

# **How Do We Measure Up: A Comparison of the Dimensionality of the Scottish Terrier: 1946 to 2003**

**Commissioned by the Board of Directors:  
The Scottish Terrier Club of America**

**March 2, 2004**

**By  
Dr. Vandra L. Huber, PhD  
University of Washington School of Business Administration**

**Danica Burge  
San Jose State University**

**Drawings by Darle Heck**

***Winner of the 2004 Dog Writers of America  
Robert Cole Award for Best Article on Canine Anatomy***

Permission to republish must be granted by the STCA and the authors. Under US copyright laws, individuals may make one copy for personal use.

# How Do We Measure Up: A Comparison of the Dimensionality of the Scottish Terrier: 1946 to 2003

By  
Dr. Vandra L. Huber, PhD<sup>1</sup>  
University of Washington School of Business Administration

Danica Burge  
San Jose State University<sup>2</sup>

Drawings by Darle Heck<sup>3</sup>

Regardless of breed, a canine standard portrays what, in the minds of compilers, would be the ideal dog of the breed. According to the Complete Book of Dogs (1992), this includes ideal in type, in size and proportion, in structure, in gait and in temperament. “A standard is not the representation of any actual dog, but a concept against which a dog show judge measures every competitor of the breed and which every breeder evaluates the get of each and every litter.”<sup>4</sup>. The purpose of this study is to conduct a measurement study of the Scottish Terrier to determine reality -- the actual, rather than the ideal, measurements of the modern Scottish Terrier in the United States. The study was commissioned by the Board of Directors of the Scottish Terrier Club of America (STCA) under the direction of Joanne Kinnelly, who was the Vice President of the STCA at the time of the data was collected and is now the STCA President.

---

<sup>1</sup> Dr. Huber is an industrial psychologist in the School of Business Administration. She is a full professor of Human Resources Management.

<sup>2</sup> Ms. Burge is a senior at San Jose State University where she is completing a degree in Kinesiology. She worked on this project under the direction of Dr. Huber to fulfill a graduation requirement in statistical analyses.

<sup>3</sup> Darle Heck is president of the Canadian Scottish Terrier Club as well as an internationally recognized artist. She is currently rendering drawings for the amplification of the standard for the West Highland White Terrier as well as the Old English Sheepdog.

<sup>4</sup> The complete book of dogs. 1992. New York, NY: Howell Book House, 18<sup>th</sup> edition, p. 27.

The standard for the Scottish Terrier has been revised and updated several times. The most current official standard for the Scottish Terrier was adopted by the Scottish Terrier Club of America and approved by the American Kennel Club in 1993. To further explain the breed standard, the Scottish Terrier Club of America has twice prepared an amplification and clarification of the standard. These documents were prepared by breed experts selected by the STCA. The first amplification of the standard was published in 1980 and the second was published in 1999.

### **The Standard**

In determining the ideal measurements for the Scottish Terrier, committee members relied heavily on a measurement study undertaken in 1946 by Seth Malby. In rewriting the standard and formulating the amplification and clarification, it was assumed that the measurements and weights for the Scottish Terrier had “withstood the test of time and therefore were an accurate representative of the breed as it ideally should be.” Committee members were not aware that the 1946 study included a sampling of only 9 dogs<sup>5</sup>. In defense of the 1946 study, the nine dogs measured represented the top kennels of the post war period. The sample included these dogs (Ch. Ralgalf Rebel Leader, Ch. Heather-Comodore of Edgerstoune, Ch. Action Hills Individualist, Ch. Deephaven Warspite, and Ch. Acton Hills Greggs) and these bitches (Ch. Barberry Knowe Victory, Ch. Rampant Shadow, Ch. Marlu Strangord Lady and Ch. Lynscott Deborah). On average, these champions of the 1940s were 10 inches tall and 11 inches in back length with heads of 8 inches in length. The actual data from this seminal study is reproduced in Table 1.

---

<sup>5</sup> Statistically, a larger sample size would have been useful. A sample of nine may not be considered representative of the breed itself and is not large enough to capture the full variability in breed type.

