



CHAPTER 1: Outdoor Living

Barbecue Grills

Barbecue grills come in a variety of models and price lines from inexpensive promotional grills used primarily as traffic builders to more-expensive gas units.

Function, durability, design and color are the four features to stress when selling outdoor grills. Examine the cooking features, the ease of height adjustment, the weight of the metal, efficiency of the windscreen, etc.

A critical factor in judging grill quality is the weight of the metal used. A deluxe grill is usually made from heavy-gauge aluminum or heavy sheet metal, and is larger and longer than inexpensive models.

Many of these grills measure up to 5' long and include food-preparation areas, high quality cutting boards, warming ovens and heat guards.

They may feature an electric motor driven rotisserie, built in lights or electric outlets for plugging in percolators, etc.

If the cooker is built squarely on four wheels, it's portable despite its weight. Slightly less-expensive models have wheels at one end and a handle at the other, so they can be lifted and rolled about.

Heat resistant, fired on porcelain or ceramic provide color. Generally, the most popular colors are those which dominate housewares.

Next in price are less-expensive grills which follow the design of top of the line versions, but are of lighter material and lack add on features.

They come with rotisseries, adjustable grates, etc. In some cases, accessories may be added at extra cost, but quality doesn't match that of better models.

Low-cost promotional grills are usually of very light metal and consist of a round piece of metal forming a concave fire bowl, with a round grill mounted above it. The grill can be raised or lowered to move the cooking surface farther from or closer to the bed of charcoal. It is usually mounted on tripod legs, two with wheels and one without.

Some promotional models with features such as hoods and rotisseries seem very similar to top of the line cookers, but these extras are of varying quality.

Another option is the hibachi grill, a small unit which copies the Japanese cook stove of the same name. Better models are usually of cast iron with an adjustable grill plate. They may have a slanted design for draining grease and a draft adjustment to regulate the intensity of the heat.

Hibachis are most popular among apartment dwellers, condo owners or young marrieds with limited patio or outdoor space.

WHAT A "SEAL" MEANS

Seals of approval, listing, etc., provided by trade associations, testing organizations and publications are not warranties or guarantees. The manufacturer of the product gives a warranty on it.

These seals and listing are used as indications that the product has met certain voluntary standards. Salespeople need to be familiar with such seals and listings and point out to customers exactly what they mean.

UNDERWRITERS' LABORATORY (UL) – Indicates the product has been tested for fire, casualty and electrical safety and that it can be expected to be reasonably safe for normal use. Testing is conducted on items considered hazardous to life or property. The tag includes special notification if only a portion of the item has been tested. Many electrical items and appliances must be "UL" listed to meet specifications of the National Electrical Code and local building codes.

OUTDOOR POWER EQUIPMENT INSTITUTE (OPEI) – Indicates participation in a voluntary safety-testing and inspection program by more than 90 percent of U.S. power lawn equipment manufacturers; means products meet American National Standard Institute (ANSI) specifications.

POWER TOOL INSTITUTE (PTI) – Means the tool fulfills the safety rules established by the PTI, that the tool has been inspected under power, contains built-in grounding system or double insulation, and that instructions for safe operation accompany the tools.

GOOD HOUSEKEEPING – Indicates products perform the function for which they were designed "reasonably well, safely and for a reasonable time." Awarded only to products advertised in Good Housekeeping magazine and whose advertising claims in the magazine are found to be truthful by the Good Housekeeping Institute. Offers replacement or refund if product is defective.

CONSUMER REPORTS – Monthly publication of Consumers Union offers descriptions, test results and ratings; evaluates products by brand name; findings are based on laboratory tests, controlled-use tests, expert opinion and experience by consumer panels; does not endorse or guarantee any product.

COVERED GRILLS

Covered grills, too, vary widely in size, quality, extra features and price. They have hinged or unhinged covers; some are square or rectangular; some resemble an old fashioned kettle and measure from 18" to 36" or more across the fire bowl. They feature damper controls, ash catchers and racks to hold charcoal up where air can circulate, providing greater and more even heat.

These grills are available in charcoal, gas and electric models. The charcoal type comes in three basic designs. The most expensive is a redwood wagon, usually on wheels, with the kettle set into a cabinet.

The common type of covered grills rests on three or four legs; small tabletop models and picnic models are available.

Gas and electric covered grills are similar to the gas and electric grills, described below.

GAS COOKERS

Gas cookers are easier to light, require no waiting for the fire to start, and require less cleanup after cooking.

These grills use volcanic rock briquettes or steel bars to convert gas to radiant heat. Using volcanic rock preserves the taste of outdoor cooking without charcoal.

Temperature controls adjust heat from low, to slow cook hams, roasts, turkeys, etc., to high heat for quick grilling of steaks or burgers. Gas grills range in size from 160-515 square inches of cooking surface.

Some models have post mounts to sink and connect to gas outlets for permanent installation; others have portable mounts to connect to a gas hose or gas bottles.

A small gas grill using two propane tanks of the "torch-kit" type combines portability with the benefits of gas cooking. These units can be taken nearly anywhere.

Be cautious in connecting portable LP gas cylinders, making sure valves do not leak at the connection. Using gas grills also presents the hazard of flash flame ups. When a customer has trouble getting a unit started, or when the flame goes out but the LP gas valve is still open, unburned gas builds up in the covered grill. Advise customers to open the grill to clear the gas before trying to reignite the unit, or the built-up gas will "flash," with possible danger to those around the grill.

ELECTRIC GRILLS

Electric grills use electric elements over an infrared reflector or use volcanic rock briquettes placed on an electric element to produce radiant heat.

These units are controlled thermostatically. They include a hood for protection, decorator weather resistant finishes, and weatherproof electrical connections. Elements are either 120v or 240v.

Electric grills have a readymade market in areas where apartment regulations or city ordinances prohibit the use of open flame grills. Open units without volcanic rock can be used indoors as long as they are designed with a drip pan for hot grease.

SMOKERS

Smokers combine heat, smoke from aromatic woods, and moisture from liquid vapors to baste meat, poultry or seafoods. Most smokers are round, with single or double grids.

GRILL ACCESSORIES

There is a wide range of grill accessories available to boost add on sales.

Heavy plastic or vinyl covers prolong the life of a grill and prevent rust and corrosion. They fit all sizes and shapes of grills and are especially useful for grills stored outdoors.

There are also numerous accessories to use on a spit or with a rotisserie motor. These include chicken baskets which tumble food while turning; spit baskets of welded-mesh grids with adjustable covers to hold large cuts of meat, and two pronged spit forks to hold large cuts of meat on the spit rod.

Charcoal sales offer brisk repeat business. In addition to standard and self lighting briquettes, special hickory or mesquite chips can impart a smoked flavor to food.

There is also a wide variety of charcoal lighters available for repeat sales, from liquid starters to solid or jelly, as well as electric and chimney style starters.

All liquid lighters should be started carefully with a long fireplace match or torch, and only after allowing the liquid to soak into the briquettes. Generally, the lower the flash point (the lowest temperature at which a combustible liquid will ignite in air), the more hazardous the material. Most liquids are safer if they have a flash point above 100° F; below that point they are flammable.

Virtually all lighter fluids on the market today have flash points between 100° F and 130° F, and gradations between these points are very narrow. Since the surrounding temperature affects flash points—fluids will light more quickly in warm weather than in cool—more care should be taken during hot weather; and liquids with a flash point higher than 125° will be difficult to light in cool months.

Lighter fluid should never be applied to burning or glowing coals, as this could cause immediate flare up.

Better grades of fluid will reduce smoke and may provide "nonflash" features to eliminate flare up. They will also have less odor—an aromatic content of 5 percent or below is best.

PVC containers allow fluids to be applied safely from a greater distance and the containers can be almost completely emptied.

With an electric charcoal lighter, the heating coil is buried in the charcoal and the unit is plugged into a 120v outlet. Only the heating unit goes into the charcoal. The coil works in as little as five minutes and the coals are ready to broil 10 minutes after removing the lighter.

Electric lighters should have the Underwriters

KNOW STORAGE LIMITS

Retailers should be aware of fire protection codes pertaining to the amount of flammable and combustible liquids they can safely stock, both on the salesfloor and in storage. Any question concerning fire protection codes should be directed to your local fire marshall or to the National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02169, or www.nfpa.org.

Laboratories label. Plugs and connections should be tightly fitted and have cord insulation intact.

Chimney style starters look like a piece of stovepipe with a handle. Charcoal loaded into the pipe piles up on an interior grate with enough space beneath for crumpled newspaper. When the newspaper is lighted, the flames pass up through the charcoal, fanned by the draft the chimney creates.

Jelly and solid lighters can be started with a fireplace match without flare up. Jellies should not be added to a fire already burning. Solid lighters can be tossed into the grill or placed next to live coals with a poker or tong.

Cooking tools and utensils are available as sets or open stock in practically unlimited variety. A common characteristic is a long handle for use over a hot fire. Turners, forks, brushes, knives and tongs are most common.

Quality tools have good hardwood handles, a nice finish and may have holes in the end for hanging. They are chrome plated or stainless steel to withstand food stains, heat, rust, etc.

Caps, aprons and gloves are also popular with barbecue chefs. Best sellers are colorful and well made, easy to launder and large enough to offer real protection to the wearer.

Insect Repellents, Lights, Traps

Antibug lights have special yellow coatings to cut out the blue light in ordinary bulbs, which attracts night flying insects. They are available as incandescent bulbs for standard sockets as well as floodlights. These lights do not repel bugs; they simply don't attract them.

Another way to eliminate insects is with a portable, flameless insect fogger that rids outdoor areas of bugs for hours. Using an ordinary propane cylinder as propellant, the fogger produces a dense, dry fog that penetrates under leaves and through shrubs. It is ideal for camping, picnics, hunting and for commercial sales to schools, churches, etc.

INSECT KILLERS

Insect killers destroy pests without chemical pesticides, poison or fogging, and are available in two basic models: electronic and those that drown insects.

Most electronic insect killers have either an incandescent or fluorescent light inside (not harmful to the human eye) to attract flying insects into an electrical grid, which kills them on contact. In general, the higher the voltage, the greater the luring power and coverage a unit will have. Most residential bug killers have an average wattage of 4,500-6,000.

Tests indicate that black-light fluorescent lamps (BL) are the most successful attractant. Fluorescent black light blue (BLB), which filters out visible light, is also popular, but the filters increase the cost of the lamp.

Compared to fluorescent, incandescent lamps are less energy efficient and have less ability to attract pests.

Some electronic bug killers are self cleaning. This means that there is enough power that bugs are burned off when

they hit the electric grid. At lower wattages, bugs will stick to the grid and clog it, limiting its effectiveness. In addition, lower-wattage bug killers may not kill bugs, but only stun them, particularly larger insects such as bumblebees.

Bug killers should be placed in line of sight 25' to 50' from the area to be cleared and operated 24 hours a day. However, they are most effective at night without the interference of the sun's ultraviolet light.

Other models extinguish insects by drowning them. As with electronic bug killers, an ultraviolet light attracts bugs to the unit. A fan contained in the unit blows insects into water with a teaspoon of household detergent added so bugs can't float, and drowns them.

Available accessories include hanging brackets, posts and collection trays to adapt units to indoor use.

Other methods of trapping insects include adhesive traps and ribbons which stick to the insect so that it cannot fly or crawl away, or traps that are constructed so the insect can get into the trap but cannot get out.

Outdoor Furniture

Aluminum, PVC and plastic resins are the primary materials used in construction of outdoor furniture, mainly because they're lightweight, weather resistant, easy to move, bright and colorful and not necessarily expensive. Chairs are available in a wide price range and variety of styles, from straight chairs to arm chairs to lounges to rockers.

Quality features include heavy construction—thicker, heavier metal or plastic tubing—and folding joints that open and close tightly without binding.

