much sear engagement is a minimum on an old style Savage 99?

- a. 1/16"
- b. 1/8"
- c. 1/32"
- d. 3/32"

55. What is the correct bedding for the buttstock?

- a. Epoxy bed at all points of contact
- b. Same as a. but with rear of top tang relieved
- c. Same as a. but with rear of lower tang relieved
- d. Same as a. but with rear of both tangs relieved

56. When removing the barrel, what two things must you do before putting on the action wrench?

- 1) remove the bolt
- 2) put a round metal plug in the receiver where the magazine was
- 3) put tape on the receiver to protect it from the action wrench
- 4) make sure the bolt is closed and the magazine is in place

- a) 1 and 2
- b) 1 and 3
- c) 2 and 4
- d) 3 and 4

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57. One of the nuts in a Savage 99 is staked in place; which one is it?

- a. The magazine retaining nut
- b. The forearm nut
- c. The sear nut
- d. The rotor spindle

58. What kind of safety is there to prevent the gun from firing before it is completely locked up?

- a. A loaded indicator safety
- b. A ridge on the lever
- c. A cam on the sear that prevents sear movement before the lever is closed
- d. The firing pin doesn't align with the primer until the bolt is completely locked

WINCHESTER 94

59. Who designed the Winchester 94?

- a. Henry Winchester
- b. Sam Colt
- c. John Browning
- d. Sharps

60. What do you do if an old Winchester '94 (pre 1940) comes in with a broken firing pin?

- a. Carve a new one from mild steel and case harden it
- b. Retip the old body
- c. Put in a new style firing pin
- d. a. or b. above

61. On a Winchester '94, how do you correct .050" headspace?

- a. Bush the chamber
- b. Move the locking block up
- c. Install a longer firing pin
- d. Set the barrel back

62. The gun comes in with .010" headspace; how would you probably correct it?

- a. Bush the chamber
- b. Move the locking block up
- c. Install a longer firing pin
- d. Set the barrel back

63. When does Winchester want the trigger safety to be functioning?

- a. Anytime the gun is loaded
- b. Anytime the trigger is not being squeezed
- c. Anytime the lever is not being squeezed
- d. Anytime the lever is being squeezed

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64. This Winchester 94 won't feed cartridges onto the carrier if worked slowly; instead the cartridges get under the carrier. If worked fast the gun usually functions normally. What causes this failure to feed onto the carrier?

- a. Carrier spring isn't pushing the carrier all the way down
- b. Bolt spring isn't pushing the carrier all the way down
- c. Cartridge stop is timed too late
- d. The carrier has too much lift

65. What's wrong with using 170 grain spire point ammunition in a '94?

- a. Develops too much pressure
- b. When the gun is fired the rounds in the magazine may go off
- c. They're too long to feed
- d. The barrel won't stabilize a bullet heavier than 150 grains

66. The two visible ways to tell a pre-1964, Winchester '94 from a post-1964 are: The pre-64 link is held in by a pin and the firing pin is retained by a pin. The post-64 has a larger finger lever pin stop screw and the cartridge guides are held in by screws from the outside.

- a. All are true
- b. Partially true

67. An old-style '94 is not feeding cartridges through the cartridge guides, but the carrier is staying up OK. What is probably causing the problem?

- a. Loose cartridge guide screws
- b. Cartridge guide screws screwed in too far
- c. Cartridge guide is reversed
- d. Cartridge guides have nothing to do with it

68. This Winchester '94 will not feed cartridges up through the cartridge guides. The carrier drops too quickly and the bolt overrides the rim. What is the cause of this problem?

- a. The carrier is going up way too high
- b. Carrier spring is not holding the carrier high enough
- c. The carrier is bent
- d. 180 grain bullets are too heavy to shoot in a .30-30 because the extra weight pushes the carrier down

69. What retracts the firing pin on a Winchester '94?

- a. Its spring
- b. The gas escaping from the pierced primer
- c. The lever
- d. The locking block

70. With the chamber loaded and the bolt closed, what acts as the cartridge stop?

- a. The front of the carrier
- b. The body of the bolt
- c. Combination of the spring cover and the finger lever
- d. The tab on the front of the link

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71. With the bolt open, what is acting as the secondary cartridge stop?