**Table 1**  
**Measurements of 9 Scottish Terriers**  
**Data Collected in 1946 by Seth Malby**

	Head	Skull Width	Neck	Tail	Chest Breadth	Brisket Clearance	Body Depth	Back	Height
<b><u>Dog</u></b>									
<b>1</b>	8 23/64	3 29/32	4 15/16	7	4 1/8	3 1/8	7 1/4	11 1/8	10 3/8
<b>2</b>	7 21/32	3 11/16	5 7/8	6 9/16	3 13/16	3 13/16	6 1/4	11 1/4	10 1/8
<b>3</b>	8 1/4	3 5/8	5 3/4	6 3/8	4	3 3/8	6 3/8	11	9 3/4
<b>4</b>	8 3/16	3 3/4	5 3/8	6	3 3/8	4 1/4	5 3/4	11 1/4	10
<b>5</b>	8 1/16	3 13/16	5	6	3	3 3/8	6 1/4	10 7/8	10
<b>Max</b>	8 23/64	3 29/32	5 7/8	7	4 1/8	4 1/4	7 1/4	11 1/4	10 3/8
<b>Min</b>	7 21/32	3 5/8	4 15/16	6	3	3 1/8	5 3/4	10 7/8	9 3/4
<b>Mean</b>	8 1/8	3 3/4	5 3/8	6 3/8	3 3/4	3 5/8	6 3/8	11 1/8	10
<b><u>Bitch</u></b>									
<b>1</b>	7 47/64	3 7/8	5	5 7/8	3 7/8	3 3/8	6 5/8	11	10
<b>2</b>	7 15/32	3 5/8	5 3/8	6	3 3/8	2 3/4	6 5/8	10 3/4	9 3/8
<b>3</b>	7 7/8	3 5/8	5	4 3/4	3 5/8	3 3/4	6 1/8	11	9 15/16
<b>4</b>	7 11/16	3 5/8	5 3/4	6 1/4	3	4	6 1/8	10 7/8	10 1/8
<b>Max</b>	7 7/8	3 7/8	5 3/4	6 1/4	3 7/8	4	6 5/8	11	10 1/8
<b>Min</b>	7 15/32	3 5/8	5	4 3/4	3	2 3/4	6 1/8	10 3/4	9 3/8
<b>Mean</b>	7 3/4	3 5/8	5 1/4	5 1/2	3 1/2	3 1/2	6 3/8	10 7/8	9 7/8
<b>Sample</b>	8	3.71	5.33	6.00	3.58	3.50	6.38	11.00	10.00

The dogs included in the sample were Champion Ralgalf Rebel Leader, Heather-Commodore of Edgerstoune, Acon Hills Individualist, Deephaven Warspite, Acton Hills Gregg. The Bitches were Champion Barberry Knowe Victory, Rampant Shadow, Marlyu Strangford Lady and Lynscott Deborah.

Following a vote by the membership of the STCA, the standard was modified in 1993 to delineate the Scottish Terrier as being ideally "about 10 inches tall" and "approximately 11 inches". The standard also recommends that a well-balanced Scottish Terrier dog should weigh from 19 to 22 pounds and a bitch from 18 to 21 pounds. No other measurements are included in the 1993 standard of the Scottish Terrier. The 1999 amplification of the standard does make reference to the head by specifying an ideal head length of 8 inches given a back length of 11 inches and a skull of 4 inches and 3 5/8 inches wide. No specific measurements regarding tails, necks, clearance of brisket, depth of body are included in the revised 1993 standard or the 1999 amplification of the standard

### **The 2003 Study**

To the knowledge of the researchers, no measurement study has been undertaken since the 1946 study. Thus we do not know if or how the Scottish Terrier has changed over the past 58 years.. To fill this void, data was collected during the spring and fall respectively of 2003 at the Rotating Specialty in Sacramento California and following sweepstakes judging at the Montgomery County National Specialty. The study was undertaken, not to challenge the current standard but to find out how our breed measures up relative to the standard. Specific questions to be answered by this study include:

- What are the actual measurements of male and female Scottish Terriers in 2003?
- Do the measurements of Scottish Terriers vary by color?
- How does the modern Scottish Terrier compare to the Scottish Terrier of the past?
- How do the measurements of today's Scottish Terrier compare to the ideal portrayed in the standard?