With webbed furniture, a quick quality test is to count the horizontal and vertical strands of webbing—the more strands, the better the chair. Rewebbing kits contain enough of the individual strands or a large enough one piece cover and the necessary fasteners for chairs or lounges.

Size also varies with quality. Some inexpensive items are so small they are uncomfortable.

Settees and chaise lounges are usually more expensive. They may be heavily padded, and some higher-priced models have springs in the mattresses or padding. They aren't weather resistant, however, and should be protected (plastic coverings are available).

Decorative cast-iron furniture duplicates the intricate curlicues of Victorian furniture and makes a good sale for someone who wants a special look for their patio or yard. These items are merchandised year round and are usually sold as sets—two chairs, settee and table—although they can be sold separately.

The main quality feature to look for is weather resistance. Three coats of enamel are preferable and bolts should be rust resistant.

Rattan and bamboo furniture are also popular patio items, but they require better protection from the elements and

are found more often in enclosed porches or patios.

Quality picnic tables and benches are of solid redwood, which withstands adverse weather. Rectangular tables range in size from 30" to 72" long; round and square tables are also popular. Other redwood furniture includes patio chairs, rockers, coffee tables, end tables and umbrella tables. Furniture of this type can be sold in groups of three to five pieces.

Cypress wood is sometimes stained to look like redwood and passed off to unwitting buyers as the better-quality product.

Pool Chemicals

As backyard swimming pools become more common, pool chemicals are being repackaged and remerchandised for the consumer market. Manufacturers also provide information about their specific products. Consumers should be reminded to check recommendations and instructions carefully before using pool chemicals.

The addition of swimming-pool chemicals can round out an outdoor living department. However, you must carry the essential chemicals and supplies for complete pool maintenance, and you must be able to explain their uses to customers.

CARE CHEMICALS

Stabilized Chlorine—to sanitize the pool water. Sold in sticks, tablets, granular and liquid form.

Super Chlorinators—or "shocker," used at the opening of the pool or for extra sanitizing power.

Stabilizers—cyanuric acid used to minimize chlorine dissipation from sunlight.

Acid—muriatic or sulfuric acid designed to lower the water's pH. Sold in liquid or granular form.

Soda Ash—raises the water's pH.

Mineral and Metal Adjusters—chemicals to prevent staining, equipment corrosion and scaling due to minerals and calcium in the water.

Algae Inhibitors and Algaecides—chemicals to prevent the growth of algae which causes a green tint to the water and a slippery film to form in the pool.

Water-Testing Kits—Test kits are designed to test for one specific chemical, or for a range of chemicals and pH balance, depending on the product. Test kits usually use chemically treated strips that turn color when exposed to pool water, or tables that turn the water colors to indicate the condition of the water. These chemicals should be used in proper sequence, which is 1) balance pH; 2) chlorination; and 3) shock or super chlorination. Missing the first step in this sequence can result in overchlorination.

POOL ACCESSORIES

Along with pool chemicals, a d-i-y pool care center needs pool brushes, extension handles and floats. Cross merchandise some other outdoor living goods with the pool items—patio accessories or deck furniture, for instance.

CHAPTER 2: SPORTING GOODS

Barbecue Grills

HUNTING

Though guns and ammunition are the foundation of a hunting department, accessories, clothing, cleaning equipment, game calls, etc. make the mix complete.

There are three types of guns of interest to the typical do it yourself retailer: shotguns, rifles and handguns.

Rifles and shotguns differ in two ways. First, rifles have a system of ridges and grooves in the barrel (called "rifling") that imparts a rotating motion to the bullet and increases its accuracy. Shotguns are smooth barreled.

Second, rifles fire one bullet or projectile at a time. Shotguns normally fire a large number of shots or pellets at a time, although they can fire large single "slugs" when used to hunt big game.

AMMUNITION

Ammunition for a rifle or handgun is called a cartridge; for a shotgun, the term shell is proper, although shell is sometimes used for both kinds of ammunition.

Rimfire Cartridges

With rimfire cartridges, the gun's firing pin strikes the edge of the rim, compressing it and igniting a primer that has been spun into the rim of the cartridge by centrifugal force. The primer then ignites the powder and an increase in gas pressure propels the bullet out of the barrel.

Rimfire cartridges are used in 5mm and .22-caliber firearms. In the .22 caliber, they come in three categories: short, long and long rifle. All come in both standard and high velocities, some with a few special loads.

Standard velocity rimfire ammunition is more accurate, but has less impact than high-velocity ammunition, which is built for use in hunting.

Centerfire Cartridges

Centerfire cartridges come in a variety of sizes and designs.

A few basic points are common to all: revolver cartridges are rimmed; automatic pistol cartridges are rimless, and rifle cartridges may be either.

Some of the cartridges will fit several brands of guns, and some are interchangeable. If a store sells much centerfire

ammunition, an interchangeability chart is helpful.

In a centerfire cartridge, primer is located in a "pocket" in the center of the base of the shell. When struck by a firing pin, it ignites the powder, generating gasses which force the bullet out of the barrel.

Cartridges come in a variety of designations. In all cases the number preceding the slash indicates caliber. However, there is no commonality to the numbers after the slash.

The 38/55 Winchester is a .38-caliber bullet originally loaded with 55 grains of black powder. The 250/3000 Savage is a .250-caliber bullet that develops about 3,000-feet per second velocity. The 30/06 Springfield is a .30-caliber cartridge adopted in 1906 for an Army rifle.

Nor is bullet diameter identical with caliber of the weapon. Rifling enlarges a portion of the barrel about .008 inches. The bullet must fill the entire groove; thus, the bullet diameter for a .30-caliber rifle is .308 inches.

Centerfire rifle cartridge cases have a bottleneck shape, with the case larger than the bullet except where the "shoulder" tapers down to the diameter of the bullet.

Most centerfire handgun cartridges have short, straight cases.

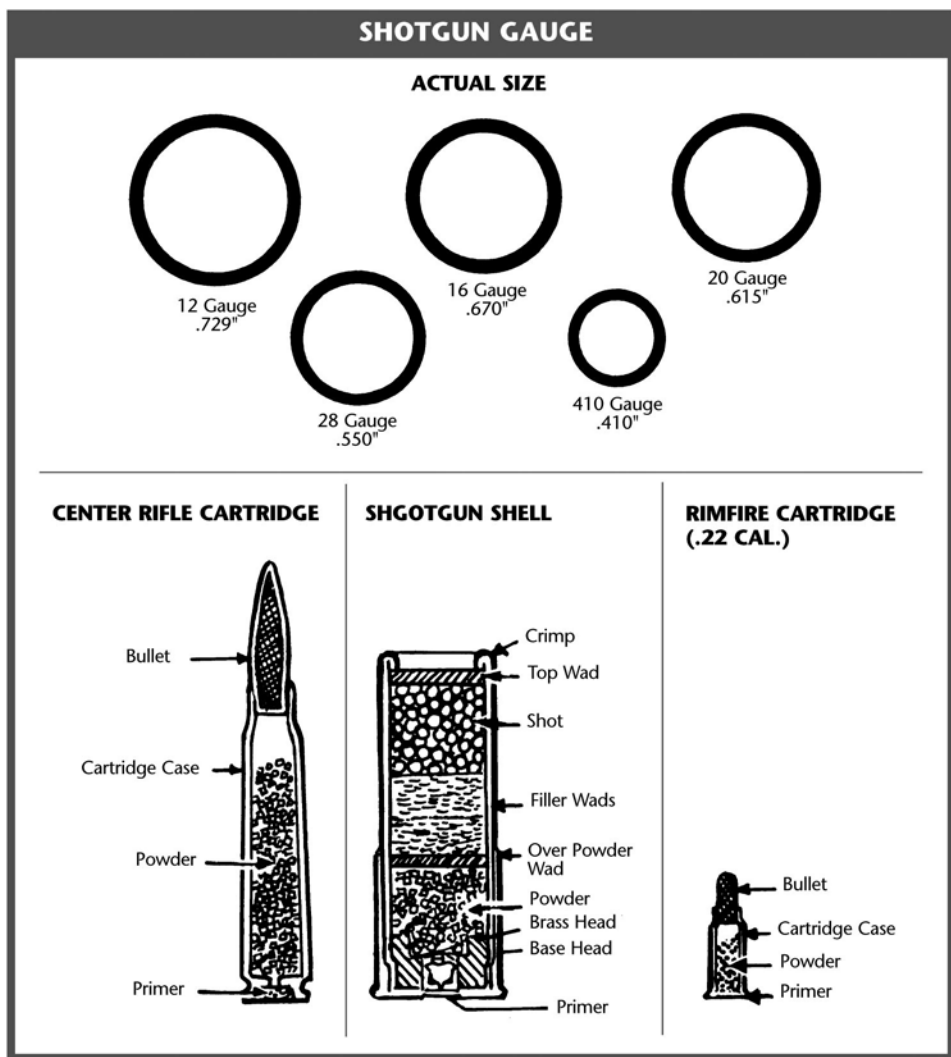
The actual bullet—that portion of the cartridge propelled through the barrel to the target—will differ in shape, weight, size, length and coverings or jackets. A lead core is common, but the bullet may have a jacket of steel or copper or aluminum alloy. The bullet is constructed so that expansion will either be accelerated or retarded upon striking the target, depending upon the type of animal being hunted, the range and the degree of penetration required.

Steel-shot loads use nontoxic steel shot which is required in specific hunting areas in 27 states. Steel shot is being produced for hunting ducks and geese.

Shotgun Shells

A shotgun shell begins with a paper or plastic tube encased in a brass head, flanged so it can be grasped by the extractor of the gun. The primer, located in the center of the brass head, ignites the main powder charge when struck by a firing pin.

Above the powder is the wad column that seals gas generated by burning powder. The column pushes a charge



of shot and protects it against gas deformation when shot is moving down the gun barrel. The end of the shell is crimped to hold the contents.

A plastic shot container keeps the pellets from flattening against the inside of the barrel, improving pattern performances. Most plastic wads include a special "shock absorber" which protects the shot from compress flattening when powder is ignited.

Power behind the shot is determined by type and amount of powder. Amount of powder will vary from 2½ to 4¾ drams, depending on gauge and type of shell. The most common shell, a 12 gauge field load, contains about 3 to 3¾ drams of powder.

"Drams"—or "drams equivalent"—refers to the amount of present day powder that would equal in velocity the stated dram weight of the black powder first used in shotgun shells.

Amount of shot in each shell varies with type of load and with the size of shell. Common load designations are standard, heavy and magnum. For example, one manufacturer of 12 gauge 2¾ shells has 1 1/8 oz. of shot in his standard load, 1 ¼ in his heavy load and 1 ½ in his magnum load.

BEWARE OF UNSAFE ARMS AND AMMUNITION COMBINATIONS

Ammunition used in a firearm must be the same caliber or gauge as that marked on the firearm by the manufacturer, according to the **Sporting Arms and Ammunition Manufacturer's Institute, Inc.**, Wallingford, Conn.

Those in possession of guns that are not marked with the caliber or gauge should have a qualified expert determine the cartridge or shall that can be safely used in the firearm. Guns that have the original marking overprinted or changed should also be checked.

The firing of a cartridge or shell other than the size for which the firearm is chambered can result in the cartridge or shell rupturing and releasing high pressure gas capable of damaging or destroying the firearm and seriously injuring or killing any nearby person.

These are countless combinations of specific cartridges and firearm chambers that are unsafe. Many of these unsafe combinations are easy to recognize because of significant dimension differences between the cartridge and firearm chamber. At the same time, similar chamber and cartridge dimensions can be dangerous. The safest insurance is to use the cartridge or shell designated by the firearm or ammunition manufacturer for use in a specific firearm.

