

LET'S TALK
FRAME SIZE

length
hip height
extra dollars
market end point
optimums

More dramatically than any single measurable trait, frame size illustrates change within the Angus breed. Concentration on size over the past several decades swept the purebred pendulum to the "belt buckle" extreme, then reversed the swing and now pushes it towards seemingly opposite limits.

No one will argue that a change in course was needed. In general, increased frame indicates increased growth. And in general, increased growth pays in the cattle business.

Breeders will argue, though, about the role and importance of frame size today. Knowing this, we asked a crosssection of Angus Journal readers to consider the issues and sparked their comments by posing a few questions. The responses, included here in our symposium section, are thought-provoking. Opinions and approaches are as diverse as the cattlemen who speak. One thing is certain, however: There are more questions than answers.

Shows and sales have labeled big as better. But is biggest best? What are the limits? Will Mother Nature let us know when to stop in our quest for added inches? Has frame size been oversold? Overbought? Should increased height be a goal in itself-or simply a measured indicator? What is its economic importance? Functional importance?

These questions only graze the concerns expressed by these men, each deeply involved with the cattle industry. Many wonder about our present course. Are we, they ask, keeping our priorities in line? Are we remembering and preserving the basic traits which have allowed Angus to make a vital, lasting contribution to the cattle industry?

No doubt the issues raised are as emotional as they are economical. The comments presented will stir further questions. We don't promise answers, but we welcome your response.

Read On...



Ed Oliver
Cripple Pine Farm
West Point, Ga.

“If our goals are to impress each other and we choose tools other than those related to production for measuring goodness, then we can expect recourse.”

What’s on my mind concerning frame size in Angus cattle? It is how efficiency fits into frame size that I’m concerned about. I hope the industry can get as excited about pounds of beef produced per cow exposed as it has about how tall or short a cow or bull should be.

If a heifer can calve unassisted at 24 months, mother her calf, milk, breed for the next year and wean a heavy calf, then I’ll not show my ignorance by putting a stick on her to decide if she is too tall or short! People tell me the industry is placing too much emphasis on hip height! I don’t know—I have never felt it necessary to use hip height as a tool for measuring productivity.

If we can maintain extreme frame in Southeastern Angus cattle, on roughage, efficiently, then fine.

How does extreme frame fit into my program? We want cows with well attached udders, cows that can stand the stress of a dozen years. We want a cow to calve at 24 months of age and every year thereafter. We expect her to function on roughage and wean a high percentage of her own weight. We like cows with large pelvic areas and the innate desire to calve or die trying. We expect her production in our environment to determine if she is tall enough.

It is true that frame sells. The test stations are publishing hip heights, and show judges are sizing cattle. Often frame size has been used as a sales gimmick rather than a selection criteria for practical economic value.

I’m convinced that our goal should be the production of Angus seed stock that can improve the economic efficiency of commercial herds. If our goals are to impress each other and we choose tools other than those related to production for measuring goodness, then we can expect recourse. Extreme frame is not a problem; straying away from practical, economic traits and the selection pressure for them can create many problems.

The Angus breed is blessed naturally with many of the qualities most of our competition would love to develop. I would hope the future finds us concentrating on our natural strengths and efficiency.

Here at home we will continue to make

our selections based on fertility, milk and pounds-believing that frame will find its proper place in the process, that form follows function and that style without substance is useless.



William R. Backus
University of
Tennessee
Knoxville

“Many of the new, tall breeds have risen to fame on the back of an Angus cow.”

We buy and sell purebred cattle by the inch and commercial cattle by the pound. Since the primary purpose of the former is to beget the latter, this seems to be somewhat illogical. For those who understand the production of beef from the conception of the calf to the consumption of the product, this infatuation with frame size seems somewhat ill advised.

It is interesting to ponder why we are presently striving to make Angus cattle taller and taller. Perhaps it is a reaction to the craze of Angus breeders of some 25 to 30 years ago to breed cattle which were extremely early maturing and little more than “belt buckle” tall at maturity. I remember well a nationally recognized breeder of another breed telling me, as a young 4-H steer exhibitor in the late 1940s that the ideal steer resembled a bale of hay with short legs, a head and a tail. Today we have grabbed hold of the pendulum and are swinging as rapidly in the opposite direction as directed biology will carry us.

The breeders of 25 to 30 years ago thought they were right. Breeders of today think they are right. Could it be that 25 to 30 years from now we will look back and see that both extremes were equally wrong in opposite directions?

If you ask a purebred breeder why he is striving so diligently to get his cattle taller, he will quickly tell you that the tall ones are the ones he can sell most easily. In an “off the record” conversation out behind the barn, most breeders who are astute cattlemen will confess to you that the tallest ones are not necessarily the ones that do the best job working in their herds.

A commonly held concept among some purebred breeders, who are not familiar with finishing and processing slaughter cattle, is that the tallest ones are always the fastest growing and most efficient and have the most desirable carcasses. Tallness in itself does not indicate any of these factors. There is considerable latitude in frame size when

cattle can be found that are fast, efficient gainers and whose carcasses fulfill the exacting requirements of the “boxed” beef industry. Height is an illusion of performance.

All breeds of beef cattle do not need to be alike. The Angus breed is so popular because it is probably the most “trouble free” breed roaming America’s pastures today. Many of the new, tall breeds have risen to fame on the back of an Angus cow. If Angus are to continue to enjoy such widespread acceptance, they must “do best” what Angus cattle “do best.” They must remain as “trouble free” as possible, continue to be good mothers, be excellent feedlot cattle, produce excellent quality beef, etc.

It is sad when sires whose offspring excel in many of these traits are not widely used in the breed because they did not measure 53 inches at the hip at 365 days of age. The ultimate goal of the industry should be to produce a carcass in the right weight range, with the proper amount of fat cover when that weight is attained and with the quality of lean that will let beef remain the Cadillac of foods. Maybe we should let the cattle tell us how tall they should be to get this job done.



Tom Field
Quartz Creek
Cattle Co.
Parlin, Colo.

“The fine art of one-upmanship leads us away from efficiency, least-cost productivity and the opportunity for maintaining a profitable enterprise over the long haul.”

As cattlemen clamor to raise the tallest bull on the block, we are a lot like the white rabbit of Alice in Wonderland. “I’m late! I’m late!” is the philosophy by which we make our genetic selections. We’re unsure of where we’re headed, but we are in one heck of a hurry to get there.

