



VIHTAVUORI

The Power of Accuracy

RELOADING
For Centerfire Cartridges
GUIDE 2020

THE POWER OF ACCURACY

For almost a hundred years, Vihtavuori powders have formed the heart of many of the world's most renowned cartridges. Reloaders know they can trust in Vihtavuori powder's performance and uniform high quality – cartridge after cartridge – to create a perfect product for successful shooting. When choosing Vihtavuori powders you know your ammo is up to the task, even in the toughest conditions.

Go ahead, take Vihtavuori and make the perfect shot.



Clean burning

Our use of only the finest of raw materials is a renowned characteristic of all Vihtavuori powders. We take great pride in producing a very pure and clean burning powder which allows longer shooting sessions between cleanings. The clean-burning characteristics of our powders result in greatly reduced carbon build-up and powder fouling, ultimately giving longer barrel life.

Decoppering agent

After extensive testing and development, we've begun adding a decoppering agent to all of our powders. This additive deters the adhesion and build-up of copper fouling in the bore. Excessive jacket material fouling is a well-known and established cause of accuracy loss. This fouling must be removed from time to time to keep a rifle performing at its peak potential. Our new decoppering agent prevents much of this fouling from building up in the first place, greatly prolonging your shooting sessions, and extending barrel life.

Temperature stable

Temperature stability in powders has always been a consideration, but with the recent improvements in Long Range shooting, it has become a factor of major concern to shooters. Firing at long ranges places greater demands on ammo, equipment and the shooter himself. Enabling a shooter to meet these demands means refining the process, and eliminating those variables which reduce hit probability. The production of increasingly temperature insensitive propellants allows for greatly reduced Extreme Spreads and Standard Deviation, which translates directly to less vertical dispersion on target.

Lot-to-lot consistency

Smokeless propellants are an organic compound of many closely monitored base materials. Every production run must be closely matched to very specific standards regarding grain geometry, chemistry and performance as compared to previous runs of that propellant. This demanding process requires constant testing, verification and adjustment to ensure that each run is perfectly compatible with those before and after. This is a guiding principle of our production philosophy. We require extreme accuracy and quality at every step of our production process.



PREMIUM N100 POWDERS

The N100 series powders are primarily rifle powders with different burning rates to optimize your loads.

N165

N165 is a very slow burning powder, making it a superior choice for the same range of cartridges as our N160 when using heavier bullets. Delivering slightly higher velocities with these projectiles makes N165 a wise choice when long-range performance is the goal. It delivers superb accuracy with heavy bullets in calibers ranging from 6,5x55 SE all the way to .416 Rigby, and is a top choice for the .338 Lapua Magnum.

N110

Our fastest burning powder suitable for small rifle cartridges such as the .22 Hornet and .30 Carbine, but also well suited to many of the more powerful Magnum handgun rounds. It is particularly applicable for the .44 Rem Magnum, .454 Casull, .500 S&W Mag and similar high-performance revolver cartridges.

N120

A well-balanced powder specifically for some of the intermediate cases such as the .300 Blackout and 7.62x39. It operates best at a somewhat higher pressure than the faster N110, and gives good results in a variety of the small to mid-capacity cases such as the .221 Rem. Fireball and .30-30 Win.

N130

A fast-burning rifle powder well suited to both small cases like the .22 calibers and 6 mm PPCs, and large straight-walled cases such as the .45-70 Govt and .458 Win Mag. N130 is also an excellent choice for lighter bullets in such cartridges as the .222 and .223 Rems. Exceptional accuracy combined with the benefits of our anti-coppering technology.

N133

The preferred choice of most leading benchrest competitors and standard rifle shooters, and the powder used to set an incredible number of the current benchrest rifle records. Ideally suited to the 6mm PPC, but it's also versatile enough to serve in a wide variety of cartridges. Especially where a relatively fast-burning powder is called for, ranging from the .222 Rem to the .45-70 Govt.

N135

N135 is a relatively fast powder that delivers outstanding accuracy, velocity and consistent performance. An excellent choice for .308 Win loads with bullet weight less than 155 grains. Well suited to cartridges like the 6 mm BR Norma, .222 and .223 Rem, as well as large straight-walled cases such as the .458 Win. Mag.

N140

An incredibly versatile powder, well suited to a wide range of cartridges and bullet weights. From the .223 Rem with heavy bullets, to full sized powerhouses like the .375 H&H Magnum, our N140 is an ideal choice. Giving good velocities, clean performance and exceptional stability, this is the standard go-to powder for a wide variety of cases.

N150

Our N150 is a slow burning powder, well suited to most common mid-sized cartridges when used with heavier bullets in accuracy and hunting loads. An excellent choice for 185-220 grain bullets in the .30-06, 140-160 grain bullets in the 6.5x55, and 175-200 grain bullets in the .308 Win. Great for 6.5 Creedmoor. Combining Vihtavuori's latest decoppering technology and enhanced temperature stability, N150 is a tremendously versatile powder.

N160

A slow-burning powder well suited to a broad range of Magnums, and large capacity/small bore cartridges like the 6.5-284 Norma. It is an ideal combination when used with the 270 Win, .25-06 Rem and a variety of belted Magnums, and it is great for 6.5 Creedmoor as well. An excellent choice for lighter to mid-weight bullets in these cartridges, N160 is temperature stable and exceptionally clean burning.

N170

Our slowest burning N100 series powder, recommended for the very large capacity cases such as the .300 Weatherby Mag. and the .300 Rem Ultra Mag. Good performances in most of the belted Magnum cartridges. N170 is one of the slowest canister-grade powders readily available from any manufacturer.

24N41 / 20N29

Vihtavuori offers two powders specifically for the .50 BMG case; 24N41 and 20N29. These are single-based treated powders, having very large grain size and extremely slow burning rates ideally suited to the .50 BMG. They also have some application in a few other very large capacity cases, such as the .338 Lapua Magnum and the .30-378 Weatherby Magnums. Of the two, 24N41 is slightly faster than 20N29, with renewed relative burning rates 39 for the 24N41 and 36 for the 20N29, when N110 is given the index 100.

Strict quality acceptance limits have helped reloaders and cartridge manufacturers to achieve similar loads regardless of the production lot for almost 100 years.

PREMIUM N300 HANDGUN POWDERS

N310

N310 is an extremely fast-burning pistol powder, ideally suited to light, target type loads. It gives outstanding accuracy in a wide range of cartridges from the .32 S&W Long to the .45 ACP wadcutter loadings. Clean burning, consistent and easy to load, N310 is the top choice for the competitive Bullseye pistol shooter.

N320

A fast-burning powder for use in light to mid-range target loads, in cartridges ranging from the 9 mm and .38 Special, up to the .44 Special and .45 ACP. Capable of producing higher velocities at acceptable pressures than our N310, N320 provides the handloader a bit more versatility at the loading bench.

N32C (TIN STAR)

This is a specialized powder intended to provide low bulk density for cartridges that were originally designed for Cowboy Action Shooters shooting lead bullets with single-action revolvers and lever-action rifles. The use of more conventional powder results in poor load density, and fails to adequately fill the case. Our N32C corrects this problem, and is ideally suited to many of the older cartridges used in Cowboy Action shooting, such as the .38 Special, .44 Special and .45 Colt.

N330

N330 provides a wide range of latitude for the handgun shooter, serving well for everything from light target to heavier high-velocity loadings. This is a versatile powder suitable for an exceptionally broad range of applications, especially designed for 9 mm Luger but also suitable for .38 Special, .40 S&W, .44 S&W Special and .45 Colt.

The N300 series powders are ideal for handgun and shotgun loads.

N105 SUPER MAGNUM

N105 Super Magnum is our slowest burning pistol powder, intended for the most powerful handgun cartridges in use today, particularly with heavy bullets and/or large case volume. Many of these specialized rounds operate at rifle pressures. Delivering this type of performance is precisely what prompted the development of N105. For such powerhouses as the .454 Casull or .500 S&W, N105 is an excellent powder choice.

N340

A flexible powder that serves well in medium to heavy high-velocity loadings. N340 is a good performer in high intensity rounds like the .357 and .44 Magnums, the 40 S&W and the .357 SIG cartridges.

N350

Our N350 is the slowest in the N300 series of handgun powders, and is ideal for very heavy loadings, and top end velocities and energies from a broad range of pistol and revolver cartridges. It is very well suited to loading powerful rounds for example in calibers 9 mm Luger, 10 mm AUTO and .45 ACP.

3N37

Originally developed as a powder for loading .22 rimfire cartridges, 3N37 has a burn rate very similar to N350, and can be used for many of the same applications. As handgun shooters began to experiment with 3N37, they found that this fine-grained powder loaded evenly through a measure and gave excellent results from a range of competitive cartridges used for USPSA and IPSC shooting.

3N38

The 3N38 is a specialized powder designed specifically for competitive handgun shooting with high-velocity loads in the 9mm and .40 S&W cartridges. A relatively slow-burning powder, 3N38 is a perfect choice for making Major with good accuracy and the clean-burning characteristics for which Vihtavuori is renowned.

PREMIUM **N500** HIGH ENERGY POWDERS



The N500 series of Vihtavuori propellants provide the utmost in performance for added velocity and range with heavy bullets. Nitroglycerine has been added to the traditional single base powder to get better energy content. The series offers seven different reloading powders with different burning rates.

N530

The fastest of our N500 High Energy series, N530 is an ideal for many of the smaller bottlenecked cases like the .223/5.56, or large straight-walled cases such as the .45-70 Springfield. It is also a useful powder for medium capacity cases like the .308 Win, when using lighter weight bullets of 155 grains or less.

N540

N540 is a mid-range powder in the N500 series, and an excellent choice for cartridges running from the .223/5.56mm, .308 Win and .30-06 Springfield with appropriate bullet weights. This is also a great powder for 6.5x47 Lapua and 6.5 Creedmoor as well as the .223 when using heavy bullets from 69 to 82 grains. It is exceptionally clean-burning and delivers outstanding accuracy.

N550

A slower burning powder very well suited to a wide range of medium to large cartridges, especially with heavier bullet weights. An ideal fit for many of the 30 caliber magnums with lighter bullets, but useful across a wide range of bore sizes. Particularly well matched to heavy bullet loadings in the 6.5x55 and .30-06 Springfield cartridges.

NEW! N555

Vihtavuori's N555 rifle powder is designed for precision rifle platforms chambered in cartridges such as 6mm & 6.5 Creedmoor, .284 Winchester, .260 Remington, .30-06 Springfield, and for rifle calibers with large case volume and comparatively small bullet diameters, among others. Competitive shooters and hunters will benefit from its insensitivity in extreme weather conditions. N555 is the most temperature stable powder in its class, and features unprecedented performance in the 6.5 Creedmoor. It includes an anti-fouling agent that minimizes barrel fouling to extend the length of your competitive shooting stages. Its unmatched lot-to-lot consistency also eliminates costly range time re-developing your favorite loads.

N560

A very slow-burning powder for large, magnum style cases, particularly when heavy bullets and high velocities are required. A perfect selection for the .270 Win, 7 mm Remington or Weatherby Magnums, .300 Winchester, RUM or Weatherby Magnums. A very good choice for the .338 Lapua Magnum when using lighter bullets of 250 grains or less.

N565

A new N500 series powder developed specially for the 250 gr bullet weight loads in .338 Lapua Magnum. N565 roughly splits the difference in burn-rate between N560 and N570, but is a bit closer to N570. It will cover many of the same cartridges and bullets as the first two, but allows the loader another option in fine tuning a load to the perfect combination. While N565 was tailored specifically for military sniping applications, it also has a wide range of sporting uses, particularly within long range shooting. The N565 will prove to be an ideal choice for calibers such as the 7mm Rem Magnum, the .30-06, .300 Win Mag, .300 Norma Mag as well as the .338 Norma Mag.

N570

The slowest burning member of the N500 line, N570 is the perfect choice for those tasks requiring heavy bullets and the largest capacity cases. Its burn rate is very close to that of our N170, but will generally provide a bit more velocity in the same cartridges, and using the same bullet weights. The burn-rate characteristics of N570 allow it to deliver the very best possible performance from such cartridges as the 6.5x284, .300 Rem Ultra Mag, and .338 Lapua Magnum.



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PREFACE

Dear Vihtavuori customer,

The new Vihtavuori Reloading Guide 2020 is an updated version of the previous Vihtavuori Reloading Guides.

The contents of this updated issue has been revised with loading data for the following calibers:

Centerfire rifle

New calibers: 6mm Creedmoor, .284 Winchester

Updated data: .223 Rem., 6.5 Creedmoor, .308 Winchester, .30-06 Springfield, .300 Norma Mag., 7.62x39, 8x57IS

Centerfire handgun

Updated data: 9mm Luger, .38 Special, .357 Magnum

The now published new rifle and pistol reloading data is expanding and revising the powder selection for existing bullets.

As a courtesy to the reloader the load tables contain notes of compressed loads and loads to fill the case up. For flexible usage this guide features data in metric and imperial dimension systems i.e. charge weight in grams and grains as well as muzzle velocity in meters and feet per second. This reloading guide also includes the accuracy loads noted in the load tables. These loads utilize worldwide well-known Lapua cartridge components and are factory tested either for even pressure / muzzle velocity and accuracy. These loads are highlighted in the load tables with dark grey shadowing.

All the loads in this guide are pressure tested according to the C.I.P. method. The maximum loads given in the tables are determined according to the C.I.P. and SAAMI maximum pressure specifications. The listed maximum loads should never be exceeded. Due to the differences in the cartridge components, individual weapons, shooting temperatures etc., always start developing your load by using the starting load according to the loading data. If there is no indication of the starting load, use 15 % lower charge than the listed maximum load as your starting load.

The Vihtavuori powders are manufactured by Nammo Vihtavuori Oy at the Vihtavuori plants. Sales and marketing of the reloading powders is carried out by Nammo Lapua Oy and Nammo Vihtavuori Oy. The contact details of Vihtavuori customer service and a listing of Vihtavuori Distributors can be found at the end of this guide. For latest updates of data and distributors check also vihtavuori.com, where this guide can also be downloaded in PDF format. Check also Apple App Store and Google Play store for the **Vihtavuori RELOAD app**. Latest reloading information and the possibility to save your own reloading recipes, at hand everywhere you go.

We wish you successful reloading with Vihtavuori powders.



VIHTAVUORI

ABOUT THE DATA

Disclaimer

As Nammo Vihtavuori Oy has no control over improper storage, handling, loading or use of our powders after they have left the factory, we make no warranty of any kind, either expressed or implied, limited or full. We specifically disclaim all warranties of fitness for a particular purpose and merchantability. We specifically disclaim all liability for consequential damages of any kind whatsoever, whether or not due to seller's negligence or based on strict product liability or principle of indemnity or contribution, Nammo Vihtavuori Oy neither assumes nor authorizes any person to assume for it any liability in connection with the use of this product.

How to Use the Data

Our rifle and handgun data listings generally contain maximum charges which are not to be exceeded. In some instances starting loads are also listed. Currently this booklet contains all of the data we can supply. Be certain you use the correct data and the specific bullet weight shown.

By staying 5 % below the maximum powder charge weight, pressures will be reduced by about 10 % while velocities will be only about 3 % lower than listed.

Caution: When loading handgun cartridges it is vital to maintain the minimum cartridge overall length (C.O.L.) listed in the tables. Shorter overall lengths may double chamber pressures. Longer lengths are permissible so long as the functioning of the handgun will not be impaired.

The data in the loading tables were obtained at an ambient temperature of 68 degrees Fahrenheit and relative humidity of 55 %. The values obtained were under carefully controlled conditions and may vary from those obtained with your firearm, specific component lots, loading dimensions, and loading procedures. The maximum charges must NEVER be exceeded. **Start loading with the starting load according to the loading data. If there is no indication of the starting load, use 15 % lower charge than the listed maximum.** When loading cartridges for which the listed charge is 10 grains or less, after firing 10 rounds at the minimum weight (15 % below maximum), increase charge weights by 0.2 grains and fire another 10 rounds. Repeat this procedure, if necessary, until you reach, but do not exceed,

the maximum listed charge. The same process is followed for heavier charges except that charge weights from 11 to 25 grains use increments of 0.5 grains. For charges over 25 grains increments of 1.0 grains will be correct.

If even a single test round shows signs of excessive pressure discontinue the use of the load. Do not fire even a single additional cartridge. Seek qualified help before proceeding! The traditional sign of overpressure is a flattened primer. When flattened primers start to occur, it is a definite warning that the charge should be reduced, quickly. Brass getting into the ejector and extractor cavities is a worse case. Blown out primers are worse still. If a case ruptures it may be a sign of a defective case or a truly lethal chamber pressure.

In case of overpressure signs it is wiser to back off, to be safe rather than sorry. Why risk potentially fatal injury? Better to stop shooting and immediately discard all such reloads.

Read also the Reloading Safety Rules on pages 16 and 17.

Pressure

There are numerous factors which can change the ballistic performance of a load even when the data is followed exactly. For example: The internal dimensions of a firearm can vary greatly even between two of the same make and model. Pressures can vary to extremes as different firearms are used. Each change in brand and even within different lots of a specific brand component can cause notable ballistic changes. Too, changes in ambient temperature can also cause ballistic altering pressures. Not every bullet of a given diameter and weight will produce alike pressure. Changes in case brand can also effect ballistics. There are numerous other causes of varying pressure levels.

Therefore it is essential that the reloader be well versed in the methods of carefully working up a reload powder charge in small increments as outlined in the various reloading handbooks that are available from reliable sources. The data in this book is not intended for use by persons not thoroughly versed in such procedures.

This guide should be supplemented by a good recognized reloading handbook that offers all appropriate information.

PROPERTIES AND STORAGE OF SMOKELESS POWDER

Properties of Smokeless Powder

Smokeless powders, or propellants, are essentially mixtures of chemicals designed to burn under controlled conditions at the proper rate to propel a projectile from a gun.

Smokeless powders are made in three forms:

1. Thin, circular flakes or wafers
2. Small cylinders
3. Small spheres

Single-base smokeless powders derive their main source of energy from nitrocellulose.

The energy released from double-base smokeless powders is derived from both nitrocellulose and nitroglycerine.

All smokeless powders are extremely flammable by design, they are intended to burn rapidly and vigorously when ignited.

Oxygen from the air is not necessary for the combustion of smokeless powders since they contain sufficient built-in oxygen to burn completely, even in an enclosed space such as the chamber of a firearm.

In effect, ignition occurs when the powder granules are heated above their ignition temperature. This can occur by exposing powder to:

1. A flame such as a match or primer flash.
2. An electrical spark or the sparks from welding, grinding, etc..
3. Heat from an electric hot plate or a fire directed or near a closed container even if the powder itself is not exposed to the flame.

When smokeless powder burns, a great deal of gas at high temperature is formed. If the powder is confined, this gas will create pressure in the surrounding structure. The rate of gas generation is such, however, that the pressure can be kept at a low level if sufficient space is available or if the gas can escape.

In this respect smokeless powder differs from blasting agents or high explosives such as dynamite or blasting gelatin,

although smokeless powder may contain chemical ingredients common to some of these products.

High explosives such as dynamite are made to detonate, that is, to change from solid state to gaseous state with evolution of intense heat at such a rapid rate that shock waves are propagated through any medium in contact with them. Such shock waves exert pressure on anything they contact, and, as a matter of practical consideration, it is almost impossible to satisfactorily vent away the effects of a detonation involving any appreciable quantity of dynamite.

Smokeless powder differs considerably in its burning characteristics from common "black powder".

Black powder burns essentially at the same rate out in the open (unconfined) as when in a gun.

When ignited in an unconfined state, smokeless powder burns inefficiently with an orange-colored flame. It produces a considerable amount of light brown noxious smelling smoke. It leaves a residue of ash and partially burned powder. The flame is hot enough to cause severe burns.

The opposite is true when it burns under pressure as in a cartridge fired in a gun. Then it produces very little smoke, a small glow, and leaves very little or no residue. The burning rate of smokeless powder increases with increased pressure.

If burning smokeless powder is confined, gas pressure will rise and eventually can cause the container to burst. Under such circumstances, the bursting of a strong container creates effects similar to an explosion.

For this reason, the Department of Transportation (formerly Interstate Commerce Commission) sets specifications for shipping containers for propellants and requires tests for loaded containers - under actual fire conditions - before approving them for use.

When smokeless powder in D.O.T. approved containers is ignited during such tests, container seams split open or lids pop off - to release gases and powder from confinement at low pressure.

PROPERTIES AND STORAGE OF SMOKELESS POWDER

How to Check Smokeless Powder for Deterioration

Although modern smokeless powders are basically free from deterioration under proper storage conditions, safe practices require a recognition of the signs of deterioration and its possible effects.

Powder deterioration can be checked by opening the cap on the container and smelling the contents.

Powder undergoing deterioration has an irritating acidic odor. (Don't confuse this with common solvent odors such as alcohol, ether and acetone).

Check to make certain that powder is not exposed to extreme heat as this may cause deterioration. Such exposure produces an acidity which accelerates further reaction and has been known, because of the heat generated by the reaction, to cause spontaneous combustion.

Never salvage powder from old cartridges and do not attempt to blend salvaged powder with new powder. Don't accumulate old powder stocks. The best way to dispose of deteriorated smokeless powder is to burn it out in the open at an isolated location in small shallow piles (not over 1" deep). The quantity burned in any one pile should never exceed one pound. Use an ignition train of slow burning combustible material so that the person may retreat to a safe distance before powder is ignited.

Considerations for Storage of Smokeless Powder

Smokeless powder is intended to function by burning, so it must be protected against accidental exposure to flame, sparks or high temperatures.

For these reasons, it is desirable that storage enclosures be made of insulating materials to protect the powder from external heat sources.

Once smokeless powder begins to burn, it will normally continue to burn (and generate gas pressure) until it is consumed.

D.O.T. approved containers are constructed to open up at low internal pressures to avoid the effects normally produced by the rupture or bursting of a strong container.

Storage enclosures for smokeless powder should be constructed in a similar manner:

1. Of fire-resistant and heat-insulating materials to protect contents from external heat.
2. Sufficiently large to satisfactorily vent the gaseous products of combustion which would result if the quantity of smokeless powder within the enclosure accidentally ignited.

If a small, tightly enclosed storage enclosure is loaded to capacity with containers of smokeless powder, the walls of the enclosure will expand or move outwards to release the gas pressure - if the powder in storage is accidentally ignited.

Under such conditions, the effects of the release of gas pressure are similar or identical to the effects produced by an explosion.

Hence only the smallest practical quantities of smokeless powder should be kept in storage, and then in strict compliance with all applicable regulations and recommendations of the National Fire Protection Association.

PROPERTIES AND STORAGE OF SMOKELESS POWDER

Recommendations for Storage of Smokeless Powder

STORE IN A COOL, DRY PLACE. Be sure the storage area selected is free from any possible sources of excess heat and is isolated from open flame, furnaces, hot water heaters, etc. Do not store smokeless powder where it will be exposed to the sun's rays. Avoid storage in areas where mechanical or electrical equipment is in operation. Restrict from the storage areas heat or sparks which may result from improper, defective or overloaded electrical circuits.

DO NOT STORE SMOKELESS POWDER IN THE SAME AREA WITH SOLVENTS, FLAMMABLE GASES OR HIGHLY COMBUSTIBLE MATERIALS. STORE ONLY IN DEPARTMENT OF TRANSPORTATION APPROVED CONTAINERS.

Do not transfer the powder from an approved container into one which is not approved.

DO NOT SMOKE IN AREAS WHERE POWDER IS STORED OR USED. Place appropriate "NO SMOKING" signs in these areas. THE STORAGE CABINETS SHOULD BE CONSTRUCTED OF INSULATING MATERIALS AND WITH A WEAK WALL, SEAMS OR JOINTS TO PROVIDE AN EASY MEANS OF SELFVENTING.

DO NOT KEEP OLD OR SALVAGED POWDERS. Check old powders for deterioration regularly. Destroy deteriorated powders immediately.

OBEY ALL REGULATIONS REGARDING QUANTITY AND METHODS OF STORING. Do not store all your powders in one place. If you can, maintain separate storage locations. Many small containers are safer than one or more large containers.

KEEP YOUR STORAGE AND USE AREA CLEAN. Clean up spilled powder promptly. Make sure the surrounding area is free of trash or other readily combustible materials.

The above information has been provided with permission from SAAMI: SPORTING ARMS AND AMMUNITION MANUFACTURERS' INSTITUTE, INC. P.O. Box 838, Branford, CT 06405.

RELOADING SAFETY

Reloading is an enjoyable and rewarding hobby that is easily conducted with safety. But like many other human endeavours, carelessness or negligence can make reloading hazardous. The essence of reloading safety is proper handling and storage of primers and powder. As important is strict following of the instructions given by the manufacturers of the reloading equipment as well as the reloading components.

Before you get started, read the safety rules below and keep them in mind whenever reloading. Attention paid to detail and patience ensures safety and quality!

- Reload only when you can give it your undivided attention. **Do not reload**, when fatigued or ill. Develop your own reloading routine to avoid mistakes. Avoid haste, load at a leisurely place and keep in mind that **absolutely no reloading under the influence of alcohol or drugs!**
- Always wear proper eye protection. It is an unnecessary risk to reload without safety glasses.
- Store powder and primers out of reach of children and away from heat and open fire. **Follow the manufacturer's instructions on your powder canister. Never smoke during a reloading session!**
- Keep no more powder than needed available. Immediately return the unused powder to its original factory container to preserve its identity and usable life time.
- Do not use any powder unless its identity is positively known. Scrap all unidentified powders according to the manufacturer's instructions on your powder canister. **Keep in mind that the trial-and-error method may lead to serious injury!**
- **Do not store primers in bulk! Doing so will create a bomb!** Bulk primers will very likely mass detonate. The blast of a few hundred primers corresponds to a hand grenade in a room! Do not force primers in any circumstances. Take special care when filling and handling auto primer feed tubes. Keep primers in their original factory packing until used. Return unused primers to their original packing.
- Do not use primers if their identity is lost. Discard them according to the manufacturer's instructions.
- Start loading with the starting load according to the loading data. If there is no indication of the starting load, use 15 % lower charge than the listed maximum load. Increase the charge using small steps watching for overpressure signs from the primer and the case head at each step. **If you detect overpressures immediately stop shooting and reduce the charge.** Immediately disassemble the defective cartridges. **NEVER EXCEED THE MAXIMUM LOADS!**
- Check visually the powder level in the cases so you are absolutely sure that you have no double powder charge. When a double powder charge is fired it may result in a gun damage, personal injury, even death.
- If you change the lot of any component or if you change any of the components of your reload, you must develop your load from the starting load again. A different component as well as a component from a different manufacturing lot may cause changes in cartridge pressure.
- You must absolutely follow the given cartridge overall lengths (C.O.L.) according to the reloading tables. The change in the bullet seating depth has a significant influence on the cartridge pressure.
- Never reduce loads under the listed starting load.
- Keep your reloading bench in good order. Clean up spilled powder and primers promptly and completely. Remember that the reloading bench is not a temporary store for other tools, used car spare parts etc.
- Use your reloading equipment according to the manufacturer's recommendations. Study the instructions carefully and don't hesitate to ask, if you don't understand everything.
- Be safe, be conscientious!

RELOADING SAFETY

Lead Exposure

A continuous lead exposure has been found out to create lead accumulation to living bodies, specially to the nervous system causing little by little serious physical impairment. Some unused reloading components as well as fired cases can contain lead or lead compounds, it is possible to a reloader to get exposed during reloading. Primers and bullets contain lead and it may be present as a residue in fired cartridge cases, too.

There are different ways lead may enter the body. However, the two most common are considered to be the mouth and the breathing. Therefore with simple precautions described underneath the possible lead exposure and its dangerous consequences can be avoided.

- **WASH YOUR HANDS** thoroughly with warm water and soap after shooting or reloading.
- **DO NOT EAT OR DRINK** during a reloading session. When handling fired cartridge cases the residual containing lead most likely gets to your hands. Therefore eating something requiring a straight hand contact during a reloading session hazards the reloader to lead exposure. Keep your hands away from your nose or your mouth during a reloading session.
- **KEEP GOOD HOUSEHOLD AT YOUR RELOADING SITE.** Regular cleaning prevents the accumulation of residuals. Use a damp cloth or mop to clean up the reloading bench as well as the floor underneath. **DO NOT USE A VACUUM CLEANER!** The use of it poses a potential risk of exposure due to the spilled powder it collects up. Furthermore, an ordinary vacuum cleaner more spreads than collects the dust containing residuals.. Do not use any carpet at your reloading site. Carpet is hard to keep dust-free and it can create static electricity that can accidentally fire a primer.
- **PROTECT YOUR BREATHING AGAINST THE DUST IN THE RELOADING AREA.** When using a dry tumbling media in cleaning the cartridge cases, keep in mind that the lead residue from the fired cases moves to the tumbling media, where it accumulates by use. Wear always a dust mask when pouring the dry cleaning media out of the tumbler and be careful not to spill the media on your reloading bench.

RIFLE RELOADING DATA

Disclaimer

All of this reloading information has been provided by Nammo Lapua Oy and Nammo Vihtavuori Oy. The data given here were obtained in laboratory conditions following strictly the CIP (Commission Internationale Permanente) June 13, 1990 and November 9, 1993 rules. The listed maximum loads have been determined according to the respective CIP/SAAMI maximum pressure specification, whichever is lower.

These test methods have been deemed to be safe throughout the world. Pressure is measured at the case mouth or from inside the case according to the CIP.

DO NOT ATTEMPT ANY EXTRAPOLATIONS. PLEASE FOLLOW THE DATA AS WRITTEN.

IT IS A MUST FOR EVERY RELOADER TO READ THE RELOADING SAFETY RULES ON THE PAGES 16 AND 17 OF THIS GUIDE.

.204 Ruger

Test barrel: 630 mm (24¾"), 1 in 12" twist
 Primers: Small Rifle
 Cases: Hornady, trim-to length 46,80 mm (1.843")

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]
2,1	32	Blitz King	Sierra	57,1	2.248	N130	1,48	22.8	1106	3629	1,62	25.0	1213	3980
						N135	1,59	24.5	1112	3648	1,75	27.0	1228	4029
						N530	1,56	24.1	1070	3510	1,75	27.0	1225	4019
2,6	40	V-Max	Hornady	57,1	2.248	N133	1,50	23.1	1011	3317	1,64	25.3	1127	3698
						N530	1,50	23.1	1013	3323	1,67	25.8	1236	4055
						N140	1,70	26.2	1027	3369	1,82	28.1	1105	3625
3,2	50	HPBT	Berger	57,1	2.248	N133	1,40	21.6	857	2812	1,54	23.6	948	3110
						N530	1,43	22.1	866	2841	1,56	24.1	965	3166
						N140	1,57	24.2	884	2900	1,76	27.2	991	3251

.22 Hornet

Test barrel: 600 mm (23½"), 1 in 16" twist
 Primers: Small Rifle
 Cases: Sako, trim-to length 35,40 mm (1.394")

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]
2,6	40	Spire Point	Speer	43,5	1.713	N110	0,52	8.0	713	2338	0,65	10.1	813	2668
2,9	45	Spitzer	Speer	43,5	1.713	N110	0,48	7.3	654	2144	0,60	9.3	746	2448
3,2	50	Spitzer	Speer	43,5	1.713	N110	0,47	7.3	609	1997	0,56	8.7	693	2274
						N120	0,62	9.5	612	2008	0,74	11.3	724	2375
3,6	55	Spitzer	Speer	43,5	1.713	N110	0,41	6.4	561	1841	0,53F	8.2F	644	2111
						N120	0,58	9.0	574	1884	0,69	10.6	679	2229

F = Case full

.221 Remington Fireball

Test barrel: 356 mm (14"), 1 in 12" twist
 Primers: Small Rifle
 Cases: Lapua, trim-to length 35,40 mm (1.394")

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]
2,6	40	Blitz King	Sierra	46,5	1.831	N120	1,06	16.4	876	2874	1,12	17.3	924	3031
						N130	1,18	18.2	879	2884	1,25F	19.3F	931	3054
3,4	52	Match King	Sierra	46,5	1.831	N120	0,96	14.8	775	2543	1,05	16.2	806	2644
						N130	1,00	15.4	713	2339	1,12	17.3	814	2671
						N133	1,20	18.5	793	2602	1,25F	19.3F	823	2700

.221 Remington Fireball

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]
3,6	55	FMJ	Lapua	46,5	1.831	N120	0,92	14.2	732	2402	1,00	15.4	779	2556
						N130	1,00	15.4	748	2454	1,07	16.5	792	2598
						N133	1,18	18.2	774	2539	1,22F	18.8F	798	2618
3,6	55	Soft Point	Lapua	46,5	1.831	N120	0,86	13.3	718	2356	1,00	15.4	778	2552
						N130	1,06	16.4	752	2467	1,13	17.4	796	2612
						N133	1,18	18.2	764	2507	1,25F	19.3F	807	2648

F = Case full

.222 Remington

Test barrel: 580 mm (23"), 1 in 14" twist
 Primers: Small Rifle
 Cases: Lapua, trim-to length 43,00 mm (1.693")

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]
2,3	35	V-Max	Hornady	52,0	2.047	N110	0,93	14.4	986	3235	1,20	18.5	1109	3638
						N120	1,31	20.2	1036	3399	1,41	21.8	1128	3701
						N130	1,44	22.2	1053	3455	1,55	23.9	1137	3730
2,6	40	Blitz King	Sierra	54,0	2.126	N110	0,92	14.2	942	3091	1,12	17.3	1056	3465
						N120	1,32	20.4	922	3025	1,43	22.1	1004	3294
						N130	1,38	21.3	997	3271	1,45	22.4	1057	3468
2,9	45	Soft Point	Sierra	54,0	2.126	N120	1,22	18.8	926	3038	1,35	20.8	1021	3350
						N130	1,34	20.7	951	3120	1,46	22.5	1034	3392
						N133	1,43	22.1	944	3097	1,56F	24.1F	1021	3350
3,2	49	Naturalis	Lapua	53,0	2.087	N120	1,09	16.8	868	2848	1,23	19.0	944	3097
						N130	1,21	18.7	886	2907	1,31	20.2	955	3133
						N133	1,33	20.5	906	2972	1,43	22.1	982	3222
						N530	1,35	20.8	880	2887	1,44	22.2	958	3143
3,2	50	SPSX	Hornady	53,0	2.087	N120	1,20	18.5	896	2940	1,30	20.1	964	3163
						N130	1,30	20.1	912	2992	1,39	21.5	986	3235
						N133	1,38	21.3	908	2979	1,49	23.0	979	3212
3,3	51	HPCE	Lapua	54,0	2.126	N120	1,18	18.2	891	2923	1,30	20.1	966	3169
						N130	1,28	19.8	899	2949	1,38	21.3	977	3205
						N133	1,37	21.1	914	2999	1,50	23.1	1003	3291
3,4	52	HPBT	Sierra	54,0	2.126	N120	1,16	17.9	876	2874	1,27	19.6	957	3140
						N130	1,28	19.8	899	2949	1,38	21.3	975	3199
						N133	1,37	21.1	916	3005	1,50	23.1	998	3274
3,6	55	Soft Point	Lapua	53,5	2.106	N120	1,19	18.4	858	2815	1,27	19.6	913	2995
						N130	1,26	19.4	871	2858	1,34	20.7	933	3061
						N133	1,35	20.8	883	2897	1,47	22.7	949	3114
						N135	1,40	21.6	896	2940	1,50	23.1	956	3136
3,6	55	FMJ	Lapua	54,0	2.126	N120	1,15	17.7	848	2782	1,27	19.6	922	3025
						N130	1,26	19.4	870	2854	1,36	21.0	942	3091
						N133	1,36	21.0	875	2871	1,47	22.7	951	3120
						N135	1,38	21.3	891	2923	1,50F	23.1F	966	3169
3,9	60	HP	Hornady	54,0	2.126	N120	1,07	16.5	806	2644	1,20	18.5	881	2890
						N130	1,21	18.7	822	2697	1,31	20.2	904	2966
						N133	1,30	20.1	845	2772	1,40	21.6	917	3009
						N135	1,33	20.5	853	2799	1,48F	22.8F	933	3061

