The 17 Caliber – Redux

By Richard E. Cundiff

So you want a 17 caliber wildcat? This is what you will need to start your project. Front: finish chambering reamer by Dan Green, 0.196" outside diameter neck. Back row, left to right: neck reaming die with reamer; No. 1 and No. 2 form dies; No. 3 form and trim die; full-length sizer die; and bullet seating die. All dies are RCBS.

From left: 223 Remington; 17 Remington; 17-223 Ackley; and author's 17 BMT (Better Mouse Trap).

During the last few months of the 20th century there were many prognosticators, seers, prophets, etc., forecasting nothing but doom and gloom and total destruction of planet earth during the onset of Y2K, or the 21st century as referred to by purists.

Granted, there was a very surprising and unprecedented attack on U.S. soil one year and nine months later, but to the shooters and hunters of our country, we were introduced to some wondrous products from the firearms and ammunition industry. One of these wonders was the Hornady 17 HMR, of which to date a record number of rounds have been sold ... more than any other cartridge in history.

Speaking of history, I thought it would be of interest to readers of **The VARMINT HUNTER Magazine®** to see an update of the "amazing 17 caliber," as P.O. Ackley described it. Further, I'll include information from my forty-five years of shooting enjoyment and frustration with the little mighty mite.

The idea of a subcaliber actually began during the first half of the 19th century. A Swiss gunsmith by the name of Flobert, who was living in France

From left: 221 Remington Fireball and case; 17 Mach IV; and 14-221 Walker for comparison.

From left: 222 Remington; author's 222 CLC; 17-222; 17 RCBS; author's 17 CLD; and 17 Javelina.

From left: 22 PPC; 17 PPC; 27-grain boat-tail bullet; and 17 caliber 37-grain VLD bullet.

at the time, designed a small rimfire cartridge using only the priming compound as the propellant. Originally in 6mm caliber, the little case was "wildcatted" to 4mm. A 172 caliber projectile is 4.32 millimeters. These sometimes elegant little rifles made up for the 4mm rimfire cartridge were known as Schutzens and used primarily for indoor parlor entertainment at ranges up to 10 meters. They also were known to be very accurate for the period.

The subcaliber was first noted in the United States during the early 1920s. Alton J. Jones of Portland, Oregon, was known to have necked down the 22 long rifle to 12 caliber, and later a 14 caliber round on the 5.5 Velo Dog case, a small centerfire pistol round used by bicyclists to ward off dog attacks. Jones also made his own 17 caliber cases from large brass wood screws, and was known to have made rifle barrels from truck axles. Quite a talented man, I would say.

Around 1943, Charles O'Neil of O.K.H. rifle and wildcat fame came up with the idea of a 17 caliber rifle and cartridge, along with making some tooling. But World War II put the project on hold for a few years. At the end of the war the project was revived by the legendary wildcatter P.O. Ackley and some of his cohorts. The first of many 17 caliber wildcats to come down the pike was the 17 Peewee, or 17-30 Carbine as it is sometimes referred to. Ackley made his first 17 caliber bullets from annealed copper wire swaged in an arbor press. The bullets, crude by today's standards, also used a hollow-point tip and were very accurate and deadly on small game.

Although I had known of the 17 caliber since 1958, following the introduction of P.O. Ackley's *Handbook for Shooters & Reloaders*, it wasn't until 1961 that one was in my gun rack. At the time my family and I were living at Lake Tahoe, California, and there was a sporting goods store located nearby called The Outdoorsman. I did some gun work for their gun department, such as minor repairs, mounting scopes, stock work and checkering, and recoil pads. The man behind the counter and I were about the same age and had become friends over time. One day I was picking up some work and he said he had started a project he couldn't finish and asked if I would be interested in it for $60. This was a lot of money to a young family man in those days.

I was able to work out the cost with my labor charge. My box of goodies included a small BSA Martini Cadet single-shot action, barreled in 17 Ackley Bee by Ackley himself using an experimental eight-groove barrel in a medium heavy contour, 1:10" twist. Also included was a semishaped Fajen Aristocrat two-piece stock in a very nice piece of American black walnut. In a few weeks I had myself a very respectable single-shot varmint rifle, that up until then I had only read and dreamed about. Somewhere along the line I also had procured an excellent Litschert 8x target scope.

