



C & B REVOLVERS & CONVERSIONS PUT TO THE TEST

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Round-up, Endurance Test, and the Drag of German Gun Regulations!

Part 1

Drums from the old Heimatland: If the steady growth in the number of enthusiastic participants in Cowboy Action Shooting™ type matches is an indicator in Germany, our sport grows stronger every year—despite tight gun regulations here on the Eastern banks of the big pond. This growth has given rise to many questions about Cap and Ball (C&B) revolver performance and their conversions versus the Colt SAA and its clones.

“Are open top type pistols robust enough for Cowboy Action Shoot-

ing™ competition?” “Can the various makes and models of C&B revolvers stand up to the demands of a fast paced Cowboy Action Shooting™ match?” To answer these questions some German pards in Hofheim and Wiesbaden have tested different types of modern percussion revolvers and their conversions for robustness and accuracy under “match” conditions.

Although German shooters still represent the majority at their open State and National shoots, the steady flow of friendly competitors from surrounding countries and also a few American cowboys and

cowgirls is a much appreciated challenge and adds to the attraction. This sweet trend pleases our gun dealers and the officers of the (BDS) Bund Deutscher Sportschützen alike. This increase in shooters of both genders at the official matches is only one example of the growing interest in our sport with a cowboy and Indian flair and lots of Spirit of the Game. To mention just a few major matches, there are the National Championship—“Philippsburg Star”, the “German Territorial Roundup,” plus numerous State and Regional shoots. At last year’s four-day German cham-



Don't go to the shoot-out with a C&B revolver ...

pionship, 244 cowboys and cowgirls happily and enthusiastically engaged 12 stages of targets in three

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different Categories—namely 1870, which roughly equals the SASS Frontiersman Category (13 shooters); 1880, which is similar to Classic Cowboy (46 shooters); and the huge balance of 185 contestants in 1890, which is very much like the SASS age-based categories.

Cowboy matches in Germany are to be organized under the BDS-Western-Schießen umbrella. The rules applied are very similar to the SASS Handbook but have been “Germanized” somewhat to be sanctioned in this country.

Trend lines and the law

This positive development nourished the idea among the authors—members of the FROCS, the Friends Of the Centaure Society in the German Rhine—Main Heartland with a much needed back-up from Lubbock, TX—to round-up all the percussion revolvers they could lay their hands on and evaluate their usefulness for Cowboy Action in an assault course of abuse tests to determine their reliability, accuracy, and other important parameters against a stringent, standardized test program during the winter of 2011/2012. Cap & Ball revolvers are often the entrance level revolvers in Germany due to the stringent gun regulations. The government makes it easier to get a license to purchase and own a front-stuffer compared to a breech-loading revolver.

For the record, the testing and the analysis of the data was executed with professionalism, although we cannot rule out some of the test results being interpreted with our rose-colored FROCS shooting glasses firmly sitting on our noses!

Let’s elaborate on the gun laws a bit more: Once

1. you are member with an official gun club for
2. at least 12 months during which you have
3. attended some 18 trainings or shoots, have
4. successfully completed an official multiple choice test on gun handling, ballistics, subject laws, and proved yourself in some target shooting, plus
5. a further theoretical and practical test organized by the BDS to prove you know and understand safety issues related to cowboy guns, the respective regulations, and can shoot a stage safely ... you are issued your BDS Star and are ready to cowboy up!

Some field research and forum discussions during the summer and fall of 2011 indicated the majority

of the 1870 competitors (Frontiersman Category) shoot .44 caliber clones of Colt Army 1860 or Remington New Model 1863 Army revolvers of different makers and production ranging from as early as the 1960s.

Only few shooters seem to prefer the easy handling Colt Navy models and even less shoot their stages with gentleman loads in heavy weight horse pistols of Colt Walker or Dragoon fame. Unfortunately, they are rare sightings at our Western matches. The same applies to replicas of the Rogers & Spencer, Starr SA 1863, or the mighty LeMat—they are more the exception than the rule.



2 ... when you can have a Colt Long Cylinder Conversion: pictures “liberated” from 2011 SciFi-Western *Cowboys & Aliens*.

Based on these findings the authors focused their practical tests on clones of the Colt 1860 Army and Remington New Model 1863 Army. We evaluated pistols “out of the box” and more or less tuned C&B revolvers. Specific tuning methods were documented, and their relevance in Cowboy Action Shooting™ analyzed.

During a 2nd step of the program, conversions of the aforementioned percussion revolvers and the Colt Open Top Model 1871-72 from Italian replica makers were evaluated as well as a few custom made conversions from conversion artists.