## **Method**

### **Sample of Scottish Terriers**

A total of 47 Scottish Terriers were measured including 26 animals during the Rotating Specialty in Sacramento, CA in April, 2003 and 21 animals during the Montgomery County weekend in October, 2003. The sample consisted of 20 dogs (43%) and 27 bitches (57%). Regarding color, there were 11 wheatens (23%), 15 blacks (32%), 19 brindles of various shades (40%) and 2 specimens whose color was not specified. Wheatens were over-represented in the sample (i.e., a larger percentage were found in the study than in the general population)<sup>6</sup>. The average age of the Scottish Terriers was 36 months; they ranged in age was 8 months to 156 months (13 years). This compares to the 1946 sample which consisted of five dogs and four bitches. For consistency, measurement procedures used in 2003 paralleled as much as possible the procedures used in 1946. It should be noted that the color, weights, and ages of the specimens were not recorded in 1946 but data on these variables was collected in 2003.

### **Measurement Procedures**

Any members who wished to have their dog(s) measurements added to the database could do so voluntarily. Following judging, the owners brought their dog to the measurement area. They filled out paperwork regarding the age, gender and color of their dog(s). Dogs did not have to be entered in the show to be measured. Nor did they have to be champions of record. Dogs were not identified by name or ownership. Each dog was

---

<sup>6</sup> Oversampling is useful to ensure that there are sufficient numbers of dogs in each color category to determine if there are statistically significant differences based on color.

assigned a unique number to distinguish its data from that of other Scottish Terriers in the data set. Each participant received a written copy of the measurements taken.

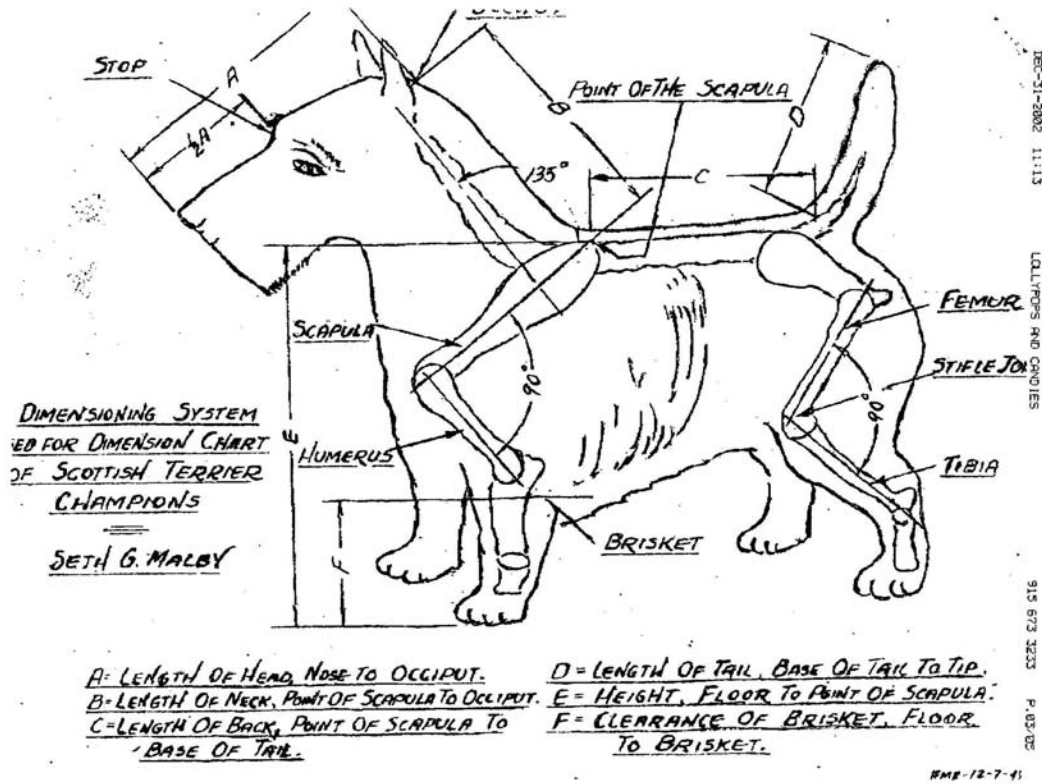
Measuring was done at the show sites. At the rotating specialty, an evaluator outside of the breed, measured each dog. Montgomery County weekend measurements were taken by Norman Prince with assistance from Bill deVilleneuve and Vandra Huber. Measurements were taken following procedures utilized in the 1946 study by Seth C. Malby. The measurement chart published in the 1980 Amplification and Clarification of the Scottish Terrier Standard and in the 1999 Study of the Scottish Terrier was used as the guide for collecting the 2003 measurement data (See Figure 1).

