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QUALITY ATTRIBUTES AND CUES  
IN BOLT ACTION CENTER FIRE RIFLES

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For: Remington Arms Company, Inc.  
January, 1983

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## INTRODUCTION

### Purpose

In connection with Remington Arms' desire to learn more about the market's perceptions of product quality in bolt action center fire rifles, this research was designed to:

1. Confirm and expand existing understandings of attributes that are perceived to constitute good quality.
2. Identify the discrete cueing elements that work to signal those attributes.
3. Learn how dealers, who are presumed to be influential in the purchase decision, may differ in their thinking with respect to quality attributes and cues.

It is anticipated that this information can play a role in the product planning process by identifying those product areas or components that are most important or influential to consumers, and (therefore) in which product improvements would yield the greatest returns. Conversely, areas of low consumer interest probably would not merit (as much) refinement or upgrading, especially from the standpoint of overall cost effectiveness.

### Method

The research was conducted in two parts, with the first addressing objectives 1 and 2, above, and the second, objective 3.

Focused discussion groups. Three group discussions were conducted with consumers -- one each in Denver, Phoenix, and Dallas. The 29 respondents all were pre-screened for recent purchase (within the past 2 years) or serious prospective purchase (within the next 6 months) of a bolt action center fire rifle. There were no formal test product evaluations; however, once the groups were well under way, three different rifles -- a Remington 700 BDL, a Ruger Model 77 and a pre-'64 Winchester Model 70 -- were introduced in order to promote the identification and discussion of quality cues.

A fourth group was conducted in Prescott, Arizona, among a group of eight "experts" -- i.e., custom gun makers and gunsmiths (some of them also dealers) -- with no product stimuli.\*

Dealer interviews. Individual personal interviews were conducted with five independent dealers in the Westchester/Fairfield County area. No formal test product stimuli were used; however, in most cases, products on hand were used to elaborate key points.

Cautionary Note

There is some risk associated with small-scale qualitative research of this sort, not only because of the limited number of persons involved, or the possibility of idiosyncratic reactions of dominant respondents being promulgated as consensus...but also because of the temptation of some respondents to "expertise" about technical or creative matters on which they have little knowledge. Additionally, all the groups were conducted in the Western part of the country and possibly could reflect a regional attitude as compared, say, to the North East, where bolt action rifles may be regarded somewhat differently.\*\* This is not to disparage the usefulness of the research method; it serves an important discovery function. To be most useful, however, the results should be regarded as directional, not definitive, and tempered with professional marketing and business judgment.

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\* This was an informal and "unofficial" session, conducted mainly for (and in part by) Remington people who sat in with participants.

\*\* This danger is in some considerable measure offset by the dealer interviews, conducted locally, which showed little substantive variation from the group sessions.

SUMMARY AND STRATEGY IMPLICATIONS

The results are consistent with previous indications of "what matters" to consumers with respect to quality in general\*...

- cosmetics/overall appearance
- wood
- (smoothness of) action
- overall feel/fit/balance

...and also provide an incrementally greater and/or more specific understanding of discrete cuing elements. In the broadest of terms, a good quality rifle is one which looks good, fits nicely, and performs well. It's important to note that overall appearance -- which includes overall design lines -- is said by both the consumers...

"The appearance when you look at a gun. You see nice wood; you see all the cosmetics of it. That's got to be your first heart throb."

"As you stand on one side of the gun counter and look across [to the rack] and see some guns that are really what you're looking for...by looks, the style, the shape, the color wood."

...and the dealers...

"The most important is looks -- aesthetically, the checkering, finish, etc. -- to get it off the shelf."

...to have the greatest initial impact; that is, creates the first impression and gets the gun off the rack and into the consumer's hands. It is only then that the more individualized/idiosyncratic balance, feel, and fit attributes come into play. Performance, while to a large degree assumed (and much

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\* See The Gediman Research Group, Inc.: "Quality Perceptions: Shotguns and Center Fire Rifles," March 1981.

influenced by brand reputation), also is a factor. Some cues to performance are derived from the inspection and "working" of the mechanical operations.