- a. The front of the carrier
- b. The body of the bolt
- c. Combination of the spring cover and the finger lever
- d. The tab on the front of the link

72. What will happen if the gun doesn't have at least .002" of headspace?

- a. It won't close
- b. It will be hard to open after firing
- c. It won't fire
- d. The firing pin will stick in the primer

73. What pulls the locking block down?

- a. The finger lever
- b. The bolt
- c. The link
- d. The carrier spring

74. The gun misfires; examination shows that the locking block is not going high enough for the firing pin in the locking block to align with the firing pin in the bolt. How would you correct this?

- a. Make a fatter front firing pin
- b. Bend the lever, tightening the headspace
- c. Increase the hammer spring strength
- d. Lengthen the front firing pin

75. When quoting a price on bluing a post-1964 Winchester '94, what must you take into account on your price quote?

- a. Cannot be rust blued
- b. Cannot be caustic blued by normal methods
- c. It has more surface area
- d. You must first remove the black chrome plating

Winchester 1873

76. What is the brass piece on the bottom of a Winchester 1873?

- a. The locking block
- b. The feed table
- c. The cartridge carrier
- d. The carrier latch

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77. The 1873 uses what type of locking system?

- a. Toggle lock system
- b. Tipping bolt locking system
- c. Rotating bolt locking system
- d. Roller lock system

78. When the 1873 is fired, all of the forces get channeled straight back with no downward force, which is what makes this locking system so strong.

- a. True
- b. False

79. What pushes the carrier up and down?

- a. The link
- b. The elevator
- c. The cam on the bottom of the bolt.
- d. The finger lever pushing on the carrier lever.

Martini

80. Why is the top of the breech block/bolt of the small Martini designed with a sweeping dished out shape?

- a. This helps the breech block to cool off faster, just like a fluted barrel.
- b. The shape aids in loading as well as helping the cartridge case to eject.
- c. This makes the rifle a lot lighter to carry.
- d. This allowed rain to drain off of the receiver and not into the action.

81. What forces the breech block/bolt to move up and down?

- a. the cocking piece
- b. the hump on the striker tail
- c. the cam on the front of the finger lever
- d. the spring-loaded sear dog

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Ruger #1

82. Similar to the Martini rifle, the Ruger #1 is a striker fired lever action rifle.

- a. True
- b. False

Ruger #3

83. What design feature greatly improves the Ruger #3's accuracy?

- a. The hanger system that the forend rests on free floats the barrel.
- b. The placement of the barrel band dampens harmonics.
- c. The shape of the stock greatly reduces barrel flip.
- d. The injection molded lands and grooves of the barrel.

84. A barrel setback would correct the problem of excessive headspace if it were to ever develop in a Ruger #3.

- a. True
- b. False

REMINGTON 740, 742 & 760

85. What is the nozzle on a Remington 742?

- a. The end of the barrel
- b. The piece that goes into the hole in the inertia block
- c. The part that squirts the bullet into the chamber
- d. The part that directs the gas into the piston

86. What is the orifice on a 742?

- a. It's the gas hole in the barrel
- b. It's the hole plugged by the ball bearing
- c. It's the hole the gas goes through on its way to the nozzle
- d. All of the above
- e. None of the above

87. How can you remove a stuck orifice ball on a 742?

- a. With a strong magnet
- b. Drill and tap it and pull it out
- c. TIG weld an electrode to it and pull it out
- d. Loosen its retaining screw 1/8th of a turn and fire the gun while aiming the ball in a safe direction

