

“Considerations for the Course Designer”

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***Reference Materials from Roger “The Real” Johnson
and George Schweikle***

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Today's Discussion Topics

- **What is our goal?**
- **Satisfying “stakeholders”**
- **A few words about safety . . .**
- **Course philosophy**
- **Cones**
- **Putting it all together**
- **Picture of success**
- **References**

What Is Our Goal?

- **Safety**
- **Facility retention**
- **Fun time had by all**
- **Fair competition**
- **Help the competitors learn “something”**

Satisfying “Stakeholders”

- **Who are the “stakeholders”?**
 - **SCCA – National Office and region**
 - “No paperwork is good paperwork”
 - **Site owner**
 - “No evidence that your club was there”
 - **Event chair**
 - “Your boss”
 - **Safety steward**
 - “Your partner”
 - **Competitors**
 - “Your customers”

A Few Words About Safety . . .

- **Section 2.1 covers course safety and layout rules**
- **Things that are overlooked:**
 - **Placement of the Timing & Scoring vehicle**
 - **Really enough distance from the course?**
 - **Can workers see enough of the course for safe conduct?**
 - **See cars for car number/class designation?**
 - **What will the course look like if it is wet?**
 - **Are the distances to obstacles enough?**
 - **Can the course be followed without chalk lines?**

A Few Words About Safety . . .

- **Section 2.1 covers course safety and layout rules**
- **Things that are overlooked:**
 - **Corner workers**
 - **Use light poles, etc. as natural locations for worker station**
 - **Position on the inside of a corner**
 - **Can they see all their cones?**
 - **Safe location but long distances to retrieve cones**
 - **Run with their backs to the direction of travel**
 - **Red flags**
 - **Courses that double back so that a single station may cover two discrete portions of the course**

A Few Words About Safety . . .

- **Section 2.1 covers course safety and layout rules**
- **Things that are often overlooked:**
 - **Factors contributing to rollovers**
 - **Negative cambered corners – especially right hand corners**
 - **Sharp decreasing radius right hand corners**
 - **Fast sections that lead to tight slaloms or offsets (requiring two or more hard inputs)**
 - **Finish sections**
 - **Abrupt and tight maneuvers just before the finish**
 - **Braking just before the finish**
 - **Position of your light beams**

Course Philosophy

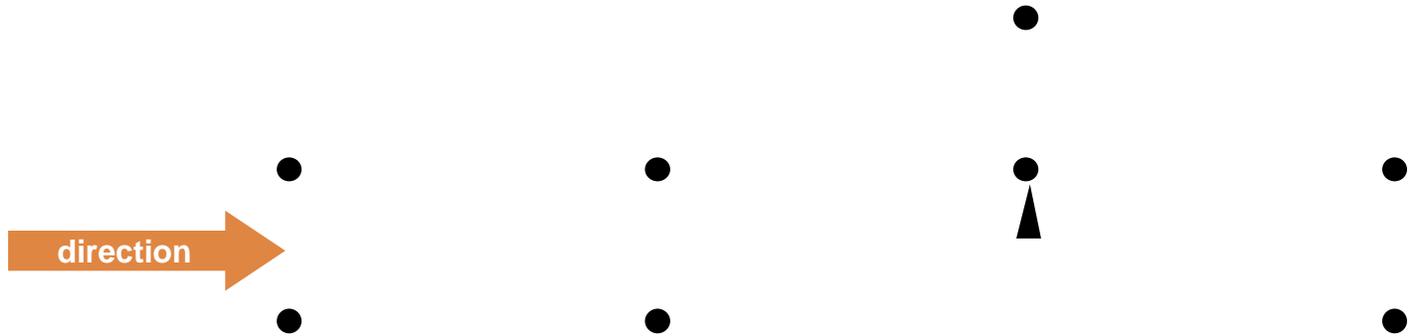
- **What type of course do you want to create?**
 - Mimic “Nationals” or other “big events”?
 - “Gated course” vs “MRC”
 - *This will affect the type of elements you may want to offer, and will affect the visuals you offer*

Course Philosophy

Gated Courses

Ratio of gate width to gate spacing should be 1 to 3 or greater.