Loading for my first 17 caliber rifle was very simple, as per P.O. Ackley: fill the case with DuPont 4198, scrape off excess at the case mouth, and seat a bullet which will create a compressed load giving a velocity of 3,550 fps to a 20- or 25-grain projectile.

Speaking of 17-caliber bullets that were available during the 1960 era, the choice was very limited, to say the least. R.B. Sisk, Iowa Park, Texas, was well-known for his 22-caliber bullets during this period. He began making 17-caliber bullets in 20-, 25-, and 30-grain weights as the demand grew. These bullets looked as good as any on the market at the time but, in my humble opinion, they did not shoot worth a hoot. This accuracy problem was because of non-concentric jackets, which has been the bane of many 17 caliber shooters over the years. Other bullet makers of note in those early years were Ted Smith of S.A.S., Lee Baker from Southern California, and some of the best the author has ever used, those from the Walker Machine Tool Co., Louisville, Kentucky. It wasn't until the debut of the 17 Remington in 1971 that we of the subcalibers were offered a suitable projectile. Those purveyors of note were Hornady, Walt Berger, Fred Woods, and others who used J4 jackets and superb bullet-making dies from experts in this field. Remington Arms also offered an excellent projectile to the shooters of that time period.

Ed Shilen of Ennis, Texas, not only made 17-caliber bullets but some of the finest stainless steel match barrels and triggers the author has used over a period of forty years. Bullets, barrels, and bedding (the three B's) and triggers constitute the formula for a superbly accurate varmint rifle, or whatever type rifle that readers may shoot.

In the late 1950s and early '60s there were only a few barrel makers with tooling to make tubes as small as 0.168" by 0.172" lands and grooves. Those of note were the godfather of wildcatting, Parker O. Ackley, Salt Lake City, Utah, and A&M Gunshop, Prescott, Arizona. Both of these barrel makers used the cut rifling method, one groove at a time. Ackley was known to have discarded four out of five barrels for various reasons during manufacture. This same scenario also was taking place in the A&M shop, and Bill Atkinson (now the shop foreman for the Ruger pistol plant in Prescott) told me in 1977 that they actually made only a few 17 caliber barrels, finally giving it up because of the attrition rate. Even Remington Arms made poor 17 caliber barrels in the early 1970s when they introduced the 17 Remington cartridge. It wasn't until G.R. Douglas and Co. designed the button rifling method that things got much better for 17 shooters.

In 1971 Remington changed the

entire world of the 17 caliber by offering factory rifles, ammunition, brass, and bullets to those shooters who were so inclined. Things finally began to look promising for the future of one of the most controversial calibers in firearms history, but it took another thirty-two years before the general shooting public accepted the 17 as a legitimate varmint buster and not just a whimsical pellet gun shooting jacketed hollow-point bullets. Of course, I'm referring to the interval between the 17 Remington and the 17 Hornady Magnum Rimfire, of which 148,000,000 rounds were sold in 2003! It seems as though handloading is becoming passé.

The following is a compilation of data gathered by me during almost a half century with the 17 calibers, based on available basic brass and others, and is not meant to be a reloading manual. If someone had the interest, money, time, and equipment to test the new "high energy" propellants we have today, I'm sure many of these loads could be improved upon, as many of the 17 caliber wildcats are more than fifty years old.

An Overview of the 17 Caliber Wildcats

Almost fifty years ago the guru of modern wildcatting commented in his *Handbook for Shooters & Reloaders* that, "A cartridge containing more than 25 grains of powder was impractical for a 17 caliber wildcat." Eight years later he wrote that the 222 Remington Magnum using 28.5 grains of powder had gained quite a bit of velocity. On the other hand, the 22-250 and 50-caliber machine gun cases seem somewhat ridiculous.

The 222 family of cartridges with a body diameter of 0.375" probably is the most popular case in use today for the 17 caliber wildcats. The following is for historical purposes only and loads shown are only for comparison.