A few guidelines: small shot, used for quail or woodcock, would be 7½, 8 and 9; larger birds (ducks or pheasants) or rabbits could be hunted with 5 or 6 shot; geese might be hunted with No. 2 shot.

RELOADING EQUIPMENT

Shotshell Reloading

Basic tools and supplies required for reloading shotshells include:

Reloading tool—Similar to cartridge-reloading press in that it can combine tools needed for decapping, recapping, charging powder, ramming wads, charging shot and crimping and sizing the shell. Price varies accordingly. User will have to buy separate equipment if reloading tool does not handle any of these functions.

Powder scale or measure—If user does not have one on the reloading tool, he will need a scale or measure. Measure comes in both adjustable and fixed charge type.

Wadding and wad setting—Traditionally, a cardboard wad went into the casing immediately over the powder charge; filler wads were positioned between cardboard and shot. Most sportsmen now use one piece plastic wads. Most reloading tools have a built in wad pressure gauge.

Shot measure—Needed if reloading tool does not have it. If user has adjustable powder measure, he can use it for

Shot size also varies in diameter. This determines the amount of shot in a single shell. Shot is numbered from 12 down through 7½, 6, 5, 4 and 2 (intermediate sizes) to BB size. The smaller the number, the larger the shot. From there it is measured in buckshot sizes, from 4 downward to 0 and 000 before reaching "slug" size, which is slightly smaller than the diameter of the gun barrel.

A 1 oz. load of No. 12 shot has about 2,385 pellets, while a No. 5, 1 oz. load contains only about 170 pellets.

shot. Otherwise, he can use powder scale.

Full length hand resizing die—Needed if reloading tool does not have die built in. Hand resizing dies are available that resize the brass head as well as the case tube.

Cartridge Reloading

Only centerfire cartridges can be reloaded. Reloading must be done with absolute accuracy; cartridges must be the right length and powder charges must be those recommended by manufacturers.

The equipment needed to start:

Reloading press or hand tool—Most reloads will want a bench press. Price depends upon how many functions it will perform.

A turret at the top of some presses rotates resizing and seating dies and powder measure so user can perform all these steps in sequence on the press without having to change dies and move to a separate powder measure.

Dies—Two die rifle sets are most common, one for full length and/or neck resizing, one for bullet seating. Pistol die sets are usually made up of three dies.

Powder scale—Weighs out proper measure of powder. Good thing to have, even if customer later purchases powder measure, so that he can double-check powder measure at intervals to see if it is discharging proper amount.

Powder measure—Eliminates need to weigh each charge separately; throws proper charges of powder each time.

Case lube and pad—Used to apply thin film of oil on cases for resizing; cases are rolled on the pad.

Other items customer may need—Length gauge to check length of cases or trimming if they have been fired in different rifles or if rifle produces some stretch; case trimmer; chamfering deburring tool to facilitate seating of bullet; loading blocks; primer flippers; case neck brushes, and powder funnels.

SHOTGUNS

Shotguns are available in several common gauges—10, 12, 16, 20, 28 and .410 bore.

Gauge measurement is based on number of uniform lead balls weighing one pound; 12 gauge is approximate diameter of a lead ball of which 12 weigh one pound; 16 gauge is diameter of a lead ball of which 16 weigh one pound, etc. The one exception is .410 bore, which is actually .410 caliber (representing .41" interior barrel diameter). In terms of gauge, it is 67 gauge.

Shell length is measured in inches; it is the overall length of a fired shell with the crimp open. A 2¾" shell measures about 2½" to 2 5/8" before it is fired, but 2¾" overall after firing. This method of measuring conforms to standard chamber lengths of shotguns. A gun with a 2¾" chamber will thus handle shells of the proper gauge up to 2¾" length.

The shot pattern is spread of pellets at any given yardage. Most loads are tested for pattern at 40 yards; the exceptions are .410-bore loads and 12-gauge and 20-gauge skeet loads, which are tested at 25 yards.

The percentage of total shot charge registering within a 30" circle (20" for .410) at these distances determines the quality of the pattern. No two patterns are exactly the same; an average of results is taken from at least 25 patterns.

Each gun has a partial constriction of the bore at the muzzle end. Its purpose is to control patterns. By using different degrees of choke boring, it is possible to control the spread of the shot charge for the best distribution of pellets at various ranges.

For example, the bore diameter of a 12-gauge gun is .729". If the diameter at the muzzle end is reduced to .694", the constriction of .035" (difference) will control the shot sufficiently to give patterns averaging about 70 percent of the shot in a 30" circle at 40 yards. Known as full choke boring, this is intended for long range shooting. This table shows the percentage of shot expected with various choke borings:

Percent at 40 yards in 30" circle:

CHOKES

Full Choke	70%
Modified Choke	60%
Improved Cylinder	50%
Cylinder	40%

A customer should select the degree of choke according to the range at which most of his shots are taken.

Most hunters find the following borings give the best results, though much depends on shooting conditions and personal preference:

Full choke for ducks, geese, pheasant, crows, turkey, fox, raccoon and trap shooting.

Modified choke for rabbits, doves, squirrels and for all around usefulness including ducks, quail, etc.

Improved cylinder, special skeet for quail, grouse, woodcock, partridge, rail and skeet shooting.

Shotgun barrels usually come 26", 28" and 30" long and 20" and 22" long with rifle sights.

Long barrels afford longer sighting radius, a steadier swing and more accurate aim in the deliberate long range shooting common to hunting ducks or geese. They also minimize discomfort of muzzle blast. Added weight reduces recoil.

Short barrels can be brought to bear on a target more quickly and easily under crowded conditions, such as hunting rabbits or quail in a cornfield or in heavy brush.

Many better guns have a ventilated rib on top of the gun

barrel, which serves several purposes: It helps dissipate heat waves along the barrel experienced in repeated firing, it contributes to the handsome appearance of a gun, it helps reduce canting (turning the gun on its barrel axis), and it provides a uniform sighting plane for more-accurate shotgun pointing.

For example, if the shooter's eye is as little as ½" off the true line of sight, his shot pattern can be off approximately 4' at a distance of only 40 yards.

To determine the correct stock length, the shotgun should be held vertically in the hollow of the bent elbow and measurement taken from the side of the forearm to the tip of the trigger finger. The trigger finger should just reach the trigger, or the front trigger if it is a two trigger double-barrel gun.

Double-Barrel Shotgun

Double-barrel shotguns offer the advantage of two quick shots from differently choked barrels. The gun may have one or two triggers. If there is only one, it can be set to fire either barrel first.

Two basic styles are barrels side by side or one over the other.

Single-Shot Shotgun

Simplest and least expensive of the five basic shotguns is the single shot. It is an excellent beginner's gun, ideal for training a youngster how to handle a firearm.

The barrel usually is hinged on the frame with hammer outside and cocked by hand. Some are "hammerless." This means that the hammer is inside the frame, cocked by the same motion that opens the gun for insertion of a shell. Single-barrel, single-shot shotguns are usually lightweight, meaning substantial recoil.

Auto Loading Shotgun

The hunter can fire an auto loading shotgun as quickly as he can pull the trigger and with no other action on his part once the gun has been cocked. The auto loader operates much like a slide actuated gun except that the action which ejects spent shell and loads fresh shell comes from recoil or pressure of powder gas rather than from the shooter's own action.

Gas operated auto loading shotguns are becoming the most popular type of action because of lighter recoil and faster second and third sets. They are made in 10, 12, 16, 20, 28 gauges and .410 bore with a wide variety of interchangeable barrels.

Bolt-Action Shotgun

Bolt-action shotguns require manual operation by the shooter to eject the spent shell and bring a new shell into firing position. This is done by grasping the protruding bolt

handle and pulling it upward and back, then pushing it forward and down.

The gun is safe and dependable, with relatively low cost.

Pump Shotgun

The magazine of a pump-(slide) action shotgun usually holds up to four shells, with an additional shell in the chamber. The five shells can be fired as fast as the shooter can operate the slide back and forth, aim and pull the trigger.

Pulling the slide back withdraws the empty shell case from the chamber and ejects it from the receiver. Moving it forward carries a fresh shell into the chamber and leaves the gun cocked and ready for another shot, allowing the experienced shooter to fire repeatedly without removing the firearm from his shoulder. Some manufacturers make slide or pump shotguns with interchangeable barrels for use under different conditions.

RIFLES

Type of ammunition used divides rifles into two categories—centerfire and rimfire. With the former, the cartridge is fired by striking a primer in the center of the cartridge. The latter is fired when the firing pin strikes the rear of the cartridge along the rim.

The most common rimfire rifle is the .22 caliber, offering moderate power, accuracy and range. It is a good performer at ranges of 25 ft. to 150 yds. Another, more powerful rimfire rifle, fires a 5mm (.20 caliber) “rimfire magnum” cartridge with great accuracy and effective impact at ranges of 150 yds. and more.

The caliber of a rifle is usually measured in hundredths of an inch, so the .22 is 22/100ths of an inch in diameter.

High velocity .22 “varmint” rifles and larger caliber guns are centerfire.

Auto Loading Rifles

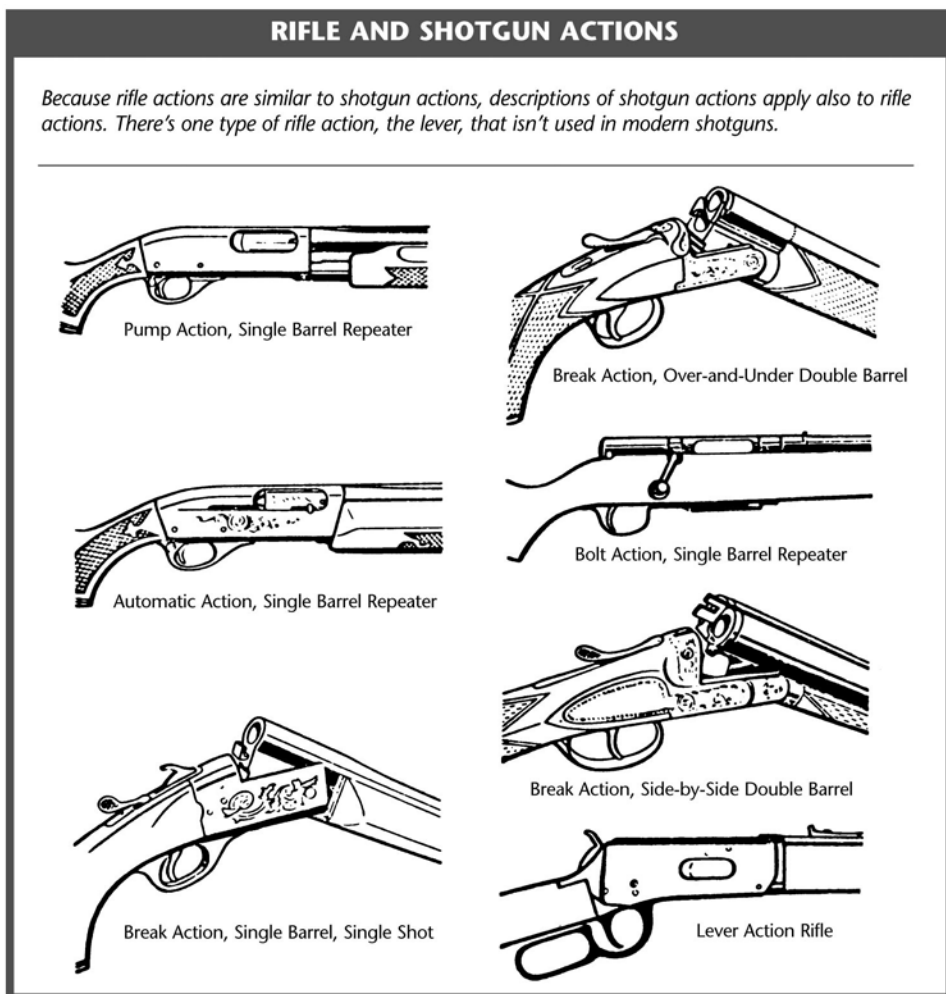
An auto loading rifle requires a separate trigger pull for each shot, but no other action once it has been cocked. Recoil or expanding powder gas operates the action to eject spent shell and put a new one into the chamber.