Consumers vary in their scrutinizing, with the emphasis depending to some degree on their own particular areas of interest (wood working, mechanically oriented, etc.) as well as their personal gun expertise. Nevertheless, there are numerous cues which many people use to make their quality assessments. In general, these cues can be categorized into the following areas\*:

- Overall design

- ...slender, "classic" \*\*

- Wood

- ...shape: tapering lines, no square, boxy edges

- ...grain: tight, patterned

- ...color: darker

- ...finish: satin or (not too extreme) gloss, smooth

- ...checkering: cut, neat, clean, attractive, functional

- ...wood species: walnut

- Metal

- ...blueing: lustrous, well polished, consistent color

- ...good steel: no alloys, blued not blacked

- ...forming: milled/machined best; castings next best; stampings acceptable (i.e., probably not specifically noted) if well executed and finished/colored

- ...finishing: clean, smooth, sharp (where appropriate); functional extras -- e.g., jewelry, knurled bolt

- Operation/Parts

- ...action: smooth, no wobble, strong looking (including extractor)

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\* Highlighted here; detailed in the main chapter.

\*\* This and other research points to a shift in consumers' design preferences (back) toward a more restrained, conservative look. (See also The Gediman Research Group, Inc.: "Model 700 ADL Product/Marketing Revitalization Research," June 1982.)

- ...safety: quiet, positive; (for some) option to work action with safety on
- ...floor plate: hinged, maybe a clip
- ...trigger: crisp, clean, precise
- Wood-to-Metal Fit
  - ...close, touching but not binding; flush
- Accessories
  - ...plastic parts (fore-end cap, pistol grip cap) considered cheap (looking)
  - ...spacers: if present, even thickness, non plastic
  - ...butt plate: steel preferred
  - ...recoil pad: inclusion a plus (for some)\*
  - ...sights: mixed reaction to inclusion or exclusion; if included, integrated (not "stuck on"), precise, solid
  - ...studs, swivels: inclusion a plus\*
  - ...integral scope mounts: inclusion a plus, as on the Ruger 77\*
- Accuracy:
  - ...cued by good barrel inletting, good sights, angled bolting system (Ruger)

Not infrequently, certain external cues are assumed by consumers to be indicative (or least suggestive) of internal quality,\*\* especially those which are considered to be examples of "craftsmanship":

"We don't know internally, but overall appearance, if it looks nice and well fitted, we assume, right or wrong, that the rest was made with the same kind of precision and care."

\* Unavoidably, in the groups, discussion of quality cues, per se, sometimes spills over into discussion of desired features which only indirectly, if at all, bear on quality (and/or on value).

\*\* Dealers, as a result of greater gunsmithing/repair knowledge, are less likely to make this assumption.

While not a "hardware" cue as such, it's clear that brand/model reputation plays a role in the consumer's perception of quality. Typically, reputation acts to pre-condition and also reinforce the consumer's expectations, and probably alters his degree of objectivity while inspecting a potential purchase.

Dealers. On the whole, while somewhat more discriminating and certainly more expert and appreciative of technical/design nuance, dealers are not significantly different from the consumers with respect to perceived cueing elements of quality.

#### Strategy Implications

Based on these results -- and, again, also on other recent and consistent research findings -- a number of actions might be considered by Remington. Design is an element that affects individual components of the rifle and at the same time the whole. Indeed, successful design should result in the whole being greater than the sum of parts -- creating an overall "aura" of fineness, or quality. As such, design is an underlying factor in all of the following and in some instances it can be an overriding factor:

- Slender, classic, tapered, resulting in no excess or unnecessary material
- Even slender(er) barrel (for hunting, not target shooting)
- Tapered lines on barrel; no extraneous projections
- No parts features that look extra, "stuck on," or stop-gap -- e.g., recoil lug on Remington
- Integration of function and aesthetics -- e.g., a jeweled bolt has the perceived purpose of holding lubricant as well as looking attractive

Additional quality-cueing points to consider, independent of any overall design context, include:

- A higher degree of polish on actions and barrels (for better blueing)
- From the quality-cueing standpoint, there is little to be gained by refining unseen internals, unless a demonstrable advantage or improvement will result; e.g., a bolt so smooth it can slide back and forth via gravity



- All metal parts, including attachments, should look like "good steel" or at least not blatantly suggest pot metal -- especially if they are stamped (which also should not be obvious)

...parts should have a blued appearance, not an alloy black look

- Use darker, patterned woods rather than light and plain looking; avoid pine or birch look.\*
- Checkering should be cut rather than pressed; while hand cut is preferred, machine cut is acceptable
- Possibly change to a more substantial looking extractor system on the bolt
- Possibly offer a safety design which allows the bolt to be operated for unloading the gun while in a "safe" position.