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88. As the bullet passes the orifice and gas starts coming out of the nozzle of a 742 it pushes the action bar sleeve, what does the barrel do?
- a. The gas block and barrel move forward and up, away from the inertia block
 - b. Nothing; the barrel is fixed in the receiver
 - c. The barrel unscrews slightly
 - d. Gets hot
89. How much upward pressure on the barrel should the action tube guard exert on a 760?
- a. 2-4 lbs.
 - b. 7-10 lbs.
 - c. None
 - d. Its tension is not critical
90. When mounting a scope on a 740 or 742, how should it be collimated?
- a. 6" low
 - b. 6" high
 - c. 14" high
 - d. Dead on
91. What must be done to the barrel assembly after bluing it but before installing it back into the receiver?
- a. Must be polished
 - b. Must be oiled
 - c. Must have the headspace checked
 - d. Must have the chamber polished
92. The gun shoots very inaccurately, yet the bore looks all right. What should you do next?
- a. Check the rifling twist
 - b. Check the stock bedding
 - c. Check for a loose barrel
 - d. Check for a defective scope
93. The barrel is tight and the gun still shoots inaccurately, which of the checks in Question 92 should you perform now?
- a. a. and b. in Q92.
 - b. b. and c. in Q92.
 - c. b. and d. in Q92.
 - d. If the above are correct, 3 point bed the barrel and epoxy bed the stock
94. How much clearance should there be between the action bar and the action bar lock on a 760 when the bolt is fully closed?
- a. 0-.010"
 - b. .010"-.020"
 - c. .020"-.050"
 - d. .040"-.080"

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95. At the instant that the bullet leaves the muzzle of a 742, how much has the bolt head moved?

- a. .004"
- b. None
- c. .050"
- d. Almost .125"

96. At the instant that the bullet leaves the muzzle, has the bolt carrier moved?

- a. Yes
- b. No

97. The bolt of the 742 is very hard to open using the operating handle, but is easy to open if the forend is removed and the action bar sleeve is pulled. What can cause this?

- a. The cam pins are broken
- b. The bolt is too tight in the carrier and the carrier is too tight to saddle
- c. The bolt is too tight in the carrier and the carrier is too loose to saddle
- d. The bolt is dirty

98. How would you cure the above problem?

- a. Replace the cam pins
- b. Loosen the saddle
- c. Tighten the saddle
- d. Clean the bolt assembly

99. The magazine of a 742 is as wide as it can be for the gun that you are fitting it into, but it is still too long. What would you do to make this magazine fit the gun?

- a. Squeeze the mag in a vise front to rear to make it shorter
- b. Replace the mag with one that will fit
- c. Machine out the front of the mag well
- d. File some off of the front of the trigger plate

100. What holds the extractor in place on a 742?

- a. Friction
- b. Rivet
- c. The ejector
- d. Two small pins

101. The bolt will not close on a cartridge unless it is closed hard on the cartridge. When it does close, it cuts a small piece of brass from the cartridge rim. What is causing this?

- a. Extractor is sticking out too far
- b. Extractor hook is too long
- c. Extractor hook is too sharp
- d. Extractor pins are sticking out too far

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102. Why won't a 742 in a .30-06 caliber extract reloads loaded with 4831 powder?

- a. 4831 powder creates too much breech pressure
- b. 4831 burns so dirty that it plugs the gas system
- c. 4831 burns so slowly that there's too much pressure at the gas orifice, causing the bolt to open too soon
- d. The powder burns so hot it fuses the case to the chamber walls

103. In a 742, how can you test to make sure it is a reload that is causing failure to extract?

- a. Polish the chamber and test fire again
- b. Open the nozzle and test fire again
- c. Shrink the nozzle and test fire again
- d. Test fire with a factory round

104. How can you lighten the trigger pull?

- 1) cut 2 coils off the sear spring
- 2) bump the sear spring
- 3) sand the outside of the sear spring down a little
- 4) cut down the hammer spring

a) 1 and 2

b) 2 and 3

c) 3 and 4

d) 1 and 4

105. Sometimes 760's develop a problem which prevents them from locking closed. The action bar lock does not lock behind the action bar. Give two things that will cause this.

- 1) the receiver plug tube plug has been screwed in too far
- 2) the cam pins are broken or bent
- 3) the forend nut has unscrewed some
- 4) the action bar lock has lengthened through use

a) 1 and 2

b) 2 and 3

c) 1 and 3

d) 3 and 4

106. Why did Remington start using a stock bearing plate?

- a. So they could save on stock wood
- b. To make the stocks less prone to breakage
- c. To keep dirt and wood chips out of the action
- d. To make the gun more accurate

Professional Gunsmithing Test: RIFLES

107. What will happen if you install a new stock without a bearing plate?

- a. It will break when the gun is fired
- b. The action will get dirty and quit functioning
- c. Nothing; it's not a needed part
- d. The length of pull will be 1/4" shorter