We felt there were unexpected trends to be discovered in this category of pistols, too ... which we did find.

- Hard core 1870/Frontiersman Category shooters tend to shoot in their percussion revolver cat-



3 Magic Joe puts the Centaure Richards to the test with the true powder ...

egory for years and years—German Championship 2007 10 contestants, 13 in 2011. On the other hand, a number of C&B revolver shooters will retire their revolvers after one or two years to wall hanger status once they have obtained the more difficult to get license to purchase and own a pair of breech loading revolvers. But, they will set their heart not only on the

- common modern SA-look-alikes—Ruger Vaqueros for the 1890/age based category—minimum caliber .38!—or the
- time-honored Colt Single Action Armies and their clones from various makers, S&W Schofields, Russians, or Armies from the Uberti Remington M1875 or M1890 stable, for the 1880/Classic Cowboy Category in “.40 Plus” caliber. Since 2007 the number of starters grew by a whopping 35% to 46% in 2011!
- A small but steadily growing group of cowboys and cowgirls alike strives for historical correctness, not only in the outfits, BUT insist on Period Correct revolvers, too. They wish to shoot the special, the unique, but similar revolvers to their previous percussion irons. They shoot conversions or Open Tops because they know it was these revolvers that were carried to tame the Wild Wild West, not the Colt SAAs of Hollywood!



4 Socks with Colt Open Top (left) and Magic Joe with Centaure (right) blazing away!

Recognizing this development, the BDS Hesse State division not only considered the suggestions of a few eager conversion shooters but will be launching the new “1875 Conversions Category” at the Open State Championship April 21, 2012 in Philippsburg. For the first time, conversion aficionados can shoot in their own category and will be evaluated separately. Spirit of the Game provides for this opportunity. Now they can shoot under competi-

tive conditions. Up to now they had to shoot in the 1880 category ... where their chances were limited because their favourite revolvers were just technically inferior compared to the SAAs, et al. We will elaborate more about the particular charm but also the inherent flaws of conversions and Open Tops further down in the test section.

A new breed of cowboys and cowgirls enters the scene: These days many German Cowboy Action Shooting™ beginners get into the game bored with a shooting association offering static shooting only. He or she is generally in the middle to senior age brackets and was brought up with Bonanza, Karl May movies, Spaghetti Westerns, John Wayne, and Clint Eastwood. They usually have decades of solid shooting sports or hunting experience, own one or two percussion revolvers, mostly Italian clones of the Remington New Model Army or Rogers & Spencer. These solid frame revolvers feature highly visible rear sights cut into the top strap and are the preferred shooting irons in bulls-eye competition at 25 meters.



5 Bumble Bee – “Cowboying keeps you young at heart!”

Although quite a number of our beginners also have an 1860 clone in their safe, possibly even a Centaure or 2nd generation Colt, they shy away from shooting it. Why? Because they have problems aligning the front sight with this funny little notch on the hammer, or they just don’t trust the connection of barrel and frame with a wedge, but without a top strap. These open top type revolvers have a reputation of being less robust than the competition with the solid frame. This assumption is wrong, as we will see.

The Practical Test

Preparations: Between November 2011 and February 2012 a (Continued on page 36)

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(Continued from page 35)

total of

- 21 percussion revolvers in .44 caliber and
- 16 conversions and Open Tops were evaluated: 14 in .44 or .45 cal. and at the suggestion of a cowboy from the German southwest, and as outsiders, two revolvers in .38 Special were also entered into the race.



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Velocity measurements: only the true powder was used for C&B revolvers, but smokeless and blackpowder cartridges were used for the conversions and Open Tops.

conversions in its possession, but not all the important models made by the replica industry. When Dr. Waldemar Gorzawski of HEGE company, an importer and distributor for Uberti, learned of our troubles, he made an offer: "... Grab whatever conversions and Open Tops you need from my new gun inventory – have them on loan but send them back cleaned once you are done with your evaluations!" ... which we could not refuse and picked five new in the box Ubertis. They are the conversions and Open Tops with the red flag fixed to the trigger guard in the pictures. Suspicious cowboys and cowgirls please note: These five revolvers had to go through the same tortures as our own guns. Just for the record, they were not specially selected or prepared for the test!

As a "wanted" poster, important profile data of all revolvers evaluated were examined, measured, and documented: manufacturer, serial number, model as applicable, caliber, year of production or proof testing, barrel length, width of cylinder gap, rifling groove and chamber diameter, and the "mileage" if possible.



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Loading up for the test ...

