HELLO all Iowa Black Powder Federation Members and all other Black Powder Shooters reading this article. My name is Roger Eichelberger, President of the IBPF. I first met Bill Cook 5 years ago at the Iowa Games held in Ames. He came to watch and ask questions, but really he was checking out how good the other shooters were and if he could compete. Bill has now been shooting at the Iowa Games for the past 3 years. Bill may not be the ”Top Dog”, but at 83 years of age he landed all 5 shots on paper at 100 yards. I asked Bill to write an article about himself and muzzle loading. Bill has hand rifled several muzzle loaders. Last September I spent a Saturday afternoon at his house looking over his equipment which he has mostly built himself. I know you will enjoy his article and hope that we will all continue shooting no matter what our age.

A LIFE TIME OF MUZZLE LOADING

WILLIAM (BILL) J. COOK

JULY 28, 2012

I have been interested in muzzle loaders nearly all the 83 years of my life. It all started with my grandfather’s muzzle loading rifle which my father had when I was a child. He never shot it, but my brothers and I played with it until one day Dad said “you kids are going to wreck that gun” and he gave it to my adult cousin for safe keeping. It’s still in the family, although another family member has it now.

I always remembered that gun and as a kid I always wanted a good ML rifle but couldn’t afford one. After high school and working in an auto engine rebuilding shop, I had enough money to afford one; a 36 Cal percussion lock rifle. It never did shoot well. In the early days of deer hunting in Iowa, I bought a 45 Cal barrel from Dixie Gun Works, removed the 36 Cal barrel from the rifle and installed in its place the 45 Cal barrel. I shot several deer with that 45 Cal. I then installed the 36 Cal barrel on another old muzzle loading rifle for which the barrel was no good. The 36 Cal then shot very well, illustrating how much difference solid mounting of the barrel makes in accuracy.

Along the way I acquired a very plain 36 Cal ‘Tennessee” muzzle loading rifle with a very heavy long barrel,. The rifling was only fair in it, and I vowed that before I died I would re-rifle the barrel. (Somewhat of an odd vow.) My brother was a machinist by trade so I had a good source of knowledge in calling him. I also had a fair knowledge of machining my self, so I was ready to take on the task of rifling when I retired in 2002 from 45 years in the Mechanical Engineering Department at Iowa State University.

I must give credit to Mark Wagner and his book “*Hand Rifling a Muzzle Loading Rifle at Home”* for the basics for a do-it-your-selfer.
The rifling rig that I built requires access to a lathe, drill press, and a milling machine. I have a small combination lathe-milling machine which will do 90% of the necessary machining. The rig consists of a long flat steel channel (clamped to a table) over twice the

length of the barrel to be rifled. The barrel is bolted to the channel by means of wooden 'cradles' (made of oak), one near the muzzle and one near the breech. The first step is to bore out the old rifling and pits and ream the bore smooth, the size determined on the caliber desired and on the diameter at which no pits remain. Next is the tough part. The boring tool, as common twist drill attached to a long rod and driven by an electric drill must have a pilot on the drill to guide the drill through the old bore. Grinding the drill down to the old-bore size to form an inch-long pilot is not difficult, but hand grinding of the cutting edge at the transition from the pilot to drill diameter is. Once the barrel has been bored, it is reamed with an expanding reamer and polished, and is ready for rifling.

The rifling rig after boring the barrel consists of the same steel channel with the barrel clamp in place, an approximately 6 inch 'float' that just slides through the new bore, a long twisted mild-steel ¼ rod with an indexing mechanism and a swivel handle (made of a bicycle peddle), all properly supported by oak blocks. The rod is twisted in the following way. One end of say a 5 ft length of the rod is clamped securely in a large vice and a wrench with a long handle extension is applied across the ¼ inch flats at the other end. The initially straight rod is twisted about its axis by turning the wrench (clockwise or counter clockwise) leaving a uniform 'twist' in the rod at the desired twist for the rifling, say 1 turn in 48 inches. (Twisting beyond the final point is required because of 'spring-back' in the rod. Also, the use of a ¼ inch rod and twisting it in the manner described was not my idea, but it works well to obtain a uniform spiral.)

A groove 3/16 X 1½ inches X the rifling width is milled axially in the float centered at half the float length to accept the rifling cutter. The cutter, ground from an old file (not heat treated) has three teeth in the shape of an inverted V. The float is solidly attached at one end of the twisted rod and the swivel handle attached to the other end. The indexing mechanism consists and element with a ¼ by ¼ hole in it through which passes the twisted rod and a means of indexing the element to positions corresponding to each of the rifle grooves to be cut in the barrel. I typically have used 8 with a groove width of 0.010 inches for 45 Cal. The rod-float assembly is drawn through the barrel with think sheets of paper used to position the cutter radially outward such that a small shaving is removed from the barrel. This may take several trips through the barrel without changing the cutter setting before the float moves freely. Next, the indexing mechanism is moved to the next position and the cutting process in repeated, not changing the cutter height, until all indexing positions have been visited. Next, the cutter is raised by additional paper shims beneath it and another small amount is removed for each rifling groove. There process is repeated until the desired depth of rifling is reached. I use 0.008 to 0.010 inch for rifling depth. The process takes many trips through the bore and requires lots of lubricant (cutting oil) and lots of time.

I have rifled several rifle and pistol barrels in this manner and they all shoot fairly well. I am blessed with good sight and have hunted deer with them and have enjoyed them

immensely. I have shot in the Iowa Games Muzzle Loading shoot the last three years.

What happened to the rifling project I vowed to complete before I died? Well, after thinking about it, I decided not to re-rifle the Tennessee rifle. After realizing the process the builder must have gone through with largely wooden components of this rifling rig, in respect to his efforts, I decided to leave it as original.

Bill Cook
IBPF Member
Ames, Iowa

2012 BLACK POWDER SCORES FROM IOWA GAMES
***IBPF Member**

Black Powder Hand Gun Male 46 and Over

Place	Name	Town	Score
1st	Darrel Gideon*	Des Moines	94
2nd	Jim Ritsch*	Dexter	73
3rd	Ron Sells*	Dinsdale	71
4th	Roger Eichelberger*	Palmer	70
5th	Chris Donald	Altoona	30

Black Powder Handgun Women 21 and Over

1st Place	Sue Gordon*	Jewell, IA	51

Black Powder Rifle Coed Open

1st	Jim Ritsch*	Dexter	110
2nd	Ron Sells*	Dinsdale	97
3rd	Dave Gordon*	Jewell	20

Black Powder Rifle Coed

1st	Mike Compton*	Jefferson	118
2nd	Bradley Richardson	Council Bluffs	114
3rd	Russ Keltner	Alden	101
4th	Tom Mowrer*	Ogden	91
5th	Randolph Patten	Council Bluffs	89
6th	Steve Ugoini	Polk City	82
7th	Gordon Sievers	Slater	76

Black Powder Rifle Male 46 to 59

1st	Mike Compton*	Jefferson	111
2nd	Bradley Richardson	Council Bluffs	103
3rd	Roger Eichelberger*	Palmer	88
4th	Roger Norgren	Rippey	82
5th	Rick Mentzer, Jr.*	Waubeek	75

Black Powder Rifle Male 60 and Over

1st	Darrell Gideon*	Des Moines	109
2nd	Tom Mowrer*	Ogden	101
3rd	Russ Keltner	Alden	95
4th	Gordon Sievers	Slater	82
5th	Bill Cook*	Ames	52

Black Powder Rifle Women 19 and Over

1st	Sue Gordon*	Jewell	94