F = Case full

.223 Remington

Test barrel: 620 mm (25"), 1 in 12" twist
 Primers: Small Rifle
 Cases: Lapua, trim-to length 44,50 mm (1.752")

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]
2,6	40	Spire Point	Speer	52,7	2.075	N120	1,23	19.0	963	3159	1,49	23.0	1118	3668
						N130	1,46	22.5	1032	3386	1,65	25.5	1147	3763
						N133	1,54	23.8	1037	3402	1,68F	25.9F	1105	3625

.223 Remington

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
2,9	45	Spitzer	Speer	54,0	2.126	N120	1,25	19.3	933	3061	1,48	22.8	1072	3517
						N130	1,44	22.2	991	3251	1,62	25.0	1092	3583
						N133	1,51	23.3	987	3238	1,68F	25.9F	1091	3579
						N135	1,64	25.3	1010	3314	1,68F	25.9F	1034	3392
3,2	49	Naturalis	Lapua	56,0	2.205	N130	1,17	18.1	861	2825	1,40	21.6	987	3238
						N133	1,34	20.7	892	2927	1,56	24.1	1017	3337
						N530	1,36	21.0	888	2913	1,54	23.8	1006	3301
						N135	1,42	21.9	906	2972	1,66	25.6	1026	3366
3,2	50	TNT-HP	Speer	57,0	2.244	N120	1,25	19.3	911	2989	1,47	22.7	1036	3399
						N130	1,43	22.1	947	3107	1,59	24.5	1046	3432
						N133	1,56	24.1	990	3248	1,68F	25.9F	1077	3533
						N135	1,65	25.5	999	3278	1,68F	25.9F	1018	3340
3,3	51	HPCE	Lapua	57,0	2.244	N120	1,23	19.0	909	2982	1,37	21.1	991	3251
						N130	1,35	20.8	930	3051	1,51	23.3	1018	3340
						N530	1,53	23.6	963	3159	1,66	25.6	1052	3451
						N133	1,45	22.4	943	3094	1,61A	24.8A	1033	3389
						N135	1,54	23.8	957	3140	1,68F	25.9	1034	3392
3,4	52	HPBT	Sierra	57,0	2.244	N130	1,37	21.1	936	3071	1,54	23.8	1028	3373
						N133	1,46	22.5	948	3110	1,62	25.0	1033	3389
						N135	1,54	23.8	808	2651	1,66F	25.6F	1039	3409
3,4	52	FB Varmint	Berger	57,4	2.260	N130	1,37	21.1	906	2972	1,52	23.5	1009	3310
						N133	1,49	23.0	929	3048	1,62	25.0	1019	3343
						N135	1,56	24.1	931	3054	1,73	26.7	1028	3373
						N140	1,62	25.0	909	2982	1,70	26.2	959	3146
						N530	1,53	23.6	935	3068	1,67	25.8	1027	3369
3,6	55	Soft Point	Lapua	56,5	2.224	N120	1,09	16.8	820	2690	1,31	20.2	939	3081
						N130	1,21	18.7	857	2812	1,42	21.9	959	3146
						N133	1,36	21.0	876	2874	1,56	24.1	980	3215
						N530	1,44	22.2	891	2923	1,61	24.8	995	3264
						N135	1,43	22.1	899	2949	1,64F	25.3F	1004	3294
						N140	1,57	24.2	915	3002	1,74F	26.9F	1014	3327
3,6	55	FB Varmint	Berger	57,4	2.260	N130	1,34	20.7	877	2877	1,49	23.0	974	3196
						N133	1,45	22.4	894	2933	1,60	24.7	991	3251
						N135	1,54	23.8	901	2956	1,70	26.2	997	3271
						N140	1,60	24.7	889	2917	1,72	26.5	965	3166
						N530	1,50	23.1	905	2969	1,63	25.2	996	3268
3,6	55	V-Max	Hornady	57,4	2.260	N130	1,32	20.4	857	2812	1,49	23.0	965	3166
						N133	1,39	21.5	848	2782	1,62	25.0	982	3222
						N135	1,52	23.5	884	2900	1,70	26.2	979	3212
						N140	1,64	25.3	884	2900	1,72	26.5	928	3045
						N530	1,49	23.0	892	2927	1,64	25.3	994	3261
3,6	55	FMJBT	Hornady	57,0	2.244	N120	1,21	18.7	889	2917	1,34	20.7	960	3150
						N130	1,41	21.8	956	3136	1,52	23.5	1013	3323
						N530	1,50	23.1	941	3087	1,62	25.0	1022	3353
						N133	1,43	22.1	928	3045	1,59	24.5	1006	3301
						N135	1,51	23.3	938	3077	1,66	25.6	1017	3337
						N140	1,60	24.7	930	3051	1,74	26.8	1019	3343
3,6	55	FMJ	Lapua	57,0	2.244	N120	1,21	18.7	876	2874	1,35	20.8	953	3127
						N130	1,33	20.5	895	2936	1,50	23.1	985	3232
						N530	1,51	23.3	931	3054	1,64	25.3	1015	3330
						N133	1,43	22.1	911	2989	1,59	24.5	999	3278
						N135	1,51	23.3	927	3041	1,68F	25.9F	999	3278
						N140	1,61	24.8	917	3009	1,77F	27.3F	1004	3294
3,9	60	FB Varmint	Berger	57,4	2.260	N133	1,39	21.5	848	2782	1,57	24.2	947	3107
						N135	1,49	23.0	860	2822	1,67	25.8	957	3140
						N140	1,55	23.9	859	2818	1,70	26.2	935	3068
						N530	1,45	22.4	860	2822	1,58	24.4	962	3156
						N540	1,61	24.8	883	2897	1,76	27.2	981	3219
3,9	60	HP	Hornady	57,0	2.244	N130	1,33	20.5	874	2867	1,50	23.1	967	3173
						N133	1,43	22.1	888	2913	1,60	24.7	978	3209
						N135	1,50	23.1	893	2930	1,67	25.8	976	3202

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

.223 Remington

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
4,0	62	TAC-X BT	Barnes	57,4	2.260	N140	1,62	25.0	895	2936	1,74F	26.8F	965	3166
						N133	1,34	20.7	832	2730	1,50	23.1	904	2966
						N135	1,36	21.0	798	2618	1,63	25.2	931	3054
						N140	1,52	23.5	821	2694	1,70	26.2	924	3031
						N530	1,40	21.6	821	2694	1,58	24.4	945	3100
						N540	1,55	23.9	840	2756	1,76	27.2	963	3159
4,0	62	FMJBT	Speer	57,4	2.260	N530	1,43	22.1	861	2825	1,56	24.1	953	3127
						N135	1,43	22.1	852	2795	1,60	24.7	942	3091
						N140	1,62	25.0	901	2956	1,70F	26.2F	943	3094
4,0	62	Scirocco II	Swift	57,4	2.260	N135	1,36	21.0	784	2572	1,58	24.4	906	2972
						N140	1,52	23.5	804	2638	1,73	26.7	919	3015
						N530	1,37	21.1	811	2661	1,54	23.8	909	2982
						N540	1,54	23.8	829	2720	1,72	26.5	941	3087
4,5	69	HPBT ¹⁾	Sierra	57,0	2.244	N133	1,34	20.7	792	2598	1,48	22.8	867	2844
						N135	1,40	21.6	804	2638	1,54	23.8	875	2871
						N140	1,53	23.6	820	2690	1,68	25.9	897	2943
						N540	1,56	24.1	824	2703	1,71	26.4	910	2986
4,5	69	Scenar ¹⁾	Lapua	57,4	2.260	N530	1,37	21.1	809	2654	1,47	22.7	869	2851
						N133	1,31	20.2	789	2589	1,42	21.9	849	2785
						N135	1,37	21.1	796	2612	1,49	23.0	862	2828
						N140	1,48	22.8	823	2700	1,60	24.7	879	2884
						N540	1,50	23.1	807	2648	1,65	25.5	895	2936
4,8	73	BT Target	Berger	57,4	2.260	N133	1,20	18.5	747	2451	1,41	21.8	822	2697
						N135	1,31	20.2	743	2438	1,51	23.3	855	2805
						N140	1,42	21.9	763	2503	1,64	25.3	875	2871
						N530	1,33	20.5	772	2533	1,50	23.1	887	2910
						N540	1,47	22.7	787	2582	1,65	25.5	899	2949
4,9	75	VLD Target	Berger	57,4	2.260	N133	1,21	18.7	732	2402	1,42	21.9	837	2746
						N135	1,35	20.8	763	2503	1,54	23.8	864	2835
						N140	1,44	22.2	771	2530	1,65	25.5	877	2877
						N530	1,35	20.8	776	2546	1,50	23.1	882	2894
						N540	1,47	22.7	786	2579	1,68	25.9	903	2963
4,9	75	ELD Match	Hornady	57,4	2.260	N135	1,38	21.3	766	2513	1,58	24.4	876	2874
						N140	1,48	22.8	769	2523	1,70	26.2	889	2917
						N530	1,33	20.5	777	2549	1,51	23.3	887	2910
						N540	1,47	22.7	791	2595	1,67	25.8	901	2956
4,9	75	Scirocco II	Swift	57,4	2.260	N135	1,23	19.0	698	2290	1,45	22.4	795	2608
						N140	1,41	21.8	718	2356	1,62	25.0	815	2674
						N530	1,28	19.8	708	2323	1,45	22.4	814	2671
						N540	1,43	22.1	743	2438	1,64	25.3	846	2776
4,9	75	BTHP ²⁾	Hornady	57,4	2.260	N135	1,34	20.7	752	2467	1,51	23.3	830	2723
						N140	1,43	22.1	754	2474	1,62	25.0	843	2766

.223 Remington

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
5,8	90	HPBT	Sierra	59,8	2.354	N140	1,25	19,3	640	2100	1,44	22,2	742	2434
						N150	1,24	19,1	648	2126	1,48	22,8	748	2454
						N540	1,34	20,7	678	2224	1,52	23,5	762	2500
5,8	90	HPBT	Berger	62,4	2.457	N140	1,25	19,3	646	2119	1,41	21,8	735	2411
						N150	1,26	19,4	651	2136	1,46	22,5	741	2431
						N540	1,34	20,7	682	2238	1,49	23,0	759	2490

A = Accuracy load F = Case full

¹⁾ 1 in 10" twist ²⁾ 1 in 7" twist ³⁾ Test barrel with a long throat to accept the C.O.L. of 65 mm (2.559")**.223 WSSM**

Test barrel: 640 mm (25"), 1 in 8" twist
 Primers: Large Rifle
 Cases: Winchester, trim-to length 42,20 mm (1.661")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
3,3	51	HPCE	Lapua	54,6	2.150	N135	2,10	32,4	1011	3317	2,61	40,3	1180	3871
						N530	2,22	34,3	1055	3461	2,59	40,0	1205	3953
						N140	2,49	38,4	1074	3524	2,83	43,7	1183	3881
3,6	55	Soft Point	Lapua	54,5	2.146	N135	2,09	32,3	1001	3284	2,49	38,4	1119	3671
						N530	2,14	33,0	1009	3310	2,48	38,3	1147	3763
						N140	2,24	34,6	996	3268	2,68	41,4	1140	3740
4,5	69	Scenar	Lapua	56,7	2.232	N140	2,29	35,3	933	3061	2,61	40,3	1030	3379
						N540	2,35	36,3	960	3150	2,68	41,4	1077	3533
						N150	2,33	36,0	947	3107	2,61	40,3	1048	3438
						N550	2,48	38,3	972	3189	2,84	43,8	1078	3537

.22 PPC-USA

Test barrel: 610 mm (24"), 1 in 14" twist
 Primers: Small Rifle
 Cases: Winchester, trim-to length 42,20 mm (1.661")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
3,4	52	HPBT	Sierra	51,4	2.024	N120	1,33	20,5	919	3016	1,56	24,1	1039	3408
						N130	1,43	22,1	934	3063	1,66	25,6	1069	3507
						N133	1,51	23,3	947	3107	1,77	27,3	1087	3565
3,6	55	Spitzer	Speer	51,8	2.039	N135	1,65	25,5	971	3185	1,90	29,2	1099	3607
						N130	1,41	21,8	898	2946	1,69	26,1	1026	3367
						N133	1,45	22,4	901	2956	1,78	27,4	1039	3409
						N135	1,68	25,9	961	3151	1,93	29,7	1103	3617

.22-250 Remington

Test barrel: 580 mm (22"), 1 in 14" twist
 Primers: Large Rifle
 Cases: Lapua .22-250 Remington, trim-to length 48,30mm (1.902")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
2,6	40	Blitz King	Sierra	58,9	2.319	N130	1,79	27,6	1097	3599	1,98	30,6	1194	3917
						N133	1,97	30,4	1099	3606	2,15	33,2	1205	3953
						N135	2,03	31,3	1097	3599	2,18	33,6	1207	3960
						N140	2,19	33,8	1111	3645	2,39	36,9	1211	3973
2,9	45	SP	Sierra	58,9	2.319	N130	1,66	25,6	1023	3356	1,99	30,7	1145	3757
						N133	1,87	28,9	1033	3389	2,10	32,4	1126	3694
						N135	1,87	28,9	1023	3356	2,18	33,6	1154	3786
						N150	2,06	31,8	1033	3389	2,32	35,8	1137	3730
3,2	49	Naturalis	Lapua	59,0	2.323	N135	1,62	25,0	913	2995	1,71	26,4	987	3238
						N140	1,81	27,9	936	3071	2,04	31,5	1036	3399
						N540	2,00	30,9	978	3209	2,21	34,1	1070	3510
						N150	1,82	28,1	944	3097	2,06	31,8	1043	3422

.22-250 Remington

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
3,3	51	HPCE	Lapua	59,6	2.346	N133	1,75	27,0	969	3179	1,99	30,7	1064	3491
						N135	1,72	26,5	959	3146	1,96	30,2	1055	3461
						N140	1,99	30,7	988	3241	2,19	33,8	1087	3566
3,6	55	FMJ	Lapua	59,6	2.346	N540	2,08	32,1	1001	3284	2,32	35,8	1105	3625
						N135	1,75	27,0	936	3071	1,98	30,6	1040	3412
						N140	1,94	29,9	959	3146	2,17	33,5	1050	3445
3,6	55	Soft Point	Lapua	59,5	2.343	N540	2,03	31,3	972	3189	2,29	35,3	1085	3560
						N150	1,98	30,6	968	3176	2,25	34,7	1057	3468
						N135	1,62	25,0	902	2959	1,82	28,1	990	3248
						N140	1,81	27,9	932	3058	2,04	31,5	1017	3337
						N540	2,09	32,3	981	3219	2,29	35,3	1075	3527
						N150	1,83	28,2	903	2963	2,08	32,1	1019	3343
3,9	60	HP	Hornady	59,6	2.346	N135	1,62	25,0	845	2772	1,86	28,7	955	3133
						N140	1,81	27,9	887	2910	2,10	32,4	989	3245
						N540	2,06	31,8	938	3077	2,27	35,0	1043	3422
4,0	62	TSX	Barnes	59,7	2.350	N150	1,91	29,5	907	2976	2,16	33,3	1012	3320
						N140	1,67	25,8	831	2726	1,90	29,3	930	3051
						N540	1,82	28,1	865	2838	2,09	32,3	974	3196
4,5	69	HPBT ¹⁾	Lapua	59,6	2.346	N150	1,72	26,5	843	2766	1,98	30,6	943	3094
						N140	1,71	26,4	820	2690	1,98	30,6	914	2999
						N540	1,85	28,5	843	2766	2,10	32,4	939	3081
						N150	1,77	27,3	836	2743	2,05	31,6	921	3022
						N550	1,98	30,6	854	2802	2,24	34,6	953	3127

¹⁾ 1 in 10" twist**6 mm PPC-USA**

Test barrel: 580 mm (23"), 1 in 14" twist
 Primers: Small Rifle
 Cases: Sako, trim-to length 38,30 mm (1.508")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
4,4	68	HPFB	Euber	53,6	2.110	N130	1,52	23,4	843	2766	1,68	25,9	928	3045
						N133	1,63	25,2	840	2756	1,83C	28,2C	951	3120
4,5	70	HPBT	Sierra	53,6	2.110	N120	1,39	21,5	809	2654	1,55	23,9	901	2956
						N130	1,47	22,7	820	2690	1,69	26,1	934	3064
						N133	1,59	24,6	826	2710	1,79C	27,6C	935	3068

C = Compressed load

6 mm BR Norma

Test barrel: 650 mm (25½"), 1 in 8" twist
 Primers: Small Rifle
 Cases: Lapua, trim-to length 39,40 mm (1.551")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
4,5	70	HPBT	Sierra	57,0	2.244	N133	1,64	25,3	864	2834	1,86	28,7	957	3140
						N135	1,88	29,0	901	2956	2,20	33,9	1009	3310
5,0	77	HP	Lapua	57,0	2.244	N135	1,81	27,9	880	2887	2,01	31,0	957	3140
						N140	1,94	29,9	882	2894	2,15	33,2	965	3166
						N540	2,00	30,9	888	2913	2,18	33,6	980	3215
5,0	77	HP SJ	Lapua	60,0	2.362	N133	1,85	28,5	884	2900	2,01A	31,0A	964	3163
						N140	2,05	31,6	900	2953	2,22	34,3	982	3222
						N540	2,14	33,0	914	2999	2,31	35,6	999	3278
5,5	85	TSX	Barnes	58,5	2.303	N140	1,62	25,0	775	2543	1,88	29,0	877	2877
						N540	1,72	26,5	803	2635	1,97	30,4	908	2979
						N150	1,63	25,2	776	2546	1,90	29,3	874	2867
5,8	90	Naturalis	Lapua	54,7	2.154	N140	1,75	27,0	790	2592	2,03	31,3	879	2884
						N540	1,89	29,2	816	2677	2,11	32,6	915	3002
						N150	1,81	27,9	795	2608	2,10	32,4	887	2910

6mm BR Norma

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
5,8	90	Scenar	Lapua	60,0	2.362	N140	1,68	26.0	788	2584	1,93	29.8	871	2858
						N540	1,69	26.1	757	2484	2,20	33.9	952	3123
5,8	90	Scenar SJ	Lapua	60,0	2.362	N135	1,85	28.5	830	2723	2,04A	31.5A	906	2972
						N140	1,96	30.2	847	2779	2,12	32.7	922	3025
						N540	2,02	31.2	854	2802	2,19	33.8	936	3071
6,5	100	Mega	Lapua	55,3	2.177	N140	1,66	25.6	737	2419	1,88	29.0	825	2707
						N540	1,81	27.9	772	2533	2,01	31.0	857	2812
6,8	105	Scenar	Lapua	60,0	2.362	N140	1,67	25.8	746	2447	1,87	28.9	821	2694
						N540	1,75	27.0	756	2480	1,97	30.4	846	2776
6,8	105	Scenar SJ	Lapua	60,0	2.362	N140	1,83	28.2	763	2503	2,02	31.2	843	2766
						N150	1,85	28.5	769	2523	2,05	31.6	841	2759
						N540	1,88	29.0	777	2549	2,08	32.1	861	2825

A = Accuracy load

6 mm Creedmoor

Test barrel: 660 mm (26"), 1 in 8" twist
 Primers: Small Rifle
 Cases: Lapua, trim-to length 48,75 mm (1.919")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
4,2	65	V-Max	Hornady	64,9	2.555	N140	2,41	37.2	1009	3310	2,69	41.5	1110	3642
						N150	2,45	37.8	1015	3330	2,71	41.8	1107	3632
						N540	2,54	39.2	1037	3402	2,76	42.6	1136	3727
						N550	2,72	42.0	1044	3425	2,94	45.4	1145	3757
4,5	70	Blitzking	Sierra	66,0	2.598	N140	2,54	39.2	1008	3307	2,71	41.8	1085	3560
						N150	2,54	39.2	1006	3301	2,74	42.3	1085	3560
						N540	2,58	39.8	1030	3379	2,77	42.7	1120	3675
						N550	2,77	42.7	1032	3386	2,92	45.1	1121	3678
5,2	80	TTSX BT	Barnes	63,0	2.480	N150	2,20	34.0	914	2999	2,44	37.7	994	3261
						N160	2,62	40.4	934	3064	2,90	44.8	1025	3363
						N550	2,51	38.7	944	3097	2,70	41.7	1030	3379
						N560	2,85	44.0	936	3071	3,10	47.8	1025	3363
5,7	87	VLD Hunting	Berger	67,8	2.669	N140	2,19	33.8	886	2907	2,47	38.1	971	3186
						N150	2,21	34.1	891	2923	2,49	38.4	974	3196
						N160	2,72	42.0	929	3048	2,95	45.5	1011	3317
						N540	2,33	36.0	914	2999	2,55	39.4	1001	3284
						N550	2,52	38.9	927	3041	2,74	42.3	1013	3323
						N560	2,87	44.3	923	3028	3,12	48.1	1011	3317
5,8	90	OTM Scenar-L	Lapua	70,0	2.756	N150	2,15	33.2	856	2808	2,38	36.7	929	3048
						N160	2,54	39.2	880	2887	2,85	44.0	971	3186
						N540	2,22	34.3	885	2904	2,46	38.0	971	3186
						N550	2,43	37.5	898	2946	2,67	41.2	988	3241
						N560	2,76	42.6	898	2946	3,02	46.6	991	3251
5,8	90	CEX Naturalis	Lapua	70,0	2.756	N150	2,16	33.3	845	2772	2,44	37.7	928	3045
						N160	2,51	38.7	863	2831	2,93	45.2	971	3186
						N540	2,27	35.0	877	2877	2,51	38.7	963	3159
						N550	2,49	38.4	894	2933	2,73	42.1	979	3212
						N560	2,87	44.3	899	2949	3,11	48.0	987	3238
5,8	90	Scirocco II	Swift	70,5	2.776	N150	2,06	31.8	818	2684	2,33	36.0	899	2949
						N160	2,44	37.7	845	2772	2,79	43.1	942	3091
						N540	2,20	34.0	853	2799	2,46	38.0	946	3104
						N550	2,38	36.7	873	2864	2,66	41.1	968	3176
						N560	2,78	42.9	884	2900	3,05	47.1	979	3212
6,2	95	Classic Hunter	Berger	69,0	2.717	N150	2,03	31.3	825	2707	2,23	34.4	887	2910
						N160	2,25	34.7	821	2694	2,69	41.5	928	3045
						N540	2,13	32.9	840	2756	2,36	36.4	923	3028
						N550	2,30	35.5	857	2812	2,57	39.7	943	3094
						N560	2,65	40.9	864	2835	2,96	45.7	957	3140

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
 LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

6 mm Creedmoor

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
6,1	95	HPBT	Sierra	70,0	2.756	N150	2,15	33.2	850	2789	2,37	36.6	920	3018
		Matchking				N160	2,65	40.9	878	2881	2,87	44.3	960	3150
						N540	2,23	34.4	869	2851	2,44	37.7	951	3120
						N550	2,44	37.7	888	2913	2,68	41.4	975	3199
						N560	2,81	43.4	891	2923	3,05	47.1	981	3219
6,8	105	Hybrid Target	Berger	71,0	2.795	N150	1,94	29.9	774	2539	2,26	34.9	857	2812
						N160	2,30	35.5	805	2641	2,65	40.9	895	2936
						N540	2,08	32.1	806	2644	2,33	36.0	889	2917
						N550	2,27	35.0	821	2694	2,55	39.4	909	2982
						N560	2,63	40.6	834	2736	2,91	44.9	921	3022
6,8	105	OTM Scenar	Lapua	71,0	2.795	N150	1,95	30.1	764	2507	2,23	34.4	851	2792
						N160	2,34	36.1	805	2641	2,66	41.1	891	2923
						N540	2,07	31.9	803	2635	2,30	35.5	883	2897
						N550	2,27	35.0	825	2707	2,50	38.6	904	2966
						N560	2,61	40.3	834	2736	2,88	44.4	922	3025
						N565	2,73	42.1	847	2779	3,00	46.3	923	3028
7,0	108	BT Target	Berger	70,7	2.783	N150	1,89	29.2	757	2484	2,14	33.0	833	2733
						N160	2,40	37.0	841	2759	2,51	38.7	870	2854
						N540	1,97	30.4	789	2589	2,24	34.6	866	2841
						N550	2,16	33.3	804	2638	2,41	37.2	883	2897
						N560	2,59	40.0	825	2707	2,81	43.4	908	2979
7,0	107	HPBT	Sierra	66,2	2.606	N150	1,98	30.6	774	2539	2,22	34.3	852	2795
		Matchking				N160	2,41	37.2	813	2667	2,67	41.2	890	2920
						N540	2,08	32.1	804	2638	2,30	35.5	883	2897
						N550	2,27	35.0	820	2690	2,50	38.6	904	2966
						N560	2,63	40.6	834	2736	2,87	44.3	918	3012
7,1	110	HPBT	Sierra	71,0	2.795	N150	1,95	30.1	756	2480	2,19	33.8	835	2740
		Matchking				N160	2,35	36.3	793	2602	2,65	40.9	879	2884
						N540	2,05	31.6	793	2602	2,27	35.0	876	2874
						N550	2,22	34.3	811	2661	2,46	38.0	892	2927
						N560	2,60	40.1	824	2703	2,81	43.4	903	2963
7,5	115	VLD Hunting	Berger	71,0	2.795	N150	1,95	30.1	744	2441	2,18	33.6	814	2671
						N160	2,30	35.5	772	2533	2,62	40.4	856	2808
						N540	2,04	31.5	767	2516	2,25	34.7	844	2769
						N550	2,22	34.3	786	2579	2,42	37.3	853	2799
						N560	2,55	39.4	800	2625	2,78	42.9	885	2904

.243 Winchester

Test barrel: 580 mm (23"), 1 in 10" twist
 Primers: Large Rifle
 Cases: Lapua, trim-to length 51,80 mm (2.039")

Bullet						Powder		Starting load				Maximum load			
Weight [g]	[grs]	Type/Name	Mfg	C.O.L.		Type	Weight		Velocity		Weight		Velocity		
				[mm]	[in.]		[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]	
3,7	58	V-Max	Hornady	65,5	2.579	N135	2,31	35.6	1037	3402	2,55	39.3	1127	3698	
						N140	2,53	39.0	1043	3422	2,80	43.2	1137	3730	
						N540	2,45	37.8	1051	3448	2,87	44.3	1151	3776	
						N550	2,65	40.9	1067	3501	2,88	44.4	1165	3822	
5,0	77	HP	Lapua	67,0	2.638	N135	1,99	30.7	855	2805	2,32	35.8	968	3176	
						N140	2,23	34.4	883	2897	2,54	39.2	992	3255	
						N150	2,24	34.6	881	2890	2,58	39.8	995	3264	
						N550	2,57	39.7	918	3012	2,80	43.2	1032	3386	
5,2	80	FMJ	Hornady	67,0	2.638	N140	2,04	31.5	831	2726	2,41	37.2	949	3114	
						N150	2,06	31.8	840	2756	2,43	37.5	947	3107	
						N550	2,42	37.3	895	2936	2,79	43.1	1002	3287	
						N160	2,54	39.2	890	2920	2,94	45.4	993	3258	
5,5	85	TSX	Barnes	67,0	2.638	N150	2,15	33.2	828	2717	2,55	39.4	949	3114	
						N540	2,19	33.8	857	2812	2,56	39.5	981	3219	
						N550	2,56	39.5	934	3064	2,72	42.0	992	3255	
						N160	2,65	40.9	860	2822	2,98	46.0	972	3189	
5,5	85	Partition	Nosler	68,0	2.677	N540	2,17	33.5	860	2822	2,50	38.6	971	3186	
						N150	1,90	29.3	801	2628	2,28	35.2	922	3025	
						N550	2,36	36.4	866	2841	2,71	41.8	977	3205	
						N160	2,42	37.3	846	2776	2,84	43.8	969	3179	
5,8	90	Naturalis	Lapua	67,0	2.638	N540	2,26	34.9	840	2756	2,53	39.0	945	3100	
						N150	2,02	31.2	799	2621	2,39	36.9	903	2963	
						N550	2,44	37.7	846	2776	2,72	42.0	952	3123	
						N160	2,43	37.5	823	2700	2,85	44.0	942	3091	
5,8	90	FMJ	Sierra	68,3	2.689	N540	2,17	33.5	842	2762	2,49	38.4	946	3104	
						N150	1,98	30.6	805	2641	2,30	35.5	902	2959	
						N550	2,31	35.6	848	2782	2,63	40.6	952	3123	
						N160	2,41	37.2	836	2743	2,76	42.6	941	3087	
5,8	90	Scenar	Lapua	68,3	2.689	N540	2,27	35.0	860	2822	2,54	39.2	962	3156	
						N150	2,08	32.1	817	2680	2,44	37.7	914	2999	
						N550	2,46	38.0	865	2838	2,68	41.4	967	3173	
						N160	2,52	38.9	847	2779	2,83	43.7	952	3123	
6,2	96	TOG	Brenneke	67,0	2.638	N540	2,15	33.2	820	2690	2,50	38.6	928	3045	
						N550	2,46	38.0	843	2766	2,68	41.4	939	3081	
						N160	2,60	40.1	824	2703	2,93	45.2	929	3048	
6,5	100	Grand Slam	Speer	68,3	2.689	N540	1,97	30.4	770	2526	2,33	36.0	878	2881	
						N150	1,86	28.7	722	2369	2,23	34.4	839	2753	
						N550	2,21	34.1	787	2582	2,48	38.3	885	2904	
						N160	2,23	34.4	769	2523	2,58	39.8	873	2864	
6,8	105	Scenar ¹⁾	Lapua	68,3	2.689	N150	1,95	30.1	729	2392	2,27	35.0	821	2694	
						N550	2,34	36.1	782	2566	2,59	40.0	890	2920	
						N160	2,43	37.5	766	2513	2,70	41.7	869	2851	
						N165	2,62	40.4	783	2569	3,00	46.3	894	2933	

¹⁾ The test barrel rifle twist 1 in 8"

6 XC

Test barrel: 620 mm (24"), 1 in 8" twist
 Primers: Large Rifle
 Cases: Norma, trim-to length 48,20 mm (1.898")

Bullet						Powder		Starting load				Maximum load			
Weight [g]	[grs]	Type/Name	Mfg	C.O.L.		Type	Weight		Velocity		Weight		Velocity		
				[mm]	[in.]		[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]	
3,4	58	V-Max	Hornady	62,0	2.441	N135	2,26	34.9	1045	3428	2,55	39.4	1162	3812	
						N140	2,48	38.3	1056	3465	2,77	42.7	1175	3855	
						N550	2,54	39.2	1079	3540	2,82	43.5	1214	3983	
4,5	70	Match King	Sierra	63,0	2.480	N150	2,21	34.1	939	3081	2,62	40.4	1066	3497	
						N540	2,41	37.2	998	3274	2,66	41.1	1110	3642	
						N550	2,05	31.6	768	2520	2,82	43.5	1109	3638	

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
 LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

6 XC

cont.

Bullet						Powder		Starting load				Maximum load			
Weight [g]	[grs]	Type/Name	Mfg	C.O.L.		Type	Weight		Velocity		Weight		Velocity		
				[mm]	[in.]		[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]	
5,0	77	HP	Lapua	64,0	2.520	N150	2,26	34.9	911	2989	2,59	40.0	1028	3373	
						N540	2,29	35.3	927	3041	2,58	39.8	1063	3488	
						N550	2,45	37.8	940	3084	2,74	42.3	1069	3507	
5,8	90	Naturalis	Lapua	63,8	2.512	N150	2,01	31.0	812	2664	2,38	36.7	921	3022	
						N540	2,08	32.1	846	2776	2,47	38.1	969	3179	
						N550	2,24	34.6	851	2792	2,61	40.3	972	3189	
5,8	90	Scenar	Lapua	69,0	2.717	N540	2,09	32.3	859	2818	2,43	37.5	988	3241	
						N150	1,94	29.9	817	2680	2,35	36.3	942	3091	
						N550	2,23	34.4	867	2844	2,60	40.1	993	3258	
6,8	105	Scenar	Lapua	69,0	2.717	N540	1,88	29.0	780	2559	2,20	34.0	882	2894	
						N550	2,07	31.9	796	2612	2,37	36.6	895	2936	
						N160	2,05	31.6	767	2516	2,43	37.5	875	2871	

6 mm Remington

Test barrel: 660 mm (26"), 1 in 10" twist
 Primers: Large Rifle
 Cases: Remington, trim-to length 56,60 mm (2.228")

Bullet						Powder		Starting load				Maximum load			
Weight [g]	[grs]	Type/Name	Mfg	C.O.L.		Type	Weight		Velocity		Weight		Velocity		
				[mm]	[in.]		[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]	
3,8	58	V-Max	Hornady	70,4	2.772	N140	2,47	38.1	1053	3455	2,80	43.2	1173	3848	
						N540	2,68	41.4	1084	3556	3,01	46.5	1207	3960	
						N150	2,50	38.6	1055	3461	2,91	44.9	1176	3858	
5,5	85	Partition	Nosler	70,4	2.772	N140	1,97	30.4	858	2815	2,49	38.4	983	3225	
						N150	2,11	32.6	868	2848	2,47	38.1	973	3192	
						N540	2,25	34.7	899	2949	2,65	40.9	1012	3320	
						N550	2,41	37.2	903	2963	2,85	44.0	1022	3353	
5,0	77	HP	Lapua	70,4	2.772	N140	2,38	36.7	933	3061	2,71	41.8	1046	3432	
						N540	2,55	39.4	971	3186	2,84	43.8	1073	3520	
						N150	2,50	38.6	950	3117	2,80	43.2	1051	3448	
						N550	2,73	42.1	972	3189	3,01	46.5	1093	3586	
5,8	90	Scenar	Lapua	71,8	2.825	N150	2,20	34.0	867	2844	2,60	40.1	976	3202	
						N550	2,52	38.9	902	2959	2,82	43.5	1010	3314	
						N160	2,49	38.4	866	2841	3,00	46.3	994	3261	
						N165	2,93	45.2	906	2972	3,30	50.9	1018	3340	
5,8	90	Naturalis	Lapua	70,4	2.772	N150	2,00	30.9	820	2690	2,50	38.6	932	3058	
						N550	2,37	36.6	873	2864	2,88	44.4	1010	3314	
						N160	2,40	37.0	869	2851	2,99	46.1	994	3261	
						N165	2,83	43.7	875	2871	3,24	50.0	1001	3284	

.240 Weatherby Magnum

cont.