108. How can an oversize nozzle hole be corrected?

- a. Replace the nozzle
- b. Shrink the nozzle with a special tool
- c. Enlarge the orifice a corresponding amount
- d. Drill the correct size vent hole in the inertia piece

109. Which group of five answers are causes of short cycling in a 742:

- 1) bent action spring
- 2) bent action spring guide
- 3) dinged nozzle
- 4) too large of an orifice
- 5) bent action bars
- 6) tight cam pins
- 7) bent receiver
- 8) tight extractor
- 9) loose extractor
- 10) bent barrel

- a) 1, 2, 4, 5 and 6
- b) 2, 4, 5, 6 and 7
- c) 3, 4, 5, 6 and 7
- d) 1, 2, 3, 5 and 7
- e) 1, 3, 4, 6 and 7

110. What two things prevent a 740 or a 760 from firing before it is completely locked up?

- 1) the firing pin is shorter than the unlocked bolt assembly
- 2) the disconnecter
- 3) the firing pin blocking safety
- 4) the bolt lock

- a) 1 and 2
- b) 1 and 3
- c) 2 and 3
- d) 3 and 4

B.A.R.

111. When collimating a scope on a B.A.R. magnum, where do you put the scope crosshairs (i.e., how is it collimated)?

- a. Right on
- b. 6" low
- c. 6" high
- d. 14" high

Professional Gunsmithing Test: RIFLES

112. How is a tight piston removed?

- a. Take the regulator port off and shoot the gun
- b. Screw a slide hammer into the piston and pull it out
- c. Using a special pusher in conjunction with the inertia sleeve
- d. None of the above

113. How should the piston be cleaned?

- a. Sandblast it
- b. Wire brush it
- c. Gently washed in soapy water
- d. Never needs cleaning

114. What will happen if the regulator port gets loose?

- a. The gun will full-auto
- b. The gun will open too soon
- c. The gun will not close
- d. The gun will short-cycle

115. When installing the buttstock, what safety precaution should be taken?

- a. Always grease the threads of the stock bolt
- b. Always install the stock bearing plate
- c. Make sure the rubber buffer is in place
- d. None of the above

116. When should the buffer be replaced?

- a. Each time the gun is cleaned
- b. Every thousand rounds
- c. Whenever it looks old and tired
- d. When it changes from yellow to brown

117. How should the buttstock be bedded?

- a. Epoxy bedded on all contact points
- b. Epoxy bedded around the stock bolt head
- c. It's not important
- d. Hard against the trigger guard

118. The customer complains that sometimes the gun won't fire when the trigger is pulled. He says that if he will pull the trigger and then let it snap forward, it will usually fire on the next pull trigger. What is the problem?

- a. Too much clearance between the sear and the disconnecter
- b. Too much clearance between the trigger and the trigger plate
- c. Sear has too much engagement in the hammer notch
- d. Not enough clearance between the sear and the disconnecter

Professional Gunsmithing Test: RIFLES

119. A customer brings in his gun complaining that sometimes it won't fire, usually on the second or third round of a burst. The hammer falls but the firing pin either doesn't hit the primer hard enough or not at all. What could be the general cause for this?

- a. Fat ammunition
- b. Long ammunition
- c. Sticking piston
- d. Bolt is not closing completely
- e. All of the above
- f. None of the above

120. The customer says that his reloads will not work in his gun most of the time. The bolt will not close on them but if it does close he can't extract them by hand, although they will extract if fired. He is using his sizing die correctly. Probably, what is the problem?

- a. He needs a small base sizing die
- b. He needs a large base sizing die
- c. He needs a short sizing die
- d. He needs to trim his cases

121. On an older B.A.R, how should the front sight ramp be removed?

- a. Heated and knocked off
- b. Ground and filed off
- c. Unscrewed
- d. They cannot be removed

122. Why shouldn't you put the receiver of a B.A.R. in the vise?

- a. It will scratch it
- b. It will collapse it
- c. Too hard to remove the other parts when in the vise
- d. You'll break the bolt handle off

COLT AR-15

123. On a Colt AR-15, how does the gas system work?

- a. Pushes a piston into an inertia sleeve
- b. Pushes the bolt carrier back via a pushrod
- c. The gas goes into the bolt assembly and pushes the carrier away from the bolt
- d. Pushes the bolt assembly away from the barrel