Like the revolvers, the loads used were assessed and documented. To achieve some methodical comparability between 1860, 1863, and 1865 type C&B revolvers, external loading presses were used for loading the standard 18 grains of CH2 or Wano PP. After the chamber diameter measurements were taken, commercially available round balls were loaded over grits or coffee powder. The balls used

had a nominal diameter of .004 in. larger than the chamber diameter.

Loads in the cartridges charged with smokeless or blackpowder were standardized as well and adjusted so the BDS MIP of 112.5

C&B revolver	Load 1 (L1)	Load 2 (L2)	Load 3 (L3)	Load 4 (L4)	Load 5 (L5)
Round ball weight (gr)	138	138	141	141	141
Round ball dia	.451	.451	.454	.454	.454
Blackpowder type	CH2	Wano PP	Wano PP	CH2	CH2
Blackpowder load (gr)	18	18	18	45	55
Filler type	grits	coffee	coffee	wad	wad
Cap maker	Remington	BWE	BWE	BWE	BWE
Cap type	Nr. 10	Nr. 1075	Nr. 1075	Nr. 1075	Nr. 1075
Loading press	external loading press	external loading press	external loading press	loading lever	loading lever
MIP (BDS)* range	91.8-110.7	72.2-95.1	74.9	148.8	176.1

*** evaluated revolvers. Loads #1 to #3 were used in 1860, 1863, and 1865 clones, #4 in Dragoon, #5 in Walker.**

could be safely achieved in all .44 and .45 cal. breechloaders.

Bullets for smokeless and blackpowder ammunition were the same. In our reloads we used the commercially available RNFP or

Conversion/OT	.38 Spec. 1 (L1)	.44 Cal. 2 (L2)	.44 Cal. 3 (L3)	.45 Cal. 4 (L4)
Smokeless loads	inside lubed	inside lubed	inside lubed	inside lubed
Case maker	various	Starline	Starline	various
Bullet	SWC	RNFP	RNFP	RNFP
Bullet dia	.358"	.429"	.429"	.452"
Bullet lube	unknown	unknown	Blue Lube	unknown
Powder maker	Swedia	Swedia	Hoppla	Austrade
Powder type	NS10	NS10	Claga	Solo 1300
Powder load (gr)	3.5	4.2	4.5	5.8
Bullet weight (gr)	155	260	260	260
Primer maker	CCI	Federal	Mosses	CCI
Primer type	small pistol	large pistol	large pistol	large pistol
Crimp	roll	roll	roll	roll
MIP (BDS)* range	114.9-159.3	120.5-141.8	135.1-143.8	181.5-193.5

***evaluated revolvers**

SWC type with a hardness of 16 Brunel. They had lube rings of regular widths. No special bullets with extra wide lube rings were used for the blackpowder loads.

Test protocol: Prior to all practical shooting tests we made sure all visible screws, wedges (Colt clones) and front sights (!) on the

Conversion/OT	.38 Spec. 1 (L1)	.44 Cal. 2 (L2)	.44 Cal. 3 (L3)	.45 Cal. 4 (L4)
Blackpowder loads	inside lubed	inside lubed	inside lubed	inside lubed
Case maker	Winchester	Starline	Starline	CHC
Bullet	RNFP	RNFP	RNFP	RNFP
Bullet dia	.367"	.429"	.429"	.452"
Bullet lube	Blue Lube	Blue Lube	Blue Lube	Blue Lube
Powder maker	Swiss	Swiss	Swiss	Swiss
Powder type	2	4	4	2
Powder load (gr)	18	28	18.5	28
Bullet weight (gr)	135	260	260	260
Primer maker	Federal	Mosses	Mosses	Mosses
Primer type	small pistol	large pistol	large pistol	large pistol
Crimp	roll	roll	roll	roll
MIP (BDS)* range	124.3-136.7	157.5-169.3	156.3-156.3	200.8-210.3

***evaluated revolvers**

revolvers to be fired were firmly and securely fixed.

- percussion revolver was to be loaded and fired with six strings of five shots for a total of 30 shots, but through every
- conversion or Open Top, six strings of five rounds with smokeless, plus six strings of five rounds with blackpowder cartridges were to be shot.

The test was organized in such a way the breechloaders were fired with smokeless rounds first, fol-

lowed by the blackpowder cartridges, without cleaning between strings. In the exceptional case that we had to start with blackpowder cartridges, the revolver in question was completely disassembled and cleaned before starting with the smokeless rounds.

Shooting took place at the indoor range of the SV Hofheim (www.svhofheim.de) and at the open range of the Wiesbadener Schützengesellschaft (www.wsg-ev.de). Temperatures were between -5° C (23° F) and 10° C (50° F).