Bullet					Powder Type	Starting load				Maximum load				
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]		Type	Weight		Velocity		Weight		Velocity	
							[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]
6,8	105	Spitzer	Speer	77,8	3.063	N165	3,47	53.6	949	3114	3,62	55.8	989	3246
						N160	2,83	43.6	852	2795	3,15	48.7	935	3068
						N560	3,23	49.8	887	2910	3,47	53.5	962	3157
						N165	3,33	51.3	895	2936	3,57	55.2	969	3180

.25-06 Remington

Test barrel: 580 mm (23"), 1 in 10" twist
 Primers: Large Rifle
 Cases: Remington, trim-to length 63,10 mm (2.484")

Bullet					Powder Type	Starting load				Maximum load				
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]		Type	Weight		Velocity		Weight		Velocity	
							[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]
5,6	87	SPBT	Speer	79,3	3.122	N140	2,35	36.2	876	2873	2,74	42.3	961	3153
						N150	2,51	38.7	892	2925	2,91	44.9	980	3215
						N160	3,15	48.6	935	3069	3,55	54.8	1020	3346
						N165	3,52	54.3	960	3149	3,95	60.9	1049	3442
6,5	100	SPBT	Speer	81,2	3.197	N140	2,60	40.0	873	2864	2,78	42.9	924	3031
						N150	2,66	41.0	878	2881	2,86	44.1	930	3051
						N160	3,24	50.0	911	2990	3,38	52.2	966	3169
						N560	3,16	48.8	900	2954	3,59	55.4	990	3248
						N165	3,44	53.0	922	3024	3,66	56.5	979	3212
						N170	3,55	54.7	885	2902	4,05	62.5	975	3199
7,8	120	Spizer	Speer	80,2	3.157	N150	1,95	30.1	692	2270	2,32	35.8	776	2546
						N160	2,50	38.6	759	2491	2,94	45.4	844	2769
						N560	2,81	43.3	798	2619	3,24	50.0	890	2920
						N165	2,69	41.5	777	2548	3,13	48.3	853	2799
						N170	3,17	48.9	802	2630	3,59	55.4	873	2864
7,8	120	HPBT	Sierra	80,0	3.155	N160	2,75	42.4	791	2597	3,09	47.7	871	2858
						N560	2,95	45.6	818	2685	3,33	51.4	903	2963
						N165	3,03	46.8	817	2681	3,38	52.2	889	2917
						N170	3,35	51.7	817	2682	3,81	58.8	904	2966

6.5 mm Grendel

Test barrel: 610 mm (24"), 1 in 10" twist
 Primers: Small Rifle
 Cases: Lapua, trim-to length 38,50 mm (1.516")

Bullet					Powder Type	Starting load				Maximum load				
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]		Type	Weight		Velocity		Weight		Velocity	
							[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]
6,5	100	FMJ	Lapua	53,0	2.087	N130	1,32	20.4	705	2313	1,54	23.8	784	2572
						N133	1,51	23.3	728	2388	1,72	26.5	811	2661
						N530	1,56	24.1	729	2392	1,79	27.6	829	2720
6,5	100	Scenar	Lapua	57,1	2.248	N130	1,40	21.6	674	2211	1,76	27.2	840	2756
						N530	1,60	24.7	729	2392	1,90	29.3	858	2815
						N133	1,57	24.2	728	2388	1,90	29.3	854	2802
7,0	108	Scenar	Lapua	57,1	2.248	N130	1,40	21.6	671	2201	1,69	26.1	791	2595
						N530	1,44	22.2	690	2264	1,73	26.7	821	2694
						N133	1,51	23.3	689	2260	1,80	27.8	804	2638
7,8	120	TSX	Barnes	53,0	2.087	N530	1,34	20.7	592	1942	1,62	25.0	707	2320
						N133	1,17	18.1	578	1896	1,58	24.4	678	2224
						N540	1,58	24.4	631	2070	1,88	29.0	751	2464
8,0	123	Scenar	Lapua	57,1	2.248	N530	1,47	22.7	635	2083	1,73	26.7	763	2503
						N133	1,36	21.0	609	1998	1,73	26.7	745	2444
						N135	1,29	19.9	593	1946	1,75	27.0	741	2431
						N530	1,47	22.7	644	2113	1,65	25.5	725	2379
						N135	1,33	20.5	597	1959	1,65	25.5	701	2300
						N140	1,59	24.5	655	2149	1,83	28.2	731	2398
						N540	1,67	25.8	661	2169	1,83	28.2	741	2431
9,0	139	Scenar	Lapua	57,1	2.248	N530	1,40	21.6	606	1988	1,60	24.7	694	2277
						N135	1,23	19.0	547	1795	1,55	23.9	664	2178

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
 LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

6.5 mm Grendel

cont.

Bullet					Powder Type	Starting load				Maximum load				
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]		Type	Weight		Velocity		Weight		Velocity	
							[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]
						N140	1,57	24.2	620	2034	1,78	27.5	706	2316
						N540	1,64	25.3	642	2106	1,82	28.1	725	2379
9,1	140	Naturalis	Lapua	57,5	2.264	N530	1,41	21.8	595	1952	1,65	25.5	694	2277
						N140	1,42	21.9	579	1900	1,74	26.9	680	2231
						N540	1,59	24.5	616	2021	1,86	28.7	714	2343
9,3	144	FMJBT	Lapua	57,1	2.248	N530	1,40	21.6	610	2001	1,57	24.2	679	2228
						N135	1,19	18.4	553	1814	1,37	21.1	621	2037
						N140	1,49	23.0	640	2100	1,77	27.3	704	2310
						N540	1,60	24.7	638	2093	1,80	27.8	718	2356
10,1	156	Mega	Lapua	57,4	2.260	N530	1,28	19.8	539	1768	1,50	23.1	615	2018
						N140	1,31	20.2	513	1683	1,62	25.0	627	2057
						N540	1,38	21.3	537	1762	1,67	25.8	647	2123
						N150	1,30	20.1	511	1677	1,62	25.0	615	2018

6.5 x 47 Lapua

Test barrel: 700 mm (27½"), 1 in 8½" twist
 Primers: Small Rifle
 Cases: Lapua, trim-to length 46,80 mm (1.843")

Bullet					Powder Type	Starting load				Maximum load				
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]		Type	Weight		Velocity		Weight		Velocity	
							[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]
6,5	100	FMJ	Lapua	62,5	2.461	N133	1,91	29.5	778	2552	2,20	34.0	886	2907
						N135	1,91	29.5	765	2510	2,20	34.0	875	2871
						N140	2,15	33.2	801	2628	2,48	38.3	908	2979
6,5	100	Scenar	Lapua	69,5	2.736	N133	2,10	32.4	870	2854	2,26	34.9	925	3035
						N135	2,20	34.0	890	2920	2,31	35.6	930	3051
						N140	2,40	37.0	900	2953	2,56	39.5	950	3117
						N540	2,32	35.8	874	2867	2,64	40.7	992	3255
						N150	2,17	33.5	831	2726	2,53	39.0	954	3130
7,0	108	Scenar	Lapua	69,5	2.736	N133	1,96	30.2	807	2648	2,20	33.9	882	2894
						N135	2,04	31.5	814	2671	2,23	34.4	885	2904
						N140	2,23	34.4	828	2717	2,51	38.7	910	2986
						N540	2,27	35.0	839	2753	2,55	39.4	943	3094
						N150	2,35	36.3	849	2785	2,63	40.6	930	3051
						N550	2,39	36.9	836	2743	2,68	41.4	948	3110
7,8	120	Scenar-L	Lapua	69,5	2.736	N140	1,80	27.8	731	2398	2,35	36.3	853	2799
						N540	2,14	33.0	772	2533	2,45	37.8	889	2917
						N150	2,06	31.8	744	2441	2,43	37.5	859	2818
						N550	2,31	35.6	776	2546	2,62	40.4	895	2936
7,8	120	TSX	Barnes	64,5	2.539	N150	1,99	30.7	690	2264	2,43	37.5	830	2723
						N540	2,20	34.0	748	2454	2,48	38.3	846	2776
						N550	2,35	36.3	750	2461	2,70	41.7	872	2861
8,0	123	Scenar	Lapua	69,5	2.736	N140	2,15	33.2	768	2520	2,36			

6.5 x 47 Lapua

cont.

Bullet					Powder Type	Starting load				Maximum load				
Weight		Type/Name	Mfg	C.O.L.		Weight		Velocity		Weight		Velocity		
[g]	[grs]			[mm]		[in.]	[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]
		N563				N150	1,77	27.3	625	2051	2,11	32.6	738	2421
						N540	1,91	29.5	662	2172	2,21	34.1	774	2539
						N550	2,04	31.5	676	2218	2,37	36.6	786	2579
10,1	156	Mega	Lapua	63,2	2.488	N150	1,78	27.5	598	1962	2,12	32.7	710	2329
						N540	2,01	31.0	650	2133	2,26	34.9	753	2470
						N550	2,12	32.7	696	2283	2,43	37.5	769	2523

6.5 Creedmoor

Test barrel: 650 mm (25 1/2"), 1 in 9"
 Primers: Small Rifle
 Cases: Lapua, trim-to length 48.50 mm (1.909")

Bullet					Powder Type	Starting load				Maximum load				
Weight		Type/Name	Mfg	C.O.L.		Weight		Velocity		Weight		Velocity		
[g]	[grs]			[mm]		[in.]	[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]
6,5	100	Scenar	Lapua	68,0	2.677	N140	2,41	37.2	869	2851	2,74	42.3	979	3212
						N150	2,39	36.9	862	2828	2,73	42.1	977	3205
						N540	2,42	37.3	881	2890	2,74	42.3	1001	3284
7,0	108	Scenar	Lapua	68,0	2.677	N150	2,18	33.6	816	2677	2,63	40.6	936	3071
						N540	2,31	35.6	843	2766	2,64	40.7	970	3182
						N550	2,48	38.3	845	2772	2,83	43.7	972	3189
7,8	120	Scenar-L	Lapua	68,0	2.677	N150	2,03	31.3	756	2480	2,47	38.1	870	2854
						N540	2,18	33.6	790	2592	2,52	38.9	895	2936
						N550	2,38	36.7	804	2638	2,73	42.1	913	2995
8,0	123	Scenar	Lapua	68,0	2.677	N150	2,22	34.3	769	2523	2,58	39.8	876	2874
						N540	2,31	35.6	799	2621	2,62	40.4	903	2963
						N550	2,46	38.0	802	2631	2,78	42.9	911	2989
8,4	130	VLD Target	Berger	71	2.795	N150	2,10	32.4	738	2421	2,34	36.1	809	2654
						N160	2,61	40.3	784	2572	2,85	44.0	857	2812
						N540	2,21	34.1	765	2510	2,45	37.8	847	2779
						N550	2,37	36.6	779	2556	2,62	40.4	857	2812
						N560	2,78	42.9	790	2592	3,03	46.8	875	2871
						N565	2,88	44.4	795	2608	3,16	48.8	874	2867
8,4	130	AR Hybrid OTM Tactical	Berger	68	2.677	N150	2,10	32.4	744	2441	2,37	36.6	816	2677
						N160	2,61	40.3	784	2572	2,86	44.1	858	2815
						N550	2,43	37.5	779	2556	2,63	40.6	856	2808
						N560	2,79	43.1	788	2585	3,06	47.2	876	2874
8,4	130	Scirocco II	Swift	67,3	2.650	N150	2,03	31.3	728	2388	2,29	35.3	802	2631
						N160	2,50	38.6	790	2592	2,71	41.8	822	2697
						N165	2,85	44.0	795	2608	2,90	44.8	808	2651
						N550	2,32	35.8	753	2470	2,55	39.4	830	2723
						N560	2,67	41.2	765	2510	3,04	46.9	857	2812
8,4	130	TSX	Barnes	69,0	2.717	N150	1,70	26.2	616	2021	2,22	34.3	769	2523
						N540	1,94	29.9	679	2228	2,33	36.0	804	2638
						N550	2,03	31.3	695	2280	2,50	38.6	819	2687
8,8	136	Scenar-L	Lapua	68,0	2.677	N150	2,08	32.1	724	2375	2,48	38.3	833	2733
						N540	2,10	32.4	739	2425	2,44	37.7	840	2756
						N550	2,32	35.8	756	2480	2,66	41.1	865	2838
						N160	2,59	40.0	770	2526	2,98	46.0	870	2854
9,0	139	Scenar	Lapua	69,0	2.717	N150	1,90	29.3	690	2264	2,30	35.5	793	2602
						N540	2,00	30.9	713	2339	2,38	36.7	817	2680
						N550	2,20	34.0	735	2411	2,57	39.7	841	2759
						N160	2,14	33.0	700	2297	2,73	42.1	833	2733
9,1	140	Naturalis	Lapua	69,2	2.724	N150	1,67	25.8	605	1985	2,05	31.6	713	2339
						N540	1,88	29.0	671	2201	2,20	34.0	769	2523
						N550	1,98	30.6	678	2224	2,33	36.0	776	2546
9,1	140	Hybrid Target	Berger	69,0	2.717	N150	2,03	31.3	710	2329	2,29	35.3	778	2552
						N160	2,41	37.2	744	2441	2,71	41.8	813	2667
						N550	2,29	35.3	745	2444	2,53	39.0	816	2677
						N560	2,66	41.1	758	2487	2,94	45.4	837	2746
						N565	2,77	42.7	767	2516	3,05	47.1	833	2733

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
 LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

6.5 Creedmoor

cont.

Bullet					Powder Type	Starting load				Maximum load				
Weight		Type/Name	Mfg	C.O.L.		Weight		Velocity		Weight		Velocity		
[g]	[grs]			[mm]		[in.]	[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]
9,1	140	AccuBond	Nosler	71,0	2.795	N150	1,87	28.9	664	2178	2,27	35.0	770	2526
						N540	1,96	30.2	685	2247	2,30	35.5	790	2592
						N550	2,08	32.1	697	2287	2,48	38.3	808	2651
9,2	142	HPBT	Sierra	68,5	2.697	N150	1,97	30.4	684	2244	2,22	34.3	752	2467
						N160	2,38	36.7	718	2356	2,68	41.4	801	2628
						N550	2,30	35.5	737	2418	2,53	39.0	812	2664
						N560	2,63	40.6	752	2467	2,86	44.1	828	2717
						N565	2,75	42.4	751	2464	3,04	46.9	829	2720
9,3	144	FMJBT	Lapua	69,0	2.717	N150	1,79	27.6	662	2172	2,29	35.3	781	2562
						N540	1,85	28.5	674	2211	2,26	34.9	788	2585
						N550	2,03	31.3	695	2280	2,44	37.7	812	2664
						N160	2,17	33.5	683	2241	2,61	40.3	782	2566
						N560	2,57	39.7	737	2418	2,86	44.1	823	2700
						N565	2,69	41.5	749	2457	2,96	45.7	821	2694
9,3	143	ELD-X	Hornady	68,8	2.709	N150	1,98	30.6	695	2280	2,23	34.4	763	2503
						N160	2,36	36.4	729	2392	2,68	41.4	801	2628
						N550	2,24	34.6	741	2431	2,44	37.7	801	2628
						N560	2,63	40.6	749	2457	2,91	44.9	833	2733
						N565	2,74	42.3	760	2493	3,05	47.1	824	2703
10,1	156	Mega	Lapua	68,5	2.697	N150	1,71	26.4	603	1978	2,17	33.5	727	2385
						N540	1,83	28.2	635	2083	2,20	34.0	739	2425
						N550	1,99	30.7	656	2152	2,37	36.6	763	2503
						N160	1,93	29.8	625	2051	2,48	38.3	754	2474

.260 Remington

Test barrel: 475 mm (18 3/4"), 1 in 9" twist *Test barrel 600 mm (23 1/2")
 Primers: Large Rifle
 Cases: Lapua .260 Remington, trim-to length 51,50mm (2.028")

Bullet					Powder Type	Starting load				Maximum load				
Weight		Type/Name	Mfg	C.O.L.		Weight		Velocity		Weight		Velocity		
[g]	[grs]			[mm]		[in.]	[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]
6,5	100	FMJ	Lapua	66,0	2.598	N140	2,08	32.1	765	2510	2,44	37.7	862	2828
						N540	2,32	35.8	797	2615	2,63	40.6	891	2923
						N150	2,12	32.7	769	2523	2,51	38.7	861	2825
6,5	100	HPFB	Sierra	67,5	2.657	N140	2,30	35.5	825	2708	2,59	39.9	906	2973
						N150	2,31	35.7	813	2669	2,61	40.3	892	2926
						N540	2,39	36.9	831	2725	2,67	41.2	912	2992
6,5	100	Scenar	Lapua	69,0	2.717	N140</								

.260 Remington

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
8,4*	130	TSX	Barnes	70,8	2.787	N540	2,17	33.5	720	2362	2,44	37.7	810	2657
						N550	2,26	34.9	717	2352	2,59	40.0	816	2677
						N160	2,32	35.8	702	2303	2,75	42.4	808	2651
8,5	130	Scirocco II	Swift	71,0	2.795	N140	2,06	31.8	719	2359	2,32	35.8	785	2575
						N150	2,02	31.2	722	2369	2,34	36.1	795	2608
						N540	2,12	32.7	734	2408	2,45	37.8	819	2687
						N550	2,30	35.5	742	2434	2,60	40.1	828	2717
						N560	2,74	42.3	762	2500	3,00	46.3	846	2776
8,5	130	VLD Target	Berger	71,0	2.795	N140	2,11	32.6	739	2425	2,38	36.7	814	2671
						N150	2,09	32.3	741	2431	2,42	37.3	815	2674
						N540	2,19	33.8	761	2497	2,48	38.3	843	2766
						N550	2,46	38.0	778	2552	2,69	41.5	856	2808
8,5	130	Hybrid OTM Tactical	Berger	71,0	2.795	N150	2,17	33.5	746	2448	2,46	38.0	821	2694
						N540	2,22	34.3	762	2500	2,51	38.7	844	2769
						N550	2,45	37.8	777	2549	2,70	41.7	855	2805
						N160	2,71	41.8	786	2579	2,97	45.8	862	2828
8,8	135	Classic Hunter	Berger	71,0	2.795	N150	2,09	32.3	721	2365	2,37	36.6	799	2621
						N540	2,13	32.9	736	2415	2,42	37.3	819	2687
						N550	2,42	37.3	758	2487	2,65	40.9	833	2733
						N160	2,59	40.0	757	2484	2,85	44.0	830	2723
						N560	2,79	43.1	768	2520	3,02	46.6	846	2776
8,8*	136	Scenar-L	Lapua	71,0	2.795	N550	2,47	38.1	755	2477	2,70	41.7	835	2740
						N160	2,71	41.8	758	2487	2,99	46.1	841	2759
						N560	2,82	43.5	762	2500	3,10	47.8	843	2766
9,0*	139	Scenar	Lapua	71,0	2.795	N550	2,40	37.0	756	2480	2,56	39.5	810	2657
						N160	2,60	40.1	756	2480	2,81	43.4	815	2674
						N560	2,72	42.0	750	2461	2,99	46.1	830	2723
9,1*	140	Accubond	Nosler	70,0	2.756	N550	2,34	36.1	720	2362	2,65	40.9	811	2661
						N160	2,43	37.5	714	2343	2,85C	44.0C	796	2612
						N560	2,56	39.5	736	2415	2,90C	44.8C	823	2700
9,1	140	Naturalis N563	Lapua	70,0	2.756	N150	1,90	29.3	667	2188	2,20	34.0	747	2451
						N550	2,17	33.5	704	2310	2,49	38.4	793	2602
						N160	2,20	34.0	689	2260	2,62	40.4	787	2582
						N560	2,57	39.7	720	2362	2,92	45.1	817	2680
9,1	140	Elite Hunter	Berger	71,0	2.795	N150	2,05	31.6	702	2303	2,34	36.1	781	2562
						N160	2,53	39.0	736	2415	2,79	43.1	811	2661
						N550	2,35	36.3	738	2421	2,57	39.7	811	2661
						N560	2,75	42.4	753	2470	2,99	46.1	834	2736
						N565	2,81	43.4	757	2484	3,17	48.9	838	2749
9,1	140	A-Frame	Swift	71,0	2.795	N550	2,04	31.5	670	2198	2,42	37.3	764	2507
						N160	1,85	28.5	627	2057	2,48	38.3	752	2467
						N560	2,40	37.0	700	2297	2,84	43.8	799	2621
						N565	2,59	40.0	724	2375	2,92	45.1	801	2628
9,1	140	VLD Target	Berger	71,0	2.795	N150	2,11	32.6	712	2336	2,37	36.6	783	2569
						N540	2,12	32.7	724	2375	2,44	37.7	806	2644
						N550	2,39	36.9	744	2441	2,60	40.1	814	2671
						N160	2,61	40.3	751	2464	2,87	44.3	824	2703
						N560	2,72	42.0	750	2461	2,99	46.1	833	2733
						N565	2,82	43.5	756	2480	3,13	48.3	833	2733
9,3	144	FMJBT	Lapua	71,0	2.795	N550	2,15	33.2	677	2221	2,49	38.4	768	2520
						N160	2,33	36.0	680	2231	2,66	41.1	762	2500
						N560	2,56	39.5	786	2579	2,90	44.8	780	2559
						N565	2,70	41.7	736	2415	2,99	46.1	812	2664
10,1	155	Mega	Lapua	69,5	2.736	N160	2,14	33.0	651	2134	2,41	37.1	711	2332
						N560	2,37	36.6	651	2137	2,72	42.0	735	2412
						N165	2,52	38.8	673	2208	2,83	43.7	755	2478

C = Compressed load *Test barrel 600 mm (23½"), 1 in 9" twist

6.5 x 55 Swedish Mauser

Test barrel: 670 mm (26½"), 1 in 8½" twist
 Primers: Large Rifle
 Cases: Lapua, trim-to length 54,80 mm (2.157")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
5,5	85	HP	Sierra	71,1	2.799	N150	2,88	44.5	937	3073	3,03	46.8	1013	3323
6,5	100	HP	Sierra	72,4	2.850	N140	2,62	40.4	860	2822	2,78	42.8	911	2990
						N540	2,65	40.9	858	2815	2,88	44.4	938	3078
						N150	2,69	41.5	860	2822	2,86	44.1	915	3003
						N550	2,82	43.5	884	2900	3,03	46.8	960	3150
						N160	3,13	48.3	878	2881	3,33	51.4	942	3090
6,5	100	FMJ	Lapua	70,0	2.756	N530	2,34	36.1	880	2887	2,53	39.0	938	3077
						N135	2,21	34.1	802	2631	2,55A	39.3A	894	2933
						N140	2,38	36.7	810	2657	2,75	42.4	910	2986
						N540	2,71	41.8	910	2986	2,90	44.8	973	3192
						N150	2,45	37.8	823	2700	2,79	43.0	920	2690
						N160	3,08	47.5	862	2828	3,39	52.3	946	3104
6,5	100	Scenar	Lapua	75,0	2.953	N530	2,35	36.3	899	2949	2,54	39.2	951	3120
						N135	2,15	33.2	790	2592	2,44	37.6	889	2917
						N140	2,32	35.8	790	2592	2,64	40.7	915	3002
						N540	2,35	36.3	790	2592	2,70	41.7	924	3031
						N150	2,37	36.6	793	2602	2,69A	41.5A	870	2853
						N550	2,58	39.8	790	2592	2,97	45.8	938	3077
						N160	2,78	42.9	790	2592	3,01	46.4	928	3045
7,0	108	Scenar	Lapua	78,0	3.071	N530	2,29	35.3	859	2818	2,48	38.3	912	2992
						N140	2,44	37.6	806	2644	2,64	40.8	880	2887
						N540	2,50	38.6	827	2713	2,69	41.5	897	2943
						N150	2,56	39.5	830	2723	2,69	41.5	870	2853
						N550	2,72	42.0	853	2798	2,94	45.4	936	3070
						N160	2,80	43.2	820	2690	3,05	47.1	920	3018
						N560	3,19	49.2	867	2843	3,35	51.7	950	3117
						N165	3,16	48.8	860	2822	3,28F	50.7F	902	2959
7,0	108	Scenar SJ	Lapua	78,0	3.071	N140	2,42	37.3	825	2707	2,68	41.3	893	2931
						N540	2,52	38.9	827	2713	2,74	42.2	902	2958
						N150	2,49	38.4	819	2687	2,70A	41.7A	889	2917
						N550	2,85	44.0	891	2923	3,00	46.3	955	3133
						N160	2,97	45.8	881	2890	3,19	49.2	945	3100
						N560	3,19	49.2	887	2910	3,38	52.2	956	3136
7,8	120	HPBT	Sierra	76,8	3.024									

6.5 x 55 Swedish Mauser cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
						N550	2,41	37.2	768	2520	2,73A	42.1A	857	2811
						N160	2,75	42.4	792	2598	2,88	44.5	831	2726
						N560	3,09	47.7	845	2772	3,22	49.7	901	2956
8,4	130	TSX	Barnes	74,5	2.930	N160	2,29	35.3	726	2382	2,72	42.0	814	2671
						N560	2,92	45.1	796	2612	3,14	48.5	860	2822
						N165	3,08	47.5	808	2651	3,32	51.2	870	2854
8,4	130	HPBT	Norma	80,0	3.150	N140	2,29	35.3	730	2395	2,64	40.7	812	2663
						N540	2,32	35.8	749	2457	2,57	39.6	820	2690
						N150	2,32	35.8	710	2329	2,60	40.1	808	2651
						N550	2,54	39.2	768	2520	2,84	43.8	852	2795
						N160	2,79	43.0	764	2507	3,06	47.3	840	2757
						N560	3,01	46.4	803	2635	3,25	50.2	878	2882
8,8	136	Scenar-L	Lapua	78,0	3.071	N540	2,39	36.9	785	2575	2,59	40.0	836	2743
						N150	2,29	35.3	753	2470	2,46	38.0	803	2635
						N550	2,57	39.7	800	2625	2,73	42.1	841	2759
						N160	2,73	42.1	778	2552	2,93	45.2	840	2756
						N560	2,90	44.8	802	2631	3,07	47.4	857	2812
						N165	3,02	46.6	813	2667	3,20	49.4	861	2825
9,0	139	HPBT	Norma	78,0	3.071	N150	2,28	35.2	704	2310	2,55	39.4	779	2555
						N550	2,50	38.6	743	2438	2,71	41.8	813	2667
						N160	2,73	42.1	738	2421	2,98	46.0	810	2656
						N560	2,88	44.4	753	2470	3,20	49.4	846	2777
						N165	3,00	46.3	765	2510	3,23	49.9	833	2732
9,0	139	Scenar	Lapua	78,0	3.071	N540	2,35	36.3	764	2507	2,53	39.0	819	2687
						N150	2,12	32.7	706	2316	2,28	35.2	761	2497
						N550	2,37	36.6	737	2418	2,59	40.0	805	2641
						N160	2,40	37.0	732	2402	2,67	41.2	790	2592
						N560	2,73	42.1	736	2415	3,06	47.2	826	2710
						N165	2,86	44.1	766	2513	3,10	47.8	833	2733
9,0	139	Scenar SJ	Lapua	78,0	3.071	N150	2,25	34.7	729	2392	2,48	38.3	785	2575
						N550	2,37	36.6	712	2336	2,61A	40.3A	799	2622
						N160	2,54	39.2	748	2454	2,80	43.3	795	2610
						N560	2,73	42.1	736	2415	3,06	47.3	826	2711
						N165	2,94	45.4	788	2585	3,12	48.1	841	2759
9,1	140	Naturalis N563	Lapua	75,0	2.953	N540	2,25	34.7	742	2434	2,47	38.1	796	2612
						N150	2,03	31.3	695	2280	2,25	34.7	752	2467
						N550	2,34	36.1	741	2431	2,59	40.0	803	2635
						N160	2,32	35.8	723	2372	2,66	41.1	790	2592
						N560	2,71	41.8	763	2503	2,96	45.7	824	2703
						N165	2,55	39.4	751	2464	3,00	46.3	813	2667
9,1	140	HPBT	Sierra	79,0	3.110	N150	2,35	36.3	703	2306	2,54	39.1	765	2511
						N550	2,58	39.8	749	2457	2,73	42.1	806	2644
						N160	2,81	43.4	759	2490	3,03	46.7	819	2687
						N560	2,93	45.2	779	2556	3,13	48.3	844	2770
						N165	3,00	46.3	766	2513	3,24	50.0	834	2735
9,1	140	Hybrid Target	Berger	80,0	3.150	N150	2,10	32.4	692	2270	2,33	36.0	752	2467
						N160	2,44	37.7	715	2346	2,69	41.5	772	2533
						N165	2,85	44.0	754	2474	3,06	47.2	810	2657
						N550	2,40	37.0	729	2392	2,64	40.7	796	2612
						N560	2,84	43.8	761	2497	3,07	47.4	826	2710
						N565	2,93	45.2	773	2536	3,14	48.5	830	2723
9,1	140	A-Frame	Swift	78,0	3.071	N150	1,65	25.5	585	1919	1,96	30.2	663	2175
						N160	1,57	24.2	560	1837	2,02	31.2	659	2162
						N560	2,25	34.7	668	2192	2,79	43.1	769	2523
						N565	2,58	39.8	716	2349	2,87	44.3	775	2543
9,3	144	FMJBT	Lapua	79,0	3.110	N150	2,04	31.5	659	2163	2,40	37.0	768	2520
						N160	2,64	40.7	717	2352	2,85	44.0	816	2677
						N560	2,91	44.8	756	2479	3,15	48.6	850	2789
						N165	2,70	41.7	720	2362	3,18	49.1	837	2746
						N170	3,08	47.5	715	2346	3,41C	52.6C	815	2674
						N570	3,11	48.0	750	2461	3,22F	49.7F	785	2575

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

6.5 x 55 Swedish Mauser cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
10,0	155	HPBT	Sierra	79,0	3.110	N150	2,10	32.4	653	2142	2,33	36.0	711	2331
						N550	2,36	36.4	689	2260	2,60	40.1	746	2447
						N160	2,64	40.7	698	2290	2,97	45.9	769	2522
						N560	2,66	41.0	702	2303	2,93	45.2	779	2556
						N165	2,75	42.4	690	2264	3,08	47.6	769	2522
						N170	2,90	44.7	677	2221	3,32C	51.2C	779	2555
10,1	156	Mega	Lapua	73,0	2.874	N165	2,74	42.3	677	2222	3,17	49.0	755	2478
						N560	2,72	42.0	685	2248	3,11	48.0	773	2537
						N170	3,03	46.8	682	2238	3,32C	51.2C	746	2447
						N570	3,02	46.6	730	2395	3,20F	49.4F	774	2539

A = Accuracy load C = Compressed load F = Case full

6.5 x 55 SE / 6.5 x 55 SKAN

Test barrel: Sauer STR 200
Primers: Large Rifle
Cases: Lapua, trim-to length 54,80 mm (2.157")

WARNING: This reloading data is intended to use with modern rifles in good condition such as Sauer, Sako or Blaser chambered to 6,5 x 55 SKAN or 6,5 x 55 SE
WARNING: DO NOT USE with the Krag-Jørgensen, Mauser M1896 or similar rifles. This data has max loads set at pressure of 380 MPa!
NOTE: Data contains velocity information for standard barrel lengths of Sauer STR200 rifles

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
6,5	100	Scenar GB504	Lapua	75,0	2.953	N530	2,07	31.9	800	2625	2,54	39.2	951	3120
						N135	2,18	33.6	800	2625	2,44	37.7	889	2917
						N140	2,35	36.3	800	2625	2,64	40.7	915	3002
						N540	2,40	37.0	800	2625	2,70	41.7	924	3031
						N150	2,42	37.3	800	2625	2,69	41.5	870	2854
						N550	2,60	40.1	800	2625	2,97	45.8	938	3077
						N160	2,80	43.2	800	2625	3,01	46.5	928	3045

Bullet		7,0 g / 108 gr		Lapua GB464 Scenar		C.O.L. 78 mm / 3.071 inch											
Powder	Type	Starting load		Velocity, barrel length [mm]				Maximum load		Velocity, barrel length [mm]							
		Weight [g]	[grs]	670 [m/s]	[fps]	700 [m/s]	[fps]	740 [m/s]	[fps]	Weight [g]	[grs]	670 [m/s]	[fps]	700 [m/s]	[fps]	740 [m/s]	[fps]
N140		2,32	35.8	796	2610	804	2639	816	2677	2,70	41.7	890	2921	900	2953	913	2995
N540		2,66	41.1	842	2762	852	2795	865	2838	2,95	45.5	942	3091	953	3128	968	3176
N150		2,39	36.9	800	2624	809	2654	821	2694	2,78	42.9	898	2947	908	2980	922	3025
N550		2,80	43.2	849	2785	858	2815	870	2854	3,04	46.9	996	3268	948	3109	961	3153
N160		2,81	43.4	837	2745	844	2769	854	2802	3,16	48.8	929	3047	937	3074	948	3110
N560		3,14	48.5	831	2726	839	2753	850	2789	3,50	54.0	949	3114	959	3146	972	3189

Bullet		7,8 g / 120 gr		Lapua GB547 Scenar-L		C.O.L. 77 mm / 3.031 inch											
Powder	Type	Starting load		Velocity, barrel length [mm]				Maximum load		Velocity, barrel length [mm]							
		Weight [g]	[grs]	670 [m/s]	[fps]	700 [m/s]	[fps]	740 [m/s]	[fps]	Weight [g]	[grs]	670 [m/s]	[fps]	700 [m/s]	[fps]	740 [m/s]	[fps]
N135		2,08	32.1	739	2425	744	2441	752	2467	2,43	37.5	829	2720	834	2736	842	2762
N140		2,18	33.6	761	2497	767	2516	774	2539	2,59	40.0	844	2769	849	2785	856	2808
N540		2,32	35.8	800	2625	801	2628	807	2648	2,81	43.4	890	2920</				

6.5 x 55 SE / 6.5 x 55 SKAN cont.