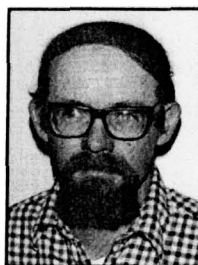
Frame scores were never intended to be utilized as standards of excellence or levels of quality. The single best use of frame scores is to sort feeder cattle into management groups so they can be fed to their most logical endpoint. When combined with observations of composition, frame provides a relatively accurate method of predicting physiological maturity.

The fact remains that cattle from a variety of frame scores can meet industry goals such as calving unassisted as 2-year-olds and every 365 days thereafter, and weaning 500 + lb. calves that will gain 3 + lb.

a day in the lot and hang 600- to 800-lb. Choice, yield grade two carcasses.

Therefore, available feed and management resources, along with reproductive rate, should determine average frame size for each individual cow herd. Let reproduction set the parameters for the size we make our cattle. If the tallest cows in the herd are irregular breeders or tend to have extended calving intervals, then perhaps the environment is making a statement about how much size can be tolerated while trying to maintain a productive herd. Simply put, we need to select cattle for the long term, economically important traits and let frame size take care of itself.

If we insist on chasing single trait selection, we are likely to learn the same hard economic lessons as Chrysler Corporation and Ford Motor Company. The fine art of one-upmanship leads us away from efficiency, least cost productivity and the opportunity for maintaining a profitable enterprise over the long haul.



Lynn Pope
Merrill, Ore.

“... frame size is important from the standpoint of whether a given set of cattle will reach a desired degree of finish at the current optimum weight for the target market.”

There is a gap between cattlemen who produce beef for a living and those who do it for fun and vanity. Unfortunately, the lat-

ter frequently influence the former to their detriment. If current economic trends persist, many more cattlemen will be forced out of this business. Those who survive are applying the most sophisticated tools available to produce beef as efficiently as possible. They are not influenced by fads.

Past shifts in desired frame size have been dictated by some logical changes in by-product use and the kind of beef in greatest demand. I expect changes will continue in the future. Factors that will influence frame size are: The limits of reproductive efficiency; ability to do well on limited feed resources; size of the finished product; feed grain prices and availability; consumer preference for the kind of product we can produce; and new product development.

Therefore, frame size is important from the standpoint of whether a given set of cattle will reach a desired degree of finish at the current optimum weight for the target market. If they are too small or too large,

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the producer will need to make some adjustments to improve his return from the market. Market requirements along with given genetic, environmental and management constraints will determine frame size.

There are other traits of greater impact on a cattleman's net return than frame size. Large frame size can have an adverse impact on reproductive efficiency, which is the most important economic trait for cow-calf producers. Frame size does not tell us what the rate or efficiency of growth is, nor does it tell us about quality or quantity of product per unit of carcass weight.

Pope Ranches' performance program started 15 years ago with principle emphasis on post-weaning growth because that was our most deficient trait. We are now in a more complex, second phase breeding program. Our objective is to produce bulls bred for a specific purpose—either growth, calving ease or maternal traits. This gives our customers a better opportunity to select bulls that meet their particular needs. Frame size is not a major criteria in the selection of sires, as long as their steers will produce YG 2 Choice carcasses at 1,150 to 1,250 lb.



Mike McDowell
Locust Level Farm
Vernon Hill, Va.

“At one time a cattleman's thin cows were probably the ones giving the most milk. . . thin cows are now the ones whose toplines block the horizons and whose bellies never brush the broom sedge.”

Certainly in the last decade no single trait in beef cattle selection has received as much universal attention as frame size. This would not be true unless selection for increased frame size held important merits.

As a general rule, one could safely say the average cow in Virginia historically has been too small for optimum production. Selection for frame has helped increase the size of our cattle. And with an understanding of frame size, we can attempt to predict the proper slaughter weight of our commercial cattle. Yet probably the one factor providing incentive for concentrated selection for increased frame is that, even as a single trait, it SELLS.

To this point I have been positive about what the industry has done through selection for frame, but I feel we have made mis-

takes and missed real opportunities to improve the industry due to a somewhat single trait selection program.

I am a strong supporter of performance programs and it concerns me to note relatively few breeders can provide progeny and individual performance data. Yet most breeders can quote cannon length and monthly, yearling, 2-year-old and even mature heights. Most central bull test stations have minimum hip height requirements for entry and sale. Test stations were formed to measure performance in pounds, yet rate of growth as measured in inches presently seems more important to most people.

At one time a cattleman's thin cows were probably the ones giving the most milk. I think we are reaching the point where thin cows are now the ones whose toplines block the horizons and whose bellies never brush the broom sedge. Efficiency as related to size is a point with which we are yet to deal.

Selection for frame size also has brought the industry problems such as carcasses that will not grade Choice at acceptable weights. Ultimately, the commercial cattleman will tell registered breeders when we have gone too far, just as he told us when his cattle were too small. This year in Virginia, medium-framed feeder cattle consistently out-sold large-framed feeder cattle. With less emphasis on frame and continued selection for growth rate in terms of pounds, I feel we would be better able to answer the commercial man's needs.

Selection for increased frame has been good for the industry. However, we as registered breeders have overrated and overbid the value of frame alone. Selection for more frame does not necessarily mean more pounds. Selection for maternal traits and growth in terms of pounds does mean more pounds. We should be height conscious, but emphasize pounds in our selection. After all, I feel safe in predicting that in the next ten years the vast majority of cattle will still be sold by the pound, not the inch.

Stan Fansher
Brookover Feed Yards Inc.
Garden City, Kan.

“ . . . we need to start with a feeder steer weighing 680 lb. with the genetics to gain at a rate of 3.3 lb. per day for 135 days. . . ”

Our beef packing plants consistently like to buy finished steers weighing an average 1,100 to 1,150 lb. A 1,125-lb. steer yielding 63 percent will hang up a 709-lb. carcass which will fit the packers' box program.

For economical production to get this

carcass weight, we need to start with a feeder steer weighing 680 lb. with the genetics to gain at a rate of 3.3 lb. per day for 135 days, grade Choice and have mostly yield grades of 1, 2 or 3.

Larry Coon
Bethel, Mo.

“Increasing altitude by straightening the joints of an animal gives us a long, tall appearance, but this method can lead to disaster.”

The economic situation in the cattle business today should tell us that efficiency is more important to a cattleman than whether or not he can see over a cow's back.

After several years of managing the Mark Twain Bull Test Station, we observed that disposition and comfort have a great influence on feed efficiency in the feedlot, and that an animal's structure affects his comfort and disposition.