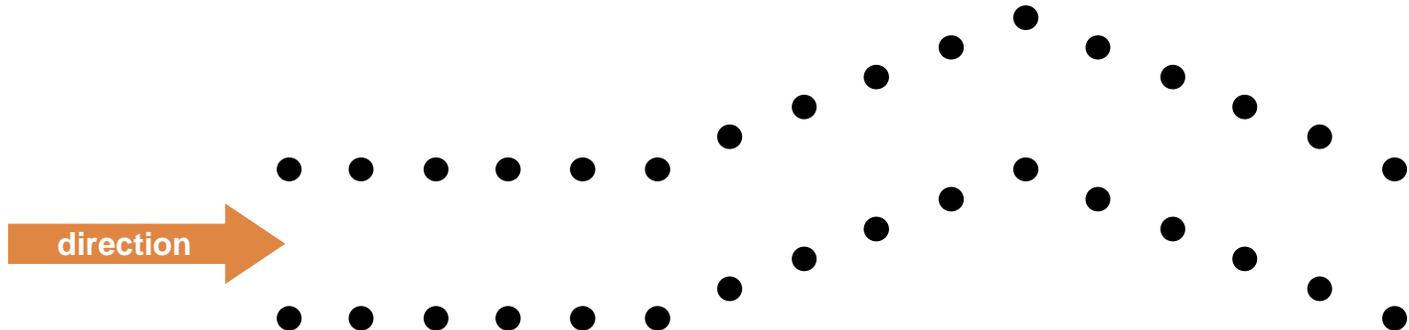
For example, if your gate width is 20 feet the distance between gates would be 60 feet or greater



Miniature Road Courses

Ratio of gate width to gate spacing should be 2 to 1 or less.

For example, if your gate width is 20 feet, the distance between gates would be 10 feet or less



Course Philosophy

- **Insure that your course will be fun**
- **Insure that your course will be fair**
 - **Course with 50' offset slaloms and 35' radius sweepers vs 400' foot straights with 180° increasing radius turns**
- **“Input density”**
 - **Measure of direction-changing inputs which the driver uses to negotiate the course**
 - **Too many = “busy” course (survival); no room to “set-up” for the next element**
 - **Too few = non-challenging course**

Course Philosophy

- **We haven't discussed:**

- **Flow**

- **Vary elements (corner radii, offset spacing)**
- **Next gate visible in peripheral line of sight**
- **Will moving a key cone aid in the abruptness of an input?**
- **Be aware of walled in corners**

- **Speed**

- **We know about “speed creep”, but watch slow sections!**

- **Visuals – good or bad**

- **Position cones/gates to avoid confusion**

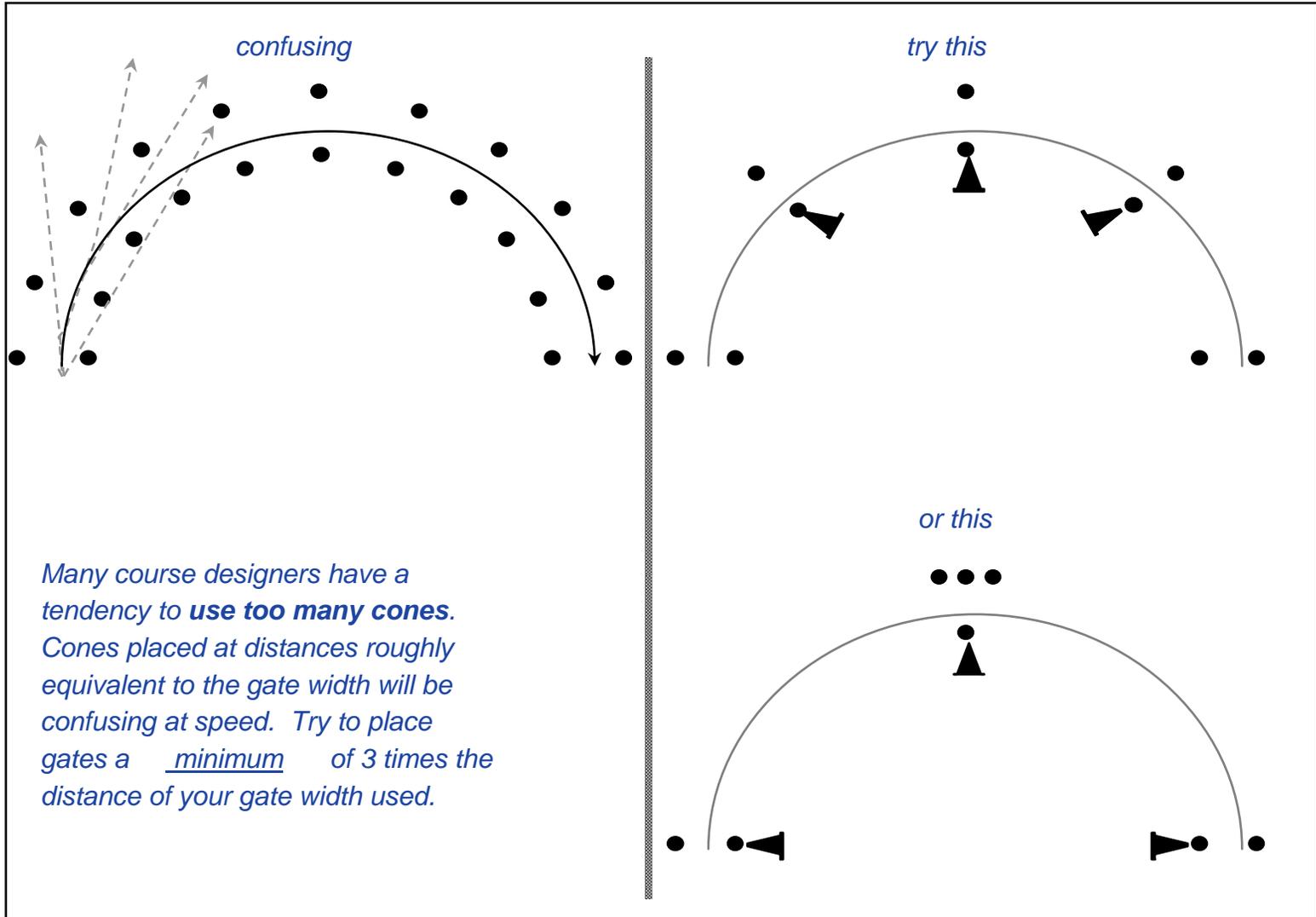
<http://www.houscca.com/solo/courses/coursedesign.zip>