Bullet		8,0 g / 123 gr								Lapua GB489 Scenar								C.O.L. 78 mm / 3.071 inch			
Powder		Starting load								Maximum load											
Type	Weight		Velocity, barrel length [mm]				740				Weight		Velocity, barrel length [mm]				740				
	[g]	[grs]	[m/s]	[fps]	[m/s]	[fps]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]	[m/s]	[fps]	[m/s]	[fps]					
N140	2,20	34.0	750	2462	755	2477	761	2497	2,55	39.4	833	2734	838	2750	845	2772					
N540	2,47	38.1	788	2586	795	2607	803	2635	2,79	43.1	881	2892	889	2915	898	2946					
N150	2,24	34.6	741	2432	748	2454	757	2484	2,60	40.1	830	2724	838	2749	848	2782					
N550	2,67	41.2	805	2641	816	2676	830	2723	2,94	45.4	883	2895	894	2934	910	2986					
N160	2,71	41.8	763	2502	779	2557	802	2631	3,02	46.6	845	2773	864	2835	889	2917					
N560	3,04	46.9	801	2628	814	2669	830	2723	3,27	50.5	888	2913	902	2958	920	3018					

Bullet		8,8 g / 136 gr								Lapua GB546 Scenar-L								C.O.L. 78 mm / 3.071 inch			
Powder		Starting load								Maximum load											
Type	Weight		Velocity, barrel length [mm]				740				Weight		Velocity, barrel length [mm]				740				
	[g]	[grs]	[m/s]	[fps]	[m/s]	[fps]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]	[m/s]	[fps]	[m/s]	[fps]					
N540	2,39	36.9	736	2415	742	2434	749	2457	2,72	42,0	841	2759	846	2776	852	2795					
N150	2,29	35.3	711	2333	718	2356	726	2382	2,58	39,8	821	2694	824	2703	830	2723					
N550	2,57	39.7	757	2484	763	2503	769	2523	2,80	43,2	856	2808	862	2828	870	2854					
N160	2,73	42.1	741	2431	748	2454	755	2477	3,05	47,1	852	2795	857	2812	865	2838					
N560	2,9	44.8	786	2579	794	2605	801	2628	3,20	49,4	884	2900	892	2927	901	2956					
N165	3,02	46.6	779	2556	787	2582	795	2608	3,30C	50,9C	868	2848	876	2874	885	2904					

Bullet		9,0 g / 139 gr								Lapua GB458 Scenar								C.O.L. 78 mm / 3.071 inch			
Powder		Starting load								Maximum load											
Type	Weight		Velocity, barrel length [mm]				740				Weight		Velocity, barrel length [mm]				740				
	[g]	[grs]	[m/s]	[fps]	[m/s]	[fps]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]	[m/s]	[fps]	[m/s]	[fps]					
N150	2,12	32.7	696	2284	699	2295	704	2310	2,40	37,0	781	2563	785	2575	790	2592					
N550	2,37	36.6	738	2421	743	2438	750	2461	2,72	42,0	825	2705	830	2724	838	2749					
N160	2,41	37.2	723	2373	730	2395	735	2411	2,84	43,8	817	2679	824	2704	830	2723					
N560	2,87	44.3	771	2529	776	2546	783	2569	3,18	49,1	866	2842	872	2862	880	2887					
N165	2,86	44.1	758	2488	765	2508	773	2536	3,25	50,2	847	2777	854	2801	863	2831					

C = Compressed load

6.5 - 284 Norma

Test barrel: 660 mm (26"), 1 in 9" twist
 Primers: Large Rifle
 Cases: Lapua, trim-to length 54,90 mm (2.161")

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight				[mm]	[in.]	Type	Weight	Velocity		Weight	Velocity			
[g]	[grs]						[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]
6,5	100	FMJ	Lapua	70,0	2.756	N150	2,71	41.8	872	2861	3,22	49.7	973	3192
						N550	3,09	47.7	895	2936	3,48	53.7	1019	3343
						N160	3,08	47.5	855	2805	3,77	58.2	1002	3287
6,5	100	Scenar	Lapua	75,0	2.953	N150	2,79	43.1	910	2986	3,23	49.8	999	3278
						N550	3,08	47.5	892	2927	3,48	53.7	1019	3343
						N160	3,10	47.8	865	2838	3,77	58.2	1004	3294
7,0	108	Scenar	Lapua	79,0	3.110	N550	2,97	45.8	920	3018	3,39	52.3	1027	3368
						N160	3,08	47.5	906	2972	3,49	53.9	1008	3308
						N560	3,47	53.5	927	3041	3,81	58.9	1031	3384
						N165	3,52	54.3	922	3025	4,04	62.4	1042	3419
8,0	123	Scenar	Lapua	79,0	3.110	N160	2,59	40.0	795	2608	3,29	50.8	925	3035
						N165	3,03	46.8	830	2723	3,65	56.4	947	3106
						N560	3,28	50.6	867	2844	3,65	56.3	963	3158
7,8	120	Scenar-L	Lapua	79,0	3.110	N550	2,83	43.7	822	2697	3,26	50.3	940	3084
						N160	2,86	44.1	801	2628	3,53	54.5	930	3051
						N560	3,32	51.2	831	2726	3,73	57.6	956	3136
						N165	3,40	52.5	834	2736	3,80	58.6	942	3091

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
 LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

6.5 - 284 Norma cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight				[mm]	[in.]	Type	Weight	Velocity		Weight	Velocity			
[g]	[grs]						[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]
8,8	136	Scenar-L	Lapua	79,0	3.110	N550	2,75	42.4	770	2526	3,13	48.3	879	2884
						N160	2,83	43.7	754	2474	3,38	52.2	868	2848
						N560	3,22	49.7	795	2608	3,62	55.9	935	3068
						N165	3,26	50.3	783	2569	3,65	56.3	892	2927
9,0	139	Scenar	Lapua	79,0	3.110	N160	2,80	43.2	772	2533	3,06	47.2	835	2740
						N560	3,12	48.1	793	2602	3,63	56.0	919	3015
9,1	140	Naturalis	Lapua	75,0	2.953	N550	2,58	39.8	737	2418	3,01	46.5	832	2730
		N563				N160	2,61	40.3	713	2339	3,12	48.1	826	2710
						N165	2,57	39.7	702	2303	3,43	52.9	851	2792
						N560	2,88	44.4	737	2418	3,44	53.1	861	2825
9,3	144	FMJBT	Lapua	79,0	3.110	N160	2,80	43.2	783	2569	3,14	48.5	841	2759
						N560	3,18	49.1	802	2631	3,43	52.9	876	2874
						N165	2,90	44.7	766	2513	3,61	55.7	875	2871
						N570	3,54	54.6	798	2618	3,70F	57.1F	830	2723
10,1	156	Mega	Lapua	74,0	2.913	N560	3,09	47.7	755	2477	3,45	53.2	841	2759
						N570	3,46	53.4	781	2562	3,65	56.3	808	2651

F = Case full

.270 WSM

Test barrel: 520 mm (20½"), 1 in 9" twist
 Primers: Large Rifle Magnum
 Cases: Winchester, trim-to length 53,10 mm (2.091")

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight				[mm]	[in.]	Type	Weight	Velocity		Weight	Velocity			
[g]	[grs]						[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]
5,8	90	HP	Sierra	68,6	2.701	N160	4,00	61.7	1021	3350	4,47	69.0	1130	3707
						N560	4,39	67.7	1020	3346	4,78	73.8	1135	3724
						N165	4,59	70.8	1041	3415	4,75F	73.3F	1083	3553
9,1	140	XFB	Barnes	71,0	2.795	N160	3,20	49.4	800	2625	3,71	57.2	899	2949
						N560	3,49	53.9	806	2644	3,93	60.6	918	3012
						N165	3,75	57.9	832	2730	4,10	63.3	913	2995
10,4	160	Partition	Nosler	71,0	2.795	N160	3,20	49.4	737	2418	3,47	53.5	825	2707
						N560	3,36	51.8	774	2539	3,82	58.9	873	2864
						N165	3,30	50.9	769	2523	3,90	60.2	863	2831

F = Case full

.270 Winchester

Test barrel: 620 mm (24½"), 1 in 10" twist
 Primers: Large Rifle
 Cases: Remington, trim-to length 64,30 mm (2.531")

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight				[mm]	[in.]	Type	Weight	Velocity		Weight	Velocity			
[g]	[grs]						[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]
6,5	100	Spitzer	Speer	80,0	3.150	N150	2,88	44.5	898	2945	3,42	52.8	998	3273
						N160	3,80	58.6	953	3127	4,27C	65.8C	1057	3468
						N165	4,00	61.7	966	3170	4,53C	69.9C	1070	3509
7,5	115	Match King	Sierra	83,5	3.287	N150	2,56	39.5	833	2733	2,94	45.4	924	3031
						N550	2,87	44.3	871	2858	3,18	49.1	954	3130
						N160	2,98							

.284 Winchester

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
10,9	168	HPBT	Sierra	71	2.795	N160	3,13	48.3	748	2454	3,48	53.7	831	2726
						N550	2,81	43.4	742	2434	3,15	48.6	825	2707
						N560	3,35	51.7	757	2484	3,76	58.0	851	2792
11,3	175	Elite Hunter	Berger	74	2.913	N160	3,18	49.1	741	2431	3,51	54.2	821	2694
						N550	2,83	43.7	728	2388	3,17	48.9	810	2657
						N560	3,33	51.4	742	2434	3,75	57.9	836	2743

7 x 57

Test barrel: 550 mm (22"), 1 in 9½" twist
 Primers: Large Rifle
 Cases: Sako, trim-to length 56,80 mm (2.236")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
7,8	120	Spitzer	Sierra	76,5	3.012	N135	2,67	41.1	814	2670	2,87	44.2	880	2887
						N140	2,82	43.5	824	2704	3,06	47.2	897	2942
						N150	2,85	44.0	828	2717	3,09	47.6	898	2946
9,1	140	Ballistic Tip	Nosler	77,5	3.051	N140	2,58	39.7	736	2415	2,82	43.5	802	2630
						N150	2,65	40.9	747	2451	2,90	44.8	810	2657
10,4	160	SPBT	Sierra	77,5	3.051	N150	2,50	38.6	691	2267	2,76	42.7	754	2474
						N160	3,04	47.0	726	2381	3,26	50.3	793	2603
11,3	175	Mag-Tip	Speer	77,0	3.031	N160	2,76	42.5	659	2162	3,06	47.1	726	2383
						N165	2,94	45.4	666	2184	3,32	51.2	740	2429

7 x 57R

Test barrel: 550 mm (22"), 1 in 9½" twist
 Primers: Large Rifle
 Cases: RWS, trim-to length 56,80 mm (2.236")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
7,8	120	Spitzer	Sierra	76,5	3.012	N135	2,58	39.7	785	2574	2,79	43.1	857	2812
						N140	2,72	41.9	791	2594	2,97	45.8	870	2855
						N150	2,74	42.3	797	2613	3,00	46.3	873	2863
9,1	140	Ballistic Tip	Nosler	77,5	3.051	N140	2,47	38.1	707	2320	2,74	42.2	777	2549
						N150	2,53	39.0	718	2354	2,81	43.4	787	2581
9,7	150	TSX	Barnes	76,5	3.012	N150	2,23	34.4	663	2175	2,51	38.7	729	2392
						N540	2,38	36.7	696	2283	2,58	39.8	759	2490
						N550	2,58	39.8	702	2303	2,77	42.7	767	2516
9,7	150	TOG	Brenneke	76,5	3.012	N150	2,32	35.8	685	2247	2,57	39.7	738	2421
						N540	2,33	36.0	700	2297	2,67	41.2	772	2533
						N550	2,67	41.2	718	2356	2,86	44.1	779	2556
						N160	2,99	46.1	723	2372	3,19	49.2	776	2546
9,7	150	ScenarL	Lapua	76,5	3.012	N150	2,33	36.0	707	2320	2,57	39.7	768	2520
						N540	2,40	37.0	727	2385	2,58	39.8	780	2559
						N550	2,50	38.6	725	2379	2,70	41.7	782	2566
						N160	2,84	43.8	741	2431	3,06	47.2	798	2618
10,4	160	Naturalis	Lapua	75,0	2.953	N140	2,17	33.5	643	2110	2,41	37.2	701	2300
						N150	2,08	32.1	603	1978	2,47	38.1	702	2303
						N540	2,26	34.9	645	2116	2,53	39.0	715	2346
10,4	160	SPBT	Sierra	77,5	3.051	N150	2,39	36.8	662	2171	2,66	41.0	731	2397
						N160	2,93	45.2	693	2272	3,19	49.3	774	2539
11,3	174	TSX	Barnes	76,5	3.012	N550	2,26	34.9	602	1975	2,52	38.9	676	2218
						N160	2,47	38.1	603	1978	2,80	43.2	672	2205
						N560	2,80	43.2	636	2087	3,14	48.5	711	2333
11,3	175	Mag-Tip	Speer	77,0	3.031	N160	2,63	40.6	629	2065	2,95	45.4	701	2298
						N165	2,78	42.8	631	2072	3,17	48.9	711	2333

7 x 64

Test barrel: 600 mm (23½"), 1 in 10" twist
 Primers: Large Rifle
 Cases: Lapua, trim-to length 63,80 mm (2.512")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
7,8	120	Ballistic Tip	Nosler	82,0	3.228	N150	2,94	45.4	863	2831	3,24	50.0	946	3104
						N540	3,03	46.8	888	2913	3,34	51.5	982	3222
						N550	3,16	48.8	884	2900	3,55	54.8	983	3225
						N160	3,52	54.3	892	2927	3,70C	57.1C	930	3051
9,1	140	A-Frame	Swift	81,4	3.205	N150	2,66	41.1	766	2513	3,10	47.8	856	2808
						N540	2,74	42.3	788	2585	3,15	48.6	887	2910
						N550	3,04	46.9	802	2631	3,32	51.2	889	2917
						N160	3,31	51.1	797	2615	3,60	55.6	889	2917
						N560	3,56	54.9	811	2661	3,88	59.9	909	2982
9,7	150	TSX	Barnes	83,8	3.299	N150	2,65	40.9	721	2365	2,99	46.1	813	2667
						N540	2,74	42.3	753	2470	3,06	47.2	846	2776
						N550	2,94	45.4	765	2510	3,24	50.0	855	2805
						N160	3,19	49.2	760	2493	3,61	55.7	861	2825
						N560	3,52	54.3	787	2582	3,91	60.3	892	2927
9,7	150	Partition	Nosler	83,8	3.299	N150	2,66	41.1	758	2487	3,09	47.7	843	2766
						N540	2,68	41.4	774	2539	3,14	48.5	871	2858
						N550	3,04	46.9	795	2608	3,33	51.4	871	2858
						N160	3,30	50.9	790	2592	3,59	55.4	874	2867
						N560	3,43	52.9	800	2625	3,76	58.0	888	2913
9,7	150	Scenar-L	Lapua	84,0	3.307	N150	2,64	40.7	757	2484	3,01	46.5	845	2772
						N540	2,71	41.8	779	2556	3,03	46.8	866	2841
						N550	2,92	45.1	787	2582	3,16	48.8	867	2844
						N160	3,22	49.7	794	2605	3,57	55.1	881	2890
						N560	3,33	51.4	796	2612	3,65	56.3	884	2900
10,1	156	Naturalis N564	Lapua	83,0	3.268	N150	2,60	40.1	736	2415	2,96	45.7	816	2677
						N550	2,81	43.4	750	2461	3,16	48.8	840	2756
						N160	3,19	49.2	764	2507	3,52	54.3	837	2746
						N560	3,33	51.4	747	2451	3,71	57.3	866	2841
10,4	160	Accubond	Nosler	84,0	3.307	N150	2,56	39.5	731	2398	2,99	46.1	810	2657
						N540	2,64	40.7	746	2448	3,04	46.9	835	2740
						N550	2,92	45.1	759	2490	3,20	49.4	839	2753
						N160	3,27	50.5	767	2516	3,60C	55.6C	854	2802
11,3	174	TSX	Barnes	81,3	3.201	N540	2,44	37.7	655	2149	2,95	45.5	765	2510
						N550	2,78	42.9	675	2215	3,24	50.0	784	2572
						N160	3,04	46.9	676	2218	3,47	53.6	781	2562
11,3	174	Game King	Sierra	84,0	3.307	N540	2,57	39.7	718	2356	2,98	46.0	803	2635
						N550	2,84	43.8	733	2405	3,09	47.7	805	2641
						N160	3,12	48.1	737	2418	3,41	52.6	812	2664
						N560	3,31	51.1	750	2461	3,70	57.1	837	2746
						N165	3,40	52.5	752	2467	3,75C	57.9C	823	2700
11,5	177	TIG	Brenneke	82,3	3.240	N540	2,53	39.0	687	2254	2,92	45.1	774	2539
						N550	2,81	43.4	701	2300	3,11	48.0	783	2569

7 x 65R

Test barrel: 660 mm (26"), 1 in 9" twist
 Primers: Large Rifle
 Cases: Lapua, trim-to length 64,80 mm (2.551")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
7,8	120	Ballistic Tip	Nosler	83,5	3.287	N150	2,89	44.6	852	2795	3,15	48.6	931	3054
						N540	3,01	46.5	886	2907	3,27	50.5	966	3169
						N550	3,18	49.1	883	2897	3,42	52.8	964	3163
						N160	3,50	54.0	885	2904	3,72	57.4	958	3143
9,1	140	A-Frame	Swift	82,3	3.240	N150	2,66	41.1	757	2484	2,98	46.0	831	2726
						N540	2,76	42.6	787	2582	3,12	48.1	872	2861
						N550	3,01	46.5	799	2621	3,24	50.0	871	2858
9,7	150	TSX	Barnes	83,5	3.287	N150	2,59	40.0	716	2349	2,90	44.8	796	2612
						N540	2,73	42.1	754	2474	3,00	46.3	834	2736
						N550	2,90	44.8	765	2510	3,15	48.6	841	2759
						N160	3,20	49.4	756	2480	3,49	53.9	835	2740
						N560	3,49	53.9	783	2569	3,74	57.7	863	2831
9,7	150	Partition	Nosler	83,5	3.287	N150	2,64	40.7	750	2461	2,96	45.7	820	2690
						N540	2,67	41.2	770	2526	3,05	47.1	849	2785
						N550	2,99	46.1	788	2585	3,24	50.0	856	2808
9,7	150	Scenar-L	Lapua	82,3	3.240	N150	2,62	40.4	756	2480	2,94	45.4	829	2720
						N540	2,70	41.7	783	2569	3,00	46.3	856	2808
						N550	2,93	45.2	793	2602	3,12	48.1	858	2815
						N160	3,22	49.7	793	2602	3,49	53.9	868	2848
						N560	3,40	52.5	797	2615	3,67	56.6	875	2871
10,1	156	Naturalis	Lapua	83,5	3.287	N150	2,59	40.0	714	2343	2,84	43.8	777	2549
						N540	2,71	41.8	742	2434	2,94	45.4	809	2654
						N550	2,86	44.1	750	2461	3,07	47.4	808	2651
						N160	3,10	47.8	709	2326	3,41	52.6	809	2654
						N560	3,35	51.7	759	2490	3,71	57.3	844	2769
10,4	160	AccuBond	Nosler	83,5	3.287	N150	2,57	39.7	715	2346	2,90	44.8	785	2575
						N540	2,71	41.8	744	2441	2,95	45.5	811	2661
						N550	2,87	44.3	748	2454	3,09	47.7	816	2677
						N160	3,10	47.8	745	2444	3,40	52.5	820	2690
						N560	3,35	51.7	766	2513	3,69	56.9	846	2776
11,4	175	TSX	Barnes	82,3	3.240	N540	2,53	39.0	658	2159	2,80	43.2	740	2428
						N550	2,74	42.3	672	2205	3,02	46.6	751	2464
						N160	2,86	44.1	656	2152	3,28	50.6	747	2451
						N560	3,33	51.4	714	2343	3,67	56.6	800	2625
11,3	174	GameKing	Sierra	83,5	3.287	N540	2,37	36.6	682	2238	2,88	44.4	783	2569
						N550	2,84	43.8	729	2392	3,07	47.4	796	2612
						N160	3,13	48.3	734	2408	3,33	51.4	796	2612
						N560	3,33	51.4	748	2454	3,59	55.4	822	2697
						N165	3,45	53.2	762	2500	3,74	57.7	828	2717
11,5	177	TIG	Brenneke	83,5	3.287	N160	3,05	47.1	700	2297	3,37	52.0	773	2536
						N560	3,35	51.7	730	2395	3,66	56.5	806	2644
						N165	3,44	53.1	732	2402	3,72	57.4	800	2625
11,7	181	Scenar-L	Lapua	83,6	3.291	N540	2,61	40.3	711	2333	2,82	43.5	772	2533
						N550	2,73	42.1	715	2346	2,97	45.8	776	2546
						N160	3,06	47.2	722	2369	3,30	50.9	786	2579
						N560	3,31	51.1	741	2431	3,58	55.2	810	2657
						N165	3,41	52.6	752	2467	3,68	56.8	815	2674

7 mm WSM

Test barrel: 660 mm (26"), 1 in 9.5" twist
 Primers: Large Rifle Magnum
 Cases: Winchester, trim-to length 53,15 mm (2.093")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
7,1	110	TNT HP	Speer	71,7	2.823	N150	3,44	53.1	965	3166	3,95	61.0	1062	3484
						N550	3,88	59.9	987	3238	4,24	65.4	1086	3563

7 mm WSM

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
9,1	140	Partition	Nosler	71,9	2.831	N160	4,19	64.7	986	3235	4,62	71.3	1069	3507
						N160	3,46	53.4	855	2805	4,00	61.7	957	3140
						N165	4,06	62.7	885	2904	4,50	69.4	970	3182
						N560	3,80	58.6	876	2874	4,34	67.0	979	3212
10,0	154	Interbond	Hornady	71,9	2.831	N160	3,39	52.3	819	2687	3,92	60.5	912	2992
						N165	3,88	59.9	842	2762	4,51	69.6	941	3087
						N560	3,70	57.1	841	2759	4,25	65.6	946	3104
10,4	160	SBT	Sierra	72,4	2.850	N160	3,38	52.2	796	2612	3,93	60.6	892	2927
						N165	3,91	60.3	834	2736	4,31	66.5	914	2999
						N560	3,70	57.1	827	2713	4,15	64.0	922	3025
10,4	160	Naturalis	Lapua	71,4	2.811	N160	2,93	45.2	782	2566	3,56	54.9	843	2766
						N165	3,34	51.5	763	2503	3,90	60.2	859	2818
						N560	3,38	52.2	779	2556	3,85	59.4	878	2881

7 mm Remington Magnum

Test barrel: 610 mm (24"), 1 in 9" twist
 Primers: Large Rifle Magnum
 Cases: Lapua, trim-to length 63,30 mm (2.492")

CAUTION: Loads less than the listed starting loads may cause excessive chamber pressure and must not be used!

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
9,1	140	A-Frame	Swift	83,0	3.268	N160	3,45	53.2	828	2717	4,03	62.2	935	3068
						N165	3,88	59.9	863	2831	4,37	67.4	955	3133
						N560	3,84	59.3	852	2795	4,36	67.3	966	3169
9,7	150	Scenar-L	Lapua	83,5	3.287	N160	3,27	50.5	794	2605	3,87	59.7	893	2930
						N560	3,86	59.6	847	2779	4,32	66.7	951	3120
						N165	3,72	57.4	820	2690	4,28	66.1	925	3035
9,7	150	Partition	Nosler	83,5	3.287	N160	3,53	54.5	824	2703	3,94	60.8	912	2992
						N560	3,89	60.0	851	2792	4,35	67.1	948	3110
						N165	3,82	59.0	847	2779	4,32	66.7	931	3054
10,1	156	Naturalis	Lapua	83,0	3.268	N160	2,99	46.1	716	2349	3,42	52.8	806	2644
						N165	3,30	50.9	743	2438	3,93	60.6	852	2795
						N560	3,50	54.0	773	2536	3,90	60.2	879	2884
10,4	160	Naturalis	Lapua	81,8	3.220	N160	3,15	48.6	753	2470	3,76	58.0	859	2818
						N560	3,67	56.6	843	2766	4,03	62.2	943	3094
						N165	3,65	56.3	786	2579	4,08	63.0	868	2848
10,4	160	Grand Slam	Speer	82,0	3.228	N160	3,31	51.1	784	2572	3,99	61.6	880	2887
						N560	3,91	60.3	823	2700	4,45	68.7	925	3035
						N165	3,83	59.1	812	2664	4,41	68.1	909	2982
10,9	168	HPBT	Sierra	83,5	3.287	N160	3,26	50.3	767	2516	3,86	59.6	862	2828
						N560	3,75	57.9	811	2661	4,26	65.7	903	2963
						N165	3,61	55.7	788	2585	4,14	63.		

7 mm Weatherby Magnum

Test barrel: 660 mm (26"), 1 in 9" twist
 Primers: Large Rifle Magnum
 Cases: Weatherby, trim-to length 64,50 mm (2.539")

CAUTION: Loads less than the listed starting loads may cause excessive chamber pressure and must not be used!

Bullet					Powder		Starting load				Maximum load			
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]	Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]	
6,5	100	HP	Hornady	81,5 3.209	N160	4,76	73.5	1071	3512	5,10	78.7	1149	3770	
					N560	4,98	76.8	1085	3561	5,30	81.8	1170	3839	
7,8	120	Spitzer	Sierra	82,5 3.248	N160	4,52	69.8	989	3245	4,83	74.5	1057	3468	
					N165	4,89	75.5	1003	3290	5,20	80.2	1072	3517	
					N560	4,79	73.9	1009	3310	5,07	78.2	1079	3540	
10,4	160	Spitzer	Sierra	82,5 3.248	N160	4,09	63.1	853	2799	4,39	67.7	912	2992	
					N165	4,41	68.0	864	2834	4,69	72.4	924	3031	
					N560	4,26	65.7	868	2846	4,53	69.9	927	3041	
10,9	168	HPBT	Sierra	81,5 3.209	N160	4,00	61.7	832	2730	4,23	65.3	879	2884	
					N165	4,31	66.5	840	2755	4,51	69.6	888	2913	
					N560	4,17	64.3	845	2771	4,42	68.2	909	2982	

7 mm Remington Ultra Magnum

Test barrel: 660 mm (26"), 1 in 9" twist
 Primers: Large Rifle Magnum
 Cases: Remington, trim-to length 72.14 mm (2.840")

Bullet					Powder		Starting load				Maximum load			
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]	Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]	
7,8	120	Ballistic Tip	Nosler	88,5 3.484	N160	5,39	83.2	1015	3330	5,83	90.0	1107	3632	
					N560	5,76	88.9	1020	3346	6,15	94.9	1123	3684	
					N165	5,59	86.3	1046	3432	6,06	93.5	1143	3750	
10,4	160	Naturalis	Lapua	91,0 3.583	N560	3,30	50.9	751	2464	4,54	70.1	904	2966	
					N170	3,64	56.2	758	2487	4,72	72.8	890	2920	
					N570	3,55	54.8	792	2598	4,95	76.4	934	3064	
10,9	168	Match King	Sierra	91,5 3.602	N560	5,07	78.2	897	2943	5,51	85.0	978	3209	
					N170	5,61	86.6	918	3012	5,96	92.0	997	3271	
					N570	5,59	86.3	912	2992	6,07	93.7	1003	3291	
11,3	175	A-Frame	Swift	91,5 3.602	N560	4,82	74.4	853	2799	5,27	81.3	935	3068	
					N170	5,26	81.2	880	2887	5,51	85.0	914	2999	
					N570	5,31	81.9	873	2864	5,82	89.8	955	3133	

.30 Carbine

Test barrel: 460 mm (18"), 1 in 10" twist
 Primers: Small Rifle
 Cases: Federal, trim-to length 32,60 mm (1.283")

Bullet					Powder		Starting load				Maximum load			
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]	Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]	
6,5	100	Plinker	Speer	42,5 1.673	N110	0,88	13.6	610	2001	0,97	15.0	669	2196	
7,1	110	Spire Point	Speer	42,5 1.673	N110	0,79	12.1	545	1786	0,91	14.0	605	1983	

.300 AAC Blackout

Test barrel: 356 mm (14"), 1 in 8" twist
 Primers: Small Rifle
 Cases: Lapua 221 Rem. Fireball, trim-to length 34,60 mm (1.362")

Bullet					Powder		Starting load				Maximum load			
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]	Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]	
6,5	100	HPCE	Lapua	46,5 1.831	N105	0,67	10.3	569	1867	0,84	13.0	643	2110	
					N110	0,93	14.4	633	2077	1,10	17.0	688	2257	
8,0	123	FMJ	Lapua	50,2 1.976	N105	0,67	10.3	480	1575	0,77	11.9	541	1775	
					N110	0,94	14.5	566	1857	1,03	15.9	607	1991	
8,1	125	Accubond	Nosler	51,4 2.024	N105	0,66	10.2	518	1699	0,77	11.9	577	1893	
					N110	0,89	13.7	580	1903	0,99	15.3	617	2024	

.300 AAC Blackout

cont.

Bullet					Powder		Starting load				Maximum load			
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]	Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]	
8,1	125	Match King	Sierra	56,1 2.209	N105	0,66	10.2	531	1742	0,76	11.7	552	1811	
					N110	0,92	14.2	568	1864	1,02	15.7	613	2011	
9,7	150	Lock Base	Lapua	57,0 2.244	N120	0,60	9.3	317	1040	1,27	19.6	615	2018	
10,0	155	Scenar	Lapua	57,0 2.244	N120	0,62	9.6	316	1037	1,19	18.4	588	1929	
10,9	167	Scenar	Lapua	57,0 2.244	N120	0,61	9.4	313	1027	1,17	18.1	561	1841	
12,0	185	Scenar	Lapua	57,0 2.244	N120	0,66	10.2	318	1043	1,09	16.8	522	1713	
13,0	200	FMJBT	Lapua	57,0 2.244	N110	0,54	8.3	319	1047	0,79	12.2	436	1430	
					N120	0,66	10.2	316	1037	1,02	15.7	459	1506	

.30-30 Winchester

Test barrel: 510 mm (20"), 1 in 12" twist
 Primers: Large Rifle
 Cases: Remington, trim-to length 51,60 mm (2.031")

Bullet					Powder		Starting load				Maximum load			
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]	Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]	
6,8	105	HP	Lapua	64,5 2.539	N120	1,48	22.8	692	2271	1,73	26.8	781	2562	
					N130	1,70	26.3	710	2329	1,95	30.1	800	2623	
					N133	1,86	28.7	730	2395	2,19	33.8	833	2732	
8,5	130	FSP	Speer	64,7 2.547	N120	1,41	21.7	617	2024	1,67	25.8	705	2314	
					N130	1,59	24.5	641	2103	1,84	28.4	728	2389	
					N133	1,71	26.4	653	2143	1,97	30.4	741	2432	
					N135	1,80	27.7	649	2129	2,08	32.0	737	2419	
9,7	150	FSP	Speer	64,5 2.539	N120	1,23	19.1	519	1701	1,46	22.5	593	1946	
					N130	1,43	22.1	558	1831	1,65	25.4	631	2070	
					N133	1,48	22.8	560	1839	1,72	26.5	636	2086	
					N135	1,71	26.4	587	1927	1,93	29.7	660	2165	
					N140	1,85	28.5	596	1956	2,06	31.8	672	2203	
11,0	170	FSP	Speer	64,5 2.539	N130	1,34	20.7	516	1692	1,60	24.7	598	1962	
					N133	1,42	21.9	511	1678	1,67	25.8	589	1931	
					N135	1,58	24.4	536	1759	1,80	27.7	604	1981	
					N140	1,66	25.5	533	1747	1,89	29.2	610	2002	

.300 Savage

Test barrel: 600 mm (23½") 1 in 12" twist
 Primers: Large Rifle
 Cases: Remington, trim to-length 47,30 mm (1.862")

Bullet					Powder		Starting load				Maximum load			
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]	Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]	
6,5	100	HP	Lapua	62,5 2.461	N120	2,19	33.9	878	2881	2,45	37.8	975	3199	
					N130	2,41	37.1	912	2993	2,59	40.0	986	3235	
					N133	2,59	39.9	894	2932	2,85	44.0	973	3192	
8,1	125	TNT-HP	Speer	65,5 2.579	N120	2,06	31.8	764	2507	2,27	35.0	837	2746	
					N130	2,21	34.1	794	2606	2,42	37.3	863	2831	
					N133	2,53	39.1	822	2698	2,71	41.8	884	2900	
9,7	150	Mega	Lapua	61,5 2.421	N130	1,89	29.2	684	2243	2,18	33.6	751	2464	
					N135	2,24	34.6	706	2315	2,50	38.6	772	2533	
					N140	2,44	37.6	719	2360	2,72	42.0	793	2602	
10,7	165	SBT	Sierra	66,0 2.598	N133	2,20	33.9	690	2264	2,42	37.3	759	2490	
					N135	2,35	36.2	700	2297	2,53	39.0	764	2507	
					N140	2,46	37.9	713	2341	2,68	41.4	787	2582	
12,0	185	Mega	Lapua	66,0 2.598	N135	2,15	33.2	631	2072	2,44	37.6	705	2313	
					N140	2,30	35.5	649	2131	2,59	40.0	715	2346	
					N540	2,36	36.4	644	2113	2,66	41.0	720	2362	

.308 Winchester

Test barrel: 610 mm (24"), 1 in 12" twist
Primers: Large Rifle
Cases: Lapua, trim-to length 51,00 mm (2.008")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
3,7	57	ALS ¹⁾	Lapua	67,0	2.638	N110	1,78	27.5	1061	3481	2,24	34.5	1217	3993
6,5	100	HPCE	Lapua	67,0	2.638	N110	1,32	20.4	711	2333	1,80	27.8	870	2854
						N120	1,98	30.6	812	2663	2,33	36.0	930	3051
						N130	2,18	33.7	852	2794	2,60	40.1	976	3203
						N133	2,63	40.6	918	3012	2,95F	45.5F	1023	3356
						N530	2,68	41.4	915	3002	3,01	46.5	1044	3425
						N135	2,47	38.1	865	2837	2,99	46.1	992	3255
7,1	110	HP	Sako	67,5	2.657	N120	2,32	35.8	844	2769	2,67	41.2	962	3157
						N130	2,52	38.9	862	2826	2,96	45.7	988	3242
						N133	2,73	42.1	874	2868	3,19	49.1	1009	3311
7,1	110	TSX FB	Barnes	68,5	2.697	N130	2,46	38.0	880	2887	2,70	41.7	953	3127
						N133	2,70	41.7	910	2986	2,94	45.4	983	3225
						N135	2,80	43.2	914	2999	3,00	46.3	971	3186
						N530	2,82	43.5	913	2995	3,05	47.1	998	3274
7,1	110	V-Max	Hornady	68,5	2.697	N130	2,41	37.2	875	2871	2,61	40.3	939	3081
						N133	2,63	40.6	897	2943	2,84	43.8	964	3163
						N135	2,76	42.6	915	3002	3,01	46.5	980	3215
						N140	2,98	46.0	912	2992	3,20	49.4	975	3199
						N530	2,73	42.1	905	2969	2,95	45.5	972	3189
8,0	123	FMJ	Lapua	66,9	2.634	N120	2,08	32.1	812	2664	2,39	36.9	896	2940
						N130	2,26	34.9	782	2566	2,78	42.9	923	3028
						N133	2,62	40.4	858	2815	2,87	44.3	940	3084
						N530	2,59	40.0	850	2789	2,88	44.4	959	3146
						N135	2,72	42.0	830	2723	3,06F	47.2F	921	3022
8,1	125	TMK	Sierra	71,0	2.795	N130	2,28	35.2	812	2664	2,55	39.4	884	2900
						N133	2,57	39.7	840	2756	2,75	42.4	900	2953
						N135	2,62	40.4	841	2759	2,81	43.4	908	2979
						N140	2,80	43.2	836	2743	3,06	47.2	910	2986
						N530	2,51	38.7	833	2733	2,85	44.0	929	3048
8,1	125	Ballistic Tip	Nosler	70,0	2.756	N130	2,40	37.0	818	2684	2,79	43.0	935	3068
						N133	2,60	40.1	829	2721	3,00	46.3	951	3120
						N135	2,70	41.6	833	2732	3,17	48.9	958	3143
						N140	2,86	44.1	835	2739	3,23F	49.8F	936	3071
8,5	130	HP	Lapua	68,0	2.677	N135	2,58	39.7	782	2567	3,02	46.7	907	2975
						N140	2,75	42.4	786	2579	3,15	48.7	903	2963
8,5	130	TSX BT	Barnes	70,7	2.783	N130	2,29	35.3	797	2615	2,53	39.0	868	2848
						N133	2,50	38.6	822	2697	2,70	41.7	885	2904
						N135	2,60	40.1	829	2720	2,83	43.7	898	2946
						N140	2,81	43.4	835	2740	3,05	47.1	907	2976
						N530	2,62	40.4	830	2723	2,84	43.8	900	2953
9,1	140	Hunting Tactic	LOS	70,5	2.776	N135	2,55	39.4	812	2664	2,78	42.9	882	2894
						N140	2,70	41.7	809	2654	2,96	45.7	882	2894
						N540	2,72	42.0	816	2677	2,97	45.8	897	2943
9,7	150	GMX	Hornady	71,0	2.795	N135	2,35	36.3	719	2359	2,57	39.7	795	2608
						N140	2,53	39.0	735	2411	2,79	43.1	810	2657
						N150	2,55	39.4	736	2415	2,82	43.5	811	2661
						N540	2,60	40.1	744	2441	2,83	43.7	827	2713
9,7	150	Tactic	LOS	70,6	2.780	N135	2,46	38.0	782	2566	2,68	41.4	843	2766
						N530	2,38	36.7	773	2536	2,64	40.7	853	2799
						N140	2,64	40.7	780	2559	2,95	45.5	855	2805
						N540	2,67	41.2	789	2589	2,95	45.5	873	2864
9,7	150	Weldcore PP	Woodleigh	71,0	2.795	N135	2,42	37.3	751	2464	2,68	41.4	817	2680
						N140	2,53	39.0	745	2444	2,87	44.3	822	2697
						N540	2,63	40.6	768	2520	2,93	45.2	854	2802
9,7	150	Mega	Lapua	65,2	2.567	N135	2,35	36.3	747	2451	2,68	41.4	842	2762
						N140	2,35	36.3	715	2346	2,95	45.5	824	2703
						N540	2,64	40.7	726	2382	2,97	45.8	833	2733

