a useful guide to

Linear Assessment

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SCORING PROCEDURE

Stage of lactation and age of animal must be taken into consideration when assigning classification score and composite box breakdown. The classification benchmark standard is by comparison to the Society’s ‘Model Cow’.

- **Pointing System**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Score Range</th>
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<tr>
<td>Excellent</td>
<td>90 – 97</td>
</tr>
<tr>
<td>Very Good</td>
<td>85 – 89</td>
</tr>
<tr>
<td>Good Plus</td>
<td>80 – 84</td>
</tr>
<tr>
<td>Good</td>
<td>79 – 75</td>
</tr>
<tr>
<td>Fair</td>
<td>74 – 65</td>
</tr>
<tr>
<td>Poor</td>
<td>64 – 50</td>
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- **Maximum Points**

  1\(^{st}\) Calver 89 points  
  2\(^{nd}\) Calver 89 points  
  3\(^{rd}\) Calver 93 points  
  4\(^{th}\) + 97 points

- **VG Heifer – 4 Box Breakdown**

  90 point Maximum  
  85 point Minimum Mammary, Feet & Legs  
  83 point Minimum Dairy Strength & Rump  
  142 cms Minimum Height

- **VG89 Heifers**

  Must score a minimum of 89 points in every box  
  Must have calved before her third birthday

- **2\(^{nd}\) Calver VG 89**

  Does not have to be VG 89 points in all four composite boxes  
  Maximum score possible is 90 points for all four boxes

- **3\(^{rd}\) Calver Excellent – No restriction on 4 Box Breakdown**

  Final score 93 point Maximum

- **4\(^{th}\) Calver Excellent – No restriction on 4 Box Breakdown**

  Maximum final score 95 points

- **5\(^{th}\) Calver Excellent – no restriction on 4 Box Breakdown**

  Maximum final score 97
- Functional Trait Composite – 4 Box Breakdown

The final class and score will be calculated from the subjective trait breakdown at the following ratio:

<table>
<thead>
<tr>
<th>Trait</th>
<th>Percentage</th>
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<tr>
<td>Dairy Strength</td>
<td>15%</td>
</tr>
<tr>
<td>Body Conformation</td>
<td>15%</td>
</tr>
<tr>
<td>Legs &amp; Feet</td>
<td>30%</td>
</tr>
<tr>
<td>Mammary</td>
<td>40%</td>
</tr>
</tbody>
</table>

The hand-held data equipment will display a suggested final class and score, calculated from the functional trait composite breakdown. Classifiers may adjust the final score by one point.

The four functional trait composite areas are as follows:

- **Dairy Strength**
  Dairy Strength is not to be focused on size or stature, but as strength through the front end and heart region of the animal, strength of constitution & front rib.

- **Body Conformation**
  Body Conformation takes account of, independently, the entire skeletal structure of the animal to identify a ‘balanced’ animal rather than the extremes. (The Body Conformation composite includes the Rump structure).

- **Legs & Feet**
  The shape and quality of the legs & feet, resulting in good locomotion. The classification to take into consideration environment and management factors.

- **Mammary**
  The strength and quality of the fore and rear attachment, strength of central ligament and udder texture. The quantity of udder in relation to the size of animal, stage of lactation and time of inspection. Teat quality and position, with equal emphasis on teat position rear view and side view.

- **Final Score**
  The final score will be suggested automatically from a calculation of the 4 box breakdown. The classifier must take into consideration the age and stage of lactation when assigning the final score.
**LINEAR INSPECTION**

**Heifer Inspections**  
Full range of points must be used.

**2nd and Later Lactations**  
For traits not physically measured, the linear code assigned must be relative to a mature female (Society Ideal Model).

All females receive a linear assessment recorded on a 1 – 9 code scale:

**Linear Traits**

<table>
<thead>
<tr>
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<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td><strong>Stature</strong></td>
</tr>
<tr>
<td></td>
<td>Measured at rump (withers for 2nd and later lactations)</td>
</tr>
<tr>
<td>2</td>
<td><strong>Chest Width</strong></td>
</tr>
<tr>
<td></td>
<td>Width of chest between the top of the front legs</td>
</tr>
<tr>
<td>3</td>
<td><strong>Body Depth</strong></td>
</tr>
<tr>
<td></td>
<td>Depth of rear rib</td>
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<tr>
<td>4</td>
<td><strong>Angularity</strong></td>
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<tr>
<td></td>
<td>Openness of rib, depth of rear rib</td>
</tr>
<tr>
<td>5</td>
<td><strong>Rump Angle</strong></td>
</tr>
<tr>
<td></td>
<td>Hip to pins</td>
</tr>
<tr>
<td>6</td>
<td><strong>Rump Width</strong></td>
</tr>
<tr>
<td></td>
<td>Pin width</td>
</tr>
<tr>
<td>7</td>
<td><strong>Rear Legs Set</strong></td>
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<td></td>
<td>Angle-side view</td>
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<td>8</td>
<td><strong>Foot Angle</strong></td>
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<td>Diagonal of foot angle – rear hoof</td>
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<td>9</td>
<td><strong>Fore Udder Attachment</strong></td>
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<tr>
<td></td>
<td>Strength of attachment</td>
</tr>
<tr>
<td>10</td>
<td><strong>Rear Udder Height</strong></td>
</tr>
<tr>
<td></td>
<td>Distance from pins to milk secreting tissue</td>
</tr>
<tr>
<td>11</td>
<td><strong>Central Ligament</strong></td>
</tr>
<tr>
<td></td>
<td>Depth of ligament at base of udder</td>
</tr>
<tr>
<td>12</td>
<td><strong>Udder Depth</strong></td>
</tr>
<tr>
<td></td>
<td>The distance from the lowest part of the udder floor to the hock</td>
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<td>13</td>
<td><strong>Front Teat Placement</strong></td>
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<td>Position of the Front teats viewed from the rear</td>
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<td>Position of the Rear Teats</td>
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<td>Length of the front teat</td>
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<td><strong>Locomotion</strong></td>
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<td>Movement of the animal</td>
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<td>18</td>
<td><strong>Body Condition Score</strong></td>
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<td>The covering of fat over the tail head and rump</td>
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Heifer Scoring –
DIAGRAMMATICAL DESCRIPTIONS

Standard Trait Definition

The precise description of each trait is well defined and it is essential that the full range of linear scores to identify the intermediate and extremes of each trait be used. The assessment parameters for the calculations should be based on the expected biological extremes of two year-old heifers. The scale must cover the biological extremes of the population in the Country of assessment.

International WHFF Recommended Scale 1 - 9

1:  Stature

Ref. Point: Measured from top of the spine in between hips to ground.
Precise measurement in centimetres/inches, or linear scale:

1 Short (136 cm)
5 Intermediate (148 cm)
9 Tall (160 cm)

Reference scale: 136 cm – 160 cm; 3 cm per point
2: Chest Width

*Ref. Point:* Measured from the inside surface between the top of the front legs:

1 – 3 Narrow
4 – 6 Intermediate
7 – 9 Wide

Reference scale: 13 cm – 29 cm; 2 cm per point

3: Body Depth

*Ref. Point:* Distance between top of spine and bottom of barrel at last rib – the deepest point, independent of stature:

1 – 3 Shallow
4 – 6 Intermediate
7 – 9 Deep

Reference scale: Optical in relation to the balance of the animal. Look always on the same side, because all cows are deeper on one side than the other.
4: **Angularity**  
*Ref. Point:* The angle and spring of the ribs. Not a true linear trait.

1 – 3 Lacks angularity  
4 – 6 Intermediate angle  
7 – 9 Very angular

Defining “spring of ribs” is another way of referring to the degree of openness between the ribs. When ribs are tight there is no opening. When the ribs springs apart or expands open, the space between ribs becomes wider.

5: **Rump Angle**  
*Ref. Point:* Measured as the angle of the rump structure from hooks (hips) to pins.

1 High Pins (+4 cm)  
2 (+2 cm)  
3 Level (+0 cm)  
4 Slight slope (-2 cm)  
5 Intermediate (-4 cm)  
6 (-6 cm)  
7 (-8 cm)  
8 (-10 cm)  
9 Extreme slope (-12 cm)
6: **Rump Width**  
**Ref. Point:** Distance between the most posterior point of pin bones:

1 – 3 Narrow  
4 – 6 Intermediate  
7 – 9 Wide

Reference scale: 10 cm – 26 cm; 2 cm per point

![Rump Width Diagram](image)

1 Narrow  
5  
9 Wide

7: **Rear Legs Side View**  
**Ref. Point:** Angle measured at the front of the hock:

1 – 3 Straight (160 degrees)  
4 – 6 Intermediate (147 degrees)  
7 – 9 Sickle (134 degrees)

In case of a significant difference the worst/extreme side must be scored.

![Rear Legs Side View Diagram](image)

1 Straight  
5  
9 Sickled
8: **Foot Angle**  
*Ref. Point:* Angle at the front of the rear hoof measured from the floor to the hairline at the right hoof.  

1 – 3 Very low angle  
4 – 6 Intermediate angle  
7 – 9 Very steep  

Reference scale: 1=15 degrees; 5=45 degrees; 9=65 degrees  

If the Foot Angle is difficult to score because of hoof trimming, bedding, manure etc. it is possible to look at the Angle of Hairline. In case of a significant difference the worst/extreme side must be scored.  