We increase height in cattle one of two ways: (1) by increasing the length of the long bones, or (2) by stacking the leg bones straighter in the shoulder and stifle areas. Increasing the long bone length increases age at maturity. This can be either good or bad. Animals that mature too early in the feedlot lay on excess fat if carried to desirable market weights; while heifers that mature too late have a hard time calving at 2 years of age, milking adequately for a good weaning weight, and settling back to calve again—all while still growing. This has led most universities to advocate graining young cows to get them settled back. Such a practice takes time, lot space, and high-priced feed—none of which are abundant in cattle country. Still, if that young cow reverts to fall calving in range country, she is a “loss” cause, almost as much as if she had calved at 3 years of age.

Increasing altitude by straightening the joints of an animal gives us a tall appearance, but this method can lead to disaster. In our test station, the straight structure had little effect on young calves, but with increased weight came increased discomfort and decreased efficiency. By 84 days on feed, we could detect great decreases in comfort and efficiency associated with straight shouldered and straight stifled cattle. One pen of bulls almost quit gaining (but not consuming) and walked much as if foundered.

I guess my point is that if we want our Angus cattle to look like Chianinas, we must be willing to tolerate the lack of reproductive and feedlot efficiency that goes along with that type of cattle. Somewhere there has to be a middle-of-the-road. I personally prefer the highly maternal, highly efficient Angus cow that has the capacity to turn roughages into a live calf every year. I'll feed

my corn and bean meal to her slaughter-oriented offspring!

P.S. Please refer to Dr. Robert Long's exceptional article in the November 1983 Angus Journal, page 20.



Gregory May
Maymont Angus
Timberville, Va.

“Emotions excited by any craze interfere with discussions about the justifications for it.”

The current discussion about frame size raises several issues. The first is a concern about the structure of the purebred industry. The second is the issue about the optimum size for Angus cattle. The third is the question whether we are wasting our time worrying about the other two.

The structural problem in the purebred industry is apparent to ail who have seen tremendous effort devoted to the pursuit of one fancy after another. As long as the industry lives on capital infusions from new breeders more interested in glamour and tax benefits than commercial profits, selection preferences will continue to swing from one extreme to another. Each deviation justifies corrective selection, and cattle that most excel in the corrective characteristic are the most easily promoted. The most easily promoted cattle draw the most attention, and the industry heads off on another craze. Seen in perspective, the current pursuit of extremely large skeletal size is nothing more than the peak of the latest cycle.

Emotions excited by any craze interfere with discussions about the justifications for it. We do have, however, a significant amount of information from which to form reasonable conclusions about the optimum size for animals within our breed. We know more about the correlations among frame size, environment and the productive traits than we did when some breeders selected for small cattle years ago. Having seen the breed severely tested by selection in one counterproductive direction, good Angus breeders will not ignore the important traits in an equally counterproductive scramble to produce cattle that excel in one highly heritable characteristic. Selection for reproductive efficiency, milk production, and rapid growth to slaughter naturally tends to produce cattle with the optimum frame size for their environment.

If selection for extremely large skeletal size is just another fancy and good cattlemen can be expected to find optimum

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frame sizes by selecting for the productive traits, we could conclude that worrying about the structure of the industry and the optimum frame size is a waste of time. That conclusion probably would be wrong. The problems with our industry might be solved if those who take this business seriously would add their voices to the political outcry against abusive tax shelters and lend their aid to new breeders seeking a direction. Research and shared experience should provide further useful indications about the value of frame size as a selection tool. Finally, worrying about frame size should help to remind us that we cannot achieve efficient beef production simply by selecting for measurably larger skeletons.

Gary Green

Commercial Cattleman
Volborg, Mont.

“Angus cattle have always been noted for gainability and fast finishing. Let’s not lose it.”

I speak as a commercial cowman. I background calves, grow yearling cattle, finish cattle to slaughter and raise bulls.

Let’s talk frame size. Everyone thinks the taller and bigger the better. But we have oversold it. If we keep going like we are today, we will be in trouble. Down the road, the commercial man’s cattle will not be economical to run on the range. A cow will consume too much grass and feed to maintain her frame.

We need a cow in the average frame score of 6. In average condition, she needs to weigh from 1,100 to 1,200 lb., and wean a calf weighing 500 to 600 lb. at six months of age without creep feed. Bulls need to weigh 2,000 to 2,400 lb. at maturity, with frame score of 7. We need good bone and enough leg under cattle for them to stand up well. Long, smooth cattle are best, with uniformity, good long muscle structure, volume and capacity.

Height is our worst enemy today. The taller cattle get, the more performance we lose. We must have cattle with performance to stay in business today. We are told we want cattle trim and showy, but we lose volume and capacity.

We need volume and capacity in our cattle. The feeder needs it. When he puts a steer in a lot, he wants gainability. If a steer has no capacity, he has no gainability. He has to be able to put the feed away to gain. The sooner a steer is fat and gone, the more money a feeder makes.

If we keep going like some are headed today, in ten years a cow will not have

enough capacity to eat enough grass to maintain her own weight, let alone raise a 500- to 600-lb. calf on her own. The cattle some want today wouldn’t make it if they did not see a grain bucket or a lush irrigated pasture every day.

The Angus industry has done a wonderful job in getting the size and frame cattle we need today. A warning, though: Slow down and don’t over do it. Angus cattle have always been noted for gainability and fast finishing. Let’s not lose it. It is one of the most valuable tools we have. When it’s all said and done, we are all raising cattle for meat.

If more bull producers would sharpen their knives and feed some cattle for slaughter, they would know more about the kind of cattle they raise today. Today’s show winners are not the kind a commercial man can use. So why does a purebred breeder need them? After all, somewhere down the road, the commercial man, feeder, packer and consumer are the ones that keep purebred breeders alive.



Robert deBaca
Mid-Iowa Cattle Co.
Huxley

“Ultimately, functionality must prevail. Mother Nature is tough on extremes.”

I’m for taller cattle-taller than they were. Taller than most cattle are today. Short-bodied and short-statured cattle are wrong. We don’t need them in the feedlot and we don’t need them as bulls or cows. Has frame been over sold? No, it’s been over bought.

But height has bothered me-as a goal. Height would have happened but slower, even without it as a goal. Height is a part of fast growth-but not as much so as length. With the correlation of height and growth being as high as it is, you would get height half as fast by selecting growth rate as by selecting directly for height. Trouble is that in selecting for height, you get growth rate only half as fast as selecting for growth rate directly. And in selecting height as a single trait, one selects for slower maturity, later puberty and often incorrect structure, lack of volume and lack of ruggedness.