.308 Winchester

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
9,7	150	SPBT	Sierra	70,0	2.756	N133	2,27	35.0	729	2391	2,86	44.1	863	2831
						N135	2,56	39.5	764	2505	2,96	45.7	871	2857
						N140	2,71	41.8	767	2516	3,05	47.1	858	2815
						N150	2,82	43.6	776	2545	3,23	49.9	878	2880
9,7	150	Lock Base	Lapua	70,0	2.756	N530	2,45	37.8	794	2605	2,76	42.6	892	2927
						N135	2,56	39.5	810	2657	2,83	43.7	885	2904
						N140	2,75	42.4	800	2625	2,90F	44.7F	853	2799
						N540	2,78	42.9	807	2648	3,00	46.3	901	2956
						N150	2,80	43.2	803	2635	2,93F	45.2F	835	2740
9,7	150	HPBT	Sierra	71,0	2.795	N140	2,62	40.4	752	2467	3,06	47.3	869	2851
						N540	2,71	41.8	758	2487	3,13	48.3	901	2956
						N150	2,74	42.2	776	2545	3,14C	48.4C	874	2869
						N550	2,88	44.5	772	2534	3,26F	50.3F	870	2855
9,7	150	TTSX BT	Barnes	71	2.795	N135	2,28	35.2	725	2379	2,55	39.4	800	2625
						N140	2,54	39.2	754	2474	2,77	42.7	822	2697
						N150	2,60	40.1	764	2507	2,82	43.5	829	2720
						N540	2,57	39.7	761	2497	2,82	43.5	840	2756
						N550	2,78	42.9	757	2484	3,10	47.8	846	2776
9,7	150	Scirocco II	Swift	71	2.795	N135	2,28	35.2	746	2448	2,48	38.3	799	2621
						N140	2,50	38.6	757	2484	2,75	42.4	822	2697
						N150	2,55	39.4	770	2526	2,78	42.9	827	2713
						N540	2,55	39.4	772	2533	2,77	42.7	833	2733
						N550	2,75	42.4	763	2503	2,98	46.0	831	2726
10,0	154	TAG	Brenneke	69,6	2.740	N140	2,66	41.1	765	2510	2,94	45.4	845	2772
						N150	2,74	42.3	772	2533	3,00	46.3	848	2782
						N540	2,69	41.5	776	2546	2,99	46.1	871	2858
10,0	155	Hunting	LOS	69,9	2.752	N140	2,62	40.4	766	2513	2,88	44.4	836	2743
						N150	2,68	41.4	776	2546	2,94	45.4	846	2776
						N540	2,66	41.1	779	2556	2,90	44.8	855	2805
10,0	155	Hybrid Target	Berger	71,0	2.795	N135	2,41	37.2	750	2461	2,61	40.3	812	2664
						N140	2,58	39.8	754	2474	2,80	43.2	819	2687
						N150	2,61	40.3	761	2497	2,84	43.8	829	2720
						N540	2,64	40.7	768	2520	2,85	44.0	842	2762
						N550	2,76	42.6	759	2490	3,01	46.5	840	2756
10,0	155	TMK	Sierra	71,0	2.795	N135	2,42	37.3	753	2470	2,60	40.1	809	2654
						N140	2,58	39.8	751	2464	2,79	43.1	816	2677
						N150	2,63	40.6	761	2497	2,85	44.0	826	2710
						N540	2,62	40.4	766	2513	2,83	43.7	839	2753
						N550	2,78	42.9	765	2510	3,01	46.5	841	2759
10,0	155	Scenar	Lapua	71,0	2.795	N530	2,24	34.6	727	2385	2,66	41.0	844	2769
						N135	2,23	34.4	687	2254	2,64	40.7	804	2638
						N140	2,38	36.7	686	2251	2,81	43.4	807	2648
						N540	2,63	40.6	781	2562	2,91	44.9	884	2900
						N150	2,53	39.0	719	2359	3,03	46.8	818	2683
						N550	2,88	44.4	794	2605	3,25F	50.2F	901	2956
10,0	155	Scenar SJ	Lapua	71,0	2.795	N530	2,45	37.8	778	2552	2,69	41.5	867	2844
						N135	2,49	38.4	783	2569	2,72	42.0	861	2825
						N140	2,66	41.0	767	2516	2			

.308 Winchester

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
10,7	165	SPBT	Speer	71,0	2.795	N133	2,38	36.8	715	2345	2,72	41.9	809	2653
						N135	2,48	38.3	724	2376	2,86	44.1	824	2703
						N140	2,60	40.1	729	2390	3,00	46.3	838	2750
						N150	2,66	41.0	735	2411	3,10	47.9	842	2761
						N550	2,86	44.1	760	2495	3,19	49.3	850	2789
10,7	165	TSX	Barnes	71,0	2.795	N140	2,45	37.8	702	2303	2,79	43.1	815	2674
						N150	2,52	38.9	715	2346	2,89	44.6	824	2703
						N550	2,71	41.8	726	2382	3,05	47.1	833	2733
10,7	165	TOG	Brenneke	68,5	2.697	N140	2,49	38.4	729	2392	2,73	42.1	788	2585
						N150	2,51	38.7	719	2359	2,81	43.4	794	2605
						N540	2,53	39.0	736	2415	2,82	43.5	820	2690
10,7	165	Solid Shank	Rhino	67,5	2.657	N140	2,56	39.5	736	2415	2,78	42.9	796	2612
						N150	2,69	41.5	758	2487	2,85	44.0	808	2651
						N540	2,60	40.1	739	2425	2,85	44.0	808	2651
						N550	2,86	44.1	745	2444	3,07	47.4	813	2667
10,7	165	Scirocco II	Swift	71	2.795	N140	2,39	36.9	715	2346	2,63	40.6	777	2549
						N150	2,47	38.1	723	2372	2,70	41.7	782	2566
						N540	2,44	37.7	716	2349	2,69	41.5	786	2579
						N550	2,68	41.4	724	2375	2,93	45.2	797	2615
10,9	167	Scenar	Lapua	71,0	2.795	N135	2,38	36.7	739	2425	2,59	40.0	813	2667
						N140	2,59	40.0	718	2356	2,85	44.0	801	2628
						N540	2,58	39.8	733	2405	2,85	44.0	811	2661
						N150	2,71	41.8	747	2451	2,90A	44.8A	836	2744
						N550	2,88	44.4	763	2503	3,17F	48.9F	836	2743
10,9	167	Scenar SJ	Lapua	71,0	2.795	N135	2,49	38.4	783	2569	2,72	42.0	865	2838
						N140	2,61	40.2	743	2437	2,80A	43.2A	828	2717
						N540	2,62	40.5	732	2401	3,00	46.3	837	2746
						N150	2,64	40.7	737	2418	2,97	45.8	828	2717
						N550	2,87	44.3	769	2523	3,22F	49.7F	870	2854
10,9	168	Hybrid Target	Berger	71,0	2.795	N140	2,50	38.6	715	2346	2,71	41.8	779	2556
						N150	2,56	39.5	731	2398	2,77	42.7	793	2602
						N540	2,58	39.8	736	2415	2,78	42.9	809	2654
						N550	2,73	42.1	739	2425	2,92	45.1	811	2661
10,9	168	HPBT	Sierra	71,0	2.795	N135	2,47	38.1	747	2451	2,73	42.1	822	2697
						N140	2,35	36.2	685	2247	2,78	42.8	780	2558
						N540	2,44	37.7	691	2266	2,89	44.5	809	2654
						N150	2,50	38.6	707	2321	2,88	44.5	804	2636
						N550	2,70	41.6	725	2379	3,06	47.2	832	2729
10,9	168	TSX	Barnes	71,0	2.795	N140	2,59	40.0	739	2425	2,86	44.1	812	2664
						N150	2,63	40.6	740	2428	2,91	44.9	814	2671
						N540	2,68	41.4	746	2448	2,94	45.4	838	2749
11,0	170	LockBase	Lapua	71,0	2.795	N135	2,42	37.4	710	2328	2,78	42.9	806	2645
						N140	2,56	39.5	715	2345	2,95A	45.5A	822	2696
						N540	2,60	40.1	703	2308	3,00	46.3	842	2762
						N150	2,61	40.2	720	2361	2,95	45.5	833	2734
						N550	2,77	42.8	719	2360	3,14	48.5	845	2772
11,0	170	Naturalis N558	Lapua	71,0	2.795	N140	2,46	38.0	723	2372	2,72	42.0	797	2615
						N150	2,56	39.5	730	2395	2,77	42.7	803	2635
						N540	2,57	39.7	752	2467	2,86	44.1	824	2703
						N550	2,72	42.0	736	2415	2,97	45.8	799	2621
11,3	175	Scenar-L	Lapua	71,0	2.795	N135	2,29	35.3	720	2362	2,50	38.6	786	2579
						N140	2,46	38.0	735	2411	2,68	41.4	803	2635
						N540	2,51	38.7	746	2448	2,75	42.4	822	2697
						N150	2,54	39.2	741	2431	2,73	42.1	804	2638
11,3	175	HPBT/VLD	Sierra/Berger	71,0	2.795	N140	2,29	35.3	664	2177	2,68	41.4	762	2501
						N540	2,44	37.7	687	2253	2,79	43.1	788	2586
						N150	2,39	36.8	681	2236	2,82	43.5	784	2573
						N550	2,57	39.6	698	2290	2,97	45.8	802	2631

.308 Winchester

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
11,7	180	SP	Hornady	71,0	2.795	N135	2,33	36.0	661	2169	2,71	41.8	765	2510
						N140	2,47	38.1	669	2196	2,86	44.1	781	2561
						N150	2,48	38.3	677	2220	3,00	46.3	793	2601
11,7	180	XFB	Barnes	71,0	2.795	N540	2,09	32.2	591	1938	2,55	39.3	715	2346
						N550	2,30	35.5	623	2043	2,75	42.4	734	2408
11,7	180	Naturalis	Lapua	68,1	2.681	N140	2,60	40.1	707	2320	2,84	43.8	772	2533
						N540	2,63	40.6	703	2306	2,90	44.7	769	2523
						N150	2,75	42.4	727	2385	2,95	45.5	778	2552
						N550	2,84	43.8	716	2349	3,13	48.3	791	2595
11,7	180	Elite Hunter	Berger	71,0	2.795	N135	2,36	36.4	693	2274	2,53	39.0	746	2448
						N140	2,45	37.8	694	2277	2,66	41.1	758	2487
						N150	2,48	38.3	697	2287	2,70	41.7	760	2493
						N540	2,53	39.0	713	2339	2,73	42.1	777	2549
						N550	2,67	41.2	715	2346	2,90	44.8	785	2575
11,7	180	TTSX BT	Barnes	71,0	2.795	N135	2,08	32.1	643	2110	2,38	36.7	711	2333
						N140	2,39	36.9	666	2185	2,64	40.7	736	2415
						N150	2,36	36.4	670	2198	2,63	40.6	738	2421
						N540	2,39	36.9	675	2215	2,64	40.7	748	2454
						N550	2,57	39.7	681	2234	2,81	43.4	751	2464
11,7	180	Oryx	Norma	68,8	2.709	N135	2,22	34.3	680	2231	2,40	37.0	737	2418
						N140	2,42	37.3	697	2287	2,66	41.1	760	2493
						N150	2,43	37.5	702	2303	2,68	41.4	764	2507
11,7	180	Oryx	Norma	68,8	2.709	N530	2,24	34.6	693	2274	2,38	36.7	744	2441
						N540	2,45	37.8	708	2323	2,66	41.1	770	2526
						N550	2,59	40.0	712	2336	2,81	43.4	774	2539
11,7	180	HMK	RWS	67,6	2.661	N140	2,47	38,1	693	2274	2,68	41,4	754	2474
						N150	2,48	38,3	697	2287	2,73	42,1	760	2493
						N540	2,49	38,4	701	2300	2,75	42,4	772	2533
						N550	2,74	42,3	712	2336	3,04	46,9	788	2585
12,0	185	Mega	Lapua	67,5	2.657	N135	2,39	36,9	673	2208	2,57	39,7	731	2398
						N140	2,53	39,0	675	2215	2,82	43,5	756	2480
						N540	2,63	40,6	707	2320	2,92	45,1	801	2628
						N150	2,65	40,9	688	2257	2,93	45,2	756	2480
						N550	2,76	42,6	685	2247	3,07	47,4	768	2520
12,0	185	D46	Lapua	71,0	2.795	N135	2,33	36,0	667	2188	2,66	41,0	761	2495
						N140	2,44	37,6	675	2215	2,83A	43,7A	778	2551
						N540	2,54	39,2	712	2335	2,84	43,8	791	2595
						N150	2,57	39,7	728	2388	2,84	43,8	805	2641
						N550	2,73	42,1	731	2398	3,03F	46,8F	822	2697
12,0	185	Scenar	Lapua	71,0	2.795	N140	2,44	37,7	706	2316	2,69	41,5	778	2552
						N540	2,38	36,7	725	2379	2,76	42,6	801	2628
						N150	2,42	37,3	664	2179	2,72	42,0	785	2575
						N550	2,62	40,5	672	2203	3,04A	46,9A	795	2608
12,0	185	Scenar SJ	Lapua	71,0	2.795	N140	2,46	38,0	689	2259	2,77	42,7	776	2546
						N540	2,64	40,7	729	2392	2,88	44,4	865	2838
						N150	2,4							

7.62 x 53R (7.62 Russian)

Test barrel: 660 mm (26"), 1 in 10" twist
 Primers: Large Rifle
 Cases: Lapua, trim-to length 53,30 mm (2.098")

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]
6,5	100	HPCE	Lapua	68,0	2.677	N120	2,59	40.0	933	3061	2,88	44.4	1020	3346
						N130	2,80	43.2	956	3136	3,03	46.8	1036	3399
						N133	2,98	46.0	960	3150	3,20F	49.4F	1019	3343
8,0	123	FMJ	Lapua	68,5	2.697	N130	2,81	43.3	883	2896	3,19	49.1	967	3171
						N133	3,07	47.4	900	2954	3,41	52.6	978	3209
						N135	3,19	49.2	901	2956	3,50	54.0	984	3229
9,7	150	Mega	Lapua	70,9	2.791	N133	2,43	37.5	727	2384	2,83	43.6	826	2709
						N135	2,70	41.7	761	2497	3,05	47.1	851	2790
						N140	2,86	44.1	774	2540	3,19	49.2	862	2829
9,7	150	Lock Base	Lapua	73,0	2.874	N133	2,71	41.8	811	2661	2,92	45.1	871	2858
						N135	2,90	44.8	825	2707	3,12	48.1	889	2917
						N140	3,09	47.7	847	2779	3,35	51.7	916	3005
10,0	155	Scenar	Lapua	75,5	2.972	N135	2,74	42.3	786	2579	3,02	46.7	865	2839
						N140	2,90	44.8	800	2625	3,19	49.3	884	2900
						N150	2,99	46.2	803	2635	3,15A	48.6A	886	2906
10,1	156	SPBT	Sako	70,5	2.776	N135	2,89	44.6	789	2589	3,18	49.0	866	2840
						N140	3,01	46.5	796	2612	3,19	49.2	845	2772
						N150	3,16	48.7	809	2655	3,33	51.4	857	2812
10,9	167	Scenar	Lapua	75,0	2.953	N140	3,00	46.3	784	2573	3,10A	47.8A	830	2723
						N540	2,94	45.3	774	2541	3,12	48.1	812	2664
						N150	3,12	48.1	790	2590	3,27	50.5	834	2736
						N550	3,21	49.5	797	2616	3,40	52.5	840	2756
10,9	168	HPBT	Sierra	75,6	2.976	N140	2,94	45.4	775	2541	3,18	49.1	830	2723
						N540	3,03	46.7	787	2581	3,12	48.1	812	2664
						N150	3,08	47.5	790	2591	3,27	50.5	834	2736
						N550	3,26	50.3	804	2638	3,40	52.5	840	2756
11,0	170	Naturalis N558	Lapua	72,0	2.835	N140	2,80	43.2	744	2441	3,05	47.1	817	2680
						N150	2,83	43.7	750	2461	3,09	47.7	817	2680
						N540	2,87	44.3	765	2510	3,15	48.6	844	2769
11,0	170	Lock Base	Lapua	73,0	2.874	N140	2,82	43.5	773	2536	3,04	46.9	834	2736
						N540	2,92	45.1	783	2569	3,18	49.1	856	2808
						N150	3,01	46.5	785	2575	3,24	50.0	846	2776
						N550	3,18	49.1	787	2582	3,46	53.4	862	2828
11,7	180	Naturalis	Lapua	72,5	2.854	N140	2,80	43.2	708	2323	3,07	47.4	781	2562
						N540	2,85	44.0	714	2343	3,10	47.8	789	2589
						N150	2,81	43.4	708	2323	3,10	47.8	782	2566
						N550	3,10	47.8	721	2365	3,40	52.5	813	2667
12,0	185	Scenar	Lapua	75,0	2.953	N135	2,74	42.2	727	2384	2,98	46.0	795	2609
						N140	2,87	44.3	741	2429	3,03A	46.8A	787	2581
						N540	2,84	43.9	741	2431	3,14	48.5	818	2684
						N150	2,98	45.9	742	2434	3,24	50.0	815	2674
						N550	3,03	46.7	747	2452	3,41	52.6	847	2779
12,0	185	D46	Lapua	76,8	3.024	N140	2,87	44.3	737	2418	3,10	47.8	805	2641
						N540	2,98	46.0	748	2454	3,23	49.8	823	2700
						N150	2,93	45.2	740	2428	3,16	48.8	806	2644
						N560	3,14	48.5	754	2474	3,38	52.2	830	2723
12,0	185	Mega	Lapua	70,0	2.756	N140	2,80	43.2	708	2324	3,12	48.1	788	2585
						N540	2,87	44.4	720	2363	3,17	48.9	799	2621
						N150	2,92	45.1	718	2355	3,20	49.4	792	2598
						N550	3,13	48.3	746	2446	3,47	53.5	835	2740
13,0	200	D166	Lapua	76,0	2.992	N140	2,36	36.4	635	2083	2,59A	40.0A	709	2326
						N540	2,47	38.1	656	2152	2,69	41.5	720	2362
						N150	2,36	36.4	641	2103	2,64	40.7	711	2333
13,0	200	HPBT	Sierra	77,1	3.035	N140	2,72	42.0	698	2292	3,07	47.4	779	2556
						N540	2,75	42.4	703	2306	3,06	47.2	779	2556
						N150	2,83	43.6	706	2316	3,14	48.5	781	2562
						N550	3,04	46.8	728	2389	3,34	51.5	807	2648

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
 LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

7.62 x 53R (7.62 Russian) cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]
14,3	220	HPBT	Sierra	77,1	3.035	N540	2,63	40.6	656	2151	2,87	44.3	728	2388
						N150	2,61	40.3	639	2095	2,96	45.7	728	2388
						N550	2,84	43.9	675	2215	3,12	48.1	753	2470

A = Accuracy load F = Full case

7.5 x 55 Swiss GP31

Test barrel: 600 mm (23½"), 1 in 10" twist
 Primers: Large Rifle
 Cases: Norma, trim-to length 55,40 mm (2.181")

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]
10,0	155	Scenar	Lapua	75,5	2.972	N140	3,00	46.3	759	2490	3,18	49.1	811	2661
						N540	3,05	47.1	766	2513	3,25	50.1	842	2762
						N150	3,03	46.8	763	2503	3,22	49.7	815	2674
10,8	167	Scenar	Lapua	75,5	2.972	N140	2,78	42.9	700	2297	2,96	45.7	760	2493
						N540	2,65	40.9	700	2297	3,07	47.4	771	2530
						N150	2,78	42.9	703	2306	3,08	47.5	761	2497
12,0	185	Scenar	Lapua	75,5	2.972	N140	2,45	37.8	694	2277	2,71	41.8	710	2329
						N540	2,74	42.3	688	2257	2,87	44.3	722	2369
						N150	2,85	44.0	697	2287	2,93	45.2	723	2372

.30-06 Springfield

Test barrel: 620 mm (24½"), 1 in 10" twist
 Primers: Large Rifle
 Cases: Lapua, trim-to length 63,10 mm (2.484")

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]
3,7	57	ALS ¹⁾	Lapua	79,0	3.110	N110	2,02	31.1	1075	3527	2,49	38.4	1217	3994
6,5	100	HP	Lapua	79,8	3.142	N130	2,58	39.8	869	2851	3,15	48.6	998	3274
						N133	3,07	47.4	911	2989	3,49	53.9	1016	3333
						N135	3,25	50.1	927	3041	3,66	56.5	1033	3389
						N140	3,50	54.0	926	3038	3,96	61.1	1044	3425
						N540	3,59	55.4	939	3081	4,08	63.0	1058	3471
7,1	110	RN	Hornady	74,0	2.913	N133	3,15	48.6	873	2864	3,48	53.7	983	3225
						N135	3,14	48.5	864	2835	3,47	53.5	964	3163
						N140	3,38	52.2	881	2890	3,74	57.7	977	3205
						N150	3,57	55.1	905	2969	3,94	60.8	1002	3287
8,0	123	FMJ	Lapua	79,8	3.142	N130	2,61	40.3	838	2749	3,01	46.4	934	3064
						N133	2,95	45.5	825	2707	3,31	51.1	922	3025
						N135	3,19							

.30-06 Springfield

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
9,7	150	Lock Base	Lapua	84,0	3.307	N135	2,93	45.2	789	2589	3,23	49.8	851	2792
						N140	3,13	48.3	802	2631	3,45	53.2	872	2861
						N540	3,16	48.8	792	2598	3,54	54.6	882	2894
						N150	3,25	50.1	803	2635	3,58	55.2	877	2877
						N550	3,51	54.2	819	2687	3,87	59.7	917	3009
9,7	150	Mega	Lapua	76,9	3.028	N135	2,60	40.1	711	2333	3,09	47.7	835	2740
						N140	2,83	43.7	732	2402	3,32	51.2	857	2812
						N540	2,94	45.4	742	2434	3,47	53.5	893	2930
						N150	2,86	44.1	777	2549	3,22	49.7	858	2815
						N550	3,12	48.1	801	2628	3,48	53.7	886	2907
9,7	150	HT	LOS	83,0	3.268	N150	3,21	49.5	853	2799	3,49	53.9	922	3025
						N540	3,21	49.5	864	2835	3,50	54.0	940	3084
						N550	3,40	52.5	866	2841	3,80	58.6	952	3123
9,7	150	HPBT	Sierra	84,0	3.307	N140	3,08	47.5	798	2618	3,42	52.8	871	2858
						N540	3,27	50.5	809	2654	3,64	56.2	906	2972
						N150	3,29	50.8	807	2648	3,65	56.3	895	2936
						N550	3,54	54.6	833	2733	3,87	59.7	916	3005
10,0	155	Scenar	Lapua	84,0	3.307	N140	2,78	42.9	755	2477	3,23	49.8	850	2789
						N150	2,79	43.0	767	2516	3,30	50.9	863	2831
						N540	3,05	47.1	774	2539	3,45	53.3	886	2907
						N550	3,19	49.2	811	2661	3,48	53.7	899	2949
						N160	3,45	53.2	817	2680	3,77	58.2	902	2959
10,0	155	TAG	Brenneke	81,8	3.220	N150	2,89	44.6	760	2493	3,25	50.2	842	2762
						N550	3,28	50.6	796	2612	3,52	54.3	868	2848
						N160	3,43	52.9	784	2572	3,75C	57.9C	844	2769
10,0	155	HPBT Palma	Sierra	84,8	3.339	N140	3,10	47.8	821	2694	3,34	51.5	876	2874
						N150	3,12	48.1	821	2694	3,33	51.4	879	2884
						N160	3,67	56.6	845	2772	3,90	60.2	896	2940
						N540	3,16	48.8	829	2720	3,41	52.6	898	2946
						N550	3,45	53.2	843	2766	3,64	56.2	902	2959
10,1	156	SPBT	Sako	80,5	3.169	N135	2,97	45.8	776	2546	3,29	50.8	851	2792
						N140	3,10	47.8	775	2543	3,42	52.8	859	2818
						N150	3,18	49.1	781	2562	3,53	54.5	863	2831
10,7	165	GMX	Hornady	83,5	3.287	N160	3,04	46.9	740	2428	3,46	53.4	824	2703
						N550	2,93	45.2	747	2451	3,13	48.3	812	2664
						N560	3,36	51.9	742	2434	3,61	55.7	816	2677
10,7	165	TOG	Brenneke	81,0	3.189	N150	2,50	38.6	682	2238	2,90	44.8	764	2507
						N550	2,96	45.7	738	2421	3,33	51.4	816	2677
						N160	2,90	44.8	708	2323	3,53	54.5	810	2657
10,7	165	Scirocco II	Swift	84	3.307	N150	2,80	43.2	751	2464	3,12	48.1	813	2667
						N160	3,41	52.6	788	2585	3,67	56.6	849	2785
						N540	2,98	46.0	768	2520	3,23	49.8	835	2740
						N550	3,21	49.5	782	2566	3,46	53.4	848	2782
						N560	3,62	55.9	778	2552	3,95	61.0	852	2795
10,9	167	Scenar	Lapua	84,0	3.307	N135	2,75	42.4	746	2449	3,02	46.6	808	2651
						N140	2,95	45.5	737	2418	3,25A	50.1A	812	2664
						N540	2,94	45.4	737	2418	3,37	52.0	836	2743
						N150	3,06	47.2	748	2454	3,38	52.2	821	2694
						N550	3,22	49.7	779	2556	3,57	55.1	855	2805
						N160	3,60	55.5	749	2457	4,00	61.7	842	2762
10,9	168	TMK	Sierra	84,0	3.307	N140	2,89	44.6	762	2500	3,16	48.8	832	2730
						N150	2,95	45.5	774	2539	3,22	49.7	845	2772
						N540	2,98	46.0	790	2592	3,24	50.0	864	2835
						N550	3,17	48.9	800	2625	3,46	53.4	876	2874
10,9	168	TSX	Barnes	81,7	3.217	N540	2,73	42.1	735	2411	3,09	47.7	824	2703
						N550	2,96	45.7	735	2411	3,26	50.3	825	2707
						N160	3,25	50.2	745	2444	3,65	56.3	833	2733
11,0	170	LockBase	Lapua	84,0	3.307	N140	2,91	44.9	717	2352	3,24	50.0	799	2621
						N540	2,96	45.7	729	2392	3,34	51.5	821	2694

.30-06 Springfield

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
						N150	3,06	47.2	735	2411	3,41	52.6	815	2674
						N550	3,17	48.9	746	2448	3,61	55.7	842	2762
						N160	3,65	56.3	765	2510	4,05	62.5	853	2799
11,0	170	Naturalis	Lapua	82,0	3.228	N150	2,62	40.4	694	2277	2,99	46.1	771	2530
		N558				N540	2,85	44.0	739	2425	3,15	48.6	821	2694
						N550	3,01	46.5	759	2490	3,33	51.4	843	2766
						N160	3,38	52.2	777	2549	3,73	57.6	857	2812
						N560	3,47	53.6	756	2480	3,91	60.3	846	2776
11,6	178	ELD-X	Hornady	84,8	3.339	N150	3,02	46.6	744	2441	3,26	50.3	814	2671
						N160	3,51	54.2	765	2510	3,88	59.9	843	2766
						N540	3,01	46.5	764	2507	3,28	50.6	837	2746
						N550	3,19	49.2	766	2513	3,44	53.1	839	2753
11,7	180	TSX	Barnes	81,7	3.217	N540	2,72	42.0	713	2339	2,99	46.1	783	2569
						N550	2,89	44.6	710	2329	3,20	49.4	788	2585
						N160	3,14	48.5	712	2336	3,54	54.6	792	2598
11,7	180	Naturalis	Lapua	80,4	3.165	N140	2,77	42.7	693	2274	3,13	48.3	784	2572
						N150	2,75	42.4	717	2352	3,13	48.3	789	2589
						N550	3,20	49.4	753	2470	3,50	54.0	830	2723
						N160	3,40	52.5	765	2510	3,62	55.9	819	2687
						N560	3,45	53.2	733	2405	3,87	59.7	829	2720
11,7	180	Elite Hunter	Berger	84,8	3.339	N150	2,99	46.1	761	2497	3,26	50.3	825	2707
						N160	3,54	54.6	788	2585	3,91	60.3	862	2828
						N540	3,05	47.1	783	2569	3,31	51.1	850	2789
						N550	3,28	50.6	785	2575	3,52	54.3	859	2818
						N560	3,71	57.3	785	2575	4,08	63.0	866	2841
11,7	180	GMX	Hornady	82,9	3.264	N140	2,68	41.4	687	2254	2,88	44.4	737	2418
						N150	2,58	39.8	666	2185	2,91	44.9	742	2434
						N160	2,97	45.8	695	2280	3,41	52.6	779	2556
						N540	2,71	41.8	697	2287	2,94	45.4	751	2464
						N550	2,83	43.7	695	2280	3,13	48.3	773	2536
						N560	3,47	53.6	716	2349	3,96	61.1	807	2648
11,7	180	Oryx	Norma	82,0	3.228	N150	2,66	41.1	719	2359	2,98	46.0	779	2556
						N160	3,21	49.5	748	2454	3,61	55.7	819	2687
						N550	2,86	44.1	732	2402	3,14	48.5	796	2612
						N560	3,44	53.1	748	2454	3,74	57.7	816	2677
12,0	185	Mega	Lapua	79,5	3.130	N540	2,82	43.5	728	2388	3,17	48.9	811	2661
						N150	2,75	42.4	692	2270	3,28	50.6	791	2595
						N550	3,12	48.1	728	2388	3,46	53.4	812	2664
						N160	3,38	52.2	739	2425	3,71	57.2	815	2674
						N560	3,50	54.0	737	2418	3,89	60.0	826	2710
12,0	185	Scenar	Lapua	84,0	3.307	N540	2,86	44.1	688	2257	3,16	48.8	771	2530
						N150	2,88	44.4	696	2283	3,26A	50.3A	778	2552
						N550	3,02	46.6	701	2300	3,36	51.8	792	2598
						N160	3,48	53.7	724	2375	3,85	59.4	809	2654
						N560	3,52	54.3	724	2375	4,01	61.9	816	2677
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.30-06 Springfield

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
13,0	200	Mega	Lapua	79,5	3.130	N150	2,75	42.4	692	2270	3,10	47.8	747	2451
						N550	3,12	48.1	730	2395	3,28	50.6	767	2516
						N160	3,38	52.2	739	2425	3,48	53.7	763	2503
13,0	200	A-Frame	Swift	84,0	3.307	N160	3,40	52.5	708	2323	3,68	56.8	778	2552
						N165	3,85	59.4	740	2428	4,14	63.9	804	2638
						N550	3,19	49.2	720	2362	3,42	52.8	784	2572
13,0	200	Partition	Nosler	84,0	3.307	N150	2,79	43.0	669	2195	3,08	47.5	724	2375
						N160	3,38	52.2	704	2310	3,73	57.6	765	2510
13,5	208	A-Max	Hornady	84,2	3.315	N160	3,27	50.5	711	2333	3,56	54.9	774	2539
						N550	3,03	46.8	711	2333	3,28	50.6	769	2523
						N560	3,56	54.9	732	2402	3,83	59.1	798	2618
						N565	3,57	55.1	729	2392	3,89	60.0	782	2566
14,0	215	Hybrid Target	Berger	84,8	3.339	N165	3,76	58.0	727	2385	3,95	61.0	774	2539
						N550	3,04	46.9	704	2310	3,28	50.6	768	2520
						N560	3,55	54.8	719	2359	3,94	60.8	800	2625
14,3	220	RN	Hornady	84,0	3.307	N160	3,29	50.8	654	2146	3,63	56.0	722	2369
						N560	3,47	53.5	672	2205	3,97	61.3	767	2516
14,3	220	Solid Shank	Rhino	81,6	3.213	N150	2,66	41.1	632	2073	2,93	45.2	686	2251
						N160	3,20	49.4	672	2205	3,45	53.2	725	2379
						N550	2,98	46.0	665	2182	3,15	48.6	713	2339
						N560	3,48	53.7	680	2231	3,88	59.9	752	2467
						N565	3,75	57.9	697	2287	3,99	61.6	750	2461
15,6	240	Weldcore	Woodleigh	84,0	3.307	N165	3,45	53.2	658	2159	3,90	60.2	729	2392
						N560	3,31	51.1	647	2123	3,67	56.6	726	2382
						N565	3,48	53.7	667	2188	3,87	59.7	732	2402

A = Accuracy load C = Compressed load

1) A muzzle velocity exceeding 1000 m/s (3300 fps) may lead to severe barrel fouling!

.300 H&H Magnum

Test barrel: 610 mm (24"), 1 in 10" twist
 Primers: Large Rifle Magnum
 Cases: Winchester, trim-to length 72,20 mm (2.842")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
10,0	155	Scenar	Lapua	91,4	3.598	N150	3,76	58.0	888	2913	3,97	61.3	935	3068
						N550	3,98	61.4	914	2999	4,26	65.8	971	3187
						N160	4,28	66.0	909	2982	4,57	70.5	967	3174
12,0	185	Scenar	Lapua	91,4	3.598	N160	3,95	60.9	820	2690	4,21	64.9	872	2862
						N560	4,31	66.5	851	2792	4,59	70.9	908	2978
						N165	4,35	67.1	843	2766	4,62	71.4	895	2937
13,0	200	HPBT	Sierra	91,4	3.598	N160	3,87	59.7	792	2598	4,04	62.4	829	2719
						N560	4,21	65.0	821	2694	4,42	68.1	864	2834
						N165	4,24	65.4	813	2667	4,45	68.6	853	2799

.300 WSM

Test barrel: 620 mm (24½"), 1 in 10" twist
 Primers: Large Rifle Magnum
 Cases: Winchester, trim-to length 53,10 mm (2.091")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
6,5	100	HPCE	Lapua	67,0	2.638	N150	3,85	59.4	1026	3366	4,21	65.0	1107	3632
						N540	3,91	60.3	1042	3419	4,29	66.2	1146	3760
						N550	4,14	63.9	1027	3369	4,55	70.2	1079	3540
8,0	123	FMJ	Lapua	68,8	2.709	N150	3,82	59.0	963	3159	4,10	63.3	1032	3386
						N550	4,06	62.7	950	3117	4,39	67.7	1057	3468
						N160	4,28	66.1	953	3127	4,70	72.5	1045	3428

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
 LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

.300 WSM

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
9,7	150	Mega	Lapua	66,5	2.618	N550	3,51	54.2	860	2822	4,00	61.7	956	3136
						N160	3,75	57.9	849	2785	4,34	67.0	951	3120
						N560	4,14	63.9	862	2828	4,60	71.0	969	3179
9,7	150	Lock Base	Lapua	72,0	2.835	N550	3,74	57.7	882	2894	4,15	64.0	979	3212
						N160	3,89	60.0	878	2881	4,50	69.4	978	3209
						N560	4,36	67.3	886	2907	4,81	74.2	989	3245
10,7	165	Scirocco	Swift	73,5	2.894	N550	3,77	58.2	862	2828	4,16	64.2	957	3140
						N160	3,87	59.7	842	2762	4,33	66.8	937	3074
						N560	4,23	65.3	858	2815	4,63	71.5	959	3146
10,9	167	Scenar	Lapua	72,1	2.839	N165	4,32	66.7	868	2848	4,74	73.1	962	3156
						N550	3,56	54.9	832	2730	3,97	61.3	922	3025
						N160	3,49	53.9	792	2598	4,15	64.0	908	2979
						N560	4,03	62.2	833	2733	4,48	69.1	931	3054
11,0	170	Naturalis N558	Lapua	66,5	2.618	N160	3,51	54.2	790	2592	4,12	63.6	891	2923
						N165	3,96	61.1	817	2680	4,50	69.4	901	2956
						N560	3,92	60.5	811	2661	4,40	67.9	913	2995
12,0	185	Mega	Lapua	69,9	2.752	N550	3,41	52.6	784	2572	3,83	59.1	867	2844
						N160	3,35	51.7	752	2467	3,92	60.5	851	2792
						N560	3,95	61.0	801	2628	4,33	66.8	881	2890
12,0	185	Scenar	Lapua	77,0	3.031	N160	3,83	59.1	799	2621	4,22	65.1	882	2894
						N560	4,11	63.4	814	2671	4,50	69.4	906	2972
						N165	4,18	64.5	823	2700	4,62	71.3	911	2989
13,0	200	Naturalis	Lapua	68,0	2.677	N160	3,56	54.9	733	2405	4,00	61.7	815	2674
						N560	3,80	58.6	743	2438	4,30	66.4	838	2749
						N165	3,90	60.2	758	2487	4,45	68.7	834	2736
13,0	200	Mega	Lapua	70,0	2.756	N160	3,67	56.6	749	2457	4,15	64.0	837	2746
						N560	3,98	61.4	772	2533	4,44	68.5	864	2835
						N165	4,10	63.3	777	2549	4,56	70.4	866	2841

.300 Winchester Magnum

Test barrel: 620 mm (24½"), 1 in 10" twist
 Primers: Large Rifle Magnum
 Cases: Lapua, trim-to length 66,30 mm (2.610")

CAUTION: Loads less than the listed starting loads may cause excessive chamber pressure and must not be used!