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\* While preference for darker wood is clear (though not unanimous), how dark is too dark is not known. Testing a series of wood samples in a range of colors -- and patterning -- might give some rough quantification on this point.

FOCUSED GROUP FINDINGS\*Foreword

In the course of the group discussions and interviews numerous cues are cited as evidence of good quality. In some cases a cue is itself also an attribute; for example, good blueing is mentioned as a cue to good quality, but in turn there are even more specific cues to good blueing. Here and throughout the research, this issue reduces to a semantic quibble of little importance. As long as we can identify the specific cueing elements of good blueing, (or any other desired characteristic), it doesn't much matter whether we construe good blueing itself as an attribute of quality or as a cue to, say, good metal, which in turn is an attribute of quality.

While there is considerable consumer agreement as to what the cueing elements are, in some cases there is divided opinion as to the favored execution of an element (e.g., stock shape, discussed below). Personal preferences come into play here. Usually it's possible to identify (or infer) the majority view, but the reader should bear in mind the small sample.

The principal emphasis in the investigation was on positive attributes and cues rather than the negatives. In some instances, though, consumers conceive and express a desired characteristic primarily in terms of the absence of certain negatives. This is apparent in the text and verbatims, and could have important implications for advertising and other communications.

Following are the areas of quality attribute focus and associated cues which seem to have the most influence. While presented in approximate order of importance overall, the degree of influence of any particular point can vary considerably from one individual to another.

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\* With some interpolation of dealer interview findings as appropriate. See also the brief separate chapter on dealer interview findings.

Wood

Wood, being the largest physical component of the rifle is also the most visible and usually draws the most attention:

"Almost invariably the one I want will be selected on the basis of wood."

The stock also provides the physical interface of the gun with the user, and in addition to having to fit well, seems to stimulate in some people a certain sense of pleasurable touch. More specifically, the main wood related cues usually involve shape, grain, color, finish, checkering, and wood species.

Shape.\* Beyond the personal fit parameters, consumers frequently mention a desire for more tapering lines, slender(er) overall and also in the fore-end and pistol grip; all to avoid a clubby look: .

"If the stock is too clubby...if the thing feels like a baseball bat in your hand instead of a stock, you'll put it back on the shelf."

"This is just a big block up here; it looks like a 2 by 4 with a pipe stuck on it." (Ruger)\*\*

"You have to have a fairly thin looking stock. Most factory stocks are a little bit bulky looking."

Respondents also praise "classic" lines, straighter lines in the butt stock, no Monte Carlo dip and (for some) no cheek piece:

"There's a simple elegance to that style and it's not either-or. You don't get one without the other. You get a chunky stock, you get unnecessary humps and lines. This style is one that has evolved over a long time and has outlasted those fad changes like the recurved grip, the funny fore-ends, roll-over combs and that sort of thing. That's why it deserves the name 'classic'; it is simple and elegant both in terms of function and form. It's what we come back to when all the fads have run their course."

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\* Specific shape cues are subject to personal preference. Although not unanimous, there seems to be a majority preference toward a more classic or conservative look -- perhaps both influenced by and itself influencing the comparatively strong market performance in recent years of the Ruger Model 77.

\*\* Brand names in parentheses after verbatims indicate which stimulus model is being referred to.

They like the fore-end tapered or rounded; with a less prominent or less blunt tip\*..

"It gives it a feeling that it has more workmanship in it rather than a block like the Sears .22...(which) looks like a 2 by 4 that has been rounded."

"I don't like the way they do the Remington [fore-end], either; they could have cut it off a lot more."

"I don't like the lines -- I think it's more the fore-end." (Winchester)

...and the fore-end rounded on the underside, not squared-off, especially in the receiver area...

