PNTSDF Scoring: The Method and the Math
Marcel Rivard

Concepts

Scoring for the PNTSDF is done on the basis of a few key concepts:

- **Category**: This represents the experience level of the competitors. Each event has a specific set of Categories that competitors may enter in based on their skill, age and past experience in the festival.
- **Criteria**: This represents some element that is evaluated. The set of criteria evaluated for each event varies, as does the scoring model for that Criteria. Each criteria is generally judged by multiple judges for any competitor
    - Criteria for Square Dancing include: Rhythm, Enjoyment, Posture, Styling, Grace and Ability. For the Mystery calls, Dance Time is also a criteria
    - Criteria for Calling include Knowledge of Call, Command, Tone, Rhythm, Personality, Timing, Enunciation and Clarity.
    - Criteria for Round Dancing include: Execution, Choreography, Rhythm, Enjoyment, Posture and Styling.
    - Criteria for Cueing include: Knowledge of cue, Command, Rhythm, Personality, Timing and Enunciation/Clarity
- **Negative versus Positive Criteria scoring models**: A negative scoring model is one where errors are counted. A positive scoring model is one where score is given within some range. For the events in PNTSDF, the judges score out of 10. For negative scoring models, the errors subtract from some initial starting score and stop when the value drops to zero (you can only be so bad...). For the Square Dancing Mysteries scoring, dance time is also a criteria and is is scored on the basis of the number of seconds danced.
- **Factors**: Factors are multipliers applied against the score or error count on a criteria to establish the weighting of that criteria on the total score for the event. Factors can vary based on Category of competitors within an event and within a round of an event (This is particular to the Display round for Square Dancing). In most cases, Factors are small integer values.
- **Adjustments**: These are simple numeric values that can modify the intermediate or final scores as a result of issues that come up during the festival itself. Generally they involve penalties applied against a competitor who neglects to follow the rules, but it can also be used to provide compensation for an adverse situation (sound system failure, caller (not your own) not being able to be heard, etc.

Each event (Square Dancing, Calling, Round Dancing, Cueing and Exhibition) includes it's own set of Categories, Criteria and factors, along with scoring model peculiarities carried over through the years. The next sections of this document look at the Scoring for each event in more detail.

Square Dance:

Depending on the Category of the competitor square, The Square Dancing event has 1, 2 or 3 Rounds of competition.

Display Round

The first round of square dance competition is the Display round. (This is the only round that Novice dancers compete in. Three Squares are on the floor at any one time. The middle position is the "display" position.. Special because the Square uses one of their own competing Callers to call for that square. The Squares progress through all positions to be judged once in each position.

In front of each position is a table with two square dance judges on on calling judge at each table. The Square dance judges are scoring the square in front of them, the calling judge is judging the caller for the center square (we'll discuss calling in another section..)

In this round, each square dance judge provides a score for each Criteria. In this round of square dancing, all criteria are positive scored, so each score is a value from 0 to 10. Factors for the criteria in this round vary by position as follows:

	Rhythm	Enjoyment	Ability	Posture	Styling
Position 1/3	1	2	4	2	2
Position 2	3	5	1	2	4

The judges scores are tabulated in the scoring database which computes the totals as follows:

• An individual judges total is computed by multiplying each criteria raw score (out of 10) by the applicable factor from the table above.
• For each position, the two judges scores are averaged to provide a position score
• The display position (2) is used to rank the competitors for the "display" award
• The average scores are summed for the final Round 1 total.

In the above example, the Position1, Judge 1 total is computed as:
$8*1+7*2+7*4+8*2+9*2 = 84$ (note, factors in red)
The other judge totals are calculated similarly. The overall round total is computed as:
$(84+88+126+121+83+81)/2$.. or, the average of the scores of the two judges in each position, summed together.

Mystery Rounds

The Mystery rounds are effectively danced to an extended patter (8 to 15 minutes depending on category). Competitors dance zero, one or two mysterys depending on the dancer's category. Mysterys are scored based both on Time danced as well as the other criteria. There are 5 timers assigned to each square dancing. The timers start their stopwatches while the dancers are executing the moves correctly and pause the stopwatches while the dancers are either stopped or not executing the moves being called The Highest and lowest recorded times are ignored and the remainder averaged to produce the score for the Time criteria. Factors (multipliers) for the other criteria are as follows:

	Rhythm	Enjoyment	Ability	Posture	Styling
Round 2/3	1	1	1	1	1

The Time based scores are based on the number of seconds danced. The times are collected as minutes and seconds to reduce entry errors.