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
7,1	110	SP	Hornady	83,0	3.268	N160	5,40	83.3	1063	3488	5,65	87.1	1122	3679
8,0	123	FMJ	Lapua	81,9	3.224	N150	3,99	61.6	943	3094	4,53	69.9	1031	3383
						N550	4,26	65.7	948	3110	4,72	72.8	1051	3448
						N160	4,47	69.0	939	3081	5,05	77.9	1039	3409
8,5	130	HP	Lapua	84,2	3.315	N160	4,99	77.0	964	3162	5,34	82.4	1041	3416
9,7	150	Mega	Lapua	79,5	3.130	N160	3,79	58.5	815	2674	4,48	69.1	935	3068
						N165	4,29	66.2	844	2769	5,25	81.0	951	3120
						N560	4,76	73.5	880	2887	5,26	81.2	983	3225
9,7	150	Lock Base	Lapua	84,0	3.307	N160	4,59	70.8	884	2900	5,08	78.4	982	3222
						N165	5,10	78.7	900	2953	5,45	84.1	979	3212
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.300 Winchester Magnum

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
10,7	165	GMX	Hornady	84,5	3.327	N160	3,74	57.7	812	2664	4,25	65.6	901	2956
						N165	4,50	69.4	878	2881	5,30	81.8	963	3159
						N560	4,45	68.7	869	2851	4,99	77.0	965	3166
						N565	4,49	69.3	860	2822	5,27	81.3	968	3176
10,9	168	TMK	Sierra	84,5	3.327	N165	4,70	72.5	876	2874	5,16	79.6	958	3143
						N560	4,54	70.1	877	2877	4,98	76.9	958	3143
						N565	4,78	73.8	889	2917	5,21	80.4	964	3163
10,9	167	Scenar	Lapua	84,8	3.339	N160	4,70	72.4	880	2887	5,01	77.3	950	3117
						N560	4,70	72.5	846	2776	5,06	78.1	939	3081
						N165	5,02	77.5	892	2927	5,39C	83.2C	967	3171
10,9	167	Scenar SJ	Lapua	84,8	3.339	N160	4,39	67.7	830	2723	4,83	74.5	919	3015
						N560	4,77	73.6	844	2769	5,15	79.5	943	3094
						N165	4,73	73.0	846	2776	5,23	80.7	936	3071
11,0	170	Lock Base	Lapua	84,8	3.339	N160	4,43	68.4	849	2785	4,82	74.4	936	3071
						N560	4,80	74.1	851	2792	5,09	78.5	952	3123
						N165	4,82	74.4	866	2841	5,15	79.5	951	3120
11,0	170	Naturalis N558	Lapua	84,0	3.307	N160	4,09	63.1	824	2703	4,63	71.5	914	2999
						N165	4,32	66.7	831	2726	4,92	75.9	925	3035
						N560	4,43	68.4	848	2782	4,95	76.4	943	3094
11,3	175	Scenar-L	Lapua	84,0	3.307	N160	4,38	67.6	812	2664	4,79	73.9	901	2956
						N560	4,60	71.0	831	2726	5,06	78.1	929	3048
						N165	4,72	72.8	831	2726	5,15	79.5	928	3045
11,7	180	Partition	Nosler	84,8	3.339	N160	4,52	69.8	843	2765	4,94	76.1	916	3004
						N165	4,86	75.0	852	2795	5,26	81.1	925	3033
11,7	180	Naturalis	Lapua	85,7 ¹⁾	3.374	N160	4,05	62.5	836	2743	4,53	69.9	878	2881
						N560	4,80	74.1	873	2864	5,01	77.3	913	2995
						N165	4,45	68.7	839	2753	4,93	76.1	887	2910
12,0	185	Mega	Lapua	82,5	3.248	N160	3,40	52.5	720	2362	4,58	70.7	859	2818
						N165	3,90	60.2	753	2470	5,17	79.8	886	2907
						N560	4,51	69.6	802	2631	5,02	77.5	901	2956
12,0	185	Scenar	Lapua	84,8	3.339	N160	4,26	65.7	805	2641	4,70	72.5	894	2933
						N560	4,60	71.0	816	2677	5,01	77.3	917	3009
						N165	4,72	72.8	825	2707	5,10A	78.7A	915	3002
12,0	185	Scenar SJ	Lapua	84,8	3.339	N160	4,22	65.1	795	2608	4,74	73.1	880	2887
						N560	4,62	71.3	814	2671	5,00	77.2	905	2969
						N165	4,64	71.6	819	2687	5,01	77.3	895	2936
12,3	190	HPBT	Sierra	84,8	3.339	N560	4,34	66.9	823	2701	4,88	75.3	898	2947
						N165	4,49	69.2	816	2676	5,01	77.3	882	2893
						N170	4,40	67.8	788	2586	5,06	78.0	861	2826
13,0	200	Weldcore	Woodleigh	84,0	3.307	N560	3,76	58.0	757	2484	4,41	68.1	851	2792
						N565	3,64	56.2	749	2457	4,64	71.6	860	2822
13,0	200	LRX BT	Barnes	84,5	3.327	N165	3,42	52.8	710	2329	4,05	62.5	797	2615
						N560	3,75	57.9	751	2464	4,39	67.7	848	2782
						N565	3,82	59.0	753	2470	4,37	67.4	840	2756
13,0	200	Hybrid Target	Berger	84,8	3.339	N160	3,84	59.3	758	2487	4,36	67.3	842	2762
						N165	4,40	67.9	797	2615	4,87	75.2	873	2864
						N560	4,30	66.4	806	2644	4,70	72.5	885	2904
						N565	4,46	68.8	817	2680	4,90	75.6	892	2927
13,0	200	Mega	Lapua	84,5	3.327	N560	4,00	61.7	753	2470	4,55	70.2	834	2736
						N165	4,10	63.3	748	2454	4,65	71.7	823	2700
						N170	4,31	66.5	740	2428	4,95	76.4	824	2703
13,0	200	Naturalis	Lapua	84,0	3.307	N560	3,98	61.4	745	2444	4,40	67.9	819	2687
						N165	3,65	56.3	703	2306	4,29	66.2	800	2625
						N170	4,23	65.3	728	2388	4,70	72.5	810	2657
13,0	200	HPBT	Sierra	84,8	3.339	N170	4,05	62.4	743	2438	4,85	74.8	828	2717
						N560	3,95	60.9	770	2526	4,60	70.9	852	2795
						N160	4,02	62.0	760	2495	4,56	70.3	835	2741
						N165	4,15	64.0	768	2518	4,79	73.8	846	2774
						N570	4,84	74.7	797	2615	5,31	81.9	891	2923

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

.300 Winchester Magnum

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
13,9	215	Hybrid Target	Berger	85,5	3.366	N165	4,04	62.3	745	2444	4,65	71.8	828	2717
						N560	4,14	63.9	772	2533	4,56	70.4	847	2779
						N565	4,26	65.7	779	2556	4,74	73.1	855	2805
14,3	220	Scenar-L	Lapua	84,5	3.327	N560	4,34	67.0	751	2464	4,74	73.1	830	2723
						N165	4,29	66.2	723	2372	4,88	75.3	816	2677
						N170	4,63	71.5	734	2408	5,20	80.2	813	2667
						N570	5,04	77.8	782	2566	5,30	81.8	839	2753
14,9	230	Hybrid Target	Berger	84,8	3.339	N165	4,01	61.9	724	2375	4,52	69.8	797	2615
						N560	4,03	62.2	743	2438	4,48	69.1	821	2694
						N565	4,27	65.9	760	2493	4,68	72.2	827	2713

A = Accuracy load C = Compressed load ¹⁾ The cartridge overall length exceeds the CIP maximum.

.300 Weatherby Magnum

Test barrel: 660 mm (26"), 1 in 10" twist
Primers: Large Rifle Magnum
Cases: Weatherby, trim-to length 71,50 mm (2.815")

CAUTION: Loads less than the listed starting loads may cause excessive chamber pressure and must not be used!

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
8,1	125	Ballistic Tip	Nosler	90,0	3.543	N160	5,19	80.2	1046	3430	5,52	85.2	1104	3623
9,7	150	Ballistic Tip	Nosler	90,1	3.547	N160	4,88	75.2	945	3102	5,22	80.6	1003	3291
						N165	5,27	81.3	949	3113	5,59	86.3	1019	3343
10,7	165	SPBT	Speer	90,3	3.555	N160	4,85	74.8	923	3028	5,16	79.6	975	3200
						N165	5,24	80.9	932	3057	5,57	85.9	984	3228
11,7	180	SP	Hornady	90,3	3.555	N160	4,66	71.9	875	2872	5,01	77.3	930	3050
						N165	5,04	77.7	888	2912	5,43	83.8	944	3098
13,0	200	Naturalis	Lapua	88,5	3.484	N560	4,16	64.2	816	2677	4,44	68.5	842	2762
						N165	3,80	58.6	760	2493	4,29	66.2	800	2625
						N170	4,50	69.4	800	2625	4,82	74.4	840	2756
13,0	200	HPBT	Sierra	90,3	3.555	N560	4,47	69.0	821	2694	4,81	74.2	872	2862
						N165	4,39	67.7	795	2609	4,87	75.1	858	2814
						N170	4,44	68.5	781	2562	5,11	78.9	859	2817

.300 Lapua Magnum

Test barrel: 690 mm (27"), 1 in 9½" twist
Primers: Large Rifle Magnum
Cases: Lapua, trim-to length 68,90 mm (2.713")

CAUTION: Loads less than the listed starting loads may cause excessive chamber pressure and must not be used!

.300 Norma Magnum

Test barrel: 655 mm (25.75"), 1 in 10" twist
 Primers: Large Rifle Magnum
 Cases: Lapua, trim-to length 63 mm (2.480")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
11,0	170	Naturalis	Lapua	83,5	3.287	N560	4,50	69.4	850	2789	5,30	81.8	974	3196
						N565	4,90	75.6	870	2854	5,57	86.0	977	3205
						N170	4,53	69.9	820	2690	5,69	87.8	957	3140
						N570	5,15	79.5	887	2910	5,81	89.7	995	3264
12,0	185	Scenar	Lapua	86,5	3.406	N560	4,72	72.8	844	2769	5,35	82.6	948	3110
						N565	4,91	75.8	863	2831	5,51	85.0	957	3140
						N170	4,98	76.9	825	2707	5,75	88.7	939	3081
						N570	5,16	79.6	862	2828	5,75	88.7	970	3182
13,9	215	Hybrid Target	Berger	86,5	3.406	N560	4,56	70.4	790	2592	5,10	78.7	889	2917
						N565	4,71	72.7	799	2621	5,25	81.0	893	2930
						N170	4,65	71.8	773	2536	5,50	84.9	881	2890
						N570	5,05	77.9	818	2684	5,66	87.3	917	3009
14,3	220	Scenar-L	Lapua	86,5	3.406	N560	4,30	66.4	762	2500	4,98	76.9	866	2841
						N565	4,41	68.1	769	2523	5,17	79.8	874	2867
						N170	4,30	66.4	734	2408	5,30	81.8	856	2808
						N570	4,62	71.3	780	2559	5,37	82.9	887	2910
14,9	230	Hybrid Target	Berger	86,5	3.406	N560	4,35	67.1	754	2474	4,92	75.9	853	2799
						N565	4,53	69.9	763	2503	5,11	78.9	856	2808
						N570	4,60	71.0	764	2507	5,41	83.5	872	2861

.300 Remington Ultra Magnum

Test barrel: 660 mm (26"), 1 in 10" twist
 Primers: Large Rifle Magnum
 Cases: Remington, trim-to length 72,10 mm (2.839")

CAUTION: Loads less than the listed starting loads may cause excessive chamber pressure and must not be used!

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
10,0	155	Scenar	Lapua	89,5	3.524	N160	5,29	81.6	957	3140	5,80	89.5	1044	3425
						N560	5,60	86.4	865	2838	6,09	94.0	1067	3501
						N165	5,60	86.4	952	3123	6,19	95.5	1052	3451
10,7	165	Partition	Nosler	89,5	3.524	N160	4,97	76.7	896	2940	5,64	87.0	980	3214
						N560	5,39	83.2	902	2959	6,13	94.5	1027	3371
						N165	5,57	85.9	919	3015	6,12	94.4	1009	3311
10,85	167	Scenar	Lapua	90,0	3.543	N560	5,29	81.6	925	3035	5,95	91.8	1029	3376
						N165	5,05	77.9	882	2894	6,10	94.1	1007	3304
						N170	5,37	82.9	895	2936	6,48	100.0	1011	3317
11,0	170	Lock Base	Lapua	90,0	3.543	N560	4,73	73.0	899	2949	5,74	88.6	1006	3301
						N165	4,56	70.4	851	2792	5,73	88.4	976	3202
						N170	5,02	77.5	865	2838	6,36	98.1	992	3255
11,7	180	XFB	Barnes	89,5	3.524	N165	4,52	69.7	833	2733	5,40	83.3	939	3079
						N560	4,65	71.7	854	2802	5,60	86.3	956	3137
						N170	4,90	75.6	840	2756	6,12	94.4	952	3124
12,0	185	Mega	Lapua	88,5	3.484	N560	5,18	79.9	874	2867	5,83	90.0	969	3179
						N165	4,75	73.3	826	2710	5,82	89.8	937	3074
						N170	5,22	80.6	837	2746	6,31	97.4	953	3127
12,0	185	Scenar	Lapua	91,4	3.598	N560	5,46	84.2	888	2913	5,93	91.5	979	3213
						N165	5,18	79.9	865	2838	6,09	94.0	960	3148
						N170	5,98	92.3	875	2871	6,40	98.7	966	3170
						N570	5,90	91.0	908	2979	6,54	100.9	1023	3356
13,0	200	Mega	Lapua	89,3	3.516	N560	5,24	80.9	892	2927	5,85	90.3	959	3146
						N165	4,95	76.4	831	2726	5,70	88.0	922	3025
						N570	5,70	88.0	877	2877	6,37	98.3	958	3143
13,0	200	Naturalis	Lapua	89,2	3.512	N560	4,87	75.1	842	2762	5,57	85.9	933	3061
						N165	4,75	73.3	826	2710	5,62	86.7	923	3028
						N170	5,16	79.6	833	2733	5,82	89.8	912	2992
						N570	5,44	83.9	860	2822	6,01	92.7	961	3153
						24N41	5,60	86.4	829	2720	6,11	94.3	914	2999

.30-378 Weatherby Magnum

Test barrel: 670 mm (26½"), 1 in 10" twist
 Primers: Large Rifle Magnum
 Cases: Weatherby, trim-to-length 73,70 mm (2.902")

CAUTION: Loads less than the listed starting loads may cause excessive chamber pressure and must not be used!

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
10,0	155	Scenar	Lapua	93,0	3.661	N160	6,10	94.1	1004	3294	6,41	98.9	1062	3484
						N165	6,68	103.1	1017	3337	6,94	107.1	1075	3527
						N170	7,23	111.6	1008	3307	7,54	116.3	1069	3507
11,0	170	Lock Base	Lapua	93,0	3.661	N160	5,63	86.9	933	3061	5,91	91.2	973	3192
						N165	6,33	97.7	957	3140	6,67	102.9	1002	3287
						N170	6,94	107.1	957	3140	7,20	111.1	1008	3307
						24N41	7,31	112.8	980	3215	7,83	120.8	1060	3478
12,0	185	Scenar	Lapua	93,0	3.661	N160	5,61	86.6	913	2995	5,95	91.8	963	3159
						N560	5,96	92.0	922	3025	6,26	96.6	981	3219
						N170	6,69	103.2	946	3104	7,12	109.9	1009	3310
						24N41	7,16	110.5	959	3146	7,58	117.0	1023	3356
						20N29	7,94	122.5	971	3186	8,18	126.2	1003	3291
13,0	200	HPBT	Sierra	93,0	3.661	24N41	4,80	74.1	691	2267	6,96	107.4	949	3114
						20N29	7,52	116.0	918	3012	7,88	121.6	980	3215
14,3	220	HPBT	Sierra	93,0	3.661	20N29	7,14	110.2	874	2868	7,64	117.9	938	3077

7.62 x 39

Test barrel: 415 mm (16"), 1 in 9½" twist
 Primers: Large Rifle
 Cases: Lapua, trim-to length 38,50 mm (1.516")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
3,7	57	ALS	Lapua	55,7	2.193	N110	1,56	24.1	925	3035	1,78	27.5	997	3271
6,5	100	HP	Lapua	55,4	2.181	N110	1,22	18.8	685	2247	1,41	21.8	772	2533
						N120	1,65	25.5	688	2257	1,80	27.8	769	2523
7,1	110	RN HS	H & N	50,5	1.988	N110	0,90	13.9	498	1634	1,00	15.4	527	1729
						N120	1,20	18.5	509	1670	1,25	19.3	548	1798
8,0	123	FMJ	Lapua	55,7	2.193	N120	1,60	24.7	663	2175	1,77	27.3	728	2388
8,1	125	Mega	Lapua	52,4	2.063	N120	1,55	23.9	658	2159	1,68	25.9	712	2336
						N130	1,68	25.9	677	2221	1,79	27.6	728	2388
8,1	125	TMK	Sierra	58,0	2.283 ¹⁾	N110	1,05	16.2	607	1991	1,19	18.4	656	2152
						N120	1,50	23.1	657	2156	1,64	25.3	719	2359
						N130	1,64	25.3	660	2165	1,80	27.8	712	2336
9,7	150	Lockbase	Lapua	56,0	2.205	N120	1,43	22.1	605	1985	1,58	24.4	666	2185
9,7	150	Flat Point	X-treme bullets	55,0	2.165	N110	0,90	13.9	465	1526	1,00	15.4	535	1755
						N120	1,10	17.0	424	1391	1,30	20.1	535	1755
13,0	200	B416	Lapua	56,0	2.205	N110	0,87	13.4	435	1427	0,97	15.0	481	1578
						N120	1,21	18.7	4					

.303 British

cont.

Bullet		Powder				Starting load				Maximum load			
Weight [g]	Type/Name	Mfg	C.O.L. [mm] [in.]		Type	Weight [g]	Velocity [m/s]	Weight [g]	Velocity [m/s]	Weight [g]	Velocity [m/s]	Weight [g]	Velocity [m/s]
11,3	174	HPBT	Sierra	78,0	3.071	N135	2,29 35.3 711 2333	2,49 38.4 761 2497					
						N140	2,49 38.4 725 2379	2,70 41.7 782 2566					
						N540	2,57 39.7 728 2388	2,78 42.9 791 2595					
11,7	180	Spitzer	Sierra	78,0	3.071	N135	2,15 33.2 664 2178	2,36 36.4 714 2343					
						N140	2,33 36.0 683 2241	2,57 39.7 739 2425					
						N540	2,48 38.3 697 2287	2,70 41.7 758 2487					

¹⁾ A muzzle velocity exceeding 1000 m/s (3300 fps) may lead to severe barrel fouling!

8 x 57 IS (8 mm Mauser)

Test barrel: 620 mm (24½"), 1 in 9½" twist
 Primers: Large Rifle
 Cases: Lapua, trim-to length 56,80 mm (2.236")

Bullet		Powder				Starting load				Maximum load			
Weight [g]	Type/Name	Mfg	C.O.L. [mm] [in.]		Type	Weight [g]	Velocity [m/s]	Weight [g]	Velocity [m/s]	Weight [g]	Velocity [m/s]	Weight [g]	Velocity [m/s]
8,1	125	SP	Hornady	74,0	2.913	N130	2,80 43.2 874 2867	3,12 48.1 950 3117					
						N133	3,14 48.5 883 2897	3,50 54.0 979 3212					
						N135	3,22 49.7 882 2894	3,57 55.1 974 3196					
9,7	150	Spitzer	Speer	76,0	2.992	N135	2,97 45.8 801 2628	3,31 51.1 880 2887					
						N140	3,13 48.3 799 2621	3,49 53.9 892 2927					
10,4	160	TTSX	Barnes	77,0	3.031	N135	2,67 41.2 752 2467	3,02 46.6 834 2736					
						N140	2,87 44.3 767 2516	3,14 48.5 841 2759					
						N540	3,01 46.5 782 2566	3,33 51.4 870 2854					
10,4	160	HIT	RWS	80,7	3.177	N135	2,56 39.5 730 2395	3,13 48.3 836 2743					
						N140	3,03 46.8 775 2543	3,35 51.7 863 2831					
						N150	3,02 46.6 776 2546	3,41 52.6 864 2835					
						N530	2,73 42.1 760 2493	3,09 47.7 853 2799					
						N540	3,06 47.2 784 2572	3,45 53.2 883 2897					
11,0	170	SP	Speer	77,0	3.031	N135	2,86 44.1 748 2454	3,18 49.1 829 2720					
						N140	2,99 46.1 747 2451	3,33 51.4 838 2749					
						N150	3,13 48.3 761 2497	3,48 53.7 853 2799					
11,7	180	Naturalis	Lapua	81,0	3.189	N135	2,70 41.7 730 2395	2,95 45.5 803 2635					
						N140	2,87 44.3 743 2438	3,11 48.0 804 2638					
						N540	2,89 44.6 747 2451	3,14 48.5 814 2671					
						N150	2,89 44.6 744 2441	3,14 48.5 809 2654					
11,7	181	E-Tip	Nosler	77,0	3.031	N135	2,58 39.8 712 2336	2,96 45.7 791 2595					
						N140	2,77 42.7 719 2359	3,11 48.0 795 2608					
						N540	2,78 42.9 718 2356	3,18 49.1 808 2651					
						N150	2,90 44.8 735 2411	3,15 48.6 801 2628					
11,7	181	TOG	Brenneke	77,0	3.031	N140	2,84 43.8 705 2313	3,16 48.8 782 2566					
						N150	2,93 45.2 723 2372	3,18 49.1 788 2585					
						N540	2,93 45.2 746 2448	3,22 49.7 822 2697					
12,8	198	TIG	Brenneke	77,0	3.031	N140	2,82 43.5 697 2287	3,12 48.1 759 2490					
						N150	2,93 45.2 708 2323	3,20 49.4 768 2520					
						N540	2,91 44.9 715 2346	3,19 49.2 783 2569					
13,0	200	Accubond	Nosler	79,1	3.114	N150	2,79 43.1 693 2274	3,07 47.4 766 2513					
						N540	2,75 42.4 701 2300	3,00 46.3 765 2510					
						N550	2,97 45.8 713 2339	3,33 51.4 784 2572					
						N160	3,32 51.2 706 2316	3,50 54.0 746 2448					
13,0	200	TSX	Barnes	77,2	3.039	N150	2,79 43.1 679 2228	3,08 47.5 745 2444					
						N540	2,77 42.7 677 2221	3,11 48.0 760 2493					
						N550	3,10 47.8 701 2300	3,40 52.5 767 2516					
13,0	200	Spitzer	Speer	79,5	3.130	N140	2,77 42.7 661 2169	3,08 47.5 759 2490					
						N150	2,86 44.1 680 2231	3,19 49.2 763 2503					
13,0	200	Partition	Nosler	81,0	3.189	N160	3,27 50.5 681 2234	3,64 56.2 785 2575					
13,0	200	A-Frame	Swift	75,0	2.953	N150	2,91 44.9 709 2326	3,22 49.7 786 2579					
						N540	2,85 44.0 714 2343	3,13 48.3 788 2585					
						N550	2,99 46.1 713 2339	3,19 49.2 773 2536					
13,0	201	MatchKing	Sierra	79,1	3.114	N150	2,74 42.3 699 2293	3,03 46.8 764 2507					
						N540	2,82 43.5 715 2346	3,05 47.1 781 2562					
						N550	3,00 46.3 716 2349	3,25 50.2 783 2569					

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
 LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

8 x 57 IS (8 mm Mauser)

cont.

Bullet		Powder				Starting load				Maximum load			
Weight [g]	Type/Name	Mfg	C.O.L. [mm] [in.]		Type	Weight [g]	Velocity [m/s]	Weight [g]	Velocity [m/s]	Weight [g]	Velocity [m/s]	Weight [g]	Velocity [m/s]
14,3	220	SPBT Gameking	Sierra	81	3.189	N140	2,74 42.3 675 2215	3,03 46.8 742 2434					
						N150	2,75 42.4 679 2228	3,07 47.4 746 2448					
						N160	3,38 52.2 715 2346	3,40 52.5 722 2369					
						N540	2,79 43.1 688 2257	3,09 47.7 759 2490					
						N550	2,92 45.1 689 2260	3,25 50.2 764 2507					

8 x 57 IRS

Test barrel: 620 mm (24½"), 1 in 9½" twist
 Primers: Large Rifle
 Cases: Lapua, trim-to length 56,80 mm (2.236")

Bullet		Powder				Starting load				Maximum load			
Weight [g]	Type/Name	Mfg	C.O.L. [mm] [in.]		Type	Weight [g]	Velocity [m/s]	Weight [g]	Velocity [m/s]	Weight [g]	Velocity [m/s]	Weight [g]	Velocity [m/s]
9,7	150	Spitzer	Speer	75,0	2.953	N140	3,14 48.5 797 2615	3,35 51.7 858 2815					
						N540	3,12 48.1 793 2602	3,52 54.3 890 2920					
						N150	2,83 43.7 712 2336	3,08 47.5 890 2920					
11,7	180	Naturalis	Lapua	79,5	3.130	N135	2,47 38.1 702 2303	2,65 40.9 742 2434					
		N559				N140	2,63 40.6 711 2333	2,83 43.7 758 2487					
						N150	2,63 40.6 717 2352	2,83 43.7 758 2487					
						N540	2,77 42.7 733 2405	2,94 45.4 778 2552					
12,8	198	TIG	Brenneke	77,0	3.031	N140	2,80 43.2 708 2323	2,95 45.5 739 2425					
						N540	2,93 45.2 721 2365	3,07 47.4 758 2487					

8 x 68S

Test barrel: 670 mm (26½"), 1 in 11" twist
 Primers: Large Rifle
 Cases: RWS, trim-to length 67,20 mm (2.646")

Bullet		Powder				Starting load				Maximum load			
Weight [g]	Type/Name	Mfg	C.O.L. [mm] [in.]		Type	Weight [g]	Velocity [m/s]	Weight [g]	Velocity [m/s]	Weight [g]	Velocity [m/s]	Weight [g]	Velocity [m/s]
9,7	150	Pro Hunter	Sierra	86,4	3.402	N150	4,00 61.7 924 3031	4,48 69.1 1021 3350					
		Spitzer				N550	4,32 66.7 946 3104	4,75 73.3 1044 3425					
						N160	4,69 72.4 945 3100	5,12 79.0 1031 3383					
10,4	160	TTSX	Barnes	86,4	3.402	N150	3,55 54.8 850 2789	4,07 62.8 952 3123					
						N550	3,79 58.5 876 2874	4,28 66.1 989 3245					
						N160	4,16 64.2 877 2877	4,67 72.1 987 3238					
11,3	174	TAG	Brenneke	87,0	3.425	N550	3,85 59.4 851 2792	4,27 65.9 942 3091					
						N160	4,02 62.0 837 2746	4,65 71.8 947 3107					
						N560	4,40 67.9 853 2799	4,97 76.7 957 3140					
11,7	180	Naturalis	Lapua	86,4	3.402	N150	3,52 54.3 819 2687	4,00 61.7 907 2976					
						N550	3,83 59.1 847 2779	4,22 65.1 935 3068					
						N160	4,14 63.9 840 2756	4,62 71.3 937 3074					
11,7	180	E-Tip	Nosler	87,0	3.425	N150	3,35 51.7 790 2592	3,92 60.5 885 2904					
						N550	3,79 58.5 825 2707	4,21 65.0 921 3022					
						N160	3,82 59.0 803 2635	4,62 71.3 923 3028					
13,0	201	TSX	Barnes	87,0	3.425	N160	3,60 55.6 735 2411	4,21 65.0 854 2802					
					</								

.338 Winchester Magnum

Test barrel: 620 mm (24½"), 1 in 10" twist
 Primers: Large Rifle Magnum
 Cases: Lapua, trim-to length 63,30 mm (2.492")

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]
13,0	200	SP	Hornady	85,0 ¹⁾	3.346	N540	3,90	60.2	814	2671	4,34	67.0	888	2913
						N150	3,85	59.4	801	2628	4,34	67.0	873	2864
						N550	4,15	64.0	822	2697	4,61	71.1	899	2949
						N160	4,71	72.7	720	2362	5,23F	80.7F	905	2969
14,6	225	SP	Hornady	84,0	3.307	N160	4,56	70.4	798	2617	4,80	74.1	856	2809
						N560	4,78	73.8	820	2689	5,15	79.4	849	2785
15,0	231	Naturalis	Lapua	84,3	3.319	N550	3,80	58.6	752	2467	4,31	66.5	838	2749
						N160	4,25	65.6	751	2464	4,74	73.1	843	2766
						N560	4,50	69.4	769	2523	4,85F	74.8F	832	2730
16,2	250	Grand Slam	Speer	83,8	3.299	N160	4,49	69.3	753	2470	4,83	74.5	809	2655
						N165	4,81	74.3	766	2511	5,19	80.0	823	2698
16,2	250	SBT	Sierra	84,8	3.339	N160	4,25	65.6	758	2488	4,58	70.7	810	2659
						N560	4,39	67.7	774	2540	4,78	73.7	831	2728
						N165	4,63	71.4	779	2555	5,02	77.4	835	2738
16,2	250	Scenar	Lapua	84,0	3.307	N550	4,06	62.7	765	2509	4,27	65.8	810	2657
						N160	4,23	65.3	760	2494	4,55	70.1	813	2669
						N560	4,72	72.9	787	2581	5,03	77.5	843	2765
17,8	275	SP	Speer	85,0 ¹⁾	3.346	N165	4,63	71.5	731	2398	5,01	77.3	785	2576
17,8	275	A-Frame	Swift	86,5 ¹⁾	3.406	N160	3,55	54.8	634	2080	4,15	64.0	717	2352
						N560	3,76	58.0	651	2136	4,30	66.3	731	2398
						N165	3,79	58.5	651	2136	4,35	67.1	725	2379
19,4	300	HPBT	Sierra	84,8	3.339	N160	4,06	62.7	692	2270	4,43	68.3	745	2445
						N560	4,20	64.7	700	2295	4,66	71.9	756	2479
19,4	300	RNSP	Woodleigh	83,5	3.287	N160	3,58	55.2	626	2054	4,10	63.3	692	2270
						N560	3,92	60.5	658	2159	4,55	70.2	731	2398
						N165	3,92	60.5	637	2090	4,46	68.8	711	2333

F = Case full

¹⁾ The cartridge overall length exceeds the CIP maximum.