"See these sharp edges on the fore-arm. If they'd just spent a little more time and rounded that off, it sure would have made it look a little nicer." (Ruger)

"I don't like any square corners on the wood. I don't think they have any place on a gun stock." (Ruger)

...and, finally, the pistol grip should be swept back a little (more).

Grain. Wood grain related quality cues are to some degree problematic, in that, on the one hand, consumers point to close, dense, tight rather than open grain, especially in the grip area...

"Look at the wood. It's just obvious that that is a quality stock -- it's darker, tighter grain." (Winchester)

"The grain...some have a tight grain, some have like a wide running grain. Tight is like close stripes -- that's good."

"I'll haul out all seven of them for them because they want to see how the wood is laid out. They're going to see that the wood flows up through the grip." (Dealer)

...and at the same time they are favorably influenced by attractive patterning, figure, character, swirls, fiddleback,\*\* as opposed to plain, straight grain throughout the butt:

\* Although at least one dealer, and possibly a second, makes positive mention of the Model 70XTR Schnable fore-end.

\*\* One dealer/gunsmith mentions that highly figured stocks are weaker and more likely to break.

"Before I even look at the rest of it I'll say, 'let me see that one with the figure in the stock.'"

"You see the grain in it; you see the figure in it; there's depth in the wood itself. The same thing over there with the Remington...but this piece here [Winchester] looks like the bottom of the window sill to me." (Ruger)

The problem for the manufacturer lies in determining an acceptable mix of straight grain versus patterning -- with an eye also to the location of the different grain characteristics.

Lastly, there is unanimous agreement that knots are undesirable, especially in the grip area.

Color. Consumers say color is a matter of personal preference; yet in this sample, the great majority prefer a darker wood. In fact, a hand count taken in the Dallas group resulted in nine out of nine preferring darker wood. Additionally, for some, darker wood also implies a harder wood and, conversely, lighter is softer:

"I don't like the grain [color]; it's not dark enough."  
(Remington)

"I think the color may have a lot to do with it. A lot of your softer woods are lighter color." (Remington)

"I like a deep color, rich. I'd pick dark."

"...they use a lighter color wood or grain and it looks cheaper."

"The harder woods are dark."

Finish. A satin type finish, even in a synthetic material, conveys an impression of the generally preferred\* oil finish, which has the advantage of being more easily repaired in the event of scratches. Typical of the comments we hear are:

"I think it's some kind of synthetic oil -- but it is repairable!" (Ruger)

"I don't like the real high [gloss] finish on it. I'd rather have oil or something." (Remington)

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\* Perhaps somewhat overstated as a result of "peer pressure" in the groups; but still, apparently reflecting at least a relative change in consumer preferences in this direction.

"...hand rubbed (finish) versus plastic spray."

"True oil -- I did my Winchester in that."

However, the high gloss finish is not without its advocates. Many of the men like the shiny appearance, as long as it doesn't look "an inch thick" or otherwise too plastic-like, which is seen as difficult to repair\*...

"This is the kind of gun that I'm attracted to from a showpiece point of view. Personally I like the high gloss finish."

"But you can put a gloss finish on that isn't an inch thick, that when you hit it against something it's almost going to shatter."

"That RKW, working with that stuff is terrible. If somebody does come up with a scratch...trying to blend it, there's no way that I know of that looks good."

...and tends to isolate the wood from the touch:

"...like the hatch cover tables in the bars where they pour on the polyurethane. It's the same thing...I can't get to the wood; it's really nice if we feel like we can touch it."

In either case, satin or gloss, consumers are agreed that the finish should be smooth and free of any "orange peel" (a specific negative cue).

Checkering.\*\* The men in the groups (as well as the dealers) have no hesitation in telling us what constitutes quality in checkering. All agree that it should be cut rather than pressed and that hand cut is considered the best:

"Good checkering...carved instead of pressed."

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\* Possibly presenting an opportunity for a repair kit?

\*\* While the point is only very rarely noted in the groups, our own examination of the Ruger and Remington models reveals a difference that may contribute indirectly to an overall visual advantage for the Ruger. The finish on the Ruger stock appears to have been applied after the checkering operation, thus darkening the checkering and resulting in some (attractive) contrast vis-a-vis the rest of the stock. On the Remington, the checkering seems to have been done after the finish was applied, this resulting in the checkering remaining the same color as the rest of the stock and thus less visible -- especially from a distance, as from a counter to the gun rack in a store.