This past winter should have been a lesson that the basic strengths of the Angus breed must not be sacrificed in favor of height. The Angus breed must maintain its ruggedness, its maternal strength, its ability to marble and have enough fat covering to withstand winter stress.

In the ’50s smallness was beauty. Today height is the fad. Ultimately, functionality must prevail. Mother Nature is tough on extremes.



Jim Gresham
Circle G Angus
Hampton, Cia.

“... as long as advancement can be made in frame size without giving up the economic traits, we are performing our function as breeders.”

Frame size has been a major topic of conversation since we started in the cattle business in 1968. One of the first things we learned was, generally speaking at purebred sales, inches sold for considerably more than pounds. Since that time, I have asked many people how tall and how long the perfect Angus cow or bull should be. During these 16 years, no one has answered that question with actual dimensions. The standard response has been “as long and tall as possible while still maintaining the economic traits Angus cattle are known for.”

Even though we have seen the height of 2-year-old bulls at national shows increase by approximately six inches during the past 16 years, most economic genetic traits have remained equal or improved. Therefore, I feel as long as advancement can be made in frame size without giving up the economic traits, we are performing our function as breeders.

During the past two decades, the commercial industry has strived to add frame to commercial cows. Commercial men recognize that it is impossible to make gains in pounds without the skeleton on which to hang the same. Since the action we take as breeders is dictated by the commercial market, I feel the trend towards larger, late maturing cattle will continue. This is especially true in light of the fact that two-thirds of all purebred and commercial cattle are still considered to be small framed.

The commercial man can achieve additional frame size quicker than a purebred breeder due to the tool of crossbreeding. However, he must have a bull that is large enough to accomplish the same. As demonstrated by measurements taken at test stations across the country, there are still relatively few Angus bulls available to the commercial cattleman that can satisfy his needs. Therefore, other naturally large-framed breeds have taken a considerable share of the market.

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I feel we should continue to breed for frame size until performance data tells us we have reached a peak with respect to fertility, carcass grade, and other factors that make for a beef producing animal.



Dr. L.I. "Ike"
Smart
Louisiana State
University
Baton Rouge

"If we do not use our heads, we will wind up with large cows bred to medium-frame bulls which is very inefficient."

I have never believed that one type of cattle fits all phases of the beef industry or that profit was made from only one trait. Economically, reproduction is the number one trait and is certainly not improved by larger frame size. In some cases, it may be the reverse and people are more likely to cull a small open female and keep a large open one. Frame size is correlated with growth traits, but not 100 percent with weight gain. The muscle mass, length of body and total volume of the animal all add weight. Weight is what we sell, not height.

If we consider our main demand is for boxed beef, a 1,100- to 1,200-lb. steer fits best. This is a frame size 4 or 5 or USDA medium frame. There is a demand for bulls with frame 6 and larger to move the frame 3 cattle into the correct frame size. The demand for this frame size should decrease as more cattle move into the frame 4 to 5 range. As this occurs, the demand for frame 4 and 5 bulls which are strong in other traits (such as maternal traits, calving ease, reproduction, etc.), should increase. The small frame cattle (frame size 1, 2 and the low end of 3), may well wind up in crossbreeding programs. The crossbred cows will probably be large enough to work best with a medium-frame bull.

We have had the best condition for efficiency which is breeding cows to larger bulls. The calves are growthy and you have a smaller cow to maintain. If we do not use our heads, we will wind up with large cows bred to medium-frame bulls which is very inefficient.

The cow-calf man will have the greatest influence on what size cattle we raise. He must have a cow large enough to produce the size calf to top the market, mature early enough to calve young, calve without trouble, give enough milk to wean a heavy calf, put on enough finish between calves

to help get her bred back on time, and have enough capacity for her frame size to do this on forage. After studying over 10,000 head of cattle with records for 15 years or more, I do not think that either the very small or the extremely tall will be the answer, but a variation in the middle will best cover all demands.

The calves produced at weaning then can be managed by the producer and feedlot man in a way to produce the end product demanded by the consumer.



Wayne Stevenson
Basin Angus Ranch
Moccasin, Mont.

"While frame is important, we've got to realize it's only one part of a total performance program. We certainly must not forget fertility, calving ease, milking and mothering ability ..."

Frame size is one of the most talked-about subjects in the Angus industry and I think we have reached the point where we need to stop and reevaluate where we are headed.

The invasion of "Exotics" did the Angus industry a great favor by forcing it to realize much of the breed needed more size. And we have certainly made a fantastic turnaround in a few short years. But let us not blindly follow them down the path to our destruction by turning our "maternal" Angus breed into a "terminal" breed.

In cow country I feel the ideal size for the Angus cow is 1,100 to 1,300 lb. (this depending on the type of range and feed conditions) and in the 52- to 53-inch height range. In a range operation (as most cattle are raised in Montana), cows larger than this have some definite disadvantages: They are harder to winter, requiring more feed to maintain; they do not conceive as easily when they are heifers; and they are harder to rebreed as mature cows without a lot of extra supplement. Every commercial rancher needs to find what size cow best fits his operation; the seed stock producer will always have to have some extremes to be able to accentuate the size of cattle that are not big enough.

While frame is important, we've got to realize it's only one part of a total performance program. We certainly must not forget fertility, calving ease, milking and mothering ability of the Angus cow, disposition, economical gain, and growth to a useful size.

The AHIR program is really on the right track by identifying those lines of cattle that have excellent maternal traits, and conversely those that do not. We need to do more to educate cattle raisers so that they can better understand the vast amount of information available through the AHIR program.

We must realize the Angus breed can't be all things to all segments of the cattle industry, and we must concentrate on emphasizing and perpetuating those things the Angus breed does best.

Dr. Troy Patterson
Auburn University
Auburn, Ala.

"... in the rush to get Angus cattle larger, many breeders began to pay less and less attention to the traits that have made the Angus breed a vital contributor to the commercial industry."

In the 1940s and early 1950s the beef cattle industry started the use of "frame" to determine the relative desirability of individual animals within each breed. Only it wasn't called frame at this time for the term had not been coined; it was referred to as "low set and compact." However, translated into today's terms they were frame 1's and 2's.

Beef breeding researchers in the meantime were developing the procedure to base selection on total performance rather than fads. Fortunately, there were some breed improvers of Angus cattle that believed this method of selection was the only tested and sure way to make simultaneous improvement in traits of economic importance. These "master" breeders were ahead of their time but had to remain in the background until the influx of "exotics," demanded by the commercial cattlemen, forced breeders with small cattle to look to these "master" breeders for seed stock.