The following measurements were taken:

- **Length of Head** from nose to the occiput
- **Width of Skull** using a caliber
- **Length of Neck** from Point of scapula to occiput
- **Length of Back** from point of Scapula to base of tail
- **Length of tail** from base of tail to tip
- **Breadth of Chest** using a caliber
- **Height** from floor to top point of scapula
- **Clearance of Brisket** from floor to brisket (under front legs, deepest point of chest)
- **Depth of Body** from point of scapula to deepest point of rib cage. Measured behind the front legs.
- **Weight** measured in pounds.

Two points should be made regarding the 2003 data. Weight data was only collected for the Montgomery County sub-sample and therefore includes a sample of only 22 dogs (11 bitches and 10 dogs). Data collected regarding breadth of chest at Montgomery could not be used in the study because the method of measurements was not consistent with the Sacramento sample or the 1946 sample. Therefore, the number of

Figure 1  
 Measurements for the 1946 and 2003 Studies of the Scottish Terrier





Scottish Terriers utilized to calculate the mean breadth of chest was 26. T-tests between the Sacramento and Montgomery sub-samples showed no other statistically significant differences regarding the measurements. Therefore it is concluded that there is no evaluator bias (even though different people measured the dogs at Sacramento and Montgomery County).

Several types of statistical analyses were conducted. These included calculating the means, standard deviations, maximums and minimums for the data set. The standard deviation is a statistic that tells you how much variation there is in a measurement. We can say for example that if the average head length of a Scottish Terrier is 8 inches and the standard deviation is .5 inches, then 68 percent of all Scottish Terriers have head lengths between 7.5 and 8.5 inches. Correlation coefficients were calculated to explore the relationships between all of the variables included in the study. Correlations show the degree of a relationship between two measurements. For example, if head and back length are correlated at .80, that means there is a very strong relationship between the two measurements. This means that as the back gets longer, the head also gets longer. If that correlation were only .10, it would mean that back length and head length are not related. If the correlation coefficient were negative (-.80), it would mean that as the back gets longer, the head gets shorter. Correlations do not denote causality, merely that there is a relationship. For example, a longer back does NOT cause a longer head.

Data was analyzed by gender (dogs versus bitches) using t-tests and by color (black, wheaten, brindle) using one way analysis of variance. Several post hoc comparisons (statistical tests) were undertaken to further examine findings of interest. Finally, data collected in 2003 was compared to data collected in 1946 to determine if the

measurements of the Scottish Terrier have changed significantly over the past 50 years. Comparisons were made using t-tests.

## **The Results**

### **Correlations between the variables**

As noted earlier, a correlation coefficient represents the degree of a relationship between two measurements. Correlation coefficients for all variables for the 2003 data set are presented in Table 2. It has often been said that longer backed dogs have longer heads. The results of this study support this conclusion. As back length increases, so does head length ( $r = .48$ ). Longer backed dogs are also taller dogs ( $r = .62$ ). Dogs with longer heads also have wider skulls, longer tails, broader chests, deeper briskets and weigh more. There was a negative correlation between the depth of the body and clearance of the brisket ( $r = -.31$ ). This finding is expected given the anatomy of the Scottish Terrier. What is somewhat surprising is deep bodied dogs tended to have shorter necks ( $r = -.39$ ). The correlation analyses also indicates that dogs that weigh more have deeper bodies (whether it is fat or substance is a matter of speculation) and less clearance of the briskets, and longer heads. Thus, as Scottish Terriers get bigger, they get proportionally bigger – including weight.