"I think this [checkering] is as good as the Remington. It's probably as good as you'd get on any normal production rifle without spending a lot of money for fancy, really good hand checkering." (Ruger)

In addition, the checkering should be neat, even, free of (obvious) mistakes...

"It's sure got nice checkering; less mistakes, irregularities." (Remington)

"They butchered it, the checkering; it looks like they used a hatchet on it." (Ruger)

...sharp and clean, deep...

"The checkering looks crummy; it's not neat; it's got junk in there...irregular." (Winchester)

"It's cleaner and feels good; got a better feel." (Remington)

"If your hands are wet from snow, sweat or anything like that, you want your checkering to be deep and sharp so you can feel the abrasion."

...and consistent side-to-side:

"The checkering's not symmetric side-to-side. The Remington I had before was crooked, too, and it always bothered me." (Ruger)

There seems to be a general preference for patterns that are attractive without being gaudy (one dealer praises French skip line). Finally, some men pickup on the differences in amount of checkering on the models shown. For functional as well as aesthetic reasons, they prefer it to extend all the way around (under) the fore-end, as on the Remington.

Wood species. Walnut is generally the preferred species, and for some the only acceptable kind of wood:

"There's a marriage of walnut and steel that almost no other wood will fulfill."

"That's the best in my opinion."

However, there does seem to be a small group of consumers who are potentially more "open" on this issue, and might be willing to accept, say, curly maple.

As noted earlier, hard wood is a quality cue, and consumers likely would require reassurance that a new wood (non-walnut) is hard -- especially if it is light(er) in color, since that tends to be associated with softer woods.

#### Metal

A rifle also presents a substantial "mass" of metal to the shopper, and this contributes importantly to the initial visual impact -- especially the blueing. Additional cues to metal quality -- subject to detection only after the gun gets into the consumer's hands -- are the use of good steel, forming methods and the finishing and/or detailing of the various parts.

Blueing. This is a major cue, often the next item mentioned by consumers after wood, when describing quality attributes. Typically, the men describe good quality blueing as deep, rich, and lustrous, and many believe this is a function, specifically, of metal polishing. Some representative verbatims:

"If you get a real shiny metal, then when you put the blueing on, that's when you'll get that real deep blue."

"The Ruger has a deeper, gloss finish; it's got good blueing."

"The blueing on this one may not be quite as dark and rich as I've seen on other guns but it's pretty damn good." (Remington)

Good blueing is deep and dark, but not black (like alloys)...

"Not streaked; and dark -- very dark as a matter of fact; and smooth, sleek, shiny."

"You've got to be careful, because they've got aluminum receivers and they've got that black finish."

"Blue rather than black on the metal, because all pot metal looks black."

...and consistent in color, both on a given part and from part to part, without any streaks or mottling:

"I'm certainly not an expert, but what I look for in blueing is an even color -- where the finish is consistent and an even color; a deep blue or blue-gray."

"Sometimes you get a mottled appearance. The one I got for an extra barrel from the factory was not near as smooth, not near as rich."



Good steel. The steel used for barrels and receivers is never questioned by consumers but it's a different story when it comes to parts like floor plate covers, trigger guards, safeties, and sights. The use of "pot metal," aluminum, or (other) alloys signaled by a "black paint" look is definitely not liked -- not only because they are viewed as being cheap(er)...

"You turn it over and the trigger guard is some kind of cast metal; it's obviously a casting with almost a sprayed on paint or lacquer."

"(Machined?) All except the trigger guard and the floor plate which I'll probably replace. They're made out of an aluminum alloy."

"Some sights are so cheap, some of the fins on the sights you see on a cheaper gun are just about like on a B-B gun -- little pot metal fins."

...but also because they can't be reblued when they get scratched:

"If you scratch it, the only way to fix it is paint the damn thing. You can't blue aluminum."

Forming. A cue to poor quality is metal that is obviously stamped; that is, visibly cheap, bent metal -- sometimes mentioned in connection with Winchesters of the late sixties:

"I'll tell you what isn't quality, and that's stamped parts."

"Machined parts in any gun will wear longer and better. Those stamped parts are rough."