124. What locks and unlocks the bolt?

- a. The cam pin and bolt carrier
- b. Hot flaming gases
- c. The cartridge case
- d. The firing pin

Professional Gunsmithing Test: RIFLES

125. What is a major disadvantage of the AR-15 gas system?

- a. Tends to leave the dirt in the bolt assembly
- b. Very sensitive to different loads
- c. Gas tube tends to plug up
- d. The seals tend to erode quickly

126. The gun short cycles using factory ammo, yet the gas hole is not plugged or undersized, the gas tube is not blocked, the bolt is not binding in the carrier, the carrier is not too tight in the receiver and the action spring is perfect. Which one of the following will not cause the gun to short cycle?

- a) the shooter isn't heavy enough to hold the gun firmly
- b) there is a misalignment between the hole in the front sight and the gas tube
- c) there is a misalignment between the hole in the barrel and the hole in the front sight
- d) the key is loose on the bolt carrier

127. What will happen if the disconnect doesn't hold the hammer with the trigger pulled? Choose two correct answers from below.

- 1) the gun might full-auto
- 2) the gun may feed the next round, but the hammer won't be cocked
- 3) the gun would blow up

- a) 1 and 2
- b) 1 and 3
- c) 2 and 3

128. The bolt tends to override the cartridges in the magazine. How might this be corrected?

- a. Raise the magazine in the receiver
- b. Open the front of the magazine lips a little
- c. Put more arch in the magazine spring so the rear is longer than the front
- d. All of the above
- e. None of the above

ROLLER LOCKING SYSTEMS

129. The locking system of the "roller lock" is a straight blowback, not a delayed blowback.

- a. True
- b. False

130. What actually delays the opening of the bolt?

- a. Spring compression
- b. The rotation of the locking lugs
- c. The energy required to accelerate the bolt carrier
- d. All of the above
- e. None of the above

Professional Gunsmithing Test: RIFLES

131. How would you correct headspace on a SIG-AMT or Heckler & Koch?

- a. Install larger rollers
- b. Install new seats
- c. a. and/or b. above
- d. Set the barrel back

132. Roller locked high power guns must have a fluted chamber _____.

- a. to allow easy extraction when there is dirt in the chamber
- b. to decrease chamber pressure with high velocity ammo
- c. so the case floats in the chamber when the bolt starts to open
- d. all of the above

133. Is there another way to achieve this floating case?

- a. Use plated cartridges
- b. Increase the amount of blowback
- c. Increase the diameter of the chamber
- d. Use greased cartridges

134. Explain why a roller lock system will cycle with a wide range of powder burning rates.

- a. It has less internal friction
- b. It has variable rate recoil springs
- c. The action is not dependent on a gas system. If the load develops enough energy the gun cycles
- d. a. and c. above

135. Why must roller locked guns have good, strong, well-fitted extractors?

- a. Because the cases tend to stick in the chamber
- b. Because the secondary extraction cycle is violent
- c. Centrifugal force tends to force the extractor away from the base rim
- d. Because they only have an extractor on one side

Winchester 100

136. After a Winchester 100 is fired, with remaining rounds in the magazine, what returns the bolt back into locked up position?

- a. One large action spring.
- b. Two right hand wound springs (so they do not get tangled up in one another).
- c. One right hand wound spring and a left hand wound spring
- d. a non-offset piston connected to a crank through a connecting rod.

Professional Gunsmithing Test: RIFLES

137. If the gas block on a Winchester 100's barrel was leaking gas from between the gas block and the barrel, causing the gun to short stroke, what would be the best way to correct this problem?

- a. Silver braze the connection between the gas block and the barrel to seal up the leaking gas.
- b. Stop down the gas regulator port and/or open up the gas hole from the barrel to the gas block.
- c. Thin the action springs on a band sander to reduce the resistance against the expanding gas in the gas system.
- d. drill lightening holes in non-stressed areas of the action bar assembly until the gun stops short cycling and call that good.

VZ-52

138. What must you do to get the push rod/sleeve off of a VZ-52?

- a. The bolt must be locked to the rear.
- b. The bolt must be held partially open.
- c. The bolt must be all of the way forward and locked up.
- d. The trigger must be pulled and held rearward.