Rounds 2/3	Timer # 1	2	3	4	5	Totals (Seconds)	Grace Rhythm	Enj.	Posture	Styling	Round 2/3 Totals
Prelim Myst.	6:54	6:40	5:50	7:34	6:58	410.67	7	7	8	9	7	448.67
Final Myst.	8:44	8:34	7:54	9:02	8:48	522.00	7	6	7	6	8	556.00

In the above example, the 6:40 and 7:34 times are ignored for the preliminary mystery and the 7:54 and 9:02 times are ignored for the final mystery. The remainder are converted to seconds and averaged to provide the Time Totals.

Calling:

Calling competitors compete in either one, two, three or four rounds of competition depending on the competitor's category.

• The first round is in conjunction with the Square Dancing Display round where the caller performs a singing call for one of their club's squares in the Display (middle) position. Novice callers are limited to this first round.

• The second round is a Patter round. Competitors must call a minimum 2:30 patter. Pre-teen callers compete in round 1 and 2.

• Third round may be either a singing call or a patter call for levels up to Intermediate. For Senior competitors, this is called in conjunction with round 4 as a full tip, consisting of a patter call and a singing call.

Calling criteria include: Knowledge of Call, Command, Tone, Rhythm, Personality, Timing, Enunciation and Clarity. Callers may also be disqualified for any round if they severely violate the rules. The Weighting factors for the criteria are the same for all rounds and are as follows:

Knowledge	Command	Tone	Rhythm	Personality	Timing	Enunciation	Clarity
4	5	3	5	4	6	6	7

The following shows a complete set of scores for a Senior caller. The differences on each round's scoring is discussed in the following sections:

Round 1

	Comm	Tone	Rhythm	Pers	Timing	Enunc	Clarity
Judge 1	10	9	9	9	9	9	9
Judge 2	9	8	9	8	8	8	8
Judge 3	9	10	10	8	10	9	10

Cue Sheet Errors [0] x (-12) + 120 = [120]

Factored Score

Comm	Tone	Rhythm	Pers	Timing	Enun	Clar
140	81	140	100	162	156	189

Round 1 Total [1088]   DQ ☐

Round 2

	Knowl	Comm	Tone	Rhythm	Pers	Timing	Enunc	Clarity
Judge 1	7	8	8	8	7	7	7	8
Judge 2	8	9	8	8	6	8	8	8
Judge 3	8	7	8	8	8	9	7	8

Time [3:49]   UnderTime [0] x -1 = [0]

Factored Score

Knowl	Comm	Tone	Rhythm	Pers	Timing	Enun	Clar
92	120	72	120	84	144	132	168

Round 2 Total [932]   Tech Score [444]   DQ ☐

Round 3/4 (Patter)

	Knowl	Comm	Tone	Rhythm	Pers	Timing	Enunc	Clarity
Judge 1	7	7	8	7	7	8	8	8
Judge 2	8	9	9	9	8	8	8	8
Judge 3	7	7	8	7	6	8	8	8

5 Moves [5]

Time [4:00]   UnderTime [0] x -1= [0]

Factored Score

Knowl	Comm	Tone	Rhythm	Pers	Timing	Enun	Clar
88	115	75	115	84	144	144	168

Round 3 Total [1053]   DQ ☐

Round 3/4 (Singing)

	Knowl	Comm	Tone	Rhythm	Pers	Timing	Enunc	Clarity
Judge 1	8	8	8	8	8	8	8	8
Judge 2	10	9	8	10	8	9	8	9
Judge 3	10	9	9	9	8	9	9	9

Factored Score

Knowl	Comm	Tone	Rhythm	Pers	Timing	Enun	Clar
112	130	75	135	96	156	150	182

Round 4 Total [1036]   DQ ☐

Round 1 (Display Round)
One thing to note on this round is that the "Knowledge of Call" criteria is not being judged. The Round 1 call is being performed both to judge the caller as well as the dancers. For this reason, a cue sheet checker is included in the judging, who's job is to verify that the caller is calling the call exactly as the published cue sheet specifies. Each error results in 12 points being subtracted from a base "Knowledge" score of 120. The second thing to note is that the judges scored are not averaged but simply factored and summed to provide a total score. This is different from how Square Dancing is scored primarily as a result of different groups responsible for determining the scoring methodology over the years.
Computation of the total score is relatively simple:
- multiply each score from the judge by the corresponding factor for the criteria
- sum all the factored scores
- add the Knowledge score (120 - (12 * errors))
For this example, the round 1 Command score is computed as:
(10+9+9)*5 = 140 where 5 is the factor for the Command Criteria.
The round 1 total is:
140+81+140+100+162+156+189+120 = 1088