"One thing that bothers me on any rifle is anytime they attempt to use stamped metal parts for sights, trigger guards, safety buttons or anything like that. If they'd stick with milled steel rather than stamped...."

Steel castings are seen as being better than stamped, but still not as good as machined. A few men with more expert knowledge speak, not unfavorably, of the investment casting method used in the Ruger.

It should be noted that much of the criticism of stamped (or cast) parts reflects more on the idea than on particular executions. Based on reactions to the models shown, it seems that most consumers can't really identify positively a part as stamped unless it has been done (and finished) very poorly.

Finishing. Good finishing means care was taken and demonstrates craftsmanship. It is indicated by a lack of burrs or rough surfaces...

"...that somebody at least took the time to burr the edges off."

...clean, sharp, square edges where intended; no blurred lines...

"...whether it's got some nice sharp edges and it looks like it was carefully made versus something that was [over] polished on a buffer and everything is rounded."

...nice touches that reflect skillful handwork as well as functional utility, like jeweled bolts (for some) and knurled bolt handles (again, for some)...

"To me, things like jewelring, and hand checkering are things that take time, are labor intensive, and imply craftsmanship -- and that's the thing that I like in guns: a craftsmanship look like a Patek Philippe watch."

"Checkered bolt knobs are a thing that I look for; it's a little touch that's nice and [also] functional."

...and a lack of obvious carelessness, as evidenced by upset or twisted screws.\*

Operation/Parts

Almost as if it were a prescribed practice, consumers (both as observed in these and other groups and as reported by themselves) after "giving the once-over" to the stock (including feel and fit) and perhaps also the metal (usually blueing appearance) proceed to the mechanical operation of the gun -- working the action, trying the safety, opening and closing (and sometimes tapping) the floor plate and, when not discouraged from it, trying the trigger by dry firing.

Action. Consumers (and dealers) tell us that they evaluate an action in a number of ways: how smooth it operates...

"The action is smooth; it sounds smooth." (Winchester)

"The working of it [the action] is very good; it wobbles but it works smooth." (Remington)

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\* One dealer even suggests that the screws (slots) should all be aligned.

...assessing how much wobble or slop there is in various positions (more tolerated in the fully open position), checking for close tolerances (also a cue to durability)...

"The bolt just rattles and rattles -- but when I close it, it's solid."

"I would feel the action. If there's a lot of slop and freedom, that would tell me it's probably going to wear out faster than one whose bolt fits nicely."

...or noting the action design. Frequent reference is made to the Mauser type action with its (perceived) stronger, larger extractor:

"It takes a bite on the cartridge -- a whole quarter-inch instead of a sixteenth. So if you get some dirt in the chamber or a burr on the rim instead of pulling through the rim on the cartridge, it'll yank the thing out of the chamber." (Ruger)

Other action pluses mentioned include a short, fast throw; an enclosed bolt head (a few); and an easily removed bolt:

"It had a very short-throw bolt action; it was just crisp all the way down. The working of the mechanical work was just beautiful -- a short throw, crisp!"

"I have never cared for Ruger's bolt stops; that's definitely a two-handed operation, getting that bolt out of there."

Safety. General agreement exists on a stated desire for a safety that is quiet...

"If it makes any noise at all it's too noisy. Mine's been modified so it's not noisy." (Ruger)

...is solid, not flimsy, and smooth yet positive in action, without being subject to accidental shifting...

"When you move it, it's hard to know whether it has reached safe or whether it's only half way there because there's no click, no positive click to it."

"If you grab it in the wrong place [Remington Model 788], this portion of your hand will shove the safety off."

...and gives clear indication of its position (for some, especially when shouldered), without paint spots that wear off:

"I try to get a safety that's in front of my eye so that I know when it's on and when it's off. I hate those little colored paint dots that wear off."

"On others, the movement is so imperceptible you can't tell which position it's in without looking. On the Remington when you're carrying it, you just touch it with the side of your thumb and tell whether it's on or off. I don't like to keep looking."

Additionally, on probing, there is some positive reaction to a three position safety, primarily for the ability to "clear" a weapon with the safety in the "on" position, rather than because three positions are intrinsically preferable to two. That is, a two-position safety which would permit working the action in the "on" position might be just as acceptable as a three:

"If you wanted to get the shells out, on this gun you'd have to put it in the "fire" position. That's why I like the three position safety."