Yes, Angus cattle needed to be larger! Unfortunately, in the rush to get them larger, many breeders began to pay less and less attention to the traits that have made the Angus breed a vital contributor to the commercial cattle industry. These traits are reproduction (including small birth weights), milk production, marbling, rapid and economical early growth, and smaller-than-average mature size in the crossbred cow thus produced.

Recently, after careful comparative considerations based on the 1983 AHIR sire summary, a young Angus bull was selected to be used by A.I. in the Auburn University research herd. This bull, in my opinion, is one of the top five bulls of the breed and will contribute positively to all the traits listed above. Yet the most frequently asked question by Angus breeders when discuss-

ing the use of this bull is "how tall is he?" I don't know how tall he is! He must be taller than most Angus bulls, but I would be surprised if he is very close to the tallest bull of the breed. He is tall enough to sire the kind of bulls needed by the commercial cattle industry.

A breeder should be aware that selecting for growth will automatically increase height and mature size because they are genetically correlated traits. Therefore height should not be the sole trait of importance in a breeding program.

In closing, I have read where individuals, perhaps more knowledgeable than me, have said "don't worry about getting cattle too large, the brood cow will tell you when this occurs by producing comparatively less at a greater cost." I must remind you that by then it will be too late, just as it was when we got them too small. The breed will once again turn around and come back to the "master" breeder for their seed stock.

Dr. H. Dee
Woody
Southern Illinois
University
Carbondale



"Each breed needs to capitalize on their strong points to maintain a foothold in the commercial market."

There has never been more emphasis put on a subject since I had to learn the three 'R's' in grade school. Extreme emphasis was placed on frame during the 1950s and early '60s—small frame that is! Then the complaining of feeders and packers of "too many shorts," the influence from breeders in the western states and the introduction of large frame made exotic breeds, the emphasis on more height, and frame and growth in the Angus breed inevitable.

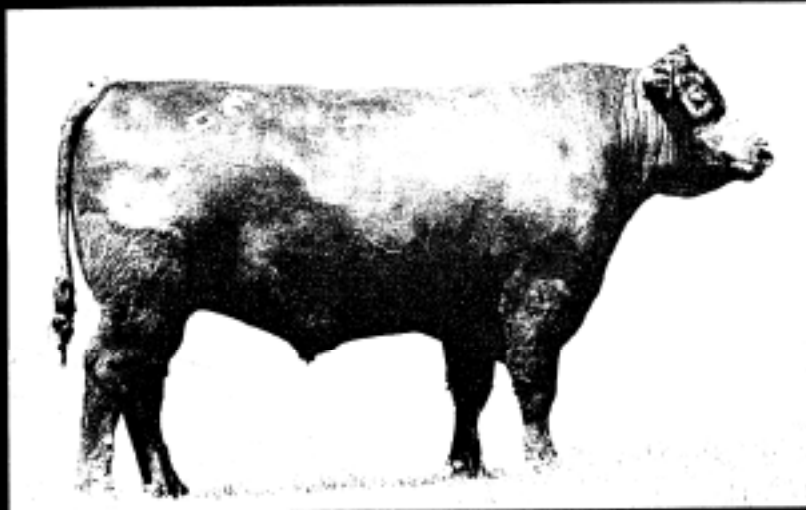
When so much emphasis is placed on a certain trait, we must periodically do some soul searching and address certain questions. These include:

1. What are the strong points of the Angus breed for the commercial market?
2. What size cow is most efficient and profitable to raise in our production system?
3. What kind of carcass or product is the most desirable to the meat packing industry and consumer?

I believe there is no ideal size or type of beef animal that fits all segments of the beef cattle industry. We actually are trying to make all breeds look alike! Each breed needs to capitalize on their strong points to maintain a foothold in the commercial market. Personally, I believe in large-framed,

Stone Gate Farms

Milking Ability



Stone Gate Quorum

We've told you about Stone Gate Quorum before. We've talked about his pedigree—Band 105 on the top side, a Stone Gate-bred cow by Prentice of Wye on the bottom. And we've given you his breeding value ratios—101 weaning, 104 maternal, 107 yearling.

We've told you, too, about his sons and their success at test stations, like Stone Gate Evander who topped the recent Kentucky Test Sale at \$7,400 to Green Valley Farm at Flemingsburg.

Now, we're finally able to tell you about Quorum's daughters. The oldest are in production and they are proving to be superior mothers. We're pleased. We believed the bull's daughters would be good producers, good milkers and now we have proof.

We'd like for you to stop by and see them and our other performance-backed females. Call us. Anytime.



Stone Gate Farms
R.R. 3, FLEMINGSBURG, KY. 41041

Jere Cannon, (606) 849-4360
Clyde Cannon, 849-4588
Chris Cannon, 849-4278
Charles Cannon, 849-4278

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grow-thy cattle and feel that we need to continue this emphasis in the Angus breed. However, let's not do it blindly as we did when we emphasized small-framed cattle in the 1950s.

In today's competitive market, producing superior breeding cattle is a difficult task. As the late Byron Good once said "Master breeders are the Michelangelos of the livestock world."

A. Gray Coyner
Fleetwood Farm
Delaplane, Va.

"We must continue to search and research for a formula that uses a combination of all trait measurements for selection."

Our industry's continued attempts to establish one trait as the answer to all our problems will only create more problems. We must continue to search and research for a formula that uses a combination of all trait measurements for selection.

in our particular herd, frame size has and will continue to play an important role in

replacement heifer selection. We are approaching the upper limits for frame in our herd, for our Angus and Angus-cross slaughter steers have reached a carcass weight of almost 800 lb. (yield grade 2 to 3).

I think we need to follow the example of the dairy industry and be able to accurately measure all traits, evaluate our cow herds, and choose bulls that will improve specific areas of our herd.



Larry Leonhardt
Shoshone Angus
Cowley, Wyo.

"Regardless of any size level preferred, it seems dependability with consistency must be maintained before any stock can qualify for the distinction of being called a purebred."

During trends, uniqueness and rarity are inclusive factors which determine the monetary value of breeding stock between regis-

tered breeders. The current demand for a significant increase in the frame size of Angus cattle is commanding primary attention for the financial reward offered for bigger Angus. Regardless of the role frame size plays in overall production efficiency, it is not so important how big we make them, rather the methods we employ while making them bigger.