Slide-Action Rifle

Pump or slide-action rifle is popular with hunters and casual target shooters.

The pump functions like the pump shotgun with a long tubular magazine which holds as many as 20 or more .22 short- or 15 .22 long-rifle cartridges.

Some pump rifles have quickly detachable clip magazines holding four or more cartridges.



Bolt-Action Rifle

The simplest, safest and least-expensive rifle is a single-shot bolt action. A cartridge is loaded into the chamber by closing the bolt, extracted by opening the bolt. The gun is reloaded by placing a fresh cartridge in place and closing the bolt again.

A step up version of the single shot-bolt action is the bolt-action “repeater.” It features a magazine filled with cartridges so each time the bolt is opened and closed a fresh cartridge moves into the firing chamber.

Lever-Action Rifles

A common action for both .22 and larger centerfire guns is the lever-action rifle.

It works much like slide action except that it uses a downward and forward movement of the lever beneath the trigger housing to eject, load and cock the weapon. The lever is quick, easy to use, and multiplies the operator's force in extracting spent cartridges.

HANDGUNS

Handguns may not be common stock to d-i-y retail outlets, but the ammunition they use frequently is. You'll need some understanding of the guns to sell the right ammunition.

Handguns come in a variety of calibers, with .22, .25, .32, .357, .38 and .45 the most common.

Automatic Pistol

Cartridges are held in a magazine encased in gun handle. These are fed into the chamber by a spring. Each time the "slide" covering the barrel assembly moves backward it ejects a spent cartridge. When it moves forward, it carries a new cartridge into position to fire. The gun will continue to fire each time the trigger is pulled, once the action has been cocked by pulling the slide back and releasing it.

Revolvers

A rotating cylinder filled with cartridges is the basic design of a revolver. Each time the cylinder moves it brings a cartridge into firing position under the hammer and into perfect alignment with the barrel. When the hammer strikes the cartridge, it fires the shell still in the cylinder.

Two styles of revolvers are common. A single-action revolver requires the hammer to be cocked by hand before firing. A double-action revolver may be cocked first and then fired, or it may be fired without first cocking by pulling the trigger so that it cocks and then releases the hammer on a single pull.

NONPOWDER GUNS

Air, spring or CO2 guns are found in most sporting goods departments. Technically, they are not firearms because they do not use a powder charge to propel a bullet.

They do have sales possibilities because restrictive laws on conventional firearms have made them more accessible to sportsmen and target shooters.

Pneumatic guns, both rifles and pistols, operate on air pressure built up by a special pump which is part of the gun mechanism. Gas guns empty small cylinders of compressed CO2 (carbon dioxide) to propel a pellet—either BB size or larger—with a small measured burst of expanding gas.

Nonpowder guns are not recommended for hunting because of their low velocity. They are sometimes used for "pest control."

MISCELLANEOUS HUNTING PRODUCTS

Hunting Clothes

Hunting clothes handled most frequently by d-i-y stores include coats, vests, pants, hats or caps, and boots.

Camouflage clothing is popular, particularly in areas where there is big-game hunting.

Better quality hunting coats have bloodproof game pockets or bags and access from either side. They are fully lined in the back and sleeve, with underarm ventilation. They should feature sewn in recoil pads and pockets or loops for shells. Quality vests should include the same features.

Pants, like coats or vests, are two ply Army duck, hard to rip or tear, with water repellent finish. Belt loops and pockets should be larger than on conventional trousers. Seat and knees should be lined or reinforced.

Game Calls

Game calls imitate turkeys, geese, ducks, etc., and bring the prey closer to the hunter. They require considerable skill for effective use.

Decoys

Waterfowl hunters use decoys, life sized models of ducks and geese, to lure birds within gun range. Promotional grades are made of papier-maché. Better quality decoys, more life like, are rubber or plastic.

Gun Cases

Vinyl gun cases are most popular, with cotton or suedecloth used promotionally.

The best gun cases have a molded rubber or plastic tip to protect the front sight and muzzle of the gun, well sewn or riveted handles to withstand rough treatment without tearing, and soft lining to prevent marring of the gun.

Cleaning Kits

Cleaning kits normally include a rod, brush, tip for holding patches, solvent, gun oil, etc.

Rifle and shotgun kits vary in diameter of the rod, but interchangeable tips are included in some; a rifle rod can also be used in a shotgun.

The typical shotgun kit is a "universal" size for all gauges from .410 to 12 gauge.

Pistol kits come in specialized calibers, such as .22, .32 or .45, and have shorter rods, usually only 12" long.

Cleaning rods may be sold independently in several grades and made of wood, aluminum or stainless steel. Wood rod is for shotguns only.

Telescopic Sights

Telescopic sights are mainly used by target shooters, varmint and big game hunters because they magnify the target and increase accuracy.

For general hunting, scopes are usually made in two- to four-power magnification. The intended use determines type and power of scope selected.

Variable power scopes, adjustable to increase magnification as high as 12 times, are available. They are much more expensive than fixed power scopes.

Varmint rifle scopes usually are eight to 12 power.

A lower power scope gives a wider field of view and is considered more useful for hunting relatively close objects in brush or wooded areas.

Animal Traps

Steel animal traps are of several types.

Cage type traps do not harm animals. When the animal enters and takes the bait, the door falls to secure him in the cage.

Long spring trap jaws are actuated by a V type spring extending from the jaw. Small sizes—from 0 to 1½—have a single spring, while larger sizes usually have two springs.

Jump type has a spring located under the jaws. Coil-spring trap jaws are activated by one or two coil springs. Guarded or loss stopping traps have a special leg guard and are used primarily against muskrat. The last is the killer type. It features a scissors action that kills the animal instantly.

Basic sizes are No. 1 for muskrat, No. 1½ for mink, No. 2 for fox, and Nos. 3 and 4 for beaver.

Most states require traps to be tagged, meaning that every sale of traps should include the tie in sale of trap tags.

POCKET KNIVES

Aside from price differences, there are three dividing lines in pocket knives. Included at the lower end of the three are boys' knives; in the middle are better-quality men's pocket knives, and on top are specialty sporting knives and collector's knives.

A knife must be sharp, must stand sharpening, hold an edge and be easy to operate. Good balance, which results in handling comfort, is a quality feature that should be aggressively sold.

Carbon cutlery steel makes the best knife. Its controlled hardening and tempering assure a cutting edge that is hard, but not brittle, and easily snapped, but can rust quickly. Stainless steel will not rust.

High carbon stainless steel holds edges very well, but requires more time and effort to resharpen.

Special, fatigue resistant steel should be used for springs in any good quality knife, because the spring cannot be replaced. The knife can only be opened and closed as long as the spring retains its strength without snapping. Brass or nickel silver linings are used around these springs because steel rusts and prevents proper opening and closing.

Due to the rust factor, steel is a less-desirable trim than nickel silver, but handles can be of many materials. Plastic is frequently used, as is a cured, unbreakable synthetic material. Bone-stag and rosewood handles are attractive, but may break easily.

Sporting knives include fixed-blade hunting and filleting knives and lockable knives, which come with longer and broader blades than are commonly found on folding pocket knives. Lockable knives offer the convenience of a folding knife with the safety of a blade locked in open position.

Among the folding knives are pen- and jackknives. Both have two blades; penknife blades open on opposite ends of the knife; jackknife blades open from the same end.

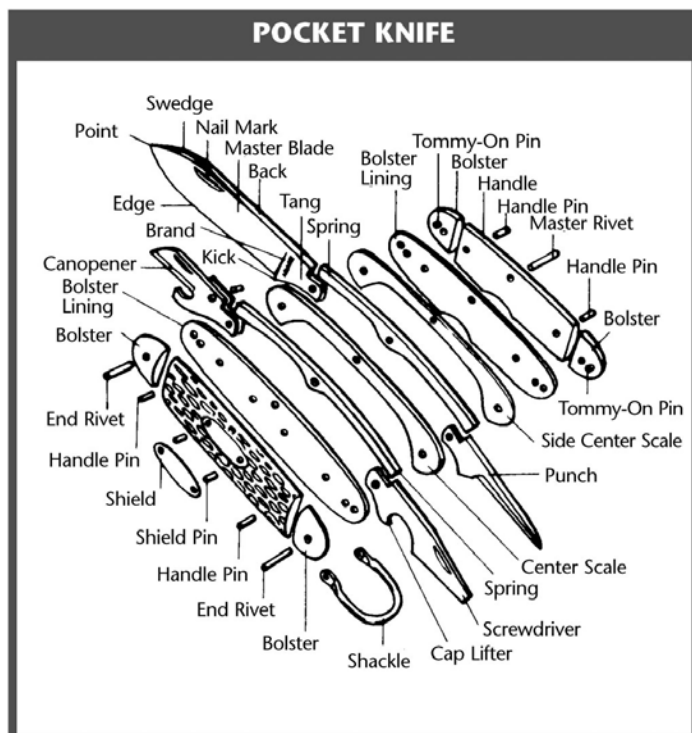
Multipurpose knives of the Swiss Army and Boy Scout variety fill a number of camping needs including eating utensils, filleting blades, screwdrivers, can openers and bottle-cap lifters in addition to one or two standard blades.

In addition to sporting knives, a retailer may stock several specialty knives depending on market demands. These include cattle knives with even ended handles, straight sides, oval ends and three or four blades. Stock knives are similar but usually have serpentine handles with oval or square ends. Other specialty knives are made specifically for jobs such as pruning, cutting roofing or linoleum, chopping corn, etc.

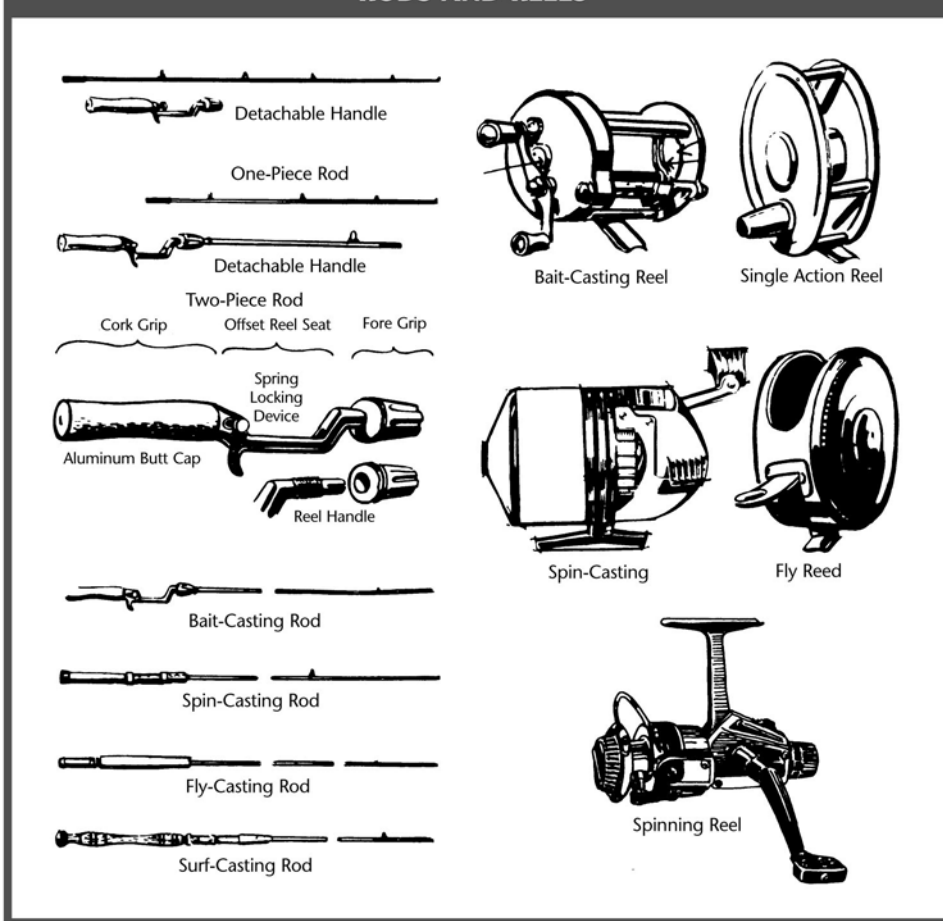
Fishing

RODS

Most rods are made of glass, although bamboo fly rods are available. Tubular or solid-form glass rods are used. The



RODS AND REELS



Surf Casting Rods

Surf casting rods are made in both one and two piece models, much stronger than freshwater equipment. They range from 7'6" to 13'. Desired action depends on line and lures and type of fish being caught.