.338 Lapua Magnum

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]
16,2	250	Hybrid OTM Tactical	Berger	93,5	3.681	N165	5,10	78.7	787	2582	5,80	89.5	869	2851
						N560	5,16	79.6	803	2635	5,77	89.0	886	2907
						N565	5,53	85.3	822	2697	5,97	92.1	890	2920
						N170	5,59	86.3	798	2618	6,11	94.3	871	2858
						N570	5,81	89.7	827	2713	6,28	96.9	902	2959
16,2	250	Scenar	Lapua	93,5	3.681	N565	5,21	80.4	803	2635	5,85	90.3	878	2881
17,2	265	LRX BT	Barnes	93,2	3.669	N565	4,79	73.9	759	2490	5,39	83.2	830	2723
18,1	280	LRX BT	Barnes	93,5	3.681	N565	4,53	69.9	717	2352	5,16	79.6	792	2598
18,5	285	TSX	Barnes	93,0	3.661	N560	4,12	63.6	684	2244	4,78	73.8	772	2533
						N170	4,30	66.4	654	2146	5,20	80.2	768	2520
						N570	4,70	72.5	728	2388	5,31	81.9	806	2644
18,5	285	HPBT	Hornady	93,5	3.681	N560	4,93	76.1	759	2490	5,48	84.6	837	2746
						N165	4,81	74.2	733	2405	5,49	84.7	812	2664
						N170	5,25	81.0	741	2431	5,96	92.0	831	2726
						N570	5,44	84.0	781	2562	6,07	93.7	863	2831
19,4	300	Scenar	Lapua	93,5	3.681	N165	4,47	69.0	685	2247	5,30	81.8	785	2575
						N560	4,64	71.6	709	2326	5,33	82.3	814	2671
						N170	4,90	75.6	712	2336	5,74	88.6	811	2661
						N570	5,19	80.1	732	2402	5,99	92.4	837	2746
						24N41	5,43	83.8	729	2392	6,23	96.1	821	2694
19,4	300	Elite Hunter	Berger	93,5	3.681	N560	4,72	72.8	720	2362	5,27	81.3	790	2592
						N565	4,89	75.5	724	2375	5,55	85.6	804	2638
						N570	5,23	80.7	744	2441	5,80	89.5	815	2674
19,4	300	HPBT	Berger	93,5	3.681	N560	4,64	71.6	744	2441	5,34	82.4	831	2726
						N170	4,62	71.3	720	2362	5,68	87.7	823	2700
						N570	4,24	65.4	711	2333	5,55	85.6	833	2733
19,4	300	HPBT	Sierra	91,5	3.602	N165	4,57	70.5	695	2281	5,20	80.2	766	2513
						N560	4,70	72.5	722	2370	5,37	82.8	800	2624
						N170	5,15	79.4	719	2360	5,86	90.4	792	2599
						N570	5,39	83.2	776	2546	5,92	91.3	826	2710
						24N41	5,52	85.2	735	2410	6,28	96.8	809	2653

.338 Lapua Magnum

Test barrel: 700 mm (27½"), 1 in 10" twist
 Primers: Large Rifle Magnum
 Cases: Lapua, trim-to length 69,00 mm (2.714")

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]
13,0	200	SP	Hornady	91,0	3.583	N160	5,81	89.6	926	3038	6,22	96.0	993	3259
						N165	6,24	96.3	935	3068	6,66	102.8	1005	3297
14,6	225	SP	Hornady	91,0	3.583	N160	5,07	78.3	830	2723	5,64	87.0	900	2953
						N560	5,35	82.6	865	2838	5,86	90.5	934	3065
						N165	5,40	83.2	839	2753	6,01	92.8	915	3000
						N170	5,75	88.8	847	2779	6,33	97.6	917	3009
15,0	231	Naturalis	Lapua	90,5	3.563	N160	4,73	73.0	793	2602	5,35	82.6	876	2874
						N560	5,19	80.1	817	2680	5,75	88.7	913	2995
						N165	5,00	77.2	797	2615	5,80	89.5	897	2943
16,2	250	Lock Base	Lapua	91,5	3.602	N560	5,04	77.8	781	2562	5,71	88.1	895	2936
						N165	4,89	75.5	781	2562	5,67	87.5	871	2858
						N170	5,36	82.7	789	2589	6,23	96.1	892	2927
						N570	5,60	86.4	830	2723	6,22	96.0	920	3018
16,2	250	Scenar	Lapua	93,5	3.681	N560	4,94	76.2	778	2552	5,50	84.9	884	2900
						N165	4,95	76.4	782	2566	5,61	86.6	864	2835
						N170	5,50	84.9	797	2615	6,17	95.2	883	2897
						N570	5,57	86.0	829	2720	6,22	96.0	920	3018
16,2	250	A-Frame	Swift	88,8	3.496	N560	4,41	68.1	753	2470	5,38	83.0	861	2825
						N165	4,48	69.1	737	2418	5,40	83.3	834	2736
						N570	5,26	81.2	795	2608	6,05	93.4	889	2917
16,2	250	Lock Base	Lapua	91,5	3.602	N565	5,22	80.6	807	2648	5,89	90.9	883	2897

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
 LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

9.3 x 62

Test barrel: 580 mm (22¾"), 1 in 14" twist
 Primers: Large Rifle
 Cases: Lapua, trim-to length 61,80 mm (2.433")

Bullet		Type/Name	Mfg	C.O.L.		Powder	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Type	Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]
14,3	220	Naturalis	Lapua	82,0	3.228	N530	3,01	46.4	687	2254	3,48	53.7	792	2598
						N135	2,95	45.5	662	2172	3,67	56.6	782	2566
						N140	3,4							

.416 Rigby

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
29,2	450	RNSP	Woodleigh	94,5	3.720	N160	5,20	80.2	614	2014	5,67	87.5	663	2175
						N560	5,70	88.0	633	2077	6,14	94.7	680	2231
						N165	5,83	90.0	631	2070	6,17	95.2	682	2238

.444 Marlin

Test barrel: 560 mm (22"), 1 in 38" twist
 Primers: Large Rifle
 Cases: Remington, trim-to length 56,30 mm (2.216")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
13,0	200	HP/XTP	Hornady	64,4	2.535	N110	2,66	41.0	720	2362	3,05	47.1	797	2613
						N120	3,28	50.6	782	2565	3,75	57.8	869	2851
15,6	240	JTC-SIL	Hornady	64,5	2.539	N120	2,91	44.9	684	2243	3,43	53.0	780	2560
						N130	3,23	49.8	697	2286	3,68	56.8	780	2558
17,2	265	FP	Hornady	65,0	2.559	N120	2,82	43.5	649	2129	3,27	50.5	736	2415
						N130	3,09	47.7	657	2157	3,45	53.2	732	2401

.45-70 Government

Test barrel: 560 mm (22"), 1 in 20" twist
 Primers: Large Rifle
 Cases: Remington, trim-to length 53,30 mm (2.098")

WARNING: These loads are to be used only in modern rifles like Ruger #1 or .45-70's chambered on Mauser type bolt actions. They MUST NOT be used in old rifles with weaker actions like Trapdoor and old Marlin mod. 1895. The listed maximum loads do not exceed 210 MPa.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
19,4	300	FN HP	Sierra	64,7	2.547	N120	2,95	45.5	579	1900	3,25	50.2	651	2136
						N130	3,38	52.2	609	1998	3,70	57.1	686	2251
						N530	3,65	56.3	596	1955	3,90	60.2	652	2139
19,4	300	TSX FN	Barnes	64,7	2.547	N120	2,45	37.8	502	1647	2,91	44.9	594	1949
						N530	3,02	46.6	460	1509	3,40	52.5	569	1867
19,4	300	XFN	Barnes	64,8	2.551	N130	3,10	47.8	547	1795	3,37	52.0	602	1975
22,7	350	RN	Hornady	64,7	2.547	N130	3,11	48.0	522	1713	3,46	53.4	614	2014
						N133	3,26	50.3	507	1663	3,72	57.4	621	2037
						N530	3,45	53.2	509	1670	3,82	58.9	606	1988
25,9	400	FN	Speer	64,7	2.547	N130	2,90	44.7	489	1604	3,22	49.7	559	1834
						N133	3,06	47.2	485	1591	3,40	52.5	574	1883
						N530	3,20	49.4	478	1568	3,52	54.3	568	1864
33,1	510	LFN w/ gas check	Gunhill	64,7	2.547	N120 ^{*)}	1,70	26.2	360	1181	1,90	29.3	408	1339
						N130 ^{*)}	2,00	30.9	389	1276	2,30	35.5	495	1624

*) Cowboy Action Shooting load

.458 Winchester Magnum

Test barrel: 635 mm (25"), 1 in 14" twist
 Primers: Large Rifle Magnum
 Cases: Winchester, trim-to length 63,30 mm (2.492")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
22,7	350	RN	Hornady	74,9	2.949	N120	4,13	63.7	712	2336	4,53	69.9	748	2454
						N130	4,46	68.8	730	2395	4,80	74.1	773	2536
						N133	4,72	72.8	730	2395	4,90F	75.6F	756	2480
25,9	400	A-Frame	Swift	82,0	3.228	N130	4,30	66.3	674	2211	4,55	70.2	710	2329
						N530	4,90	75.6	691	2267	5,10F	78.7F	722	2369
						N135	4,80	74.1	677	2221	4,90F	75.6F	692	2270
25,9	400	XFB	Barnes	83,0	3.268	N130	4,00	61.7	631	2070	4,36	67.3	688	2257
						N530	4,50	69.4	645	2116	4,70F	72.5F	674	2211

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
 LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

.458 Winchester Magnum

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
32,4	500	RN	Hornady	84,0	3.307	N135	4,30	66.3	625	2051	4,42F	68.2F	644	2113
						N130	3,60	55.5	557	1827	4,11	63.4	623	2044
						N133	3,85	59.4	564	1850	4,52	69.7	645	2116
						N530	4,20	64.8	589	1932	4,76	73.4	655	2149

F = Case full

.50 Browning

Test barrel: 1140 mm (45"), 1 in 16½" twist
 Primers: CCI35
 Cases: IMI, trim-to length 99,10 mm (3.902")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
41,9	647	FMJBT	Speer	137,5	5.413	N170	13,03	201.1	801	2629	14,76	227.8	894	2932
						24N41	13,86	213.8	819	2688	14,72	227.2	888	2915
						20N29	15,53	239.7	836	2744	16,61	256.3	922	3024
45,4	700	Solid	Barnes	137,5	5.413	24N41	13,69	211.2	808	2652	15,00	231.5	887	2910
						20N29	15,27	235.6	819	2687	16,61	256.3	908	2978
48,6	750	A-MAX	Hornady	137,5	5.413	N170	12,31	190.0	759	2490	13,99	215.8	842	2763
						24N41	12,97	200.2	764	2508	14,13	218.0	843	2765
						20N29	14,59	225.2	779	2556	15,97	246.4	862	2829
48,6	750	Bullex-N	Lapua	138,0	5.433	24N41	13,83	213.4	798	2618	14,93	230.4	865	2838
						20N29	15,57	240.3	826	2710	16,58	255.9	895	2936
48,6	750	Solid	Barnes	137,5	5.413	24N41	13,26	204.6	768	2520	14,54	224.4	858	2815
						20N29	14,64	226.0	782	2565	16,23	250.5	871	2857
51,8	800	Bullex-N	Lapua	137,5	5.413	24N41	12,93	199.5	756	2480	14,23	219.6	826	2710
						20N29	14,95	230.7	796	2612	15,79	243.7	857	2812
51,8	800	Solid	Barnes	137,5	5.413	24N41	11,79	181.9	722	2369	12,84	198.1	790	2592
						20N29	14,19	219.1	779	2557	15,88	245.0	850	2788
55,1	850	Solid	Barnes	137,5	5.413	24N41	12,34	190.5	716	2349	13,50	208.3	784	2573
						20N29	13,91	214.7	746	2447	15,42	238.0	828	2716

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
 LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

HANDGUN RELOADING DATA

Disclaimer

All of this reloading information has been provided by Nammo Lapua Oy and Nammo Vihtavuori Oy. The data given here were obtained in laboratory conditions following strictly the CIP (Commission Internationale Permanente) June 13, 1990 and November 9, 1993 rules. The listed maximum loads have been determined according to the respective CIP/SAAMI maximum pressure specification, whichever is lower.

These test methods have been deemed to be safe throughout the world. Pressure is measured at the case mouth or from inside the case according to the CIP.

DO NOT ATTEMPT ANY EXTRAPOLATIONS. PLEASE FOLLOW THE DATA AS WRITTEN.

IT IS A MUST FOR EVERY RELOADER TO READ THE RELOADING SAFETY RULES ON THE PAGES 16 AND 17 OF THIS GUIDE.

7 mm TCU

Test barrel: 360 mm (14"), 1 in 10" twist
 Primers: Small Rifle
 Cases: Necked-up Lapua .223 Rem., trim-to length 44,50 mm (1.752")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
6,5	100	HP	Hornady	62,5	2.461	N120	1,48	22,8	667	2188	1,64	25,3	744	2441
						N130	1,62	25,0	672	2205	1,79	27,6	753	2470
						N133	1,77	27,3	695	2280	1,96	30,2	774	2539
7,8	120	SSSP	Hornady	63,5	2.500	N120	1,32	20,4	606	1988	1,45	22,4	655	2149
						N130	1,45	22,4	610	2001	1,61	24,8	673	2208
						N133	1,62	25,0	630	2067	1,81	27,9	701	2300
8,4	130	Spitzer	Speer	65,0	2.559	N120	1,24	19,1	542	1778	1,38	21,3	596	1955
						N130	1,40	21,6	573	1880	1,55	23,9	626	2054
						N133	1,46	22,5	576	1890	1,62	25,0	633	2077
9,7	150	SBT	Sierra	65,0	2.559	N120	1,17	18,1	513	1683	1,30	20,1	562	1844
						N130	1,31	20,2	535	1755	1,45	22,4	586	1923
						N133	1,38	21,3	542	1778	1,53	23,6	599	1965
						N135	1,44	22,2	538	1765	1,60	24,7	597	1959
10,4	160	SBT	Sierra	66,0	2.598	N120	1,12	17,3	480	1575	1,25	19,3	531	1742
						N130	1,26	19,4	505	1657	1,41	21,8	558	1831
						N133	1,31	20,2	511	1677	1,45	22,4	559	1834
						N135	1,45	22,4	531	1742	1,61	24,8	582	1909
						N540	1,48	22,8	544	1785	1,63	25,2	598	1962

NOTE: This cartridge is not supported by CIP or SAAMI. The maximum loads do not exceed 300 MPa.

7 mm BR Remington

Test barrel: 375 mm (14½"), 1 in 10" twist
 Primers: Small Rifle
 Cases: Remington, trim-to length 38,40 mm (1.512")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
6,5	100	HP	Hornady	56,0	2.205	N120	1,82	28,0	774	2539	1,93	29,8	829	2720
						N130	1,97	30,5	783	2568	2,10	32,4	838	2749
7,8	120	SSSP	Hornady	56,6	2.228	N120	1,67	25,8	687	2255	1,80	27,8	738	2421
						N130	1,81	27,9	707	2318	1,94	29,9	784	2572
						N133	1,94	30,0	714	2343	2,11	32,6	771	2530

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
 LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

7 mm BR Remington

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
9,1	140	Ballistic Tip	Nosler	60,3	2.374	N120	1,45	22,4	595	1954	1,58	24,4	640	2100
						N130	1,62	25,0	612	2006	1,73	26,7	661	2169
						N133	1,71	26,3	623	2044	1,84	28,4	671	2201
9,7	150	Ballistic Tip	Nosler	60,3	2.374	N120	1,42	21,9	576	1890	1,54	23,8	619	2031
						N130	1,54	23,8	589	1931	1,67	25,8	635	2083
						N133	1,62	25,1	595	1952	1,77	27,3	642	2106
						N135	1,75	27,0	606	1988	1,87	28,9	650	2133
10,4	160	HPBT	Sierra	59,7	2.350	N120	1,30	20,1	539	1770	1,42	21,9	580	1903
						N130	1,42	21,9	559	1834	1,55	23,9	602	1975
						N133	1,56	24,1	575	1886	1,69	26,1	619	2031
						N135	1,67	25,8	588	1929	1,79	27,6	630	2067

7 mm GJW

Test barrel: 380 mm (15"), 1 in 8" twist
 Primers: Small Rifle
 Cases: Munitionsfabrik Thun, trim-to length 48,80 mm (1.920")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
9,7	150	Ballistic Tip	Nosler	75,0	2.953	N130	1,58	24,4	613	2013	1,67	25,8	642	2106
						N133	1,65	25,5	614	2013	1,74	26,8	644	2113
						N135	1,78	27,5	629	2065	1,86	28,7	658	2159
10,9	168	HPBT	Sierra	75,0	2.953	N130	1,54	23,7	583	1913	1,63	25,2	611	2005
						N133	1,62	25,1	587	1927	1,71	26,4	617	2024
						N135	1,76	27,1	605	1984	1,83	28,2	631	2070
						N140	1,83	28,2	607	1991	1,91	29,5	636	2087

7,62 x 25 Tokarev

Test barrel: 150 mm (6"), 1 in 10" twist, groove calibre 7,85 mm (0.309")
 Primers: Large Pistol
 Cases: Focchi 7,63 Mauser, trim-to length 24,80 mm (0.976")

NOTE: FOR FIREARMS CHAMBERED FOR THE 7,62 x 25 TOKAREV CARTRIDGE ONLY.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
3,9	60	HP ²⁾	Speer	32,0	1.260	N320	0,29	4,4	391	1284	0,36	5,5	480	1574
						N340	0,39	5,9	434	1425	0,46	7,1	522	1713
4,6	71	FMJ ²⁾	Sierra	33,0	1.299	N340	0,36	5,5	410	1345	0,43	6,7	478	1569
						3N37	0,39	6,0	412	1352	0,49	7,6	493	1616
						3N38	0,53	8,1	471	1546	0,61	9,5	521	1708
4,8	74	FMJ ¹⁾	Lapua	33,0	1.299	N340	0,35	5,5	406	1331	0,43	6,6	471	1546
						3N37	0,39	5,9	403	1322	0,49	7,6	478	1569
5,8	90	JHC ²⁾	Sierra	32,5	1.280	N340	0,29	4,5	308	1011	0,37	5,7	405	1329
						3N37	0,34	5,2	340	1116	0,43	6,6	416	1366
						3N38	0,46	7,1	404	1326	0,53	8,1	452	1482
6,0	93	FMJ ¹⁾	Lapua	34,0	1.339	N340	0,31	4,7	342	1122	0,39	5,9	401	1316
						3N37	0,33	5,1	349	1146	0,46	7,1	418	1370
						3N38	0,43	6,6	378	1241	0,56	8,6	445	1460

¹⁾ Bullet cal. 7,84 mm (0,309") ²⁾ Bullet cal. 7,92 mm (0,312")

.32 S&W Long N.P.

Test barrel: 175 mm (7"), 1 in 18½" twist
 Primers: Small Pistol
 Cases: Lapua, trim-to length 23,20 mm (0.913")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
5,4	83	LWC	Lapua	24,6	0.969	N310	0,09	1,4	231	758	0,11	1,7	258	846
6,4	98	LWC	Lapua	24,6	0.969	N310	0,07	1,1	186	610	0,08	1,2	208	682
6,4	98	LRN	Lapua	32,3	1.272	N310	0,12	1,9	256	840	0,14	2,2	277	909

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
 LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

.32 S&W Long Wadcutter

Test barrel: 150 mm (6"), 1 in 18¾" twist
 Primers: Small Pistol
 Cases: Lapua, trim-to length 23,20 mm (0.913")

Bullet					Powder Type	Starting load				Maximum load				
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]		Weight [g]	[grs]	Velocity [m/s] [fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]		
5,4	83	LWC	Lapua	24,6	0.969	N310	0,11	1.7	246	807	0,13	2.0	286	938
6,4	98	LWC	Lapua	24,6	0.969	N310	0,09	1.4	233	764	0,12	1.9	257	843

9 mm Browning Court (.380 Auto)

Test barrel: 82 mm (3.2"), 1 in 10" twist
 Primers: Small Pistol
 Cases: X-Treme Bullets, trim-to length 17,15 mm (0.680")

Bullet					Powder Type	Starting load				Maximum load				
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]		Weight [g]	[grs]	Velocity [m/s] [fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]		
5,9	90	HP / XTP	Hornady	24,9	0.980	N310	0,14	2.1	246	807	0,17	2.6	290	951
						N320	0,20	3.1	266	873	0,23	3.6	319	1047
						N32C	0,22	3.4	270	886	0,23	3.5	268	879
6,5	100	FMJ	Hornady	25,0	0.984	N310	0,13	2.0	232	761	0,16	2.4	270	886
						N320	0,18	2.7	243	797	0,21	3.2	296	971
						N330	0,21	3.2	243	797	0,25	3.9	306	1004
6,5	100	RNFP	X-treme Bullets	24,3	0.957	N310	0,14	2.2	247	810	0,17	2.6	273	896
						N320	0,18	2.8	248	814	0,22	3.3	297	974
						N32C	0,18	2.7	239	784	0,22	3.4	280	919

9 mm Luger

Test barrel: 100 mm (4"), 1 in 10" twist
 Primers: Small Pistol
 Cases: Lapua, trim-to length 19,00 mm (0.748")

Bullet					Powder Type	Starting load				Maximum load				
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]		Weight [g]	[grs]	Velocity [m/s] [fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]		
5,8	90	HP-XTP	Hornady	27,0	1.063	N310	0,26	3.9	369	1212	0,27	4.2	384	1260
						N320	0,31	4.8	401	1316	0,34	5.3	421	1380
						N330	0,36	5.6	420	1379	0,39	6.1	439	1440
						N340	0,36	5.5	423	1387	0,40	6.2	452	1483
						N350	0,42	6.4	424	1391	0,47	7.2	456	1496
						3N37	0,42	6.4	437	1434	0,47	7.2	461	1512
6,5	100	HP HS	H&N	28,0	1.102	N310	0,21	3.2	325	1066	0,25	3.9	373	1224
						N320	0,27	4.2	355	1165	0,31	4.8	401	1316
						N330	0,32	4.9	370	1214	0,37	5.6	421	1381
						N340	0,31	4.8	372	1220	0,37	5.7	426	1398
6,5	100	HP	Speer	27,5	1.083	N320	0,30	4.7	373	1222	0,33	5.1	398	1307
						N330	0,35	5.4	393	1290	0,38	5.9	416	1365
						N340	0,37	5.7	393	1290	0,42	6.4	429	1407
						3N37	0,42	6.4	398	1306	0,47	7.3	434	1423
7,5	115	HP-XTP	Hornady	29,0	1.142	N320	0,26	4.0	341	1118	0,29	4.5	362	1188
						N330	0,31	4.8	356	1166	0,35	5.4	381	1251
						N340	0,34	5.2	365	1198	0,38	5.9	397	1301
						3N37	0,39	6.0	370	1214	0,44	6.7	398	1305
						N350	0,38	5.9	373	1225	0,42	6.4	396	1299
7,5	115	FMJ-RN	Lapua	29,0	1.142	N320	0,25	3.9	304	997	0,29	4.5	341	1119
						N330	0,29	4.5	328	1076	0,35	5.4	374	1227
						N340	0,31	4.8	344	1129	0,35	5.4	372	1220
						N350	0,35	5.4	344	1129	0,42	6.5	394	1293
						3N37	0,36	5.6	344	1129	0,42	6.5	393	1289
7,5	115	RN	Rainier	29,0	1.142	N320	0,25	3.9	326	1068	0,28	4.4	347	1139
						N330	0,30	4.7	342	1123	0,33	5.1	361	1185
						N340	0,32	5.0	353	1157	0,35	5.4	374	1228
						N350	0,37	5.7	364	1195	0,41	6.4	391	1282
						3N37	0,39	6.1	364	1195	0,42	6.5	383	1256
7,5	115	HB RN TP	Berry's	29,0	1.142	N320	0,27	4.1	319	1047	0,30	4.7	361	1184
						N330	0,31	4.8	334	1096	0,37	5.7	384	1260

LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
 LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED

9 mm Luger

cont.

Bullet					Powder Type	Starting load				Maximum load				
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]		Weight [g]	[grs]	Velocity [m/s] [fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]		
						N340	0,32	5.0	279	915	0,37	5.8	388	1273
						3N37	0,36	5.6	341	1119	0,44	6.7	396	1299
						3N38	0,47	7.2	360	1181	0,56	8.7	427	1401
7,5	115	TAC-XP	Barnes	28,6	1.126	N320	0,18	2.8	264	866	0,22	3.4	308	1010
						N340	0,22	3.5	279	915	0,27	4.1	327	1073
						3N37	0,27	4.2	291	955	0,31	4.8	333	1093
						3N38	0,32	4.9	284	932	0,41	6.3	343	1125
7,8	120	CEPP	Lapua	28,7	1.130	N320	0,24	3.7	298	978	0,28	4.3	330	1083
						N330	0,29	4.5	326	1070	0,33	5.1	360	1181
						N340	0,29	4.5	326	1070	0,34	5.2	369	1211
						N350	0,34	5.2	340	1115	0,38	5.9	381	1250
						3N37	0,37	5.7	346	1135	0,42	6.5	390	1280
8,0	124	FMJ/FP	Hornady	29,0	1.142	N320	0,25	3.9	310	1017	0,28	4.3	334	1096
						N330	0,31	4.8	338	1108	0,34	5.2	359	1178
						N340	0,34	5.3	347	1139	0,37	5.7	370	1214
						3N37	0,39	6.1	357	1172	0,42	6.5	377	1236
						N350	0,35	5.4	349	1144	0,39	6.0	370	1214
8,0	124	RN	Rainier	29,0	1.142	N320	0,24	3.8	305	1000	0,27	4.1	326	1069
						N330	0,27	4.2	324	1063	0,30	4.7	344	1129
						N340	0,30	4.7	328	1077	0,33	5.1	351	1152
						N350	0,34	5.2	340	1115	0,38	5.9	364	1196
						3N37	0,35	5.4	346	1136	0,39	6.0	365	1199
8,0	124	FMJ-RN	Lapua	29,0	1.142	N320	0,22	3.4	290	951	0,26	4.0	326	1070
						N330	0,28	4.3	315	1033	0,32	4.9	359	1178
						N340	0,29	4.5	331	1086	0,33	5.1	360	1181
						N350	0,32	4.9	341	1119	0,37	5.7	377	1237
						3N37	0,34	5.2	336	1102	0,40	6.2	379	1243
8,0	124	Megashock	Lapua	28,7	1.130	N320	0,23	3.5	273	896	0,27	4.2	321	1053
						N330	0,27	4.2	299	981	0,32	4.9	344	1129
						N340	0,28	4.3	299	981	0,32	4.9	344	1129
						N350	0,33	5.1	321	1053	0,37	5.7	362	1188
						3N37	0,34	5.2	334	1096	0,39	6.0	375	1230
8,1	124	HB RN TP	Berry's	29,0	1.142	N320	0,22	3.4	270	886	0,26	4.1	326	1070
						N340	0,27	4.1	300	984	0,32	4.9	352	1155
						3N37	0,30	4.7	309	1014	0,36	5.5	361	1184
						3N38	0,37	5.8	328	1076	0,44	6.7	381	1250
						N350	0,29	4.5	311	1020	0,34	5.2	358	1175
8,1	125	JHP	Sierra	26,3	1.035	N320	0,21	3.2	273	896	0,25	3.8	316	1037
						N330	0,25	3.9	288	945	0,29	4.5	331	1086
8,4	130	FMJ	Sierra	29,0	1.142	N320	0,23	3.6	299	981	0,26	4.0	319	1046
						N330	0,26	4.0	314	1031	0,29	4.5	333	1094
						N340	0,28	4.4	325	1066	0,31	4.8	341	1119
						N350	0,33	5.2	330	1083	0,36	5.5	346	1135
	</													

.38 Super Auto

cont.

Bullet						Powder		Starting load				Maximum load			
Weight		Type/Name	Mfg	C.O.L.		Type	Weight	Velocity			Weight	Velocity			
[g]	[grs]			[mm]	[in.]		[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]	
						N340	0,36	5.6	349	1145	0,39	5.9	367	1202	
						3N37	0,41	6.3	360	1181	0,44	6.8	380	1245	
						N105	0,60	9.3	402	1319	0,63	9.6	423	1388	
8,4	130	RN	Rainier	32,0	1.260	N320	0,29	4.5	312	1024	0,31	4.8	331	1086	
						N340	0,35	5.4	344	1129	0,38	5.8	360	1179	
						N350	0,38	5.9	347	1138	0,42	6.4	368	1206	
						3N37	0,41	6.3	355	1165	0,44	6.8	374	1225	
9,5	147	HP/XTP	Hornady	32,0	1.260	N340	0,33	5.1	315	1033	0,36	5.5	335	1097	
						3N37	0,38	5.9	334	1096	0,41	6.3	353	1158	
						N350	0,37	5.7	327	1073	0,40	6.1	346	1134	
						N105	0,51	7.9	360	1181	0,53	8.2	377	1237	
9,5	147	RN	Rainier	32,0	1.260	N340	0,32	4.9	321	1053	0,35	5.3	335	1097	
						N350	0,34	5.2	307	1007	0,37	5.7	326	1070	
						3N37	0,36	5.6	316	1037	0,39	5.9	333	1091	

.38 Special

Test barrel: 170 mm (6½"), 1 in 18" twist
 Primers: Small Pistol
 Cases: Lapua, trim-to length 29,10 mm (1.146")

Bullet						Powder		Starting load				Maximum load			
Weight		Type/Name	Mfg	C.O.L.		Type	Weight	Velocity			Weight	Velocity			
[g]	[grs]			[mm]	[in.]		[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]	
5,5	85	WC H-HB	H&N	29,5	1.161	N310	0,22	3.4	277	909	0,30	4.6	351	1152	
						N320	0,30	4.6	283	928	0,36	5.6	357	1171	
						N32C	0,29	4.5	281	922	0,38	5.9	324	1063	
7,1	110	HP/XTP	Hornady	36,5	1.437	N320	0,35	5.4	342	1120	0,40	6.1	388	1272	
						N340	0,40	6.2	345	1130	0,45	6.9	386	1267	
						3N37	0,48	7.3	353	1156	0,53	8.2	399	1308	
						N350	0,43	6.6	355	1165	0,50	7.7	398	1305	
8,1	125	FP/XTP	Hornady	36,5	1.437	N320	0,32	4.9	299	981	0,37	5.6	342	1121	
						N340	0,38	5.8	318	1042	0,43	6.7	359	1178	
						3N37	0,44	6.8	319	1045	0,49	7.5	367	1204	
						N350	0,42	6.5	323	1058	0,49	7.5	373	1224	
8,1	125	FP	Rainier	36,5	1.437	N320	0,29	4.5	293	960	0,34	5.2	332	1089	
						N340	0,34	5.2	306	1002	0,41	6.3	349	1146	
						N350	0,38	5.9	304	997	0,45	6.9	354	1160	
						3N37	0,40	6.2	310	1017	0,47	7.2	362	1187	
8,1	125	Flat Point	Berry's	38,0	1.496	N310	0,31	4.7	283	928	0,36	5.5	345	1132	
						N320	0,35	5.4	317	1040	0,41	6.3	375	1230	
						N340	0,42	6.5	344	1129	0,47	7.2	393	1289	
						N32C	0,51	7.8	333	1093	0,53	8.2	343	1125	
9,1	140	HP	Speer	36,5	1.437	N320	0,30	4.6	268	878	0,35	5.3	320	1051	
						N340	0,36	5.6	275	902	0,41	6.2	329	1079	
						3N37	0,41	6.2	282	925	0,46	7.1	341	1117	
						N350	0,40	6.2	282	925	0,45	6.9	336	1102	
9,5	146	JHP	Speer	35,0	1.378	N340	0,30	4.6	261	856	0,35	5.4	306	1004	
						3N37	0,35	5.4	263	863	0,40	6.1	310	1018	
						N350	0,34	5.2	265	869	0,39	5.9	308	1010	
9,6	148	LWC	Sako	30,0	1.181	N320	0,20	3.0	237	776	0,23	3.5	267	876	
						N330	0,22	3.3	239	784	0,25	3.8	277	910	
						N340	0,24	3.6	248	812	0,27	4.1	282	926	
						N350	0,27	4.1	255	835	0,30	4.6	294	964	
9,6	148	Double End WC	Berry's	29,5	1.161	N310	0,19	2.9	172	564	0,22	3.4	233	764	
						N320	0,24	3.7	230	755	0,27	4.2	284	932	
						N340	0,29	4.5	258	846	0,32	4.9	305	1001	
						N32C	0,28	4.3	242	794	0,31	4.7	274	899	
10,2	158	SWC copper plated	H&N	36,5	1.437	N310	0,22	3.3	239	784	0,25	3.8	269	883	
						N320	0,30	4.6	270	886	0,33	5.0	309	1014	
						N340	0,34	5.3	289	948	0,39	6.0	333	1093	
10,2	158	Flat Point	LOS	39,3	1.547	N310	0,28	4.4	187	614	0,32	4.9	254	833	
						N320	0,34	5.2	264	866	0,39	6.0	313	1027	
						N330	0,38	5.8	279	915	0,42	6.5	325	1066	

.38 Special

cont.

Bullet						Powder		Starting load				Maximum load			
Weight		Type/Name	Mfg	C.O.L.		Type	Weight	Velocity			Weight	Velocity			
[g]	[grs]			[mm]	[in.]		[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]	
						N340	0,39	6.0	282	925	0,43	6.7	329	1079	
						3N37	0,47	7.2	275	902	0,50	7.8	340	1115	
10,2	158	SWC copper plated	X-treme Bullets	36,5	1.437	N310	0,22	3.4	206	676	0,25	3.9	265	869	
						N320	0,29	4.4	263	863	0,33	5.2	304	997	
						N340	0,36	5.6	287	942	0,39	6.0	325	1066	
						3N37	0,42	6.5	302	991	0,45	6.9	334	1096	
						N32C	0,35	5.4	266	873	0,39	6.0	303	994	
10,2	158	HP / XTP	Hornady	36,6	1.441	N310	0,24	3.7	210	689	0,26	4.1	244	801	
						N320	0,29	4.5	244	801	0,33	5.1	293	961	
						N340	0,34	5.2	261	856	0,38	5.8	310	1017	
						3N37	0,40	6.1	267	876	0,43	6.7	320	1050	
10,2	158	Flat Point	Berry's	39	1.535	N310	0,25	3.9	213	699	0,29	4.4	272	892	
						N320	0,35	5.4	273	896	0,38	5.8	317	1040	
						N340	0,39	6.0	289	948	0,44	6.8	332	1089	
10,2	158	HP	Speer	36,5	1.437	N320	0,25	3.9	218	715	0,30	4.6	272	892	
						N340	0,32	4.9	241	791	0,37	5.6	300	983	
						3N37	0,38	5.9	259	848	0,43	6.6	305	999	
						N350	0,36	5.5	261	855	0,41	6.3	309	1013	
10,2	158	FNCM	Gunhill	36,7	1.445	N32C ^{*)}	0,27	4.2	261	856	0,36	5.6	306	1004	
10,2	158	HP HS	H&N	38,6	1.520	N320	0,28	4.3	264	866	0,32	4.9	296	971	
						N330	0,34	5.2	290	951	0,38	5.9	322	1056	
						N340	0,35	5.4	291	955	0,39	6.0	329	1079	
10,3	158	LSWC/HP		36,5	1.437	N320 ^{*)}	0,21	3.3	230	755	0,25	3.8	256	840	
						N330 ^{*)}	0,23	3.6	240	787	0,27	4.1	269	883	
10,2	158	FP	Rainier	37,5	1.476	N320	0,26	3.9	237	776	0,31	4.8	283	927	
						N340	0,32	4.9	247	809	0,37	5.7	295	967	
						N350	0,36	5.5	261	856	0,41	6.3	306	1004	
						3N37	0,37	5.6	260	853	0,42	6.5	310	1015	
11,7	180	Flat Point	LOS	39,3	1.547	N310	0,24	3.8	125	410	0,27	4.2	203	666	
						N320	0,29	4.5	222	728	0,33	5.1	265	869	
						N340	0,33	5.2	231	758	0,38	5.8	285	935	
						3N37	0,38	5.9	240	787	0,43	6.7	293	961	
						N350	0,36	5.6	246	807	0,40	6.2	298	978	
11,7	180	HS HP	H&N	39,3	1.547	N310	0,24	3.7	221	725	0,27	4.2	247	810	
						N320	0,30	4.6	251	823	0,34	5.2	284	932	
						N340	0,34	5.3	261	856	0,38	5.9	301	988	
						3N37	0,38	5.9	268	879	0,41	6.3	308	1010	
						N350	0,37	5.7	269	883	0,42	6.4	310	1017	

*) Cowboy Action Shooting load

.357 Magnum

Test barrel: 175 mm (7"), 1 in 18½" twist
 Primers: Small Pistol
 Cases: Remington, trim-to length 32,60 mm (1.283")

Bullet						Powder		Starting load				Maximum load			
Weight		Type/Name	Mfg	C.O.L.		Type	Weight	Velocity			Weight	Velocity			
[g]	[grs]			[mm]	[in.]		[g]	[grs]	[m/s]	[fps]	[g]	[grs]	[m/s]	[fps]	
7,1	110	HP/XTP	Hornady	40,0	1.575	N310	0,43	6.6	413	1355	0,45	7.0	427	1402	
						N320	0,51	7.9	445	1460	0,54	8.3	462	1516	
						N340	0,60	9.3	475	1558	0,64	9.8	500	1639	
						3N37	0,68	10.5	496	1627	0,73	11.3	518		

.357 Magnum

cont.