12, 14, and 17 Alton Jones Wildcats

These are the first known subcaliber cartridges to have originated in the United States in the 1920s. There are no known "pet loads" available, but it is known that DuPont #80, a very quick burning propellant of that era, was used with cast and jacketed bullets of various weights. The centerfire cases were made from large brass wood screws.

W.A. Eichelberger Subcalibers

I can remember reading a want ad in the *American Rifleman* years ago from the man in King of Prussia, Pennsylvania, and there is no treatise on the subcaliber wildcats that would be complete without his mention. His cartridges were based on the 22 long rifle case, including 10 caliber, 12 caliber, 14 caliber, 17 caliber, and 20 caliber. For more information on these and other Eichelberger cartridges, please refer to *Cartridges of The World, 11th Edition*.

17 Peewee or 17-30 Carbine

This was the first (1945) of many 17-caliber wildcats to come from the house of Ackley. This case was chosen because he had made up a small bolt action which was exactly right for the Carbine cartridge. Loading is similar to the 17 Ackley Bee.

13.5 grains 4198, 20-grain bullet, 3,450 fps

12.0 grains 4198, 25-grain bullet, 3,120 fps

17 Landis Woodsman

Landis was a noted Canadian writer during the 1950s. He wrote several books on rifles and varmint hunting. Two of his most famous works are *Twenty Two Caliber Varmint Rifles* and *Woodchucks and Woodchuck Rifles*. The 17 Woodsman is based on the 25-20 Winchester single-shot case, which also is the parent for another famous 22 caliber wildcat, the 2-R Lovell, which was popular before the advent of the 222 Remington in 1950. Some impressive velocities are noted with the 17 Woodsman, but cases have not been available for many years.

16.5 grains 3031, 25-grain bullet, 3,450 fps

17 Ackley Bee

This was my first 17 caliber experience. P.O. Ackley replaced the 17 Peewee with the 17 Bee because of the lack of suitable actions for the Carbine case. It is a highly efficient little case and produces relatively high velocities for its capacity.

11 grains 4227, 20-grain bullet, 3,845 fps

12.5 grains RL 7, 25-grain bullet, 3,650 fps

14.5 grains 4198, 25-grain bullet, 3,550 fps

17 Ackley Hornet

I probably will get a scolding from my fellow senior citizens, 65 years or older, on this one ... but the 22 Hornet has never been a favorite of mine simply because of its very weak, antiquated case which has not been improved upon since the 1930s. Sorry guys. If you're a die-hard fan of the Hornet, the 17 Ackley version is your baby. Some loss of cases may occur during fireforming, but the 17 Hornet is a good one for single-shot rifle fans and exhibits decent ballistics for its size.

11 grains 4227, 20-grain bullet, 3,500 fps

12 grains 4198, 25-grain bullet, 3,485 fps

222 Remington and family

The introduction of the 222 Remington in 1950 resulted in the development of many other excellent cartridges based on the 0.375" size case head. The 222 Remington Magnum, the 223 Remington, the 221 Remington Fireball in 1962, and more recently, the RWS 5.6x50mm Magnum. Without a doubt, this case head size has been the basis for more 17 caliber wildcats than any other in use today.

17 Mach IV

The 17 Mach IV was designed by Vern O'Brien, Las Vegas, Nevada, in 1962. It simply is the 221 Remington Fireball necked down to 17 caliber, us-

ing a 30-degree shoulder. While I was writing this article I received an e-mail from editor John Anderson telling me that Remington Arms had sent him a press release stating they were introducing a new rifle cartridge based on their 221 Fireball necked down to 17 caliber. Aptly named the 17 Remington Fireball, it is their version of our most popular 17 caliber wildcat with minor changes from the original design in some areas. John and I both asked: "What took them so long?" I firmly believe the overwhelming popularity of the 17 HMR had something to do with it, as the 17 Remington never was a huge seller. Like many wildcats of any caliber, the typewriter or word processor may speak louder than a chronograph. Some shooters who load for the 17 Mach IV are claiming 4,000 fps and over with a 25-grain bullet. I am a little skeptical about these results but I guess it brings on a lot of oohs and aahs.