A good surf casting rod has a long butt handle to give the fisherman extra leverage, with a medium-tip end for casting 4 to 6 oz. weights.

Fly Casting Rods

Fly casting rods differ in action depending upon type of lure used. A stiffer rod is preferred for "dry" (surface) flies, and a more flexible rod for "wet" (subsurface) flies. They come in lengths from 6'6" to 9'6".

Rod, line and lure must be matched for desired balance and action.

Spinning Rods

Spinning rods are similar to bait casting rods except for the larger guides or rings on the rod to control the line. They feature a straight butt with the reel attached beneath the handle.

former offers lighter weight and better balance. The solid models feature greater durability.

Graphite, the most expensive rod type, offers more strength and a better feel to the fisherman.

Rods come in one, two, three and four piece models. This refers to the tip or rod section, not the handle. Thus a rod that has a handle that detaches from a single-rod section is not considered a two piece rod. In the two piece rod, the tip section itself breaks down into two sections. The three and four piece rods are sometimes called "backpackers" and designed for fishermen who carry equipment a long distance.

Bait Casting Rods

Available in lengths varying from 4½' to 6' or 6½', these rods are listed by type of action—light, medium or stiff. They are used for casting bait, plugs or other artificial lures.

Choice of a solid or tubular rod depends on individual preference and the type of fish being sought. Bass or similar light freshwater fish are caught easily on a tubular rod, but the fisherman going after pike or muskie should use a solid rod. Better grades of heavy tubular rods have the same strength as solid rods.

The reel is attached by a "fixed seat" in most models, but slip ring attachments are used, too.

Although 6½' to 7' spinning rods are most common, they also are available in longer and shorter models. Longer rods usually are two piece or "backpacker" models in three or four pieces.

Spin Casting Rods

Spin casting rods differ from bait casting rods in that they are longer (6' 7'), have faster, more responsive tips, and guides are usually of the larger spin variety. Longer rods are two piece, ferrule jointed for easy carrying and storage.

Other Rods

Boat rods, used for saltwater fishing, come in one or two piece models up to about 9'6" long. The rod may be used to make short casts from a jetty or pier.

Big-game rods may have roller guides instead of simple guides. These are built for deep-sea trolling for larger game fish.

Cane poles, sold mainly for bank or boat still fishing, come in lengths from about 10' to 20', usually at 2' intervals. These may be a single piece or jointed with slip or screw ferrules in three sections.

REELS

Personal preference and ultimate use are determining factors in the experienced fisherman's selection of a reel. The beginner may need guidance, but the more experienced angler will have firm opinions on exactly what he wants.

Bait Casting Reels

A bait casting reel has a spool that revolves on the cast and on the retrieve to pay out and take up line. Lightweight reels run from 4 to 6 oz., heavier duty reels from 7 to 8 oz.

Quality features are adjustable drag, antibacklash and a level wind mechanism which distributes line evenly over entire spool. A heavier duty reel may have wider spools with greater line capacity than the typical lightweight reel, which takes 100 or more yards of 9 or 12 lb. line.

Spin Casting Reels

A spin casting reel has a stationary spool. It, too, is mounted on top of the rod and controlled by a mechanical "thumb" or pushbutton.

Enclosed in a housing with a front hole, the spool of a spin casting reel lets out line like a spinning wheel during the cast. Flight of the lure can be stopped by pushing down on the button or lever. On the retrieve, a pickup pin rewinds the line.

Saltwater Reels

Larger and heavier than reels designed for freshwater fishing, saltwater reels have greater line capacity and are built stronger to withstand heavier use, larger lines and lures, damage from salt and sand, etc.

Level wind features are included on lighter trolling and bait casting reels. A good, adjustable drag device is a must.

Fly Casting Reels

A fly reel does not operate during the cast. In fly fishing, the line is pulled by hand. It is this loose line that is cast by the fly rod to carry lures.

With a large diameter spool and narrow width, the fly casting reel comes in single action (ungeared) and automatic models. A spring rewinds line on the automatic reel, winding up as the line goes out and retrieving by the touch of a lever.

Fly casting reels come in both horizontal and vertical models, each based on the position of the spool.

Spinning Reels

A spinning reel has a spool that does not turn at any time. Line is pulled over the end of spool by the weight of the lure; during retrieve, line is rewound by a pickup device that travels around the spool. Since weight is not needed to turn

a spool, use of light lines and lures is possible. Spinning reels mount beneath the rod.

Ultralight spinning reel is for sport fishing. It uses lighter tackle and a lighter line and has more action. The lightweight reel is used mostly for inland, lake fishing.

TERMINAL TACKLE

Terminal tackle includes items used at or near the end of the fishing line—hooks, swivels, floats, etc.

Hooks come in a wide range of sizes and designs. Among the most popular designs are Aberdeen, Kirby and Carlisle, with differences in the length and shape of the shank, angle of the point, amount of curve in the hook, etc.

Sizes run from 6/0 to 1/0 to 1 to 1, in order of descending size. This means that a 6/0 hook is the largest and a 14 hook is the smallest.

Hooks are sold already snelled—with a leader attached. These are preferred by many anglers, despite greater cost. Weedless hooks have a spring loaded wire loop attached near the eye, pulled down to and hooked over the barb to prevent snagging.

A split shot is the most common sinker. Others include pinch on style and bass-casting weights. The pinch on is used with simpler fishing gear. Bass-casting weight is used for bottom fishing or trolling.

Swivels prevent twisting or snarling lines. Better-quality swivels are made with ball bearings in tapered raceways.

Most floats are made of plastic materials, but cork is available. Better floats have spring actions for easy adjustment and attachment. Sizes range from ½" to 2½" in diameter. Panfish floats run about 6" long and vary in body shape.

LURES

Lures come in a variety of sizes, shapes, colors and construction materials. Every fisherman will have his favorites. The sporting-goods salesman should know which fish in his area are hitting on what kind of lures.

Most casting lures weigh from ½ to 1 oz. but artificial lures used with spinning tackle often weigh from 1/8 to ½ oz. Saltwater spin lures or jigs may go up to 8 oz.

Each lure is classified as surface, subsurface or deep running, depending upon the depth at which it operates.

In years past, only flies were used with fly casting rods. Now miniature plug-style lures are used with fly rods. Flies fall into two categories—"wet" for fishing just below the surface and "dry" for fishing on top of the water.

LINES

Selecting the proper line is important and more difficult than it appears. A line that is too light will break or stretch when fighting a fish. A line that is too heavy puts excessive strain on rod and reel. In fly fishing, the wrong weight or type of line makes successful fishing difficult.

Line is either monofilament (single strand) or braided. Monofilament line is nylon, invisible to fish and always used with spinning rigs. Braided lines come with and without cores. This line is used primarily with bait casting reels because it is easier to cast.

All line, except fly line, is rated by the number of pounds of direct tension required to break it—the “pound-test” rating. When extreme strength is required, as in big game fishing, wire line is used.

In spinning and bait casting, the heavier the line, the poorer it will cast. It is important to balance the rod, reel and line to achieve proper performance.

Fly Line

Fly line must be treated separately. It has its own rating system and is required to do special jobs.

Some flies float on the surface. Others are designed to work submerged, so the fly must be matched with either floating or sinking fly line. This is the first decision that must be made.

In fly fishing, the weight of the line carries the cast, not the weight of the lure or a hunk of lead. Fly line is sold by weight rather than by strength.

Altering weight distribution along the line alters its casting properties. Three types of weight distribution are available in fly lines.

Level line has the same diameter throughout its entire length. Level line is usually used for lures such as bass bugs and for fishing where the smoothness of laying down the lure is not too important.

Double-tapered line allows a slower, smoother cast with a dry or wet fly. Should damage occur to one end of the line, it can be reversed.

Weight-forward (torpedo) taper line is designed for “shooting” line into the cast. It is used when distance is important. The running line, back of the oversized portion, offers less resistance feeding through the rod guides and, being lighter, carries along better.

Fly lines are specified by a combination of letters and numbers. The numbers refer to the weight of the line and the letter to the type, L 6 F, for example, is a level, 6-weight, floating line; DT 6 S is a double-tapered 6-weight, sinking line; WF 5 S is a weight-forward, 5-weight, sinking line.

Spinning lines are usually monofilament, as are lines for saltwater surf casting.

Leaders

A leader is a piece of monofilament line, invisible to fish, that is attached to the fishing end of the line. The leader is usually 6’ to 8’ long and slightly weaker than the line. It is designed to break before the rest of the line so the fisherman will not lose much line in the event of break.

When using braided or fly line, the leader also is used to fool the fish, which can see a piece of braided or fly line.

In fly fishing, the weight and design of the leader is matched to the line. The butt diameter of a tapered leader should be no less than two thirds the diameter of the end of the fly line. A level leader is sufficient with heavier flies, such as streamers and bass bugs. Tapered leaders are used only in fly fishing.

MINNOW BUCKETS

Floating and nonfloating buckets are offered, with the former the more popular and expensive. A bucket usually has a two part design with an outer shell that holds water and an inner bucket that can be lifted out, draining the water so minnows can be picked out of the inner bucket by hand. Most common sizes run from 10 to 20 quarts.

LANDING NETS

Small landing nets usually have twine or a thong attached to the end of the handle for hanging on a belt. Larger nets, designed for use in a boat, have longer handles. Best models feature a floating handle for retrieval.

Length or depth of the net itself varies from 18” to 36”. Width of opening differs from one model to another. Handles can range from only a few inches to 4’ or more.

TACKLE BOXES

The simplest tackle box has a single tray that lifts out, while more complex models have an entire series of hinged trays attached to a split lid to open out flat or in a stair-step arrangement.

Some manufacturers have designed boxes with built in lights for night fishing. Materials most frequently used for tackle boxes include aluminum, steel and plastic.

Camping Equipment

The best salesman of camping gear is a person who uses it. The list of camping gear and accessories is nearly endless.

As with all big-ticket items, when a customer is willing to invest in expensive equipment, he expects the salesperson to be able to answer questions and know the product. Quality and performance are important in camping gear. The camper needs to be sure the equipment will not fail miles from help.

HEATING EQUIPMENT

Campers have two choices in heating—propane or gasoline.

A flameless heater operates on gas up to 18 or 20 hours without refilling. This type of heater, which has an open screen-mesh top, is rated by the number of BTUs of heat it

gives off. Small models are rated at 3500 BTUs, with other models going up to 8,000.

The other heater type, fueled by propane, is a radiant heater with a bowl shaped deflector that directs heat in a powerful "stream." These heaters are also rated by BTU output and range from 3,500 up to 5,000 BTUs. They light instantly, burn as long as 16 hours with two propane tanks and cannot be affected by wind, cold, etc.

Portable electric heaters are another alternative, particularly for use in public or private campgrounds, where electrical outlets are usually available.