When selection pressure mandates that functional purpose follow some idealistic form, much to our chagrin, in reality we may find that maintaining an intricate balance of preferred traits with that form may result in an effort towards futility. Ultimately, form is a consequence of function. All our breeds of different purpose portray this well. It is encouraging to note the comparisons between sale averages of exotic breeds and British breeds. They reveal that commercial cowmen are beginning to recognize that bigger is not necessarily more efficient. And supply and demand are coming closer together.

Determining proper frame size seems dependent upon the defined objective and whether the role of the stock will be as parents in systematic commercial crossing procedures. If the objective is to raise taller cattle, obviously selection and mating of tall to tall will increase the frequency of the trait. Indifference to the latent content of the genotype may cause considerable assortment during succeeding generations-an inefficient maneuver.

If we try to fill all the differing needs of

the meat consumer with Angus cattle, it appears that we then need different kinds (each for an appropriate purpose) to ultimately affect production efficiency. In 1950, poultry meat was 80 percent of the price of beef, while today it is only 30 percent. Efficient genetic improvement systems must be devised to compliment production.

According to published statistics, 16 percent of the meat eaters are primarily concerned with fast food meals easily prepared; 25 percent are price conscious and may substitute other products for beef; 17 percent are the health group; 20 percent are creative meat cooking specialists; and 22 percent are meat lovers because they enjoy the taste ... which market do each of us want to breed our Angus for? What inherent qualities are most deserving and readily preserved?

Once determined, if dependability and predictability are a definitive part of a breeding objective, that goal must be pursued with persistent continuity within the realm of possibilities. Then frame size will adjust itself as a consequence of that objective. Otherwise, correlations among traits may cause us to propagate "Heinz 57" genotypes and we then would be in direct competition with all the synthetic strains being developed today from breed composites. This results in a lack of genetic order and predictability.

Regardless of any size level preferred, it seems dependability with consistency must be maintained before any stock can qualify

for the distinction of being called a purebred. Whatever function a purebred's role is to be, it should be identified and merchandised accordingly to assure proper usage, based on evaluated facts, not anticipation.

Winning contests of any nature with individual stock are temporary, sporadic achievements if that representative symbol cannot be effectively and more assuredly transferred to the commercial industry. Purebreds transmitting predictability are the stabilizers for the entire industry.



Milo Wolrab
Wayside Farms
Mount Vernon, Iowa

"To put breeding pressure on any one phase with little regard to other important factors leads to extremism and the curse of Mother Nature."

The true art of breeding livestock is the art of "perfectionism." To capture and main-

tain it 100 percent from every angle is an impossibility. In the same breath, to be able to do so would destroy the thrills and challenges that contribute so much to every stockman's dreams that are so necessary to the dedication and motivation of this God-given art.

Perfectionism is to capture the most of all things important to the survival and efficiency of any breed of livestock. To put breeding pressure on any one phase with little regard to other important factors leads to extremism and the curse of Mother Nature.

The "baby beef" era was a prime example of extremism when small, inefficient cattle were the name of the game. The shorter the leg, the better. The terms "blocky and low down" were just as important in those unrealistic years as hip height is today. Needless to say, fertility and conception became significant problems. The ever-swinging pendulum swung too far to left field, with all three British breeds "stuck in the mud."

The pressure of the exotic breeds with extra size was incentive enough to redeem the things that spelled efficiency and common sense for the British breeds in their exodus from the "pumpkin seed" era. The Angus was fortunate to have enough of the genetic tools, jealously guarded by a handful of stubborn die-hards who knew that you were paid for pounds, and pounds put shoes on the kids and bread on the table.

As a 4-H lad in the early '30s,

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well some of the great Angus herds in east-em Iowa. I distinctly remember a visit to the Senator Del Miller herd of Morley. Those were big, long beefy cows, structurally correct with the length of neck and upheadedness to impress the most exacting. They had depth of muscling with the ease offleshing that guaranteed their survival in the worst of Iowa winters. These same qualities preserved their fertility and milking ability. These are the very things that are basic to the survival of any breed. These were the kind of Angus cattle that started the Angus "steam roller" heading west in the invasion of strictly Hereford country.

The size revolution in the Angus breed has been tremendously important. We needed it. And certainly the extra length of leg on these cows nursing calves in the mid-western "mud holes" has eliminated a host of problems. At this time we need more concentration and pressure on depth of muscling on this larger frame and structural soundness while maintaining fertility. We don't want somebody to ask "Where's the Beef!"

Let's not lose the marbling structure for which the Angus breed has long been noted, complemented by that long, uninterrupted list of great International carcass winnings. The old established herds of the early 30s had these qualities and we are getting close to redeeming them. We need to fine tune that evasive pendulum and stop it at 12 o'clock. We have a great breed, great breeders, and a great organization headed by a super group of people. If we do these things I'm sure that future generations will never have to ask "Where's the Beef!"



Bob Rice
Rice Ranches
Harrison, Mont.

"All you have to do is eat a steak in a restaurant to know what is happening to the cattle industry."

Frame size definitely fits into the total production picture, and the Angus industry has come a long way since the days of the "cute" little blocky, short-legged animal of 40 years ago.

I believe we must stay with an Angus cow that is reasonably long and feminine, has a straight back and is not wastey in front. We seem to have more difficulty breeding big, long-legged cows, so we cull such females and try to stay away from this tract in our bulls.

Bulls should be masculine with large testicles, cut up well in front with good straight backs and muscling. Their length should be as great as their back will support. Some of the larger, taller bulls produce calves that do not feed out as well or as cheaply. It takes muscling and a reasonable length of back to produce a good feeder steer. We have noticed that some really long bulls have a tendency to produce weak-backed cattle and backs that are not straight.

I believe the industry should stop and take a good look at what is happening. Maybe we should be thinking more about live calves on the ground within a 45-day period, along with cost of feed for desired cutability, tenderness and flavor.

All you have to do is eat a steak in a restaurant to know what is happening to the cattle industry.



Harris Penner
Mill Creek, Okla.

" . . . if we continue to swing from one extreme to another, more problems will be created than solved. "

Frame size of a lot of Angus cattle did need to increase, but there reaches a point when productivity and profitability will start to decline. With selection emphasis on frame score, mature weights are going to increase and, after a few generation turn-overs one will have late maturing animals that are heavier than the packer wants and females that will not breed by 15 months of age. Angus steers should have the genetic ability to grade choice, yield grade 2.5 to 3.5 at 16 to 18 months of age, and weigh 1,050 to 1,200 lb. That would be true economic progress!