Location of safety generally is a matter of idiosyncratic personal preference, although a few men cite the convenience of a tang safety, especially for left handers.

Floor Plate. For the most part, the hinged floor plate is liked for the ability to empty the magazine quickly out the bottom of the receiver...

"On the Classic you can dump all shells out the bottom."

...but, for some, a removable clip (attached to the floor plate à la Browning) is preferable, as it would avoid dumping cartridges into the snow or dirt; and for at least one respondent would eliminate the fragile "jack-in-the-box" look of the follower dangling on a spring.

Trigger. All agree that quality in a trigger pull means crisp, clean, and precise, without any slack, creep, or grabbiness. Only a few mentions (mainly dealers) are made about having an externally adjustable trigger; apparently it's not that important on a hunting rifle. In more than one instance, Remington is praised for having the best triggers.

Wood-to-Metal Fit

Usually associated with wood, this attribute is generally seen as another indication of the level of workmanship put into the gun. The cues to good wood-to-metal fit are most often described as close, even, no gaps, touching but not binding, and flush or level with adjoining parts. Consumers say the most important and noticeable areas are along the sides of the barrel,\* the magazine floor plate area on the bottom of the receiver,\*\* the back of the tang area,\*\*\* and (while not always noticed, but disliked when pointed out) the "lie" of the bolt handle in the notch (itself rough and unfinished on the Ruger). Illustrating some of these points are the following:

"Another obvious thing is the inletting. If it's close inletting, someone's paid a little bit of attention to the details in the assembly."

"The wood-to-metal fit is not good. Water will go in there and get down under there and everything will rust and it's a mess to clean out." (Winchester)

"The wood fit is not the best I've ever seen -- at the dump plate, the receiver." (Winchester)

"If it's a cheap, mass produced weapon, then your wood to metal fit is going to be really sloppy."

Also mentioned favorably are Ruger's angled bolting system, seen as being more secure; and negatively (by one) the brass pin showing in the side of the Remington receiver.

Accessories

Accessories seem to play mixed role in signaling quality. For some men, the inclusion on a rifle of certain items such as recoil pads, swivels, integral scope mounts, and spacers are viewed as an added value or an attractive touch which could swing the purchase decision. For others, it seems to make little difference -- even when the accessories are disliked (e.g., any plastic parts).

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\* One dealer says there should be a small space (free-floating?) because today's woods are not kiln dried, more subject to warpage.

\*\* Two dealers criticize the Ruger on this count.

\*\*\* Open slot for the safety mechanism on the Remington could allow water and dirt to enter mechanism.

The net of it seems to be that those accessories which are more functional -- sights, recoil pads, swivels, scope mounts -- should be well executed in good materials - i.e., no alloys or (obvious) pot metal, no (cheap looking) plastics. For those accessories which are more appearance oriented than functional, while it probably isn't necessary to use the finest materials (plastic or hard rubber butt plates or pistol grip caps are at least tolerated in this context), they should be done neatly (see below).

(Obviously) plastic\* parts generally are not liked, particularly for end caps on the stock. Plastic pistol grip caps are somewhat more acceptable:

"I hate this plastic tip up here. That's like a mud flap; that's garbage." (Remington)

"I don't like the fore-end tip and the white-line spacers. It's a waste of time and money. I would rather see it spent on function." (Remington)

Spacers. If present at all, spacers should be even in thickness, and flush with the adjoining material. Rosewood, à la Weatherby is much preferred over plastic.

Butt plate. Steel would be nice, but most consumers readily accept plastic or hard rubber:

"I don't think it's crummy plastic. I think it's good, solid plastic. If that's your only complaint, you're well off." (Winchester)

"If you made it steel, you'd be going to nostalgia."

Recoil Pad. (For some) a recoil pad should be a standard inclusion, with rubber being the preferred material. A couple of consumers complain of (screw) holes in the side or end which could collect dirt.

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\* While steel and wood are typically mentioned as preferred alternatives, perhaps there are other materials or different formulations that might be acceptable?

