Green Valley, Ariz.
Jan. 4, 1982

Mr. Rogers S. White
1426 Ute Ave. Box 2344
Grand Junction, Colo. 81501

Dear Mr. White;

Please excuse the delay in answering your letter. I wanted to give your questions careful thought.

Your list of manufacturing facilities and experience is certainly impressive and be-speaks of a quality organization. However, if you will pardon the constructive criticism, the experience outlined is lacking in several areas when it comes to producing a product for the market place that is considered in the dangerous category, such as a firearm. Your third sentence pertaining to product liability obligations should and has prompted your hesitation in the pursuit of the design and manufacture of trigger assemblies for they are definitely in the dangerous category! This item is especially critical when the design must function precisely in a product that is under the control or another company.

Canjar has been relatively successful with his product, but if the truth was known there is no question he has had problems. Imagine his frustrations in trying to keep abreast of design and dimensional changes after the fact in the various rifles he is trying to fit. It took many years of trial and error by his company to determine the mean dimensions of another product. During those early years product liability was not as serious as it is now, but it gave him time at least to determine the dimensional trends. I must admit he did very well but I certainly wouldn't have the fortitude to attempt such an effort in light of today's legal situation.

Liability suits, involving injury and death, are not in the magnitude of a mere hundred thousand dollars but in the millions. Often the one who pays is not at fault as in the case against Remington concerned with the alleged safety mechanism on the M700 rifle.

In the design and manufacture of a trigger mechanism there are so many dimensional variables and tolerances that testing of all the combinations requires hundreds and thousands of parts, several hundred thousand rounds of test firing*, and thousands of precise measurements. This is needed to detect dimensional variations in the manufacture and wear and damage during testing.

Within the last ten years computer analysis, coupled with automated drafting techniques allowing enlarged examination of dimensional variations, has been added to the designer's kit of tools to allow further examination in depth into the areas of critical control of parts in the dangerous category.

* In semiautomatic mechanisms this could approach one half million rounds.

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Therefore this leaves the small company, no matter how dedicated with limited capital, facilities, experience, and equipment, to the mercy of chance--a very dangerous place to be and does not provide a secure base for product development such as you are suggesting. Such a program would be fraught with costly problems and liability suits.

In the area of trigger guards, sights and accessories, the liability problems are of no concern.

In the design and manufacture of an entire rifle especially by a small company the problems previously described involving the trigger mechanism are compounded by the additional necessity of dimensional control over the locking mechanism, strength of the action, and gas flow, another dangerous category. The only advantage one would have is the opportunity of complete control over the entire product.

To justify the design, testing, permanent or temporary tooling, and production requires a considerable amount of working capital and as problems arise, and they will, costs can soar. Also consider the cost of recall as this can happen in the best or circumstances.

Then there is the problem of advertising, sales promotion, and the establishing of marketing outlets. If there is a weakness in this area failure in the market is assured regardless of the sterling qualities of the product.

Venture-analysis into the market of a new concept or product is an excellent safeguard to be established before progressing beyond the model stage of development.

To support a rifle design that you mentioned I would estimate that 25,000 units a year would be necessary to break even on your costs. I doubt the market would support that volume.

In producing items in the low-volume category, production methods using investment castings and numerical control are ideal, with the individual parts at high cost but the tooling investment held at the minimum level.

In reviewing the history of success of new arms development over the past 20 years there have been numerous starts by small companies with almost 100% failures. These results should be seriously reviewed before undertaking a new venture in this area.

I suggest to you that these ventures are very risky.

Very truly yours,

Wayne E. Leek

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