Cones

- **Reference Roger Johnson's guide for "superfluous cones"**
 - **Adds setup/teardown labor**
 - **Increases course map complexity**
 - **Can add to driver confusion**
 - **Increase likelihood of reruns**
 - **Big event competition integrity**
 - **Increased burden on workers**
 - **Hot weather**
 - **Wet weather**

Cones

Sweeper



Putting It All Together

- **Assemble “concepts”**
 - **Obtain site diagrams – note obstacles!**
 - **Plan non-course features**
 - **Site entrance/waiver point, registration, tech, pit, grid, spectator areas**
 - **Locate start/finish and timing/scoring vehicle**
 - **What is your “philosophy”?**
 - **Put together a main “concept” and alternatives**
 - **Identify key features and key cones**
 - **Involve your event chair and safety steward**

Goal: Have different ideas to best use your visit time

Putting It All Together

- **Visit the site**
 - **Note deviations from site diagrams**
 - **Add details w.r.t. surface issues, missed obstacles, or elevation issues**
 - **Walk through your course alternatives**
 - **Picture the flow around the facility**
 - **Picture the flow of the course**
 - **Visualize corner stations**

Putting It All Together

- **Surface issues**

- **Avoid areas with surface break-up**
- **Watch areas that will be subject to breaking-up (i.e.: spilled fluids)**
- **Avoid patches**
- **Watch out for drain holes, grates, rebar (from removed parking blocks), etc.**
- **Stay away from significant elevation changes**

Look at the surface through the eyes of a Mod or Kart driver!

Putting It All Together

- **Setting it up**
 - **Get the course set up early!**
 - **Pet peeve: courses that aren't ready for walking when registration is open**
 - **Set up the day before?**
 - **Position the start and finish first**
 - **Locate the timing vehicle**
 - **Insure safe and easy flow to/from grid**
 - **Work the “far corners” first, and then “fill in”**
 - **Easier to modify on the “fly”**
 - **Consult your alternatives**

Putting It All Together

- **Setting it up**
 - **Walk/drive the course with a critical eye**
 - **You can keep the basic intent, but optimize:**
 - **Flow**
 - **Visuals**
 - **Work with your event chair and Safety Steward ASAP**
 - **Direct conversation about suggestions**
 - **Control the changes – keep your intent**

Picture of Success

- **Easy to find**
 - **Course route can be walked without a map by a semi-experienced driver**
- **Easy to remember**
 - **Sections connect well**
 - **Visuals are consistent and clear**
 - **Directional flow is logical**
- **Hard to drive “right”**
 - **Rewards line, discipline, car control, and appropriate aggression**
 - **Noticeable time differential between different skill levels**

References

- **The “Bible” of course design:**
<http://www.houscca.com/solo/courses/coursedesign.zip>
- **Authored by Roger “The Real” Johnson**
- **Excellent in-depth discussion of all key topics discussed today, including illustrations**
- **Great discussion regarding “course flow”, visuals, element dimensions and real speed, and more!**