Six stages or 30 rounds per revolver are about a day's worth of shots fired at a typical Cowboy Action Shooting™

match. Powder residue could be wiped off the revolvers after every string. Further thorough cleaning was not allowed because there would be no time for such procedures between the stages at a match, either.

All revolvers were fired Duellist style. This is the regular stance in the 1870 and 1880 Categories. Cocking, aiming, and firing was to be done as quickly as possible, no pausing between shots. After each string, impressions, observations, and remarks of shooter and spotter were noted, plus possible

issues, problems, or incidents documented.

"Jams" during a string, like lost caps or cap fragments in the actions, or cartridges failing to fire, cocking/cylinder turning issues, would be taken care of with caps, cartridges, or tools carried on the body of the shooter. If the failure

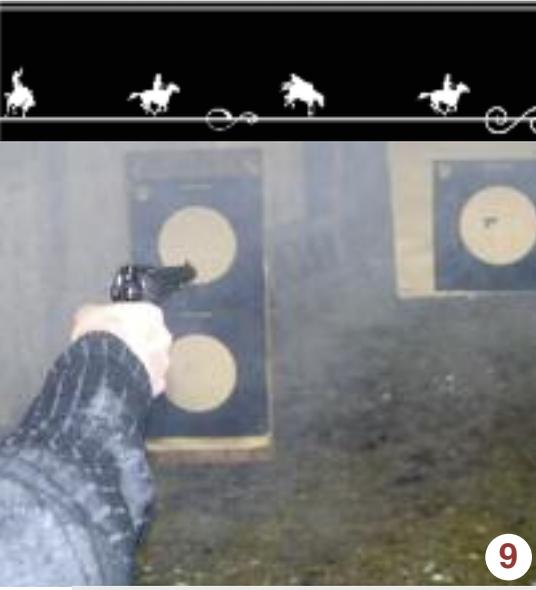
could not be cured at the firing line, the revolver was withdrawn from the test and the issue was documented.

Shooting blackpowder fast and repeatedly through a revolver will heat it up quickly. Therefore, a gun was given a rest between strings to cool for at least five minutes before it was reloaded again.

Such a precaution was unnecessary during the smokeless strings.

During the 1st and 6th string, BDS Cowboy targets were to be engaged at a distance of five meters using a uniform center POA. The objective here was to document accuracy at typical Cowboy Action Shooting™ distances, but also to assess if a change in POI or the spread of the hits after a couple of strings can be expected.

Velocity for the MIP calculation was then measured during the



the Colt Army 1860 clones:

- Larger grip,
- Ergonomically designed geometry of grip and hammer for easy, fast, and reliable cocking, aiming, and firing,
- Less affected by blackpowder fouling compared to solid frame revolvers.
- The pistol will hit what the front sight is aimed at ... with the caveat the arbor is bottomed out and a front sight of appropriate height is installed
- The small rear sight on the hammer or on the top of the barrel of Open Tops or Long Cylinder Conversions are not considered critical.
- Tuning and replacement parts are usually easily available from the wide assortment of Colt-SAA customs parts.

Italian disease: More than 50 years after Aldo Uberti assembled the first open top type Italian per-

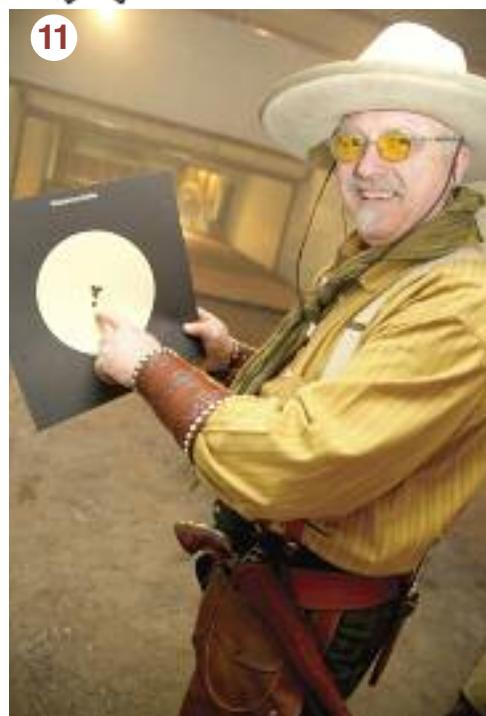


Checking out the length of the arbors in Italian Colts ... this one is too short!

cussion Colts, their arbors are still cut too short, or the counter bearing in the barrel lug is bored too deep. Unless this ailment is corrected, the width of the cylinder gap changes in line with the depth the wedge as it is pushed into the barrel lug. These guns will have no reproducible POI, and sooner or later malfunctions from fouling on the barrel side of the cylinder and/or contact with the barrel cone will eventually make cocking the piece impossible.