Sights. At least for a hunting rifle, there is mixed opinion on the importance of sights. Many men who mount scopes anyway don't feel the need, but at least one says he wants the open sights for back up in case his scope should be damaged while on a hunt. In any event, when included, consumers tell us the sights should have an integrated, not "stuck on" appearance, look like they belong...

"The latest one on the Remington 700 is the finest one I've seen. It looks as though some planning went into it. It looks as though it was designed to operate as a sight, wasn't stuck on as an afterthought or that they ran out of money and had to do this on the cuff."

...be easy to adjust precisely and of a solid looking steel, not pot metal.

Studs and swivels. These are considered fairly important; their inclusion probably signals good value, which is not unrelated to quality.

Scope mounts. Several references are made to the good value of the included, integral scope mounts on the Ruger. At least one consumer says that if he were to buy another rifle it would be another Ruger, because then he could easily switch one scope between the two guns, thereby obviating a second scope.

#### Accuracy

Interestingly, in spite of the fact that in most cases the consumer is unable to test fire a gun to check out its accuracy prior to purchase, most assume that any given (new) gun of generally known make will be accurate enough. Nevertheless, there are some physical cues that at least some consumers say serve to provide assurance of accuracy. Specifically mentioned are barrel inletting, precision sights, and a tightly locking bolt.

Barrel inletting. The bedding of the barrel should be even and consistent, whether fully bedded or free floated. To be avoided are excessive gaps and wood touching in some places but not in another:

"That fit is extremely important, because as the barrel heats up it can warp the wood, which puts it on a pressure point and it will change the point of impact."

Precision sights. A few consumers think that precision sights are a confirmation of accuracy. They reason: why else would precision sights be on a gun if it weren't accurate:

"If it's got a back sight that's got windage and elevation, a double flip peep, I know that I've got something that I'm going to be able to sight in. I can look at a set of sights and pretty well tell what the rifle's going to do in the field."

Bolt. At least one consumer explains in detail how a bolt that locks tightly against the base of the cartridge will reduce the chances for bullet wobble in the chamber.



DEALER INTERVIEW FINDINGS

Personal interviews were conducted with five independent gun dealers, four in Westchester County and one in Fairfield County. All of the dealers operated a single retail operation. In one case, the dealer no longer stocked any guns citing economic conditions and discounters; he obtained new guns (no hand guns) "on order." Four of the five dealers carry additional hunting and fishing equipment, with one also carrying other sporting goods; the remaining dealer (also the smallest) depends mainly on gunsmithing/repair business and carries a small inventory of "mechanically worthwhile" brands in new guns plus some used guns. The rifles carried by the dealers were all of the major brands, with emphasis on the better ones. That is, the so-called "cheaper" brands such as Harrington and Richardson, Mossberg, Savage, Stevens, etc., are stocked only occasionally or in a selected model (e.g., the Savage Model 99). However, every dealer we talked to would obtain a desired brand/model on request.

Composition of sales indicates that the major part of gun unit sales for the Westchester dealers is shotguns by a two or three to one margin over rifles. Hand gun sales for those same dealers are generally less than rifle sales. For the Connecticut dealer, hand guns make up the greatest proportion by more than three-to-one over rifles or shotguns, which are about equal.

Quality Attributes and Cues

All of the content areas covered in the groups were also covered in the dealer interviews. When queried as to what constitutes good quality in rifles, the dealers respond much like the consumers, citing the same factors and, for the most part, using the same language. Considerable probing was required to help the dealers be more specific or direct with respect to articulating the cues to quality. In most cases the process was aided appreciably when guns on the rack were used to illustrate various points. In the areas of metal work and internal mechanics, the dealers' technical expertise is greater than consumers'. The cues are pretty much the same, but

the dealers are not as quick as the (less knowledgeable) consumers to make assumptions as to the acceptability and performance of these parts, putting their trust in the manufacturer's reputation.

Another area in which dealers differ from consumers is their greater ability to recognize custom rifles and their (assumed) better quality. It seems that dealers (at least those with gunsmithing experience) differ from most consumers mainly in their understanding and appreciation of the fine points found in custom or limited production (high cost) guns. However, when talking about mass produced guns, their attitudes and assessments of quality are quite similar to those of the buying public.

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