Small, inexpensive to operate and easily stored, portable electric heaters should be promoted as "good insurance measures" to camping enthusiasts.

COOKING EQUIPMENT

Customer satisfaction in camp stoves is directly related to the size and number of burners. A larger stove is a far more satisfactory because it lets the camper cook with two or three full sized pots, pans or skillets at one time, impossible with smaller stoves.

Propane and white (unleaded) gasoline are commonly used fuels. Propane has the advantage of simplicity, but costs more.

Gasoline stoves require the camper to pump air pressure in the fuel tank—a potential drawback.

A butane-cartridge stove simplifies fuel problems, but is not as powerful as propane or white-gas stoves.

Most campers use regular kitchen utensils for cooking, but special, self storing utensil kits are available.

Accessories which fit over burners to convert stove to griddle, and drums, which can be set on top of burners to make ovens, are available.

Every camper needs an ice chest for perishable foods. These are made of aluminum, steel, ABS, polyethylene or polypropylene plastic with varying types of insulation. Polyurethane or expanded styrene are most common.

Better chests offer trays and dividers. All metal or better plastic chests should have a spout for draining off water created by melting ice blocks or cubes. Handles on both ends for easy mobility are essential, as is a secure latch.

Foam chests are usually inexpensive promotional lines and should not be sold to persons who are looking for a longer useful life. Guides to quality in foam chests are weight, handle installation, ribbed bottoms, etc.

Picnic jugs should not be confused with vacuum jugs. The former gives relatively short time protection of liquids. Picnic jugs, also called beverage coolers, are designed to keep liquid cold. They are made of plastic or metal with polyurethane or expanded styrene insulation in the body.

Vacuum bottles have steel, aluminum or molded-plastic cases with glass vacuum liners of steel or stainless-steel liners. Some have carrying handles. Regular vacuum bottles come in pint and quart sizes with both standard and

wide neck openings; stainless-steel bottles come in pint, quart and half gallon sizes.

Replacement glass fillers are available. Rusting of the outer containers is eliminated with the molded-plastic outer shell or the aluminum or stainless-steel models.

Vacuum bottles under 16 oz. capacity—particularly those intended for use by children—must pass a drop test indicating that broken liners will not harm youngsters. Manufacturers will include a warning on labels if the bottle is not tested for child use.

LIGHTING EQUIPMENT

Flashlights are the most common supplemental lighting item for campers, making batteries a staple item for everyone who buys camping gear.

Besides battery operated lighting devices, there are three major fuels used for camp lighting; propane, gasoline and kerosene.

Kerosene is the least satisfactory. It tends to give uneven, flickering, yellowish light.

Gasoline lanterns are available in unleaded types, in both single- and double-mantle sizes. They require pumping up pressure as with a camp stove. Most will burn 10 to 12 hours on one fuel refill, although they will require repumping of pressure several times during that period.

Propane lanterns are simple to use and require no pumping. The fuel is readily available.

There are several kinds of electrical lights available to campers. One type operates off regular lantern batteries and serves as a small table light. Another, drawing power from a conventional lantern battery, operates a fluorescent light fixture. Some models also work from standard 110 volt current.

A fluorescent light that plugs into a car's cigarette lighter produces as much light as a 60- or 100-watt bulb (depending on size). It can burn all night for several nights in a row without depleting power in a car's battery.

Most lighting devices come with handles or hooks for easy portability and for suspending from a tent pole, tree limb, etc.

SLEEPING EQUIPMENT

Mattresses

Air mattress sizes and styles vary. Most comfortable are those made with a "tufted" or sewn effect. Least comfortable are those with large air cells, which sometimes run full length of the mattress. Better models are larger, usually about 72" × 28" with promotional models generally about 70" × 24".

Twelve volt electric pumps are available for inflating mattresses. Some have built in foot pumps. Universal foot-pump inflators with valves to fit all mattresses are available.

Foam pads serve the same purpose, but do not require

inflation. They occupy more space, but eliminate any possibility of leak or puncture.

Sleeping Bags

Quality sleeping bags are made of goose or duck down—extremely expensive. By regulation, even a bag tagged “100 percent down” may have up to 15 percent feathers or fibers. Any lesser percentage must be on the label, such as “75/25”, meaning 75 percent down, 25 percent feathers.

“Loft” is a trade term for fluffiness. This marks the difference in insulating materials. Northern goose has the best loft, retaining its shape almost indefinitely, even after repeated crushing. It’s costly and can’t be washed.

Sleeping bags can be dry cleaned if properly aired out after the cleaning process. Some solvents used in dry cleaning give off poisonous fumes and could be dangerous to the user if the fumes become trapped in the sleeping bag.

Most bags are machine washable and dryable. It’s best to check manufacturer’s cleaning instructions.

The more insulating material, the better the sleeping bag. Insulating fabrics made of Dacron 88, Holofil II, DuPont Fiberfill II, Permaloft, Acryloft and DN 500 can closely equal goose down’s loft, insulating ability and light weight. They are less expensive, washable and nonallergenic.

Bonded-insulation filling eliminates the need for quilting and reduces “cold spots” at the point of quilting.

Zipper construction is an important quality factor. Weight and size of zipper are more important than materials used.

The zipper should be double stitched, applied so that there is an insulated flap running along the inside of the zipper when the bag is in use.

Size is a factor. “Finished” rather than “cut” size is most important. Best-quality bags are larger than the standard 75” × 33”. A camper should look for a bag 8” to 10” more than his height. Some bags are constructed so they can be joined together as a double sized sleeping bag.

Duck is used for a cover in better-quality bags, with poplin or rayon used in lower quality units. Lining should be flannel or flannelette. Percale and nylon are used in some bags. Not as warm, they do permit freer movement. Whatever material is used, it should have a water repellent finish.

TENTS

Most campers start with tents because they are a relatively simple and inexpensive way to begin. From this point, they move toward the purchase of more sophisticated and expensive products—trailers, trucks, campers, etc.

The first thing to find out is what kind of camping the customer has in mind. If he plans to back pack or canoe camp, 14 lbs. is considered maximum tent weight. Experienced campers try to stay under 8 lbs.

Aside from weight, fabric is the most important element in tent cost, and the major key to quality. A thread count

of 130 means that, per square inch, there are about 70 threads running one way, 60 the other. The higher the thread count and the lower the fabric weight (expressed in oz. per sq. yd.), the better the tent will hold out the elements.

Spun-polyester sidewalls contribute to weight reduction in construction. Many tent fabrics are treated in much the same way a raincoat is treated to further resist water. This adds a little to weight.

Construction quality features include lap felled or French seams (providing four layers), preferable to less-costly flat seams, which are not as good at keeping out water.

Eaves and main corner seams should be reinforced with an additional strip of webbing. This adds strength to the seams and helps the tent keep its proper shape.

Areas where guy ropes and poles attach should be reinforced with heavy webbed tape backing to keep loops from ripping out of the tent in a heavy wind. A top-quality tent will have either pressed on metal grommets or sewn in rings where poles or stakes fit.

In most areas, insect protection is as important as protection from the elements. A sewn in floor and mosquito door are definite quality factors. Good ventilation is equally important.

Last major consideration is size. The customer should figure a minimum of 2½’ × 6½’ floor space for each person who will sleep on the tent floor. If cots are to be used, add another 50 percent to space requirements.

Pup Tents

Popular with Scouts, pack campers, etc., pup tents are designed only for sleeping, and hold one or two persons. Size is limited, with a base about 5’ × 7’ and a height of only 3’6” to 4’.

Better-quality pup tents have sewn in floors and come in one piece construction. The lowest priced are simply one or two pieces of canvas, two poles and some pegs.

Exterior Frame Tents

The cabin style tent with exterior frame construction has more room than an umbrella tent and is easy to set up.

The umbrella tent, which requires a center post and ribs extending like umbrella ribs, has been improved with exterior-frame design. The exterior frames afford more interior room and easier set up. These are available in a variety of sizes to fit camping needs.

Bicycles

Energy conservation, enjoyment and physical fitness sell bicycles. While juvenile models make up a significant portion of sales, the higher-ticket, lightweight, multispeed bikes have made phenomenal inroads.

According to the Bicycle Manufacturers Association,

bicycles are considered practical for trips within a five-mile radius.

There are bicycles to fit everyone's budget and transportation needs: tourist bicycles, characterized by light weight and several speeds; minibikes, compact enough to fold and park inside an apartment or carry in the trunk of a car; tricycles, not the children's type, but 24" wheel models popular with adults, and tandems, the "bicycles built for two."

Other types are the lightweights, often called racing bikes, and sidewalk bicycles with trainer wheels.

Bicycles bring young parents and young customers into the store. They'll bring in older adults, too, for physical fitness. Cities now have thousands of miles of bicycle paths.

Although profit margins may be short, dollar sales are large and still worthwhile.

Customers are willing to buy better bicycles, which improve margins as do sales of bike accessories.

Touring Bicycles

A long time favorite has been the 10 speed touring bike with a derailleur gear changing mechanism, thin, high-pressure tires and racing-style handlebars.

The construction of this type of bicycle affects its performance. The easiest to ride of the touring bicycles are lightweight, have a rigid frame, sturdy pedals, a comfortable seat and quality bearings.

A light, rigid frame with quality bearings is the best combination. If the frame is not rigid, it will tend to flex under stress. This wastes energy that could be used to propel the bike and makes handling and pedaling difficult.

Many touring bicycles are equipped with a number of safety and convenience features including:

Auxiliary brake levers—these parallel the horizontal portion of the handlebars. They enable the rider to apply brakes without reaching for the primary brake levers.

Quick-release wheels—these consist of camlock levers that allow the biker to free the wheels from the frame by turning a lever—without tools. It eases disassembling the bike or removing the wheel.

Aluminum wheels—these perform much better than steel wheels in wet braking tests conducted in independent studies by consumer groups.

All Terrain Bikes

All terrain bikes or ATBs have sturdy, heavy frames; balloon tires with pronounced tread that will withstand abuse and soften the ride; wide, straight handlebars and many different gear speeds for easy pedaling in a number of situations.

These bikes are designed for trail riding and some models are geared for riding on city streets. The features of these bikes stress durability, ease of control, pedaling ease and

safety on out of the way trails as well as the road.

Transbar Power Bikes

Transbar power bikes feature an unusual propulsion system that makes the bike attractive to riders who don't have the leg strength for normal pedaling.

The pedals move up and down, instead of round and round. The levers keep the pedals always poised for a power stroke.

That reduces the motion wasted in cranking a normal pedal back into the power position.

The pedals attach to opposing bars that seesaw lengths of bicycle chain across a pair of ratcheting drive gears on the rear hub. An idler mechanism changes the direction of the chains with each stroke, so that pushing down on one pedal brings the other back into position. Gear ratios are altered by changing the point at which the chains attach to the bars.

Selling Features

Regardless of the bicycles you sell, there are certain step up qualities you can talk about to upgrade sales. Some are for looks only; others provide a measure of extra life, durability, easy maintenance, etc.

For example, chrome plated rims and fenders are better looking, easier maintained. Chromed and/or heavier gauge chain guard is sturdier and better looking. Whitewall or striped tires may be attractive, but reflective tires contribute to cycling safety, especially at night.

Study your wholesaler or manufacturer catalogs carefully for specific features.

Selling a bicycle equipped with even a few of the accessories available could double the sale. Bicycles can be fitted with carrier racks, saddlebags, bike trailers; carts that attach to the bike's seat, lights, generator lights, horns, speedometers, and child-carrier seats.

Reflective tape is available for clothing, bicycle-tire walls, frames, etc., to promote night safety.