139. The VZ-52 utilizes what type of locking system?

- a. Tipping bolt locking system
- b. Rotating bolt locking system
- c. Toggle lock
- d. Roller lock system

140. The VZ-52 locking system has how many locking surfaces?

- a. 2
- b. 4
- c. 6
- d. 8

Hi-Point Carbine

141. Four hex head bolts hold the top cover on to the Hi-Point Carbine. The two long bolts are the rear bolts and the two short bolts are for the front.

- a. True
- b. False

Professional Gunsmithing Test: RIFLES

142. The Hi-Point Carbine...

- a. is a simple roller lock gun.
- b. is an inexpensive cam lock carbine.
- c. is a short-piston gas operated carbine.
- d. utilizes a direct blowback action.

SKS

143. The SKS is a gas operated, semi-automatic, Soviet/Russian rifle designed by Sergei Gavrilovich Simonov and is chambered for the 7.62 x 39mm cartridge.

- a. True
- b. False

144. What does the push rod of an SKS rifle push on to move the bolt rearward?

- a. The bolt itself
- b. The bolt carrier
- c. The gas key
- d. The gas piston

145. The safety on an SKS must be in what position to take the trigger group out of the gun?

- a. The safety on position
- b. The safety off position
- c. In between the off and on position
- d. It does not matter what position the safety is in as long as the gun is unloaded.

146. After the push rod begins to move the bolt assembly rearward, what part of the bolt assembly moves rearward a short distance before the other parts move rearward?

- a. The bolt moves rearward first.
- b. The bolt carrier moves rearward first.
- c. The bolt and bolt carrier move rearward at the same time and for the same distance as well.

Professional Gunsmithing Test: RIFLES

Tavor

147. What might happen if you release the sear from the hammer of a Tavor with the fire control system out of the stock?

- a. The sear spring will fly out from the housing and shoot across the room.
- b. There is no way to trip the sear to release the hammer once the fire control housing is out of the stock.
- c. The hammer will release with enough force to crack the housing if the hammer is not supported and eased down.
- d. Once the hammer is released, if not eased down, the mainspring and strut will violently fly out of the housing.

148. What direction does the trigger bar and the U-shaped sear connector move when you pull the trigger on a Tavor?

- a. They both move forward.
- b. They both move rearward.
- c. The trigger bar moves forward and the sear connector moves rearward.
- d. The trigger bar moves rearward and the sear connector moves forward.

149. If a customer brought in a Tavor rifle that was disassembled and he wanted it put back together for a left handed shooter, what would you have to be sure of?

- a. You would have to be sure that the iron sights were set up for a lefty.
- b. You would have to make sure that the trigger and trigger bar was set up for left handed shooting.
- c. You would have to adjust the butt stock and the comb of the stock for a left handed shooter.
- d. Make sure that the extractor is on the left-hand side of the gun.
- e. answers b and c

150. What is the condition of Tavor face?

- a. It is the look of joy on the shooters face after shooting a Tavor firearm.
- b. This is when the shooter receives a blast of gas in the face after shooting the Tavor.
- c. This is the face that is made by a person on the receiving end of a Tavor's projectile.
- d. This is a condition in which the bolt face and a feeding round create a jam that is hard to clear.

Professional Gunsmithing Test: RIFLES

FN FAL

151. The FAL is a reliable Battle rifle that can launch grenades as long as the gas is channeled through the gas piston system and not strictly through the barrel.

- a. True
- b. False

152. When you turn the gas regulator sleeve, it opens and closes a gas hole. If you were shooting really hot loads, how would you want to regulate the gas and why? (Choose the best answer from below).

- a. You wouldn't want any of that gas to escape from that little hole, so you would want the hole to be completely closed so that it won't short cycle.
- b. You need as much gas coming out of that little hole. The hole should be completely open so that it won't short cycle.
- c. You wouldn't want any of that gas to escape from that little hole, so you would want the hole to be completely closed so that it will still cycle the bolt. The gun will not get beat up or excessively dirty.
- d. You need as much gas coming out of that little hole, so the hole should be completely open. This way you won't beat the gun and make it excessively dirty.

Ruger SR-556

153. The direct impingement SR-556 is Ruger's contribution to the AR-15 platform. A standard gas tube and gas key design with the addition of a gas regulator is what the gas system uses to cycle the bolt.

- a. True
- b. False