Steel: A growing number of cowboys and cowgirls purchase the Belgian Centaures for the 1870 Category or as base guns for custom conversions because of the harder steel used in their making. Unfortunately, since 1973 they are no longer made, but some pre-owned specimens still seem to trickle to the market regularly.

Accuracy: All revolvers evaluated in our test were sufficiently accurate at typical Cowboy Action Shooting™ distances. Provided, of course, the shooter behind the gun does his or her job. We did not find a change worth mentioning in the



European champion in the Classic Cowboy Category, Socks, is happy with the accuracy of his Uberti Open Tops.

POI or the pattern of the hits between the 1st and 6th string. Due to their PC front sights, most Italian clones and US "made" new issues connected a bit high, but mostly around 12 o'clock.

Wear and tear parts: The factory installed leaf type trigger/bolt spring, the leaf spring of the hand, and the bolt stop of both Colt and Rem-

ington systems will break eventually. According to Murphy's Law in the middle of the match when you least need it. The recommendation here for non-purists is to exchange the trigger/bolt spring for a piano wire spring, which is almost unbreakable. These springs are available as after market parts.

A Ruger type plunger and coil spring assembly to replace the leaf spring of the hand can be installed by a gunsmith familiar with SA systems.

From time to time one of the bolt stop legs can break. Having a



Wire instead of leaf spring.

replacement part fitted in, ready for installation, in one's box of exchange parts is prudent.

Lubrication agents: MoS2 is an often-used gun cleaning agent, preservative, and lube for moving gun parts. One of the authors is using nothing but this as a spray since the 1970s.

However, to lube revolvers to be fired with blackpowder, we found it



Lubricating agents that proved themselves in our test (clockwise from left): WD-40 (WD-40 Company Zweigniederlassung Deutschland/Bad Homburg), PTFE Trenn Gel (TEFLON-Paste: HEGE/Messkirch), Vaseline (Drogerie), HP .357 Hubertus Waffen-Top-Pflege (Friedrich & Hubertus Hofmann/Burghaun)

not suitable! Shooting blackpowder makes the MoS2 film turn goeey. The cylinder pin and cylinder begin binding together during the first strings fired. Cocking is eventually no longer possible.

Lubes made from Vaseline like HP .357 work very well for percus-



Centaur conversion: application of Vaseline to the arbor before shooting blackpowder cartridges.

sion revolvers and conversions alike when blackpowder loads are used. It should be applied generously to arbor AND the chamber mouths on top of the bullets. Teflon paste, likewise, was a problem solver in our test, and WD-40 can be used as universal lube with blackpowder as well. We consider US reports of discoloration of the blueing after application of WD-40 anecdotal. However, the European formula of WD-40 might differ from the one used in the USA.

Part 2 of this story to be continued ...

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second string. Strings 3, 4, and 5 were fired into the barrier as quickly as possible.

Observations and Remarks on the Revolvers in the Test

Favourite revolvers: Our market research prior to the practical test regarding which type of percussion revolver is actually being used in the sport indicated 80% of the shooters favour Colt Army 1860 type clones over Remington New Model Armies in the 1870 Category. Hard core Remington shooters do not switch over to Colts and vice versa.

Percussion Revolvers	"open top" frame	"solid top" frame	Total
Armi San Paolo 1860/1863/1865	1	2	3
2nd gen Colt 1860	1	-	1
3rd gen Colt Dragoon/Walker	2	-	2
E.N. Santa Barbara 1863	-	3	3
Euraarma 1860/1863	1	1	2
FAUL 1860	3	-	3
Uberti 1860/1863	4	3	7
Subtotal	12	9	21
Conversions /Open-Tops			
Custom FAUL 1860	4	-	4
Custom Uberti 1863	-	2	2
Uberti .36 SP 1861/1863	1	1	2
Uberti .44/45 1860/1863/1871	7	1	8
Subtotal	12	4	16
Total	24	13	37

For the sake of the exercise we assumed this trend line to be about the same when it comes to conversions and Open Tops.

In our test we could evaluate 24 Colt clones, 12 Remingtons, and 1 Rogers & Spencer as an outsider.

While solid frame revolvers rule the bulls-eye competition, this is not the case in Cowboy Action Shooting™. Bulls-eye contestants successful with their Rogers & Spencers refused this model in Cowboy Action Shooting™ after in-depth trials!

Here are a couple of reasons given by shooters why they prefer