18.5 grains H335, 25-grain bullet, 3,575 fps

18.5 grains H322, 25-grain bullet, 3,890 fps

Some of our popular powders have been around since the late 1920s and the early 1930s. Most of these powders have long granules and can be difficult to load into the small 17-caliber case neck. With the advent of ball powder and H322, this becomes less of a problem and also may produce better ballistics.

17 Javelina

Designed by Paul Marquart of A&M Gunshop, Prescott, Arizona, in 1958, this was my second 17-caliber project, and came to fruition in 1964. Based on the Sako L-461 action, Ackley barrel with 1:10" twist, and a very unusual piece of Oregon myrtle wood for the "California" style stock. This rifle was the first of many that I made up in the 1960s and '70s.

If you readers have not had a lot of experience with the making of wildcat cases, I would not recommend this one. In today's world, case forming dies are very expensive and many steps are involved to make a single case. I still have my RCBS dies from 1966 and have enough knowledge of the 17 Javelina that I do not need to change to another similar round, but I might change my mind when the newly announced 17 Remington Fireball becomes available. A&M's "pet load" was 18.6 grains of 3031, which launched the 25-grain Sisk bullet at 3,850 fps. Since the 1960s, ball powders and small-grain extruded powders, like H322, have changed the world of the subcalibers dramatically. With the introduction of the so-called high energy propellants, loading for the 17 caliber becomes more interesting.

When I started competitive bench rest shooting in 1975, the powder of choice was H322 in the PPC cases, and also in my 6x47 with 68-grain Remington match bullets. Since those days H322 and variations have been my choice for a number of varmint cartridges I load for, including: the 222 Remington, 223 Remington, 22 and 6mm PPC, 17 Ackley Bee, and 17 Javelina, as noted.

19 grains H322, 23.5-grain bullet, 3,760 fps

18.7 grains H322, 25-grain bullet, 3,680 fps

My last 17 Javelina rifle was built in 1997 using a Sako L-461 action, Douglas 1:10" twist stainless match barrel, Lee Six Shilen Pattern varmint stock, and a 6.5-20x Leupold scope. This rifle was stolen along with several others in 2003 while I was away on business.

17-222 Remington and others

Since it was introduced to the world in 1950, the 222 Remington has been one of the most popular varmint cartridges on our planet. It also became the basis for many 17 caliber wildcats — short, medium, and long. The standard 17-222 is relatively easy to make by necking down the case with no other change. Variations usually are just a change in shoulder angle and body taper, to whatever suits the designer's fancy. They all use a similar powder charge, within a few grains, and therefore exhibit the same ballistics within a few percent.

17.2 grains H4198, 25-grain bullet, 3,601 fps

21 grains H335, 25-grain bullet, 3,740 fps

These loads are maximum per *Hodgdon Data Manual No. 25*. Some improved designs of the 17-222 might be able to use a grain or so more of a medium burning powder. One intrinsic problem with any 17 caliber cartridge is that the slightest increase in the powder charge will raise pressures dramatically, and forget the old axiom of half-grain increments when working up a load.

17-222 Magnum

The late editor of *Rifle* and *Handloader* magazines, Dave Wolfe, has been credited with this one, although I believe there were others using the same idea at the same time. The rules of expansion ratio dictates how much and what types of powder can be efficiently burned in a 0.172" diameter bore, regardless of what length barrel is used. The 17-222 Magnum is about optimum for this caliber and will produce some nice gains in velocity. This was another 17 wildcat that was popular in the 1960s, as it was easy to form and produced good ballistics.

25 grains 3031, 20-grain bullet, 4,484 fps

24 grains 4320, 25-grain bullet, 4,050 fps

17-223 Remington

For those enamored with using surplus military brass, this is the one for you. Most of those who have worked with this design push the shoulder back to create a longer neck length and sharper shoulder angle. One example has a 30-degree shoulder.

22 grains 4198, 25-grain bullet, 3,995 fps

24.5 grains H335, 25-grain bullet,

3,870 fps

For some unknown reason this one never has been popular.