### **Effects of Gender**

Table 3 presents the means and standard deviations for the 2003 sample separately for dogs and bitches. While it has long been speculated that females are

**Table 2**  
**Correlation Matrix for all variables:**

## 2003 Study of the Scottish Terrier

	Skull	Neck	Back	Tail	Chest Breadth	Height	Brisket Depth	Body Depth	Weight
1. Head	<b>.43</b>	.12	<b>.48</b>	<b>.58</b>	<b>.40</b>	<b>.62</b>	.01	<b>.30</b>	<b>.40<sup>1</sup></b>
2. Skull		<b>-.27</b>	.01	<b>.51</b>	<b>.51</b>	<b>.35</b>	-.16	<b>.49</b>	.29
3. Neck			.10	.23	-.18	.09	<b>.28</b>	<b>-.39</b>	.32
4. Back				.15	.18	<b>.46</b>	.08	.14	.25
5. Tail					<b>.58</b>	<b>.45</b>	.10	.23	.22
6. Chest						<b>.39</b>	-.13	<b>.53</b>	-- <sup>2</sup>
7. Height							<b>.32</b>	<b>.35</b>	-.01
8. Brisket								<b>-.31</b>	<b>-.45</b>
9. Depth									<b>.39</b>
10. Weight									

1. Because weight was only measured at Montgomery County, the sample size was smaller. Therefore, the correlations needed to be stronger for the results for weight with other variables to be significant.
2. The correlation between chest breadth and weight could not be calculated because of sampling error.
3. Items which are in bold are significant at .05 level.

**Table 3**  
**Comparison of Dimensions of Male and Female Scottish Terriers in 2003**

	Head	Skull	Neck	Tail	Chest Breadth	Brisket Clearance	Body Depth	Back	Height	Weight
<b><u>Female Scottish Terriers</u></b>										
<b>Max</b>	8.25	4.25	8.25	7.00	3.88	4.00	7.75	11.25	10.38	23.00
<b>Min</b>	6.00	3.25	3.25	5.00	3.00	3.25	3.88	9.00	8.50	17.23
<b>Mean</b>	7.71	3.70	5.59	6.23	3.41	3.81	6.45	10.31	9.78	20.73
<b>SD</b>	.53	.31	1.06	.46	.29	.31	.90	.59	.36	1.92
<b><u>Male Scottish Terriers</u></b>										
<b>Max</b>	9.75	4.25	7.88	8.00	4.00	4.00	4.00	12.00	11.00	28.00
<b>Min</b>	7.60	3.50	4.50	5.00	3.25	3.25	3.25	9.37	9.50	17.00
<b>Mean</b>	8.36	3.89	5.79	6.75	3.63	3.83	6.52	10.45	10.00	22.00
<b>SD</b>	.48	.27	.91	.63	.25	.31	.90	.68	.35	3.32
<b>p-value</b>	*	*	n.s.	*	*	n.s.	n.s.	*	n.s.	n.s.

\*significant at the .05 level  
n.s. means not significantly different from one another

somewhat longer in loin and thereby back length than males, this is not the case for Scottish Terriers in this study. The average length of back was 10.30 inches, with females only slightly, but not significantly shorter in back length. Females were not found to weigh significantly less than males. However, they did have significantly shorter heads (.65 inches shorter) and narrower muzzles (.19 inches). Dogs had significantly longer tails (.52 inches) and broader chests (.22 inches) than bitches.

### **Effects of Color**

It has been speculated in past decades that wheatens are more coarse than blacks or brindles. To determine whether the color of the dog affects proportions, a one way analysis of variance (ANOVA) was conducted for each of the 11 measurements (See Table 4). With the exception of the depth of body, the ANOVAs for color were not significant. Wheatens were found to have significantly deeper bodies ( $M = 6.97$ ) than either blacks ( $M = 6.33$ ) and brindles ( $M = 6.39$ ,  $p = .03$ ). A post hoc comparison showed that, wheatens have significantly shorter necks ( $M = 5.27$ ) than brindles ( $M = 5.94$ ,  $p = .03$ ). Together, these results suggest that the color of the dogs has little relationship to the dimensionality of Scottish Terriers. Regardless of color, Scottish Terriers have similar dimensions.