RULES OF THE ROAD FOR SAFE BICYCLING

1. Obey all traffic regulations, signs, signals and markings.
2. Observe all local ordinances pertaining to bicycles.
3. Keep right; ride with the traffic, not against it. Ride single file.
4. Watch out for drain grates, soft shoulders, other road surfaces.
5. Watch out for opening car doors or cars pulling out into traffic.
6. Don't carry passengers or packages that interfere with your vision or control.
7. Wear a good helmet.
8. Be careful at intersections, especially when making a left turn.
9. Use hand signals to indicate turning or stopping.
10. Use reflectors and lights at night for required protection.
11. Ride a safe bike. Have it inspected periodically.
12. Ride your bike defensively. Watch out for the other guy.

Care of Bikes

All bikes need to be cleaned thoroughly at least once a year. Use a soft, damp cloth or small, soft paintbrush to wipe off dirt. Remove mud or grit from frame, wheels, chains and sprockets.

Lubricate chains and multispeed gear shifts frequently with a light coat of ordinary household oil.

Car wax can be used to keep paint and metal parts shiny.

Keep tires inflated to proper pressure for better wear. Replace broken spokes. Tighten loose ones.

Check lights, reflectors and horn frequently to make sure they are in proper working condition.

Power Vehicles

MINIBIKES

Simple, stripped-down minibikes with centrifugal clutches are designed primarily for the young and not permitted on the road. A larger class of bike with 50-70 cc engine displacement is popular with outdoorsmen. Most of these types must be licensed for road use. This larger variety of bike is available in either automatic or manual transmission.

MOPEDS

The moped is a motorized version of a bicycle. Because it retains foot operated pedals, it offers the advantages of a power vehicle and a bicycle. Its name, moped, is a combination of motor and pedal, since either can be used to power it.

A moped motor is small enough to keep the cycle lightweight. Top speed is around 30 mph, with about 150-mpg economy.

These motorized vehicles are legal in most states.

GO CARTS

Carts are basically two types: a racing cart and a "fun cart" for everyday use. The latter comprises 90 to 95 percent of the market.

Most are lawnmower engine powered units of 3 to 8 hp. On "live-axle" carts, the engine drives both rear wheels with no differential, allowing more traction for racing, but greater turning difficulty. On "stub-axle" carts, the engine drives the left rear wheel only, providing less traction but easier turning. The latter is preferable for fun carts.

Archery

To successfully sell archery equipment, a salesperson should be well versed in the basics of the sport. Although bow hunting is the backbone of the archery business, target shooting should not be overlooked.

Types of Bows

One piece fiberglass bows are generally used for children. They are sometimes sold individually but are usually merchandised in a set with arrows, armguard, glove or tab, target face and instructions.

Conventional or recurve bows are made of laminated wood and fiberglass and come as either one piece bows or take down bows with a wood or metal handle and separate interchangeable limbs. Recurve bows are available as target bows, hunting bows or bows used for both purposes.

Unlike conventional bows, which increase in draw weight as you start to pull back the string, compound bows reach peak (or full) draw weight as you start to pull back the string, and let off to a lighter weight (called relaxed weight) at full draw.

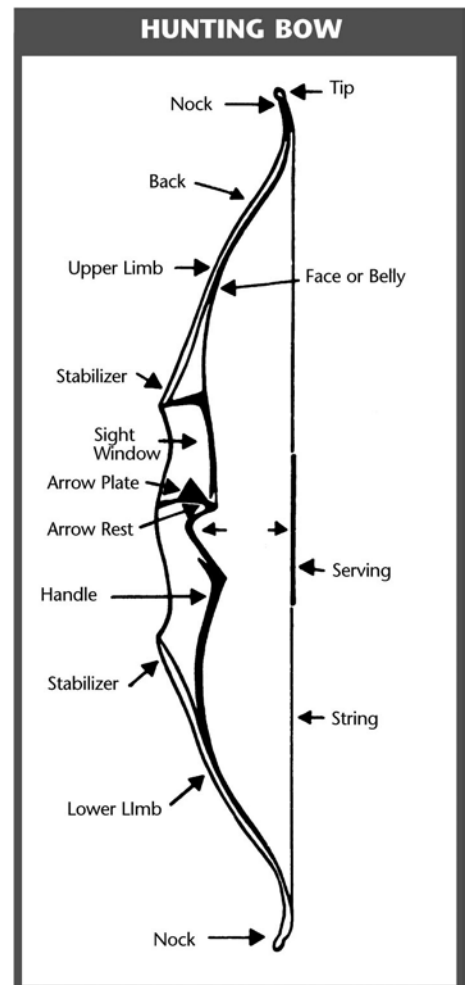
The design of eccentric wheels on the ends of the limbs determines the percentage of let off, with 50 percent being usual on hunting bows. This means that on a 50-lb. bow, you only hold 25 lbs. at full draw, allowing the shooter to hold longer with less strain.

Hunting Bows

Hunting equipment constitutes more than 80 percent of the total archery business. The selection of the right hunting bow is based on the customer's size, strength, experience and hunting objectives.

Hunting bows vary in draw weight from 30 to 80 lbs. Lighter draw weights are used for hunting small game, heavier weights for big game. More experienced hunters like a heavier bow, but beginners may find a heavy draw too difficult. Most beginners learn faster with a light, low cost bow. Average draw weights for draw bows are 45 to 50 lbs. and 50 to 55 lbs. peak weight for compound bows.

Draw length is important on a compound bow, since it is part of the bow design. Many compounds now have



an adjustable peak weight, meaning that the customer can increase his draw weight as he becomes more experienced, or lower the draw weight in order to use the same bow for target shooting.

Hunting bows come with limbs of solid fiberglass or laminations of maple and fiberglass. Laminated limbs are more expensive and usually provide a smoother release and slight increase in arrow speed. Fiberglass limbs are durable and long lasting.

Hunting Arrows

Fletching (feathers or plastic vanes) on hunting arrows should be at least 4½" long and helical fletched to provide spin in flight for stability with heavy hunting heads. Plastic vanes have replaced turkey feathers. They are waterproof, working well under hunting conditions. Arrow length and spine (degree of stiffness) must be properly matched to archer and bow.

The most accurate way to determine proper arrow length for the beginner is to use a measuring arrow, available from most manufacturers. If using a yardstick, measure from chest to fingertips with arms stretched forward, palms held downward against the yardstick.

The arrow should be weight matched to the peak weight of the bow. The length should be ¾" to 1" longer than target arrows, to keep the hunting head clear of the bow and archer's hand. Average hunting-arrow length is 29" for recurve and 30" for compound bows.

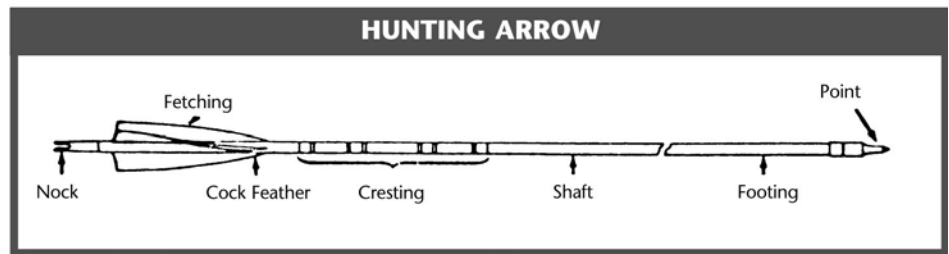
Hunting arrows are made from wood (usually cedar), fiberglass or aluminum. Cedar is the cheapest, excellent for beginners. Fiberglass is durable. Because aluminum offers the best flight consistency, most hunters favor these arrows.

Better-quality hunting arrows have interchangeable points, allowing the archer to switch from blunt points for small game or practice, to field points and razor-sharp hunting heads. Stocking two or three types of points should satisfy most needs.

Target Bows

Selection of the proper target bow is based on the same elements as the hunting bow—size, strength, experience and target-shooting objectives. Target bows are often longer and heavier than hunting bows and generally lighter in draw weight.

Target recurves vary in length from 60" to 70", with draw weights from 20 to 40 lbs. Compound target bows usually are shorter with peak weights from 25 to 50 lbs.



Target Arrows

Target-arrow length is determined from the archer's draw length. Spine weight should be matched to peak draw weight. Target archers have to experiment for the best arrow flight.

Fletching on target arrows is smaller than on hunting arrows, usually 2½" to 3½" long. Points are either field-point style or the smaller, bullet shaped target.

Accessories

Accessories are generally the most profitable portion of the archery equipment market. Common accessories include quivers, arm guards, finger gloves, tabs and string sleeves.

Quality quivers hold an adequate number of arrows, cover arrowhead or points and keep the arrows from rattling against each other. They are usually made of vinyl or leather. Back quivers strap around the body and can be hung from tree stands or blinds, but they allow arrows to rub together, dulling points and making noise.

Hip quivers have individual arrow clips to prevent rubbing and noise and are relatively inexpensive and compact.

Bow quivers are made of rigid plastic or fiberglass and attach directly to the bow. While these provide easy arrow access and good maneuverability, some hunters think the bow quiver adds unnecessary weight to the bow.

Arm guards are made of leather or vinyl and strap to the arm to protect it from the bowstring. Most arm guards are short and are worn between the elbow and wrist; longer arm guards that cover above the elbow are useful for hunting with loose clothing to prevent the string from snapping against sleeves.

Leather tabs protect fingers from bruises and blisters caused by bowstring friction. They also ensure a smoother and more accurate string release. Some hunters use plastic or rubber sleeves over the string where the fingers grip the string in place of a tab.

Team Sports

Team outfitting is a profitable business. It requires no warehousing or floor space, but a lot of product knowledge.

No matter what kind of team you are serving, sell safety and quality. These are paramount considerations in purchasing decisions for sporting equipment.

FOOTBALL

A good football is made of select cowhide, with good lining and stitching to be sure it retains its shape. Less-expensive models use lower-quality leather composition or plastic.

Plastic kicking tees are made in several designs. There is little difference between them, and no reason to stock or sell more than one kind.

Helmets should have a tough plastic shell with an interior webbing or padding to prevent shock from being transmitted directly to the skull. The more points of suspension, the more protection the helmet gives the wearer.

For maximum safety results, each helmet must be individually fitted to the player who will wear it. It must cover the back of the head and base of the skull, it must not turn when struck, and it must not fall over the eyes when hit from behind.

Shoulder, hip, thigh and knee pads are made of plastic, with 100 percent nylon padding sewn with nylon.

Shoes should support the ankle as well as provide good traction. Highest quality shoes have kangaroo or good split-cowhide uppers, top-quality leather insoles, cleat posts of tough steel with a broad base firmly locked in position.

Linemen usually prefer over the ankle hightop shoes for greater support while back and ends usually prefer a lighter, low cut (oxford) style.

Mouthguards are required equipment. Fitted guards—those molded exactly to the teeth of the individual wearing them—are the best type.

BASKETBALL

A rubber covered basketball is adequate for beginners, but vinyl or vinyl and nylon covers give longer lasting wear.

Best-quality basketballs no longer have leather covers. They are made of a nylon carcass covering the bladder and all encased in a composition cover.

Backboards are sold in several grades, depending on the type of material used. They are made of particleboard, hardboard, encapsulated fiberglass over a wood core and pure fiberglass. Steel backboards are used for playgrounds, while fiberglass is most popular indoors.

Basketball goals are made of tempered-steel rims—the greater the diameter of the rim material, the better the goal. These come in 3/8", 1/2" and 5/8" sizes, all with the same 18" opening.

Nets vary in thread size and are sold in both 8 and 12 loop. Threads are made of cotton, nylon and all weather polyester.

BASEBALL AND SOFTBALL

Balls

All baseballs follow the same specifications of size and weight with horsehide covers, composition centers and wool-yarn windings, but they differ with the quality of

materials used. Softballs, on the other hand, differ in types of center (kapok or cork), type of cover (rubber or leather), etc.