There is not one cow size that is best for all environments; and bigger is not always more profitable. The long, tall females may be topping sales, but they are not the females that will preserve the strong maternal traits of the Angus breed. The frame size of your cows should determine the frame size of bulls used-but never sacrifice muscling for height. The best two female sires we have used only have mature hip height measurements of 55 and 56 inches. The strong points of Angus cattle must not be forgotten (carcass and maternal).

The registered Angus breeder has increased frame scores and growth performance of Angus cattle, and this was necessary to survive the mistakes of the late '50s and early '60s. But if we continue to swing from

one extreme to another, more problems will be created than solved. Now is the time for registered breeders to listen to the commercial industry rather than direction being decided by the show ring.



Robert L. Stewart
Extension Animal
Scientist
University of Georgia
Tifton

"What good are higher 205-day weights or 365-day weights when the percent calf crop drops?"

During the past few years there has been much discussion over frame score and its importance to the beef industry. Frame score is definitely important, but there are other factors to consider besides the size of cattle we need to produce.

There is no doubt that frame is positively correlated with such economic growth traits as average daily gain, weight per day of age and yearling weight. These traits are certainly important to cow-calf producers, stocker operators, and feedlot people. However, we should not forget that frame score is also positively correlated with birth weight and, therefore, possible dystocia. When selecting for frame score, a breeder is usually selecting against fertility and mothering ability. What good are higher 205-day weights or 365-day weights when the percent calf crop drops?

What is the ideal frame score? I'm not sure, but with the advent of boxed beef the packer pays a premium for carcasses weighing 650 to 750 lb. These convert to live weights of 1,050 to 1,200 lb. which mean frame scores of 4 to 5. Frame scores above this do not fit the trade. Cattle usually fail to grade Choice at these weights or may be too heavy when they do get to the Choice grade. Frame scores below this also fail to fit the trade. Small carcasses simply will not fill the "box."

How do we achieve the desired frame scores with consistency? One way is to put selection pressure on frame score in every breed regardless of the consequences. In this way, the commercial cattleman can obtain market weights with straightbred cattle. An alternate way would be crossbreeding. Hybrid vigor is obviously a quicker means of obtaining desirable growth traits, including frame score, for the commercial cattleman.

What about the future? Everyone is aware that the cattle business is cyclical in nature. History shows us that cattle numbers and prices move in cycles of eight to 12 years. We should also note that desirable types of

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cattle also move in cycles of somewhat longer duration. Remember the short, blocky steers which were considered ideal 20 years ago? Frame size has continued to increase since then. We may have peaked in terms of extreme frame size and are beginning to moderate.

I don't think the industry will ever cycle back to the 800 lb. Prime steer. However, there is some food for thought about new directions in the packing industry. Conceivably, there could be a strong market for 500-lb. carcasses in the future. The housewife may prefer smaller portion sizes of red meat than are currently available from boxed beef. There is also a need for smaller cuts in the restaurant trade. Such a trend would not necessarily dictate a change **in the packing industry**. Boxed beef is here to stay. However, we may see a need for a smaller "box." A two-tiered system of retailing beef based on carcass size could well develop.

How do these ideas relate to the breeder who is emphasizing frame score in his selection? First, I think a breeder should objectively decide what frame score is big enough. My suggestion is that a frame score of 5+ is big enough for English cattle. Selection pressure for frame beyond this may succeed in producing bigger cattle, but may also produce higher birth weights and less efficient females.

If a particular breed offers strong points such as calving ease, milking ability, reproductive efficiency and high-quality carcasses, then what is accomplished by selection against these traits? When selecting for frame score, keep these traits in mind. Efficiency keeps more cattlemen in business than size of cattle.



Ed Lettunich
Lettunich & Sons
Payette, Idaho

... the only reason any registered breed or breeder really exists is to improve the quality and efficiency of meat production. Any breed or breeder who forgets their purpose will be short lived."

Frame is the magic word in the Angus business, or is it?

In the 1980s frame allows a new breeder to determine a "good animal" from a "bad animal" and become an expert immediately. Frame is so important it allows a judge

to place a bull first even if he can't walk or has other important defects. Frame determines a donor cow. Frame is the basis of more than 20,000 breeding programs in the Angus business. Frame makes sale managers rich. Fortunes are made and lost in the Angus business on frame.

In the 1950s we bred them smaller. In the 1970s we bred them bigger. Should we continue to get them bigger in the 1980s?

Now, more than any time in the 30+ years we have been in the Angus business, one single trait dominates. The majority of breeders emphasize frame. It always has been the major consideration, but open A.I. has helped accentuate selection for a single trait.

Single trait emphasis is never a good pol-

icy for long. Emphasis on a single trait by the majority of breeders in a certain breed for a long period can be disastrous. Especially if this trait is almost counter-productive with traits for which commercial breeders use a particular breed.

Angus is a maternal breed. Angus will be used in the commercial cattle industry as a maternal breed. Attempts by breeders to make the Angus breed something other than maternal are disastrous.

Single trait selection for frame within the Angus breed is having an adverse effect on the demand for Angus cattle in the commercial bull trade. The most apparent, easily recognized problems include losses of calving ease, early puberty and milk.

Space does not allow me to pursue these

points in depth, but remember the only reason any registered breed or breeder really exists is to improve the quality and efficiency of meat production. Any breed or breeder who forgets their purpose will be short lived.

John Kiker
Kiker Angus Farm
Dalton, Ga.



"A breeder can add frame without adding problems if he is selective."

In my opinion, our top Angus cattle have enough frame, but far too many Angus cattle are not big enough for today's needs. The commercial breeder needs a bull that will add frame in most instances. The demand for Angus bulls is up mainly because we have more frame in our cattle. However, we cannot let our breed change so much that calving ease is no longer one of our strong points.

We should not get to the point where "we can't see the forest for the trees." I repeat what I have said before: I think the big ones are ideal. The first thing we hear now is how tall a calf is. We are becoming too conscious of heights and not conscious enough of other factors. At a major Angus event in 1983, winners in most classes could be selected from height alone. It seems that if we had the measurement chart, we would not need a judge.

Each time a new breed appears on the market, the respective association begins telling about all the breed's good traits. The very breeding traits they brag about best describe Angus cattle. So, why change the best product one could have? We needed to get back to the big cattle the Angus breed once had, but we don't need to go beyond being practical or functional. In 1880 Angus bulls weighed as much as a ton as 2-year-olds. And they had plenty of meat along with volume.