9: **Fore Udder Attachment**  
*Ref. Point:* The strength of attachment of the fore udder to the abdominal wall:  
Not a true linear trait - Optical  

1 – 3 Weak and loose  
4 – 6 Intermediate acceptable  
7 – 9 Extremely strong and tight.  

In cases of significant difference in the quality of udder attachment of either side the worse side must be scored. (Only if the udder is healthy).
10: **Rear Udder Height**  
**Ref. Point:** The distance between the bottom of the vulva (pin bone) and the milk secreting tissue: in relation to height of the animal:

1 – 3 Very low  
4 – 6 Intermediate  
7 – 9 High  

Reference scale: Measured on a scale between the bottom of the vulva and the hock; the midpoint represents a score 4 (29 cm); 2 cm per point

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11: **Central Ligament**  
**Ref. Point:** The depth of cleft, measured at the base of the rear udder:

1 Convex to flat floor (+1 cm)  
2 (+0.5 cm)  
3 (+0 cm)  
4 Slight definition (-1 cm)  
5 (-2 cm)  
6 (-3 cm)  
7 Deep definition (-4 cm)  
8 (-5 cm)  
9 (-6 cm)
12: **Udder Depth**  
*Ref. Point:* The distance from the lowest part of the udder floor to the hock:

1 Below hock  
2 Level with hock  
5 Intermediate  
9 Shallow (22cms Above Hocks)

Reference scale: level=2 (0 cm); 3 per point

![Udder Depth Diagram]

1 Deep  
5  
9 Shallow

13: **Front Teat Placement (FTP)**  
*Ref. Point:* The position of the front teat from the centre of the quarter as viewed from the rear:

1 – 3 Outside of quarter  
4 – 6 Middle of quarter  
7 – 9 Inside of quarter.

![Front Teat Placement Diagram]

1 Outside  
5  
9 Inside
14:  **Rear Teat Position (RTP)**

*Ref. Point:* The position of the Rear Teat from the centre of the quarter as viewed from the rear:

1 – 3  Outside of quarter  
4 – 7  Middle of quarter  
8  Touching  
9  Crossing

Reference scale: To obtain population distribution it is recommended that 4 represents mid point of the quarter

![Diagram of Rear Teat Position](image)

1  Outside  
5  
9  Inside

15:  **Teat Placement Side View (Unique to the UK)**

*Ref. Point:* The distance between the front and rear teats

1 – 3  Close  
4 – 6  Intermediate  
7 – 9  Far Apart

*No Picture Available*
16: **Teat Length**  
**Ref. Point:** The length of the front or rear teat:

1 – 3 Short  
4 – 6 Intermediate  
7 – 9 Long

Reference scale: 1-9 cm; 1 cm per point by front teat and 0.75 cm by rear teat.

16: **Locomotion**  
**Ref. Point:** When walking, the use of legs, feet, length and direction of the step. Not a true linear trait.

1-3 = Severe Abduction and/or Short Stride  
4-6 = Slight Abduction and Medium Stride  
7-9 = No Abduction and long stride

Abduction is the lateral deviation in respect to the straight line.

Should only be scored in herds where cow regularly walk. If so, score all cows to be classified that day. The score of 9 means that the rear leg is put straight forward with force to the step of the foreleg, and (extreme) lame cows getting score 1 because they have short strides.
18: **Body Condition Score**

*Ref. Point:* The covering of fat over the tail head and rump, not a true linear trait

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Poor</td>
</tr>
<tr>
<td>5</td>
<td>Intermediate</td>
</tr>
<tr>
<td>9</td>
<td>Grossly Fat</td>
</tr>
</tbody>
</table>

With a score from 1-6 primarily observed at the loin, while the tail implant is important with the higher scores (7 – 9)
RECORDING OF ADDITIONAL HEIFER TRAITS

Temperament

1  Vicious
2  Very nervous
3  Nervous
4  Slightly nervous
5  Average
6  Slightly above average
7  Quiet
8  Very quiet
9  Placid

Milking Speed

1  Very hard
2  Hard
3  Slow
4  Slightly below average
5  Average
6  Slightly above average
7  Fast
8  Very fast
9  Runs milk
BULL CLASSIFICATION

Bulls must be 15 month old to be eligible for scoring. Bulls must be a minimum of two years old to score EX.

Bulls will be scored in four composite boxes

Rump
Body conformation
Dairy strength
Legs/feet

Visit may be for bull classification only – not part of female TCS.

Classification by region.

Registration certificates must be produced for identification and endorsement, with appropriate classification.

Bulls may be presented for up-pointing or re-classification and cannot be down-pointed/down-graded.