### **The Past Versus the Present**

The findings are particularly noteworthy when the results for the 47 dogs measured in 2003 are compared to the 9 dogs measured in 1946. The means, standard deviations, minimums and maximums for both data sets are presented in Table 5. Despite the small sample size and lack of statistical power, the back length of the 21<sup>st</sup> century Scottish Terrier is significantly shorter ( $M = 10.37$ ,  $SD = .63$ ) than what it was in 1946

**Table 4**  
**Comparison by Color**  
**2003 Measurement Sample**

<b>Measurement</b>	<b>Black (N = 15)</b>	<b>Brindle (N = 19)</b>	<b>Wheaten (N = 11)</b>	<b>Significance Overall Test</b>
<b>1. Length of Head</b>	7.93 inches	7.97 inches	8.11 inches	n.s.
<b>2. Width of Skull</b>	3.73 inches	3.79	3.93 inches	n.s.
<b>3. Length of Neck</b>	5.68 inches	5.94 inches	5.27 inches	n.s.
<b>4. Length of Tail</b>	6.33 inches	6.40 inches	6.82 inches	n.s.
<b>5. Breadth of Chest</b>	3.48 inches	3.54 inches	3.48 inches	n.s.
<b>6. Clearance of Brisket</b>	3.69 inches	3.77 inches	3.85 inches	n.s.
<b>7. Depth of Body</b>	6.33 inches	6.39 inches	6.97 inches	*
<b>8. Length of Back</b>	10.32 inches	10.36 inches	10.45 inches	n.s.
<b>9. Height</b>	9.89 inches	9.90 inches	10.05 inches	n.s.
<b>10. Weight</b>	22 pounds	21.38	n/a <sup>7)</sup>	n.s.
<b>11. Age</b>	24 months	43 months <sup>8</sup>	35 months	

\* significant at the .05 level

\*\* significant at the .01 level

\*\*\* significant at the .001 level

n.s. means not significantly different from one another

<sup>7</sup> Only two wheatens were weighed at Montgomery County. Therefore the numbers are too small to be meaningful.

<sup>8</sup>The brindle subsample included three dogs more than 100 months old. Given this, mean age is significantly higher. Median age is not.

( $M = 11.13$ ,  $SD = .17$ ). The results of the t-test show that this finding is significant at the .001 level. This means that there is less than one in thousand chance that this result was found in error. The results also show that there is greater variability in the back length of today's Scottish Terriers than there was among the 9 champions measured in 1946. The longest backed dog in 1946 was 11.25 inches compared to 12 inches in 2003 and the shortest backed dog was 10.88 compared to 9 inches in 2003. If we consider the standard deviation, it can be said with certainty that the majority of Scottish Terriers (68%) today have back lengths between 9.74 inches and 11 inches. In 1946, the majority of dogs had back lengths in the range of 11.3 inches and 10.96 inches.

It has long been said that the Scottish Terrier is an off square dog – slightly longer than tall. This is still true. The ratio of back length to height was 1.10 in 1946. The proportion in 2003 is 1.04, representing a significant 6% decrease in the ratio. While still off square, Scottish Terriers are closer to being square than they were in the 1940s. In fact, if we apply Weber's law<sup>9</sup> regarding noticeable differences in measurement, the difference between height versus back length may not be noticeable to the human eye.

With increased statistical power, two other differences emerge.<sup>10</sup> The tails of Scottish Terriers are significantly longer ( $p = .02$ ) today ( $M = 6.46$ ) than they were in 1946 ( $M = 6.00$ ). One explanation for the difference in tail length relates to the common practice in the past of “tipping off” the tails of Scottish Terriers. That is, breeders of old

---

<sup>9</sup> Weber's law purports that the increase of stimulus necessary to produce an increase of sensation in any sense is not a fixed quantity but depends on the proportion which the increase bears to the immediately preceding stimulus, is the principal generalization of that branch of scientific investigation which has come to be known as psycho-physics

<sup>10</sup> The sample size was extremely small for the 1946 sample. To increase statistical power, the cell numbers were doubled. A count of 18 was utilized in subsequent analyses.

