

AMERICAN KNEEBOARD ASSOCIATION

TECHNICAL CONTROLLERS' HANDBOOK

(Revised August 1993)

TECHNICAL CONTROLLER

It shall be the responsibility of the Technical Controller, to be determined, by methods he/she believes to be required under circumstances that the course should continue to be certified prior to the start of competition. The Technical Controller shall continue to be responsible for the certified conditions of the course throughout the tournament and must sign a statement at the conclusion of the event that, in his/her opinion, the courses were entitled to certification throughout the tournament. It shall be the responsibility of the Technical Controller to assist in the measuring of official tournament ropes, bridles and handles prior to the start of a record capability competition. It shall be the responsibility of the Technical Controller to assist in the measuring of official tournament ropes, bridles and handles prior to the start of a record capability competition.

CERTIFICATION OF SLALOM AND TRICK COURSE

The competition Slalom and Trick course required for the events scheduled for the tournament shall be certified, both as to measurement and as to approval, by the Technical Controller prior to the tournament. In the event that a possible slalom record has been set, the Technical Controller must collect the tournament rope at the completion of the run and measure the rope, bridle and handle for accuracy. Once this has been completed and all measurements are determined, the Technical Controller must sign a statement to confirm measurement. The rope, bridle and handle may be used again providing it remains within tolerance.

TOWLINES

Towlines to be used for the slalom event shall have loops sliced in the line at distances from the handle of 59' 10-1/2", 52' 6", 46' 9", to permit quick change of line length. Each of these loops shall be within 5-7/8" of the correct distance from the handle. If it is reasonable expected that they will be used, additional loops at 42' 7-13/16", 39' 4-7/16", 36' 10-7/8", 35' 3/4", 33' 8-7/8", 31' 9-3/4", and 29' 10-3/4" may be provide as felt necessary. These additional loops shall be within 3" of the correct distance. For Class C tournaments and below, lines without loops for shortened rope runs may be provided in events where such lengths are not reasonable expected to be needed. At the option of the Tournament Committee, towlines may be supplied with colored loops which must be in the sequence of red, orange, yellow, green, blue, violet (or blue/white) and white, with red being the -15' indication. Colored multi-section towlines may be supplied with colored sections in the following sequence:

The measurements below are for rope and handle attachments (4' 11").

| | Section | Color |
|-------------------|-------------------------|--------------|
| | 75'5-1/2" +/- 11-3/4": | Neutral |
| 1st cut -15 | 59'10-1/2" +/- 5-7/8" | Red |
| 2nd cut -22 | 52'6" +/- 5-7/8" | Orange |
| 3rd cut -28 | 46'9" +/- 5-7/8" | Yellow |
| 4th cut -32 | 42'7"-13/16" +/- 5-7/8" | Green |
| 5th cut -35 | 39'4-7/16" +/- 3" | Blue |
| 6th cut - 30-1/2" | 36'10"-7/8" +/- 3" | Violet |
| 7th cut - 39-1/2 | 35'3-1/4" +/- 3" | Neutral |
| 8th cut - 41 | 33'8-7/8" +/- 3" | Red |
| 9th cut - 43 | 31'11-7/8" +/- 3" | Orange |
| 10th cut-45 | 30'4-3/16" +/- 3" | Yellow |

The shortening loop may be made of both adjoining colors or alternatively of the color of the section toward the handle end. Neutral may be white, black, black/white or any other approved neutral color, except colors used above.

SKIER FURNISHED HANDLE

The contestant may furnish his own handle, for which he is entirely responsible, with an attaching loop to attach to the tournament line. The contestant's handle may be of any dimension or material except that the length of the bridle and handle must be 4' 11".

TOLERANCES

The accuracy of all speeds shall be determined by the accompanying chart. The speed indicated on the speedometer may not vary more than +/- 1/2 mph. It is recommended that the accompanying table be used unless the quality of the boat driving and water conditions do not permit their use with an absolute minimum or reruns. For a speed to be considered accurate, the maximum and minimum speeds recorded in the course as noted by an official in the boat must be within the tolerance allowed, and in addition, the time through the course must fall within the times allowed. Any timing device used in a tournament must be checked by the Chief Judge or a person appointed by him to 5 parts in 10,000 (.01 second in 20 seconds).

TIMING OF TOWBOAT

The following times are for speedometer calibration. All times listed are for the speed indicated from the slalom course entry gates to the third buoy.

TRICK TIMES

| MPH | ACTUAL | TOLERANCE |
|-----|--------|-------------|
| 11 | 22.17 | 21.20-23.22 |
| 12 | 20.32 | 10.51-21.20 |
| 13 | 18.76 | 18.06-19.51 |
| 14 | 17.42 | 16.82-18.06 |
| 15 | 16.25 | 15.73-16.82 |
| 16 | 15.24 | 14.78-15.73 |
| 17 | 14.34 | 13.93-14.78 |
| 18 | 13.55 | 13.18-13.93 |
| 19 | 12.83 | 12.50-12.18 |
| 20 | 12.19 | 11.89-12.50 |
| 21 | 11.61 | 11.34-11.89 |

SLALOM TIMES

| MPH | MID COURSE | | FULL COURSE | |
|-----|------------|-------------|-------------|-------------|
| | ACTUAL | TOLERANCE | ACTUAL | TOLERANCE |
| 14 | 17.42 | 16.82-18.06 | 41.38 | 39.96-42.92 |
| 16 | 15.24 | 14.78-15.73 | 36.21 | 35.11-37.38 |
| 18 | 13.55 | 13.18-13.93 | 32.19 | 31.32-33.11 |
| 20 | 12.19 | 11.89-12.50 | 28.97 | 28.26-29.71 |
| 22 | 11.08 | 10.84-11.34 | 26.33 | 25.75-26.95 |
| 24 | 10.16 | 9.95-10.30 | 24.14 | 23.65-24.65 |

SLALOM COURSE

Surveying the Course

Surveying the course itself can be a difficult task and the results will be less than totally accurate if some preparations are not made in advance. All of the buoys must be installed and should be tight. Having at least half of the buoy, and preferable more, under the water will help ensure that the buoy is floating directly over the anchor and will also prevent floating during the survey. The usual result of loose buoys is large triangles. If the wind is blowing, having the buoys tight and mostly submerged is even more important since variable winds can cause large errors. If at all possible, it is better to delay the survey until the wind subsides than try to complete a survey when the water is rough.

CHECKING A PREVIOUSLY SURVEYED COURSE

If you are to be a Technical Controller at a site on which the course has been previously surveyed, you are still obligated to verify the accuracy of the course. The most accurate means of doing this would of course be to complete your own survey, or at a minimum, set up an instrument and verify the angles produced by the original survey.

If completing a survey is not possible, there are some alternatives. The course can be physically measured by swimmers with a tape measure. A good way to accomplish this is to join several towropes together, pre measure the distances you wish to check, and mark the rope to indicate these distances. The rope can then be stretched between the buoys and the distances checked. This is usually quite accurate because the rope floats on the surface and is easy to stretch tight. All of the course dimensions can be checked in this manner.

Another method of checking the accuracy of slalom courses is to measure the width of Buoy 2, 2, 5, 6 and then visually sight each skier buoy line to ensure that the buoys line up. When using this method it is also recommended that some of the distances between the gates be checked to verify the length of the course.