Our breeders today need to fine tune the great cattle that we have. Concentrate on maternal traits, volume, performance and, most of all, fertility. Also, calving ease must not be overlooked. A large-framed dead calf is not worth much around our farm. We have kept measurements on all our calves for nine years and the larger-framed calves at birth are not always the largest at weaning age. Some calves that are moderate in size at birth outgrow the others. Bulls that sire this type calves are what we should be using, if their maternal traits are good enough.

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We have all heard the comment that the larger cow may not be as fertile as the smaller one. Our larger cows have been the most fertile and the best milkers. A breeder can add frame without adding problems if he is selective.

Don't forget, pounds sell, not frame.

Joe Elliott

Robert Elliott & Sons Angus
Adams and Cedar Hill,
Tenn.

"A vertical yardstick is a poor way to measure function."

Today, height in the Angus business is as oversold as Phyllis Diller's sex appeal.

As seed stock breeders, we must keep in mind the goals of our primary customer, the commercial cow-calf man. His number one goal is the same as that of his banker—a profit.

As a breed and as an industry, we are putting too much emphasis on height and not enough on function. A vertical yardstick is a poor way to measure function. Overall function of the Angus breed is what has

made the breed number one. I am not saying that the Angus breed as a whole is tall enough. What I am saying is we need to step back and take a long look at what putting so much emphasis on selecting for a single inherited trait may be doing to the overall function of the Angus breed.

For those of you who have forgotten what true function is, here is my description of functional traits and the reasons they are important, in order of importance:

1. Fertility and calving ease—the growth rate on a dead calf or no calf at all is very low.
2. Mothering ability—a calf needs something besides companionship.
3. Early sexual maturity—a heifer that cannot calve as a 2-year-old or a bull that cannot breed as a short yearling cost too much.
4. Rapid growth rate to accepted market weight—growth rate after reaching slaughter weight has no function.
5. Easy keeping—God made cattle to eat forage, and it costs less than grain.
6. Carcass quality at desired market weight—quality will sell if it is in the right size package.

I know of no reason why a frame 7 cow can not outperform a frame 5 cow on the above economically important traits. The fact is most frame 7 cows will not perform as well because they have been selected for frame and frame alone.

Selection with too much pressure put on one or two traits is a short-term answer. In the long-term, it is like playing Russian Roulette.

In order to make a profitable contribution to all segments of the beef industry, a cow must be totally functional.

Form follows function, it always has and always will.

It is perhaps true that frame size has been overemphasized, especially in the show ring. However, this is not surprising since any easily recognized physical characteristic which gains acceptance is usually favored to an extreme in the show ring.

There is a great deal of misunderstanding about the relationship of size and growth. It is often stated that bigger cattle are "grow-thier," "faster gaining," and "more efficient." This has been shown to be true, if we measure these factors over a time-constant or weight-constant period. But, if we compare cattle at the same physiological end-point (such as carcass grade or fat thickness) then there is much less variation among various sizes of cattle, especially in efficiency. Instead, the main difference among cattle of different sizes at the same carcass grade or fatness is their weight, and the length of time required to reach that weight.

Certainly, in recent years acceptable carcass weight has increased while the level of desirable fatness has decreased, both favoring increased size. So, selection for greater frame size is probably justified only to the extent necessary for the majority of slaughter cattle to reach acceptable slaughter weight at the desired fatness. Any changes in acceptable weight or desired fatness will guarantee a change in emphasis on frame size.

Dr. Charles A. McPeake
Oklahoma State
University
Stillwater



"Many generations of single trait selection would have to occur before the fate of the Angus breed would be in jeopardy."

Frame size in recent years has become a standard of measurement that is like other traits for which selection is practiced—it can be beneficial or harmful. Frame size is beneficial when used as a descriptive tool in identification of phenotype. It can be harmful when used in single trait selection since response of correlated traits may have negative production and economic effects.

With over 60 breeds in the United States, commercial producers can make gigantic changes through crossbreeding in one generation for frame size. To further complicate the situation, the total beef industry includes these major segments: cow-calf (purebred and commercial), stocker, feeder, packer, retailer and consumer. Reams of paper could be used in discussing frame size for such a complex industry.

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Stephen P. Hammack

Extension Beef
Specialist
Stephenville, Texas



"We sometimes use the term 'size' when we actually mean frame or weight alone but the distinction is an important one."

Evaluation of frame is just one of a number of methods of characterizing cattle. Frame and weight are the two most common methods of expressing size. We sometimes use the term "size" when we actually mean frame or weight alone, but the distinction is an important one. Knowledge of both frame and weight allows us to better characterize animals.

For a single breed, the Angus breed, frame size is a bit easier to analyze and understand. The two variables in determining frame score are age and actual measurement. Without accuracy in these two variables, frame size can be very misleading.

Today approximately 25 percent of the Angus calves registered are sired through artificial insemination. And about 25 percent of these A.I. calves are sired by less than seven bulls. These bulls are not necessarily the extreme frame size bulls within the breed. In population genetics it becomes necessary to understand the average both in the purebred and commercial setting. The average Angus in both these segments is still too small. There are environments that will dictate what frame size is optimum for efficient production.

The understanding of a breed's strong and weak points is crucial for utilizing frame size and in its future development. For Angus, some of the strong points would be: calving ease, milking ability, fertility, age at puberty, age at maturity, and carcass quality.

Some show cattle and extreme growth cattle may approach the extreme in frame size before harmful effects on the strong points of the breed are seen. The only way the average of a breed can move is through the use of these extremes. Many generations of single trait selection would have to occur before the fate of the Angus breed would be in jeopardy.

For extreme cattle, correlated traits will warn the breeders in how far to go. Extreme extremes in frame size can mean calving problems due to prenatal growth, fertility (age of puberty, especially in females, hormone production because of age at sexual maturity), poor maternal ability, less desirable carcass quality, and growth (extended growth curve).

Wise selection within the Angus breed will involve several of the economically important traits, including frame size. Frame size for the breed is unlikely to become a problem since breeders of extreme frame size cattle will change selection pressures well before harmful effects appear throughout the breed.

Final thought: All breeds do not need to be the same in frame size. AJ

ANGUS JOURNAL Flashbacks

1965—"Elected president of the state wide beef cattle organization (the Missouri Angus Assn.) was Paul Van Meter, an Angus breeder from near Queen City, Mo. He replaces retiring president Howard Hackler of Taylor, Mo. Ralph Sydenstricker, Mexico, is the new vice president. Re-elected for another term were the secretary Fred Blades, Holliday, and the treasurer, W.G. Raymond, Boonville. Directors for the year are T.R. Cole, Pascola; Bob Perry, Bethel; Dwight Gamer, Rosendale; and Judson Baugher, Trenton."