**Table 5**  
**Comparison of Dimensions of Scottish Terriers: 1946 to 2003**

	Head	Skull	Neck	Tail	Chest Depth	Brisket Clearance	Body Depth	Back	Height	Weight
<b><u>1946 Data</u></b>										
<b>Max</b>	8.35	3.91	5.88	7.00	4.13	4.25	7.25	11.25	10.38	N/a
<b>Min</b>	7.65	3.63	4.94	6.00	3.00	3.13	5.75	10.88	9.75	N/a
<b>Mean</b>	8.13	3.75	5.38	6.00	3.75	3.63	6.38	11.13	10	N/a
<b>SD</b>	.29	.11	.36	.60	.40	.44	.41	.17	.27	N/a
<b><u>2003 Data</u></b>										
<b>Max</b>	9.75	4.25	8.25	8.00	4.00	5.00	7.75	12.00	11.00	28.00
<b>Min</b>	6.00	3.25	3.25	5.00	3.00	3.00	3.88	9.00	8.5	17.00
<b>Mean</b>	8.01	3.79	5.68	6.46	3.51	3.76	6.49	10.37	9.93	21.33
<b>SD</b>	.60	.31	.99	.59	.29	.42	.72	.63	.39	2.69
<b>p-value</b>	n.s.	n.s.	*	*	n.s.	n.s.	n.s.	***	n.s.	

\*significant at the .05 level given increased statistical power from doubling the 1946 sample size.

\*\*\*significant at the .001 level

n.s. means not significantly different from one another



commonly removed the last two vertebrae in the tail to give it a snappier, less ratty image. The third difference of note related to neck length. We are also breeding dogs with longer necks ( $M = 5.68$  inches) than were bred in the 1940s ( $M = 5.38$  inches). One explanation is that breeders prefer more elegant dogs and so produce longer necked dogs. In diffidence to these changes, the length of head ( $M = 8.01$  inches), breadth of skull ( $M = 3.79$ ), height ( $M = 9.93$  inches), breadth of chest ( $M = 3.51$ ), clearance of brisket ( $M = 3.76$ ) and depth of body ( $M = 6.49$ ) have remained relatively constant over the past 58 years.

While the results of this study are noteworthy, several reservations should be noted. First, the dogs included in the 2003 data set are not representative of the entire population of Scottish Terriers. While the majority of dogs were those being shown at the two specialties, not all dogs were shown. So it cannot be concluded that the sample represents only show or breeding stock. It is also unknown, how many kennels or lines of Scottish Terriers are included in the sample. Finally, it should be noted that this study focuses reports only average measurements for the 47 Scottish Terriers in the study and the 9 dogs measured in 1946. Despite these reservations, several conclusions can be made:

- The majority of measurements have withstood the test of time and remain unchanged over the past 58 years. Scottish Terriers in 1946 and in 2003 are more similar than different.
- Longer backed dogs have longer heads and are taller.
- Scottish Terriers today are no taller nor shorter than they were in 1940s. Consistent with the standard, Scotties are approximately 10 inches tall.
- The length of head today averages 8 inches. This is consistent with the 1946 data and what is suggested in the 1999 clarification and amplification of the standard.

- Wheatens, blacks and brindles have similar proportions. This is consistent with the standard which states that any color is acceptable and makes no distinction in measurement on the basis of color.
- Female Scottish Terriers, on average, are more diminutive with significantly shorter heads and narrower skulls and chests than male Scottish Terriers.
- The average Scottish Terrier today is heavier than Scottish Terriers of the past. Dogs generally weigh between 19 3/4 and 25 1/3 pounds rather than 19 to 22 as indicated in the standard. Similarly, bitches generally weigh 19 2/3 and 22 2/3 pounds rather than 18-21 pounds as indicated in the standard. Thus we are breeding heavier dogs than ideally we should.
- The 21<sup>st</sup> Century Scottish Terrier is significantly longer in neck with longer tails.
- Scottish Terriers today are significantly shorter backed than those measured in 1946. The majority of Scottish Terriers (68%) have back lengths no longer than 11 inches and no shorter than 9 3/4 inches. This finding is inconsistent with the standard which suggests a back length of approximately 11 inches (could be longer or shorter than 11 inches).
- The Scottish Terrier today, as in the past, is an off-square breed, slightly longer from point of scapula to base of tail than tall. However, the Scottish Terrier today is closer to being a square breed than it has been in the past.

In conclusion the results of this study provide a reality check regarding the Scottish Terrier today. It provides benchmark data against which the progress of the breed can be assessed. That is, it depicts what the average dog looks like today and therefore allows the “average to be compared against the ideal Scottish Terrier as delineated in the breed standard.