Round 2
Round 2 is a patter call. Callers must call for at least 2 minutes and are penalized 1 point for each second under 2 minutes. Round 2 is also the source for the scoring / ranking of the "Tech" award. This is awarded for the highest ranking in the criterium deemed most "important" for callers (Timing, Enunciation and Clarity).

Round 3 and Round 4
Round 3 and 4 are unique with respect to the Intermediate category in that the caller has a choice of calling a patter call or a singing call. If they call a patter, they receive a score for round 3. if the judge a singing call, they receive a score for round 4.
For Senior callers, both round 3 and round 4 receive scores.
For round 3, the under-time penalty score is applicable. Round 4 scoring and calculations are straightforward.

Round Dancing:
Round Dance competition has two rounds. The first, the "Compulsory" round has two dances of different rhythms that the dancers have knowledge of months before hand. These must be danced without cues. The second round is a Hash round where although the set of round dance figures are defined ahead of time (based on Roundalab standards), the dance is cued as a hash.
Scoring for Round Dance competition is, by far the most convoluted of the festival and, in fact also produces the most score sheets. 8 Judges are required for the Round dance competition for each round

Compulsory Round
In the compulsory round, two dances are danced by up to 3 couples on the floor at the same time. 6 Judges are assigned as follows:
• two judging the Execution and Choreography categories
• two judging the Rhythm and Enjoyment categories
• two judging the Posture and Styling categories
Execution and Choreography are "negative" scored categories (count the errors). The other categories are positive scored categories (grant a score out of 10).
Factors are as follows:

	Execution	Choreography	Rhythm	Enjoyment	Posture	Styling
Compulsory	-2	-1	3	2	1	1

In addition to the Factors, the "baseline" score for Execution is 70 and for Choreography is 35.
In this round, the scores are averaged between the two judges to provide the final score.. Here's where the convoluted scoring comes into play..

Round 1 Compulsory Dances						
You Don't Wear Blue so Well			ERRORS		Rock & Roll III	
		Dance 1		Dance 2		Factors	Totals
	Max	J1/2/3	J4/5/6	J1/2/3	J4/5/6		
Execution	70	2	5	8	5	2	120.0
Choreography	35	0	0	0	1	1	69.5
Rhythm	10	8	6	10	7	3	46.5
Enjoyment	10	9	7	9	6	2	31
Posture	10	8	9	7	8	1	16
Styling	10	8	10	8	9	1	17.5
					Round 1 Total		300.50

For Execution and Choreography
- Compute each judges total for each dance for the criteria by multiplying the error count with the factor, then subtracting from the baseline. Then average the two judges scores. In the example above:
  - dance 1 Execution = (70 - (2*2))+(70-(5*2)))/2 = 63 where 2 is the factor for Execution
  - dance 2 Execution = (70 - (8*2) + (70 - (5*2)))/2 = 57
- Sum the totals for each dance by criteria
  - Execution total = 63+57 = 120.0

(Note the actual computations performed are simplified versions of these equations, but this presentation is probably easier to understand from the perspective of intent).

For the other criteria, the judge scores are factored, averaged for each dance, then the averaged dance totals are summed to get the final score. eg, for the Rhythm criteria above:
- Rhythm Total = (((8*3)+(6*3))/2) + (((10*3)+(7*3))/2) = 46.5

Hash Round

Scoring for the Hash round is slightly more convoluted than for the Compulsory round. In the compulsory round, Six judges are assigned to just counting execution errors. The judges in this event are experienced round dancers who have danced the hash secretly in the past. Two additional judges are assigned to judging styling aspects (one for Rhythm and Enjoyment, the second for Posture and Styling).

The factors for the hash round are similar to those of the compulsory round with Execution and Choreography combined into the "Errors" criteria.

	Errors	Rhythm	Enjoyment	Posture	Styling
Hash Round	--3	3	2	1	1

The Baseline value for Errors in this round is 155.