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
						N350	0,62	9,6	456	1496	0,66	10,2	476	1561
						N110	1,09	16,8	488	1601	1,19F	18,4F	540	1772
8,1	125	JHP	Sierra	40	1,575	N320	0,48	7,3	405	1329	0,57	8,8	448	1470
						N340	0,54	8,3	427	1401	0,63	9,7	475	1558
						N350	0,58	9,0	442	1450	0,69	10,7	492	1614
						N105	0,78	12,1	485	1591	0,96	14,8	547	1795
						N110	1,12	17,3	513	1683	1,20	18,5	552	1811
9,1	140	HP	Speer	40,0	1.575	N340	0,53	8,2	404	1325	0,56	8,7	422	1385
						3N37	0,59	9,1	417	1368	0,63	9,8	439	1440
						N350	0,58	8,9	416	1365	0,62	9,5	437	1433
						N110	1,02	15,7	457	1499	1,11F	17,1F	502	1647
10,2	158	HP	Speer	40,0	1.575	N320	0,40	6,2	335	1099	0,43	6,6	354	1160
						N340	0,47	7,3	361	1184	0,50	7,7	378	1239
						3N37	0,53	8,2	377	1237	0,57	8,8	398	1305
						N350	0,54	8,3	385	1263	0,58	8,9	400	1314
10,2	158	FP/XTP	Hornady	40,0	1.575	N105	0,76	11,7	427	1401	0,80	12,4	447	1466
10,2	158	HP / XTP	Hornady	40	1.575	N340	0,46	7,1	359	1178	0,56	8,6	416	1365
						3N38	0,57	8,8	380	1247	0,72	11,1	455	1493
						N110	0,88	13,5	426	1398	1,06	16,3	499	1637
10,2	158	HP	Speer	40,0	1.575	N110	0,98	15,1	451	1480	1,03	15,9	478	1569
10,2	158	FNCM	Gunhill	40,2	1.583	N32C ¹⁾	0,29	4,5	265	869	0,37	5,7	309	1014
10,2	158	SJSP	CBC	40,0	1.575	N320	0,38	5,9	337	1106	0,48	7,3	381	1250
						N340	0,45	6,9	359	1178	0,56	8,6	414	1358
						3N37	0,51	7,9	380	1247	0,62	9,6	433	1421
						N350	0,48	7,4	367	1204	0,61	9,4	428	1404
						N105	0,64	9,8	406	1332	0,81	12,4	472	1549
10,2	158	SJSP	CBC	40,0	1.575	N110	0,91	14,1	436	1430	1,11	17,2	508	1667
10,2	158	Flat point	Berry's	40,0	1.575	N340	0,46	7,1	362	1188	0,50	7,7	378	1240
						3N37	0,46	7,1	350	1148	0,52	8,0	385	1263
						N105	0,55	8,5	328	1076	0,60	9,3	382	1253
						N110	0,75	11,6	358	1175	0,80	12,3	383	1257
10,3	158	LSWC/HP		40,0	1.575	N330 ¹⁾	0,25	3,9	241	791	0,32	5,0	304	997
						N340 ¹⁾	0,29	4,5	245	804	0,38	5,9	320	1050
11,7	180	Copper plated HP	LOS	40	1.575	N340	0,41	6,3	321	1053	0,49	7,6	363	1191
						3N37	0,46	7,2	340	1115	0,56	8,7	388	1273
						N350	0,44	6,8	328	1076	0,53	8,2	378	1240
						N105	0,60	9,3	370	1214	0,71	10,9	420	1378
						N110	0,78	12,0	384	1260	0,94	14,6	452	1483

F = Case full ¹⁾ The cartridge overall length exceeds the CIP maximum. ²⁾ Cowboy Action Shooting load**.357 Remington Maximum**Test barrel: 300 mm (12"), 1 in 18½" twist
Primers: Small Rifle
Cases: Remington, trim-to length 40,60 mm (1.598")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
10,2	158	FP/XTP	Hornady	48,0	1.890	3N37	0,70	10,8	461	1512	0,74	11,3	478	1568
						N350	0,64	9,9	443	1453	0,71	10,9	470	1541
						N105	0,85	13,1	485	1591	0,92	14,3	513	1683
						N110	1,21	18,7	557	1827	1,27	19,5	578	1898
10,2	158	FP	Rainier	48,0	1.890	N350	0,71	11,0	440	1444	0,78	12,0	472	1548
						3N37	0,69	10,6	445	1460	0,75	11,5	473	1552
						N105	0,86	13,3	490	1608	0,94	14,5	517	1695
						N110	1,27	19,6	559	1834	1,32	20,3	581	1907
11,7	180	Silhouette	Nosler	48,1	1.894	N105	0,79	12,2	443	1453	0,85	13,1	468	1534
						N110	1,07	16,5	500	1640	1,12	17,3	519	1704
						N120	1,40	21,6	516	1693	1,46	22,5	537	1762
13,0	200	TMJ	Speer	50,8 ¹⁾	2.000	N110	0,99	15,3	440	1444	1,04	16,1	460	1508
						N120	1,30	20,1	458	1503	1,36	20,9	483	1584

¹⁾ The cartridge overall length exceeds the CIP maximum.LIGHT GREY TEXT BOX INDICATES MAXIMUM LOAD - USE WITH CAUTION!
LOADS LESS THAN MINIMUM CHARGES SHOWN ARE NOT RECOMMENDED**.40 S&W**Test barrel: 140 mm (5½"), 1 in 16" twist
Primers: Small Pistol
Cases: Remington, trim-to length 21,40 mm (0.843")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
8,7	135	HP-XTP	Hornady	28,6	1.126	N320	0,34	5,2	337	1106	0,35	5,5	346	1134
						N330	0,39	6,0	348	1142	0,40	6,2	357	1172
						N340	0,39	6,0	345	1132	0,41	6,3	357	1171
						3N37	0,47	7,3	357	1171	0,49	7,6	369	1210
						N350	0,43	6,6	351	1152	0,45	7,0	362	1189
8,7	135	HP	Nosler	28,6	1.126	N320	0,39	6,0	373	1224	0,40	6,2	384	1259
						N340	0,48	7,4	403	1322	0,50	7,8	416	1364
						3N37	0,54	8,3	403	1322	0,56	8,6	417	1367
10,0	155	FP	Rainier	28,6	1.126	N320	0,34	5,2	331	1086	0,35	5,5	340	1114
						N330	0,39	6,0	344	1129	0,40	6,2	354	1160
						N340	0,41	6,3	352	1155	0,43	6,6	364	1195
						N350	0,46	7,1	357	1171	0,48	7,4	370	1213
						3N37	0,49	7,6	359	1178	0,51	7,9	371	1216
10,7	165	TC-FMJ	PMC	28,6	1.126	N320	0,32	4,9	303	994	0,34	5,2	316	1038
						N340	0,41	6,3	334	1096	0,43	6,6	347	1137
						3N37	0,47	7,3	343	1125	0,49	7,5	355	1166
						3N38	0,62	9,6	369	1211	0,64	9,8	382	1252
11,0	170	HP	Hornady	28,6	1.126	N340	0,34	5,2	313	1027	0,36	5,6	324	1063
						3N37	0,39	6,0	322	1056	0,41	6,3	333	1093
						N350	0,38	5,9	322	1056	0,40	6,2	333	1091
11,7	180	HP	Speer	28,6	1.126	N340	0,35	5,4	305	1001	0,37	5,7	316	1037
						3N37	0,38	5,9	303	994	0,40	6,2	315	1035
						N350	0,38	5,9	319	1047	0,40	6,2	329	1078
11,7	180	LTC	Fiocchi	28,6	1.126	N320	0,23	3,5	269	883	0,26	4,1	295	968
						N340	0,30	4,6	289	948	0,34	5,2	315	1034
						3N37	0,35	5,4	289	948	0,39	6,1	320	1049
13,0	200	TMJ	Speer	28,6	1.126	N340	0,30	4,6	267	876	0,32	4,9	277	910
						3N37	0,33	5,1	265	869	0,35	5,4	277	909
						N350	0,34	5,2	272	892	0,36	5,5	282	925
						3N38	0,45	6,9	304	997	0,47	7,3	316	1038
						N105	0,49	7,6	321	1053	0,50	7,7	328	1076

10 mm AUTOTest barrel: 140 mm (5½"), 1 in 16" twist
Primers: Large Pistol
Cases: Remington, trim-to length 25,00 mm (0.988")

Bullet		Type/Name	Mfg	C.O.L.		Powder Type	Starting load				Maximum load			
Weight [g]	[grs]			[mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
10,0	155	HP-XTP	Hornady	31,9	1.256	N340	0,40	6,2						

.41 Remington Magnum

Test barrel: 150 mm (6"), 1 in 18¾" twist
 Primers: Large Pistol
 Cases: W-W Super, trim-to length 32,50 mm (1.280")

Bullet					Powder Type	Starting load				Maximum load				
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]	
11,0	170	JHC	Sierra	40,1	1.579	N350	0,72	11.1	415	1362	0,81	12.5	451	1480
						N105	0,99	15.3	465	1526	1,10	16.9	500	1642
						N110	1,41	21.8	500	1640	1,50	23.2	532	1746
13,6	210	HP/XTP	Hornady	40,1	1.579	N350	0,67	10.3	373	1224	0,74	11.4	400	1312
						N105	0,84	13.0	405	1329	0,95	14.6	437	1435
						N110	1,20	18.5	436	1430	1,28	19.8	466	1529

.44 S&W Special

Test barrel: 150 mm (6"), 1 in 18" twist
 Primers: Large Pistol
 Cases: Remington, trim-to length 29,30 mm (1.153")

Bullet					Powder Type	Starting load				Maximum load				
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]	
11,7	180	HP-XTP	Hornady	37,3	1.469	N320	0,44	6.8	285	935	0,49	7.6	315	1033
						N330	0,50	7.7	308	1010	0,56	8.6	338	1109
						N340	0,57	8.8	319	1047	0,62	9.6	349	1145
						N350	0,64	9.9	318	1043	0,68	10.5	350	1148
13,0	200	HP-XTP	Hornady	37,3	1.469	N320	0,41	6.3	270	886	0,45	6.9	294	965
						N330	0,50	7.7	287	942	0,55	8.5	315	1033
						N340	0,54	8.3	293	961	0,59	9.1	325	1066
						N350	0,59	9.1	296	971	0,64	9.9	329	1079
14,3	220	FPJ-Match	Sierra	37,3	1.469	N320	0,34	5.2	221	725	0,39	6.0	255	837
						N330	0,40	6.2	232	761	0,46	7.1	271	889
						N340	0,43	6.6	248	814	0,48	7.4	278	912
						N350	0,50	7.7	254	833	0,56	8.6	289	948
15,6	240	JTC-Sil	Hornady	37,6	1.480	N320	0,31	4.8	193	633	0,36	5.6	223	732
						N330	0,35	5.4	206	676	0,40	6.2	234	768
						N340	0,41	6.3	222	728	0,46	7.1	252	827
						N350	0,49	7.6	239	784	0,53	8.2	271	889
15,6	240	SWC/HP		39,1	1.539	N320 ^{*)}	0,30	4.7	214	702	0,38	5.9	260	853
						N330 ^{*)}	0,36	5.5	229	751	0,41	6.3	270	886
16,1	248	LRNFP	Gunhill	37,2	1.465	N32C ^{*)}	0,38	5.9	238	781	0,41	6.3	255	837
16,2	250	FPJ	Sierra	37,3	1.469	N320	0,31	4.8	193	633	0,36	5.6	226	741
						N330	0,32	4.9	191	627	0,39	6.0	228	748
						N340	0,36	5.6	197	646	0,42	6.5	237	778
						N350	0,44	6.8	229	751	0,49	7.6	260	853

^{*)} Cowboy Action Shooting load

.44 Remington Magnum

Test barrel: 175 mm (7"), 1 in 20" twist
 Primers: Large Pistol
 Cases: Remington, trim-to length 32,40 mm (1.275")

Bullet					Powder Type	Starting load				Maximum load				
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]	
11,7	180	HP-XTP	Hornady	40,7	1.602	N320	0,69	10.6	407	1335	0,77	11.8	437	1432
						N340	0,84	13.0	439	1440	0,92	14.1	472	1549
						N350	0,89	13.7	448	1470	0,99	15.3	481	1578
						N105	1,23	19.0	498	1634	1,40	21.6	543	1781
						N110	1,63	25.2	492	1614	1,76	27.1	534	1751
13,0	200	HP-XTP	Hornady	40,7	1.602	N320	0,65	10.0	381	1250	0,73	11.3	408	1339
						N340	0,76	11.7	410	1345	0,84	13.0	437	1434
						3N37	0,89	13.7	433	1421	0,98	15.2	462	1515
						N350	0,83	12.8	416	1365	0,95	14.6	453	1487
						N105	1,09	16.8	459	1506	1,26	19.4	500	1642
						N110	1,58	24.4	494	1621	1,71	26.3	530	1740

.44 Remington Magnum

cont.

Bullet					Powder Type	Starting load				Maximum load				
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]	
14,3	220	FPJ-Match	Sierra	40,7	1.602	N320	0,59	9.1	350	1148	0,67	10.4	375	1232
						N340	0,72	11.1	381	1250	0,80	12.3	405	1328
						N350	0,83	12.8	402	1319	0,96	14.8	439	1441
						N105	1,08	16.7	432	1417	1,22	18.8	470	1542
15,6	240	JTC-Sil	Hornady	40,7	1.602	N320	0,58	8.9	331	1086	0,63	9.7	354	1161
						N340	0,67	10.3	358	1175	0,75	11.5	380	1247
						3N37	0,78	12.0	372	1220	0,86	13.3	402	1318
						N350	0,77	11.9	375	1230	0,83	12.8	399	1308
						N105	0,95	14.7	404	1325	1,08	16.6	437	1434
						N110	1,32	20.4	435	1427	1,43	22.1	470	1541
16,1	248	LRNFP	Gunhill	40,5	1.594	N32C ^{*)}	0,49	7.6	272	892	0,62	9.6	309	1014
16,2	250	FPJ-Match	Sierra	40,7	1.602	N320	0,55	8.5	314	1030	0,63	9.7	344	1130
						N340	0,65	10.0	341	1119	0,73	11.2	370	1213
						N350	0,75	11.6	366	1201	0,85	13.1	395	1295
						N105	0,87	13.4	382	1253	1,08	16.7	429	1406
17,3	267	LSWC		40,5	1.681	N32C ^{*)}	0,50	7.7	271	889	0,60	9.3	301	988
19,4	300	HP-XTP	Hornady	43,6 ¹⁾	1.717	N340	0,62	9.6	304	997	0,68	10.5	323	1061
						3N37	0,67	10.3	308	1010	0,74	11.4	336	1102
						N350	0,68	10.5	315	1033	0,76	11.7	344	1128
						N105	0,85	13.1	349	1145	0,94	14.6	375	1231
						N110	1,21	18.7	384	1260	1,31	20.2	419	1374
19,4	300	JSP	Sierra	43,6 ¹⁾	1.717	N340	0,61	9.4	296	971	0,66	10.2	319	1046
						3N37	0,65	10.0	305	1001	0,73	11.2	332	1089
						N350	0,64	9.9	296	971	0,72	11.1	326	1071
						N105	0,82	12.7	342	1122	0,90	13.8	368	1208
						N110	1,15	17.7	369	1211	1,23	19.1	398	1305

¹⁾ The cartridge overall length exceeds the CIP maximum.

^{*)} Cowboy Action Shooting load

.45 ACP

Test barrel: 127mm (5"), 1 in 16" twist
 Primers: Large Pistol
 Cases: Remington, trim-to length 22,70 mm (0.893")

Bullet					Powder Type	Starting load				Maximum load				
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm] [in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]	
12,0	185	FP copper plated	Berry's	28,4	1.118	N310	0,27	4.2	250	820	0,31	4.8	286	938
						N320	0,36	5.6	280	919	0,41	6.3	318	1043
						N330	0,42	6.5	286	938	0,49	7.5	336	1102
						N340	0,43	6.6	288	945	0,50	7.7	335	1099
12,0	185	HP copper plated	H&N	30,0	1.181	N310	0,27	4.2	263	863	0,32F	4.9F	296	971
						N320	0,37	5.7	283	928	0,44F	6.7F	328	1076
						N32C	0,39	6.0	279	915	0,47F	7.2F	319	1047
						N330	0,45	7.0	297	974	0,51	7.9	346	1135
						N340	0,45	6.9	293	961	0,53	8.1	346	1135
12,0	185	HBRN copper plated	Berry's	32,1	1.264	N310	0,30	4.7	262	860	0,36	5.5	299	981
						N320	0,41	6.3	288	945	0,47	7.3	331	1086
						N32C	0,43	6.6	276	906	0,53	8.2	323	1060
						N330	0,49	7.5	298	978	0,55	8.5	346	1135
						N340	0,49	7.6	298	978	0,56	8.6	348	1142
12,0	185	HP / XTP	Hornady	31,2	1.228	N310	0,29	4.4	250					

.50 AE

Test barrel: 150 mm (6"), 1 in 19" twist
Primers: Large Pistol
Cases: Speer, trim-to length 32,50 mm (1.280")

Bullet						Powder Type	Starting load				Maximum load			
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
19,4	300	JHP	IMI	40,0	1.575	N105	1,26	19.4	395	1296	1,38	21.3	436	1430
						N110	1,64	25.3	396	1299	1,86	28.7	456	1496
						N120	2,11	32.6	363	1191	2,33	36.0	417	1368
21,1	325	UCHP	Speer	40,0	1.575	N105	1,15	17.7	357	1171	1,26	19.4	406	1332
						N110	1,56	24.1	386	1266	1,75	27.0	437	1434
						N120	1,99	30.7	348	1142	2,23	34.4	408	1339

VIHTAVUORI SMOKELESS LOADS FOR COWBOY ACTION SHOOTING

About the Data

These loads are developed to give the velocities required for the cowboy action shooting using revolvers with lead bullets. The maximum load is determined by the velocity limit about 300 m/s, or by the maximum pressure limit according to the CIP October 1, 1992 rules. The bold text in the tables indicate the maximum load according to CIP pressure level. The maximum loads must never be exceeded.

All the listed loads are intended to be used in modern fire-arms, which are according to the SAAMI requirements. Please use a competent gunsmith to evaluate that the condition of your gun is adequate to be used with the pressures indicated in the tables. The starting loads are the lowest charges which appeared to give clean burning, i.e. no unburned residues in the barrel or in the case, in our test shooting. This limit may, however vary according to the revolver used.

There are some special features, which must be considered, when using reduced loads like the ones presented in the tables below. The same facts are equally valid always when using any smokeless powder in such loads.

1) Double charges

Some of these loads are so small that throwing the load twice in the same case is possible because of the large case volume. Doubling the charge accidentally causes most probably truly lethal chamber pressures. Therefore, it is a must for everyone using this data to check visually every single load for the double charge before seating the bullet.

2) Free space in the case

When using charges which leave large amount of free space in the case, the shooting characteristics may vary largely depending on where the powder is located in the case. If the powder lies totally in the bottom of the case (i.e. in the end where primer is), the muzzle velocity and especially the maximum pressure become much higher. The maximum pressure may even be doubled when same powder charge is moved from the bullet end to the primer end of the case. This can simply be demonstrated by shaking the revolver barrel upwards or barrel downwards just before turning it smoothly in horizontal position, aiming and shooting. Also the recoil may transfer the

powder in either end of the case. This is sometimes seen as a velocity change between the first shot and the following shots.

The shot to shot deviations in velocity and pressure are normally increased when using load which leaves the cases half empty. For this reason such loads are not recommended for target loads. The data below is tested in a way that the powder is as much as possible in the primer side before firing, and therefore, the pressures and the velocities represent the maximum values which were obtained using our test equipment and cartridge components indicated in the table.

3) Risk for underload detonation

This risk is always present when using highly reduced loads of any smokeless powder. The large free space in the case may generate a pressure wave which can cause, in the worst case, powder to burn as a shock wave, i.e. to detonate, instead of normal fast burning process. The extremely sharp pressure peaks involved in detonation can destroy the weapon and may lead to serious injury.

All these loads given here are extensively pressure tested and no signs of underload detonation were found. We strongly recommend everyone to follow strictly these tables to minimize the risk for underload detonation.

Warnings

Smokeless powder differs considerably in its burning characteristics from common "black powder". Black powder burns essentially at the same rate in the open (unconfined) as when in a gun. The burning rate of smokeless powder increases with increasing pressure. If burning smokeless powder is confined, gas pressure will rise and eventually can cause the container or chamber to burst. A slight increase in smokeless powder charge after maximum load causes sharp increase in maximum pressure in the chamber. **Never exceed the maximum loads.**

.500 S&W Magnum

Test barrel: 280 mm (11"), 1 in 18" twist
Primers: Large Rifle
Cases: Starline, trim-to length 41,00 mm (1.614")

Bullet						Powder Type	Starting load				Maximum load			
Weight [g]	[grs]	Type/Name	Mfg	C.O.L. [mm]	[in.]		Weight [g]	[grs]	Velocity [m/s]	[fps]	Weight [g]	[grs]	Velocity [m/s]	[fps]
19,4	300	TMJ	Speer	51,0	2.008	3N38	1,90	29.3	535	1755	2,20	33.9	583	1913
						N105	1,98	30.6	536	1759	2,33	36.0	599	1965
						N110	2,59	40.0	570	1870	2,95	45.5	652	2139
22,7	350	HP/XTP	Hornady	50,4	1.984	3N38	1,64	25.3	468	1535	2,00	30.9	537	1762
						N105	1,75	27.0	487	1598	2,02	31.2	522	1713
						N110	2,19	33.8	521	1709	2,51	38.7	574	1883
						N120	2,76	42.6	503	1650	2,90F	44.7F	539	1768
25,9	400	JSP	Sierra	52,1	2.051	3N38	1,63	25.2	441	1447	1,85	28.5	486	1594
						N105	1,62	25.0	440	1444	2,01	31.0	505	1657
						N110	2,11	32.6	485	1591	2,42	37.3	536	1759

F = Full case

MEET THE VIHTAVUORI TEAM

Read the full stories! www.vihtavuori.com/team/



Victor Terblanche



Alexander Kreutz

VICTOR TERBLANCHE (ZAF) shoots F-Open class and has won back to back South African Championships in 2018 and 2019.

ALEXANDER KREUTZ (GER) has won numerous German nationals titles in 100 and 300 meter rifle disciplines, and his number one discipline is F-Class. In 2018, he took home the gold at Bisley at the GBFCA European Championships.



Anastasia 'Nastja' Mustonen



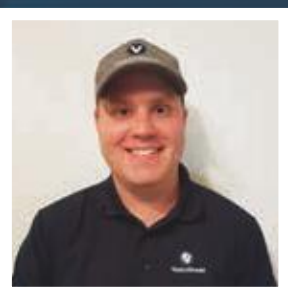
Bruce Piatt

ANASTASIA MUSTONEN (FIN) shoots IPSC practical handgun and rifle and her favorite Vihtavuori powders are N320 handgun powder and N133 rifle powder.

BRUCE PIATT (USA) competes in Action Pistol, Tactical 3-Gun, USPSA/IPSC, Steel Challenge and Sportsman's Team Challenge competitions. He is also a gunsmithing instructor.



Gene 'Evil Roy' Pearcey



Halvor Thrane Svendsen

EVIL ROY (USA) is a Cowboy Action shooting legend. His favorite powder is the N320 and he uses it for .45 ACP, .45 Colt, 9mm and .38 Special.

HALVOR THRANE SVENDSEN (NOR) is a 200 / 300 m big bore and small bore shooter, and has been using Vihtavuori powders for 15 years. His favorite powder is N150 which he uses to reload his 6.5x55 ammo.



Paul Hill



Paul Phillips

PAUL HILL (GBR) is an F-Class and FTR shooter using N160 and N165 powders. Paul has been reloading with Vihtavuori powders over twenty years and his ambition is to shoot at the 2021 South Africa World Championships and win.

PAUL PHILLIPS (USA) is a former United States Marine Corp Infantryman and graduated top of his class in FBI sniper school. Paul has set, tied or broken over 45 NRA National Shooting Records. He uses N133 powder and shoots long range.



Tony Tello



Wayne Campbell

TONY TELLO (USA) is an accomplished high power and smallbore silhouette rifle as well as Cowboy lever action shooter. He loves all Vihtavuori powders, N130, N133, N135, N140 and N150.

WAYNE CAMPBELL (USA) is a Hall of Fame and multiple World Team benchrest shooter. He uses, naturally, the Vihtavuori N133 powder.



Dan Pohlbel



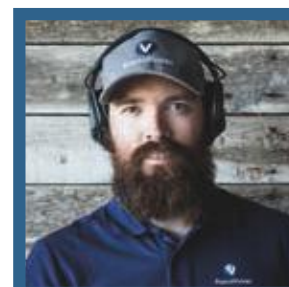
Gabrielle 'Gabby' Hendricks

DAN POHLABEL (USA) competes in F/TR at mid range and long range, and ELR matches like the King of 2 Miles, the NRA mile challenge, and others out to a distance of 2 miles.

GABRIELLE HENDRICKS (USA) shoots Long-Range, Mid-Range, Across the Course Match Rifle and High Power Rifle. She has been shooting rifles competitively for four years now with great success.



Ian Klemm



Johan Eriksson

IAN KLEMM (USA) started shooting F-class in 2010 and, has since then excelled in the sport, with top ten results in nearly all F-class US National Championships.

JOHAN ERIKSSON (SWE) is a long range and PRS shooter. Of Vihtavuori products, Johan prefers the N100 series because it gives good barrel life and gives him the results he anticipates.



Steve Reiter



Tony Boyer

STEVE REITER (USA) is a legend of his own within bullseye pistol shooting. Through the years, he has competed in free pistol, standard pistol, air pistol and centerfire events as well as rifle.

TONY BOYER (USA) is widely regarded as the best American short-range benchrest shooter in history. He's been shooting for 40 years, has won several World Championship titles and has been named Shooter of the Year over ten times. Tony relies on his N133 to do the job.

Ian Klemm

Long range shooter, USA

“Reload in a space where you can concentrate and be thoughtful”



“I reload once every week. The best thing about reloading my own ammunition is that I never run out of different combinations to try in pursuit of the perfect load. Sometimes the session only includes 1 or 2 steps in the brass prep process applied to a bulk lot of 1000 cases at once, but that is the rate I need to maintain in order to produce the ammo I need for an average shooting season.

I reload for hunting, formal competition, and recreational shooting. It’s a lot of cartridges; 6BR Norma, .260 Remington, 6.5x55SE, .284 Win, .30-30 Win, .308 Win, .300 Win Mag, .338 Lapua Magnum, .38 Special, .357 Magnum... just to name a few! If I could shoot only one caliber for the rest of my life, it would be the .308 Winchester. Because my main shooting discipline has me loading and shooting 3,000 rounds of .308 Winchester annually, I’ve gotten to know and love it. Suitable bullets and powders are plentiful and recoil is modest for shooters of all ages.

My number one tip for reloading is to reload in a space where you can concentrate and be thoughtful. Reloading isn’t one of those activities that should be multitasked. It is, however, a great activity if you enjoy the opportunity to remove yourself the various distractions around you, concentrate your focus on singular tasks, and allow yourself to pay as much attention to details of your pursuit as you can. Be intentional in your actions and take time to understand why you’re taking certain steps in the reloading process. Finally, perceive the effect that changing singular variables in your components and process has on your intended resulting ammunition.

My ultimate goal in shooting is to form a few live-long friendships. The personal mastering of a specific skillset is a worthwhile goal, but it’s much more meaningful if you can share that pursuit with one or more likeminded people. You can gain a deeper understanding through shared failures and successes but the real win is the resulting friendship that extends past the shared interest.

My favorite Vihtavuori load for the .308 Winchester is 45.5 grains of N140 powder with the Lapua 155 grain Scenar bullet. Vihtavuori lists this combination as one of their identified “accuracy loads” and it’s no wonder. Out of hundreds of combinations tried to date, it is THE most precise shooting .308 load I have ever tested.

For this reason, it’s my go-to load for most of my training. The superior accuracy and modest recoil of this load means the cause and effect information I get while training to read the wind’s effects on the bullet is the highest quality possible. This translates to more effective training, a higher degree of development for wind-reading, and better results during competition.”



Paul Hill

F-Class shooter, UK

Top achievements

- 2018 Bisley imperial meeting
- Winner of the century aggregate
- 2019 European F-class championships
- 1000 yds, 3rd place
- 2019 Bisley imperial 150th meeting
- Winner of the St. George’s cup



“I reload most weeks at least once, sometimes more. The best thing about reloading my own ammunition is that I can tune the load to the barrel at the speed that it will shoot the lowest extreme spreads and smallest groups. I reload for all my rifles; for competitions, practice and hunting. The cartridges I use are 6BR, 30BR, and 6.5-284 for hunting, and .284, 6.5-284, 7mm SAUM and .300 WSM for target competitions. My ultimate goal in shooting is to win the world F-class championships. This event is only shot every four years, with the next one scheduled for 2021 in South Africa.”

Try this - Paul’s reloading recommendation:

“This is a load that I use for deer stalking with a moderated rifle, it’s a very accurate load with N165.” For 6.5x284 Norma: 52.5 grains of Vihtavuori N165 with a 120 grain bullet.

Anastasia Mustonen

Practical Shooter, Finland

Top achievements

- 2019 IPSC Handgun Finnish Championship
- Production-division Lady 1st place
- Standard-division Lady 1st place
- 2019 IPSC Handgun European Championship
- Standard-division Lady Team 2nd place

“I reload 24, 000 rounds of 9mm Luger and 6,000 rounds of .223 rem in a year, for competition or practice for IPSC Handgun and Rifle. If I could shoot only one caliber for the rest of my life, it would be 9mm Luger. The best thing about reloading my own ammunition is the good results. My number one tip for reloading is to always use the best components! My ultimate goal in shooting is to be the best among the best.”

Try this – Nastja’s reloading recommendation: For .223 Rem.: 23.5 grains of Vihtavuori N133 with a 55 grain bullet.



EXPERIENCED CRAFTSMANSHIP FOR THE PERFECT AMMO

For almost 100 years, Vihtavuori has been known for producing high quality propellants with reliable ballistic performance, long shelf-life and wide variety selection. All of our powders meet the strict requirements of both civilian and military needs.

Vihtavuori powders come in three different series: N100 offers traditional single base propellants for rifle calibers, N300/3N offers porous single base powders and precise measuring capability for pistol cartridges, rimfire ammunition and shotgun shells, and N500 series powders are special high energy rifle propellants enhanced with nitroglycerin for extra ballistic performance.

N100 Reloading Powders for Rifles

	N110	N120	N130	N133	N135	N140	N150	N160	N165	N170	24N41	20N29
Bulk density (g/l)	800	860	870	870	870	910	910	920	920	960	970	960
Energy content (J/g)	3950	3700	3750	3600	3550	3700	3750	3650	3500	3700	3700	3600

N300 Reloading Powders for Handguns

	N310	N320	N32C	N330	N340	N350	3N37	3N38	N105
Bulk density (g/l)	560	550	420	620	620	660	720	730	730
Energy content (J/g)	4100	4100	3050	4100	4100	4100	4100	4000	3950

N500 High Energy Reloading Powders for Rifles

	N530	N540	N550	N560	N565	N570
Bulk density (g/l)	930	940	940	960	960	960
Energy content (J/g)	3950	4000	3900	4000	4000	4000

Relative burning rate of powder types mentioned above decreases from left to right.

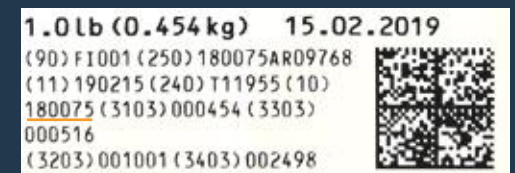
CONSUMER PACKAGE INFORMATION

Consumer package, bottle 0,6 ltr (36.6 in ³) Measures: sides & height 95 x 75 x 140 mm	net weight	gross weight
N110, N120, N130, N133, N135, N140, N150, N160, N165, N170 24N41, 20N29	1.0 lbs	1.1 lbs
N530, N540, N550, N560, N565, N570	1.0 lbs	1.1 lbs
Consumer package, bottle 1,2 ltr (73.2 in ³) Measures: sides & height 95 x 75 x 226 mm	net weight	gross weight
N110, N120, N130, N133, N135, N140, N150, N160, N165, N170 24N41, 20N29, N530, N540, N550, N560, N565, N570	1,0 kg	1,1 kg
N310, N320, N32C, N330, N340, N350, 3N37, 3N38, N105	0,5 kg	0,6 kg
N310, N320, N32C, N330, N340, N350, 3N37, 3N38, N105	1.0 lbs	1.2 lbs
Consumer package, canister 4,5 ltr (274.6 in ³) Measures: sides & height 135 x 189 x 260 mm	net weight	gross weight
N110, N140, N150, N160	3,5 kg	3,7 kg
N310, N320, N340, 3N37, 3N38	2,0 kg	2,2 kg
N110, N120, N130, N133, N135, N140, N150, N160, N165, 24N41, 20N29, N530, N540, N550, N560, N565, N570	8.0 lbs	8.4 lbs
N310, N320, N330, N340, N350, 3N37, 3N38	4.0 lbs	4.4 lbs

All Vihtavuori reloading powders are packed into bottles and canisters and further in cardboard boxes.

LOT NUMBER

All Vihtavuori powder bottle labels have a white area with specific information shown in number sequences. The lot information is shown after item number (10). For instance, the lot number in the example picture is 180075.





QUALITY by DESIGN

Manufacturing propellants entirely in-house ensures their high quality. All Vihtavuori powders are made using nitro-cellulose produced by linters at our own plant. Premium quality Vihtavuori powders deliver consistently flawless firing performance – for you this means reliable reloading and ammunition you demand.

Each stage of the production process is subject to stringent quality control by the Vihtavuori experts to ensure that each production lot has the exact ballistic performance required. Each and every batch produced is inspected by comparing them to selected reference batches.

All Vihtavuori powders for small arms are extruded propellants. Propellant grains are perforated cylinders of various sizes, flat ribbon flakes or other shapes extruded for special applications. The grain geometry of different powder types provides the wanted combustion characteristics for the chosen cartridge application.

The estimated shelf-life of Vihtavuori powders is a minimum of 10 years, if stored and sealed in its original containers at a temperature ca 68°F and relative humidity of 55 -65%.

All Vihtavuori reloading powders are packed into bottles and canisters and further in cardboard boxes.

Major improvements

Vihtavuori has undertaken some major improvements in the production of our high-quality N300 series powders.

This change involves the application of graphite as a finishing step in production. As always, our powders undergo a stringent series of quality control checks throughout the manufacturing process. Before it ever ends up in a reloading bottle, we've checked and rechecked it at every step of the way. Our goal is to continuously improve our powders to give our customers every possible competitive advantage.

In this latest improvement, we have changed the manner in which the nearly completed powder is given its final coating. Graphite is added to the surface of these powders during the vacuum drying stage. The graphite serves to eliminate static electricity, and makes the finished powder flow smoothly and evenly through loading machines and powder measures.

An **Advanced Process** added to our **N300 Series powders!**



VIHTAVUORI RELOAD APP

This Edition of the Vihtavuori Reloading Guide is also available on vihtavuori.com – check also Apple App Store and Google Play store for the updated free of charge Vihtavuori RELOAD mobile app! The latest reloading information and the possibility to save your own reloading recipes, at hand everywhere you go, online or offline.



VIHTAVUORI
RELOAD



BURNING RATE CHART

Current canister powders in order of *approximate* burning rate.
This list is for reference only and **not** to be used for developing loads.

Fast Burning

Slow Burning

	Vihtavuori Norma	RWS	VECTAN	Reload Swiss	IMR	Hodgdon	Accurate	W-W	Alliant	Ramshot
						Titewad			E ³	
	N310	P805 P801	Ba10			HP38	Nitro 100	WST		
						Trail Boss	Solo 1000	231	Bullseye	Competition
	N320			RS12	Hi-Skor700X	Titegroup Clays	No. 2	452	Red Dot	
	N32C		AS		PB	Clays Int'l	Solo 1250	473	American Select	
		P804 P803	A1		SR7625				Promo	Zip
	N330		Ba9			Clays Univer.	No. 5	WSF	Green Dot	
	N340		SP8	RS20	SR4756	HS-6		540	Unique	
	3N37		A0			CFE Pistol		WAP	Power Pistol	Silhouette
	N350				Hi-Skor 800X	Longshot				
	3N38		SP2 Pract.	RS24						True Blue
	N105							571	Blue Dot	
		R-123	SP3			HS-7	No. 7		Steel	Enforcer
							No. 9		2400	
	N110	P806 R910		RS30	SR4759	H110	4100	296		
			Ba6		IMR4227	H4198		680		
						Li'l Gun				
	N120	R901	Tubal2000		IMR4198	H4227	5744		410	
							1680		Reloder 7	
							2015			
		R902			IMR3031	Benchmark			Reloder 11	
	N130	201	SP10			H322	2230		Reloder 10X	
	N133	202	Tubal3000		8208XBR	CFE 223	2460	748		X-Terminator
						H335	2495			
		R903	SP9		IMR4895	Leverrevolution	2520			
	N530			RS40	IMR4166	H4895	4064		Reloder 12	TAC
	N135				IMR4064					
			SP7		IMR4320	Varget				
	N140	203B	R907	RS50		H380	2700		Reloder 15	Big Game
	N540			RS52		H414		760		
	N150	URP	R904	Tubal5000		H4350	4350		Reloder 17	
	N550			RS60	IMR4350	HYBRID 100V			Reloder 19	
				RS62	IMR4451	H450		WMR		Hunter
	N160	204	SP11		IMR4831	H4831SC		785		
			Tubal7000							
	N560	MRP	R905		IMR4955	H4831	3100			
	N165	MRP(2)		RS70	IMR7828SSC	Super-Performance	MagPro	WXR	Reloder 22	
									Reloder 25	Magnum
					IMR7828	H1000				
	N170				IMR7977	Retumbo	8700			
	N565		SP13	RS76		H870				
	N570			RS80		50BMG				
	24N41					US869				
	20N29									

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VIHTAVUORI N555 - COMING SOON!



VIHTAVUORI

Vihtavuori's N555 rifle powder is designed for precision rifle platforms chambered in cartridges such as 6mm & 6.5 Creedmoor, .284 Winchester, .260 Remington, .30-06 Springfield and for rifle calibers with large case volume and comparatively small bullet diameters, among others.

Competitive shooters and hunters will benefit from its insensitivity in extreme weather conditions. N555 is the most temperature stable powder in its class, and features unprecedented performance in the 6.5 Creedmoor. It includes an anti-fouling agent that minimizes barrel fouling to extend the length of your competitive shooting stages. Its unmatched lot-to-lot consistency also eliminates costly range time re-developing your favorite loads.

For updated information, please follow vihtavuori.com/powder/n555-high-energy-powder



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