Bats

Baseball bats come in different sizes and weights, depending upon the age of the player and individual preferences. An important feature for many customers is type of grip; they look for material that will not slip in sweaty hands.

For participation in some leagues—e.g., Little League, Pony League—bats must meet certain specifications of size, weight, etc. If you are selling baseball equipment to teams or individuals in these leagues, be sure you know the specifications, approved styles and models, etc.

Ash or hickory are the woods used for both softball and baseball bats. The best bats are made of ash. Medium priced models are made of hickory and walnut. Bats range in length from 33" to 36".

Aluminum bats are also sanctioned for official league play. They come in a variety of colors. Manufacturers claim they are unbreakable.

Quality is especially important in bats. Low grades in other types of sporting equipment wear out faster; a low-quality bat may break with the first hit.

Gloves

Baseball gloves vary considerably in price, depending on the quality of material and workmanship. Horsehide is inferior to top-grain cowhide.

Fielder's gloves come in six finger, five finger, four finger and three finger styles. In more expensive models, finger loops inside the little finger and thumb are a comfortable aid for controlling the glove for fast action. The flex pad is a scientifically designed area that forms a firm foundation over the fleshy part of the thumb.

Baseman's mitts come in double-pocket, extended palm, trapper, spear and catcher's styles. Some mitts have an adjustable wrist loop, giving every hand a tailored fit.

Racquet Sports

RACQUETBALL

The game, similar to handball, is played with a short racket by two, three or four persons, indoors, in an enclosed hardwood court.

The primary equipment is a racket, rubber ball, soft-sole shoes and protective glasses.

Rackets

A racquetball racket is similar to a tennis racket, except that it has a much shorter shaft.

Rackets are made of fiberglass, graphite, wood and metal (usually aluminum). They come in different shapes for player preference, although they must not exceed 27" as the combined total of length and width.

Other Equipment

The racquetball ball is a hollow rubber ball with a smooth outside covering. Some types are pressure regulated.

Optional equipment includes a hand glove, available for men and women in left and right hand styles.

Other accessories include sweatbands for head and wrist, and equipment bags for carrying clothes, shoes, rackets and balls.

TENNIS

Tennis Balls

Tennis balls are sold in pressure packed cans to keep the balls livelier longer.

Tennis shoes and gym shoes are commonly spoken of as being identical, but the true tennis shoe has a completely smooth sole, while gym shoes have "tread" for suction or similar configurations on the sole.

Only completely smooth soles are permitted on some types of composition courts. Do not sell gym shoes as tennis shoes unless you know the buyer is planning to play on hard surface or clay courts.

Wood Rackets

Better-quality tennis rackets are sold by sporting goods specialty stores or stores with large sporting-goods departments. In a smaller sporting-goods department, the only rackets likely to be sold are low end models, designed for beginners or occasional players.

Most good rackets have a laminated ash frame, with the number of laminations a key to quality—the more plies, the better the racket. Most rackets are strung with nylon; monofilament in cheaper models and multiply in better rackets. Gut is used for stringing fine rackets for those who play frequently.

When selling tennis rackets, be sure the head is flexible and the grip fits the customer's hand properly.

A natural add on sale with a better wood racket is a racket press to protect the frame from warping, and a waterproof racket cover to protect against moisture.

Metal and Glass Rackets

Metal rackets are usually made of aluminum or steel, but some manufacturers use magnesium.

Metal rackets offer greater power than most wood rackets and are lighter weight—a big advantage for some players.

Steel rackets are said to absorb more shock and are more flexible than aluminum ones.

The major difficulty with steel and aluminum rackets is string breakage. The number-two headache for metal rackets has been racket breakage or weakening and rivet or weld failure.

Rackets that add fiberglass and steel to wood have extra power and life, while retaining the string-protective benefits of wood.

Water Sports

SWIMMING

Just a few items are aimed at the swimmer—goggles, snorkel, masks, nose and earplugs and swim fins.

Swim goggles are for the underwater swimmer. They permit him to see easily without danger of eye injury. Quality goggles have rubber frames with shatterproof lenses. They should be watertight with adjustable head straps to permit setting for a comfortable position.

A snorkel and mask permit the swimmer to breathe normally under water through plastic breather tubes which extend above the water. A valve at the upper end of tube keeps water out of the tube if it should go underwater. An airtight seal is provided over the swimmer's nose and eyes.

Swim fins are made of rubber or plastic with adjustable straps to fit any size foot. Rubber is preferable because it floats.

Scuba-diving equipment gets its name from the initials of "Self Contained Underwater Breathing Apparatus," the full name for equipment carried by a scuba diver. A highly technical product line, scuba equipment should be sold by someone with special knowledge and experience in its use.

BOATS AND MOTORS

Boats 10' to 14' long are most popular models sold in d-i-y stores. These may have flat bottoms, "V" bottoms or semi V bottom design and be made of aluminum, plywood or fiberglass. They are used for fishing, waterskiing and other general marine activities.

Plywood boats are generally the lowest priced, with fiberglass the most expensive and most versatile from the standpoint of uses.

There is a vast market for marine products. Safety equipment is a leader in this field. Included are life belts and vests and floating seat cushions, usually made of kapok filling in a plastic cover. These should have handles that can be grasped easily by anyone floating in the water.

Horns, lights, buoys, boarding ladders, boat hooks, etc., also fall into the marine-safety category. Specialty items range from anchors to tachometers, deck hardware to trailers.

Outboard motors can be used with any of these types of boats. Gasoline powered motors are rated on the basis of horsepower, with the intended use determining how much horsepower is needed. Lower-horsepower motors are used for fishing, while more speed and power—from 40 to 50 hp up—are needed for waterskiing.

This highly specialized line requires much study and consultation with supplying manufacturers and distributors.

CANOES

Design, construction and materials vary with each manufacturer, but all canoes have a rib framework of wood or metal with body of wood, aluminum, fiberglass or petrochemical compounds such as polyethylene.

With accessory motor mounts, some canoes accommodate small outboard motors around 5 hp.

WATERSKIING

Most popular types of water skis are made of wood or fiberglass. Wood skis may have a plastic or melamine facing. Skis vary in length, but most are about 5'6" to 6'6" long. Width varies with the length. A typical, 69" ski will normally be about 6¾" wide. The ski should have movable heel cleats to adjust to any foot size.

Tow ropes vary with price. Braided polypropylene is used for top quality tow ropes. Most ski tow ropes are 75' long, and many have a float attached to the line. All will have a handle, some with a special two piece handle that can be joined for one piece use.

Skiing vests (or jackets) or belts are a safety must. The selection of vest or belt is largely a matter of customer preference, although vests are required in some forms of competition.

Kapok filling is used for lower-quality vests, with plastic foam the filler for more expensive vests. Fabrics vary, but one of the biggest quality differences is found in sewing and workmanship. Look for double sewn seams in better vests.

Golf

BAGS

Golf bags vary in price, depending upon quality and style of material, workmanship, features, etc. The larger, heavier bags generally offer more pockets for balls, tees, shoes, etc., a hood to protect the clubs in transit, carrier for an umbrella and dividers to keep clubs from rubbing against each other.

CLUBS

A full set of golf clubs consists of four woods, eight irons and a putter. An experienced golfer will often add a fifth wood and one or two specialty irons. A wedge is the most common specialty club.

Low priced starter sets include two woods, four irons and a putter.

The woods begin with the driver (number one wood) used only on the first shot off each tee. Other woods are numbered two through five. The higher the number on the club, the greater the loft of the club face, the shorter the shaft and the shorter the potential for distance.

A standard set of irons is numbered two through nine. The putter, available in designs and sizes to suit personal preferences, is purchased separately.

Irons, like woods, are designed so that the greater the club number, the greater the loft of the ball and the less distance it will travel.

Better clubs may come with a choice of weight, length and stiffness of the shaft. Shafts are made of steel, aluminum and fiberglass.

Graphite is being sold to top players, but it is usually offered in the driver (#1 wood) only. Graphite is also very expensive.

BALLS

Golf balls are available in several types, with individual preference the main factor in selection. Balls are made with liquid, steel, air and vinyl centers and in varying amounts of compression—medium compression for an average golfer, high compression for a better, more-powerful golfer.

Golf balls with more durable cutproof covers have tremendous sales appeal, particularly for the average golfer. Bright-colored covers add visibility.

CARTS

Better carts are usually die cast aluminum. A folding assembly lets the wheels roll free after the cart is folded up.

Economy models have tubular-aluminum frames with riveted assembly, but rarely last more than a season with frequent usage.

Yard Sports

Four of the most popular backyard sports are badminton, croquet, horseshoes and volleyball. All are available as complete sets.

Badminton rackets look like tennis rackets but are lighter weight with longer handles. Play is similar to tennis, although shuttlecocks or "birdies" are used instead of balls.

The only equipment needed to play volleyball is a net (larger and heavier than a badminton net) and a volleyball.

Snow Sports

While only a very few do it yourself stores get into specialized winter sports such as downhill and cross country skiing or hockey, most dealers in snow regions carry some snow toys.

The classic snow sled with metal runners is still the most popular. Molded plastic sleds are generally dish shaped; the entire bottom of the sled comes in contact with the snow. These are designed to run in soft snow where metal runner sleds won't go. Toboggans, too, have some popularity, as families spend more time together outdoors.

FITNESS

Americans are shaping up, as evidenced by the tens of millions of joggers buying special running gear for which style is as important as function.

Running shoes provide added comfort and support not available in ordinary tennis shoes. They are lightweight, with synthetic as well as leather uppers. Rubber soles are specifically designed to cushion the constant pounding a runner's legs sustain.

Mini-trampolines allow joggers to run indoors all year round. The trampolines average about 3' wide, have a nylon running surface and steel springs. They are also useful for runners with leg injuries who cannot run on hard pavement.

Jogging shirts and shorts are designed for various climate conditions to provide maximum body comfort and performance. Sweatbands, hats and ankle weights add to accessories.

Beyond jogging and running, but often in conjunction with these sports, both men and women are utilizing weight training to condition their bodies. Barbells are used with two hands while dumbbells are used with one hand. Barbells are usually steel; dumbbells can be made of metal or molded plastic filled with sand. Weights on barbells and some dumbbells are permanently affixed or can be added.

HOME GYMS

Home gyms and fitness equipment enjoy widespread use. A study commissioned by the National Sporting Goods Association (NSGA) indicates that more than 10 million people work out with their home equipment and accessories; and the number is growing.

A top of the line home gym has weight stack, bench slant board, handlebar and leg lift/curler. Other types of home gyms feature a rolling board with a system of pulleys to exercise the muscles by pulling body weight up and down a steel track. Both types of gyms are usually made of tubular-steel frames.

INVERSION SYSTEMS

Another form of exercise equipment is inversion systems. These systems stretch the back by allowing the person to hang upside down, either from a bar and boots or with legs curled around a pad, hanging just from the hips.

Both types of inversion equipment are generally made from tubular steel. They can be mounted in doorways and there are also freestanding platform models.

ROWING MACHINES

For customers interested in just one major piece of exercise equipment, experts recommend a rowing machine, which works muscle groups throughout the body and provides an aerobic workout. Encourage the customer to choose quality models with strong shock absorbers and seats that slide back and forth smoothly.

EXERCISE BIKES

Exercise bikes strengthen the legs and make leg and hip muscles more flexible, as well as burning a lot of calories.

A good exercise bike will have a wide, easy to adjust seat for comfort; pedals with straps that let exercise work on the up and downstrokes; a rigid frame; adjustable handlebars; resistance control (a calibrated control is easiest to reset); easy to read gauges; a resistance mechanism (either a caliper brake or belt around the flywheel); and a large, heavy flywheel (the bigger and heavier it is, the smoother the ride).

Other exercisers include hand presses, which use coiled-spring tension to help firm arm muscles, jump ropes, chinning bars, etc.