The Hash round dances two dances, each with a different rhythm (similar to the compulsory round).

In this round, the computations for the Errors Totals take an additional twist..

- Each Judge's score is computed by subtracting the factored error count from the baseline. for judges 1 through 6 in dance one above, this would be: 134, 131, 140, 131, 113, 98.
- The highest and lowest scores are ignored and the remainder averaged: = (134+131+131+113)/4 = 127.25
- The factored totals for Rhythm, Execution, Posture and Styling are computed, then **multiplied by the *scale** (the 0.571428571428 number). This is there because the Round dance leaders wanted the Compulsory and Hash rounds to be equally weighted.
- The resulting numbers are summed to obtain the round 2 total scores.

(All I can say is it's a good thing the computer is good at math..)

Cueing:

By comparison to Round Dancing, scoring for Cueing is really simplistic.. All Criteria are positive scored and the same for each round, all Circuits (rounds) are score identically.

Criteria for RD Cueing judging are: Knowledge of cue, Command, Rhythm, Personality, Timing and Enunciation/Clarity. Factors are as follows:

Knowledge	Command	Rhythm	Personality	Timing	Enunciation/
11	9	10	7	12	11

The number of circuits cued by a competitor depend on their category. Novices cue only circuit 1, Advanced cue circuits 1 through 3. All other category competitors cue circuits 1 and 2.

The following is a sample score sheet showing scores, subtotals and totals. Interpreting the methodology is left as an exercise to the reader (since it is simple).

Circuit 1

	Knowl	Comm.	Rhythm	Pers	Timing	Enunc. Clarity
Judge 1	6	5	5	6	5	7
Judge 2	9	10	10	9	10	9
Judge 3	10	10	10	9	10	10

Factored Score

Knowl	Comm.	Rhythm	Pers	Timing.	Clarity
275	225	250	168	300	286

Round Total 1834

Circuit 2

	Knowl	Comm.	Rhythm	Pers	Timing	Enunc. Clarity
Judge 1	9	9	9	9	9	8
Judge 2	9	8	9	8	8	9
Judge 3	7	8	7	8	7	8

Factored Score

Knowl	Comm.	Rhythm	Pers	Timing.	Clarity
275	225	250	175	288	275

Round Total 1818

Circuit 3 Cold Cue

	Knowl	Comm.	Rhythm	Pers	Timing	Enunc. Clarity
Judge 1	8	8	7	9	7	9
Judge 2	7	7	8	7	5	7
Judge 3	8	8	7	8	7	8

Factored Score

Knowl	Comm.	Rhythm	Pers	Timing.	Clarity
253	207	220	168	228	264

Round Total 1670

Exhibition:

Exhibition is a fun event. 5 judges are selected from the attendees at the festival and given scoresheets. They sit in the audience and apply scores as they see fit. Exhibition judging criteria include: Execution/Synchronization, Originality/Choreography, Styling, Rhythm and Enjoyment. All Criteria are positively scored out of 10. Criteria factors are:

Execution/ Synchronization	Originality/Choreography	Styling	Rhythm	Enjoyment
2	1	2	1	1

Total score is computed simply by factoring all the scores and summing the results for all judges by criteria. Here's an example score sheet:

	Judges Scores					Factors	Factored Totals
	1	2	3	4	5		
Execution / Synchronization	9	9	9	10	8	2	90
Originality / Choreography	9	10	9	10	7	1	45
Styling	10	9	8	10	8	2	90
Rhythm	9	9	9	10	9	1	46
Enjoyment	10	9	8	10	9	1	46
						Total	317

The Bottom Line

There are literally hundreds of awards granted at the PNTSDF. All events have a 1st, 2nd and 3rd place by Category plus a few "special" awards (Best Display for Dancing, Best Singing, Best Patter and Tech awards for calling). There are additional awards granted for promotion (selling the most badges to support the festival) and the Coordinator's award, granted to the "best" club at the festival (subjectively decided by the festival Coordinator).

I hope this document has provided an understandable overview of the Scoring methodology we use for the PNTSDF. If there are any questions, I can be contacted via the PTNSDF website (http://pntsdf.org). The database supporting the scoring system is also freely available (you'll need a copy of Filemaker Pro to use it though).

Marcel Rivard
Chief Scorekeeper, PNTSDF.