17 Remington

Remington Arms Co. introduced their 17 Remington cartridge in 1971, using the excellent 700 BDL bolt-action platform. Even though chambered in one of the best rifles in firearms history, the 17 Remington never was a big hit. There were several reasons why, including barrels were just plain lousy and would foul so badly after fifteen or twenty shots the bullets would either come apart or keyhole on the target at 100 yards. I had a firearms license at the time and was lucky to get the second BDL rifle in 17 Remington that was delivered to the West Coast. Although there were several die-hard fans, I being one, the 17 Remington was not one of America's favorite cartridges. It was, however, very popular in Australia with the fur hunters. The reason for this is that when shooting a coyote-size animal there is a very small entrance hole but a lot of internal damage, as I'm sure many of our readers are aware of.

With the advent of button and hammer forged barrel rifling, things have become much better for us of the subcaliber persuasion. Of course, we also have to thank the bullet makers for their expertise. I have used the 17 Remington for more than 30 years and have some "pet" loads of my own.

Rifle: Custom Remington 700; Shilen No. 5 1/2 taper, 1:10" twist, 24" barrel; Shilen 12-oz trigger; H-S Precision stock; Bausch & Lomb 6-24x44mm scope with 1/4 minute dot.

26.5 grains H414, 27-grain Simonson rebated boat-tail bullet, 3,780 fps

25.5 grains AA-2520, 23.5-grain Harwood boat-tail bullet, 3,895 fps

A classic load is 24.5 grains of 4320, 25-grain bullet, 3,900 fps.

Although I shot some "wallet size" groups with the 27-grain Simonson bullets and H414, this rifle never was a consistent tack driver. Occasionally I designed a few improved cases but some changes in my life kept me from proceeding with any further experimentation. They looked good on paper, though. In my view, they may have been a little better than the 17 Remington.

17-5.6x50 RWS

Several years ago I was writing for another specialty gun magazine. Before leaving the staff I had announced that I was going to write a book on wildcat cartridges, a subject that had not been updated for several years. I also had asked the readership to submit any new ideas they might have, along with a sample case. Because of some unforeseen circumstances, I never was able to fulfill my intentions.

One interesting wildcat was sent to me by Paul Zollinger, Sterling, Ohio. This is what he named the 17x50mm Improved, based on the 5.6x50 RWS case.

32 grains WW 760, 30-grain Hammet bullet, 4,064 fps

32.5 grains 4350, 30-grain Hammet bullet, 4,073 fps

33.5 grains H4831, 30-grain Hammet bullet, 4,042 fps

Mr. Zollinger shot several half-inch groups at 100 yards at these velocities.

17-PPC

This is a relatively new design sent to me by Bob Simonson of Kalamazoo, Michigan. He's a noted carbide bullet die maker, specializing in the VLD designs of William B. Davis Jr., known for his expertise in this field. No known loads were available as of this writing. I have a sample case with a 37-grain, moly-coated, boat-tail, VLD bullet.

I realize there probably are many more 17-caliber wildcats out in the world of the subcalibers, but those I listed here are ones that are familiar to me.

I would like to add a few notes here on components. Not long after the 222 Remington was announced in 1950 there were some incidents with pierced primers. Shortly thereafter "Big Green" introduced the 7 1/2 small rifle primer. Since then, this primer has been the top choice for all my handloads requiring a small rifle primer, except for my bench rest guns. In these I use the Federal 205, the choice of most competitors.

Sometimes there are variations in many surplus powders with the same number. One of these is H335. Some of the early batches have a deterrent coating that not only is hard to ignite but leaves a stubborn residue in the bore after an extended series of shots, and becomes difficult at times to remove by conventional methods. The tradeoff is excellent accuracy with less barrel erosion, but this powder should be used only for top loads, still using the "working up" method. "The hotter the better" does not always apply to accuracy handloads, but with ball powder this saying probably will apply, within reasonable parameters.

Some rumors have been floating around that the new 20 calibers eventually will supersede the 17 caliber, but I believe there is enough interest in these calibers that both will be around for years to come. And what if there were a legitimate 14 caliber to run with the big dogs?

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