

National Corvette Museum

- Owns and Manages the Motorsports Park
- Located beside the only GM plant manufacturing the Corvette
- Makes Bowling Green a Destination for Corvette and car enthusiasts



Yes, it is where a sinkhole
swallowed 8 corvettes



© Corvette Museum

What caused it??

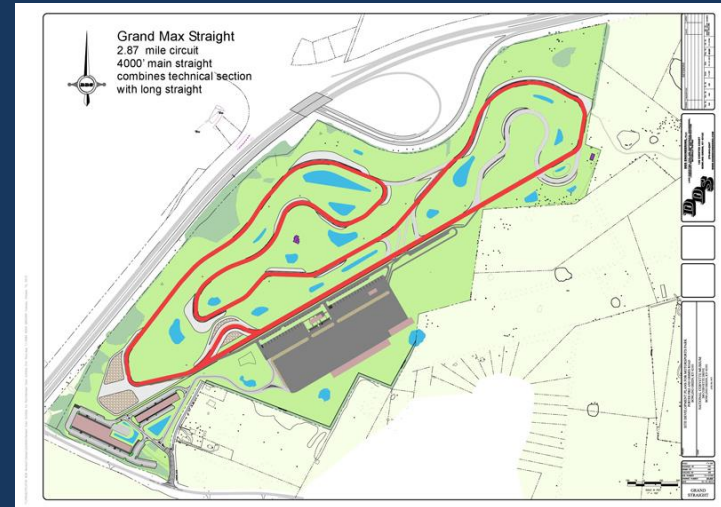
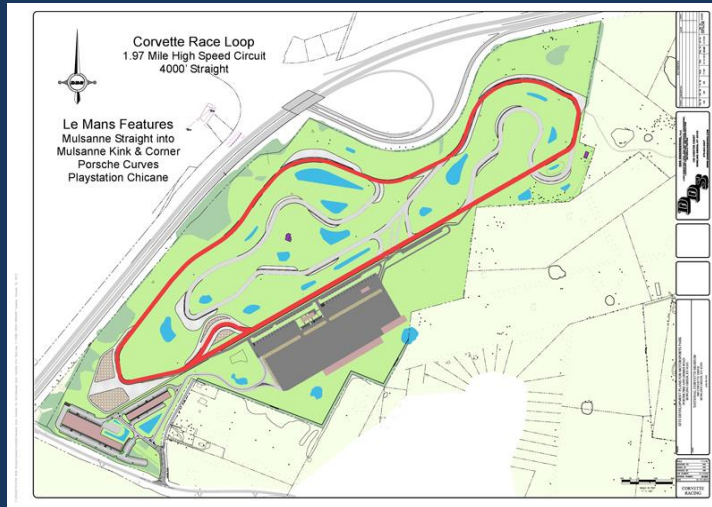


NCM Motorsports Park

- Le Mans style road course with multiple configurations
- 22 acre paved lot – skid pad/autocross area
- Multiple Uses
 - Car Clubs
 - Motorcycle clubs
 - Corporate events
 - Driver training
 - Manufacturer testing
 - Corvette Racing Team

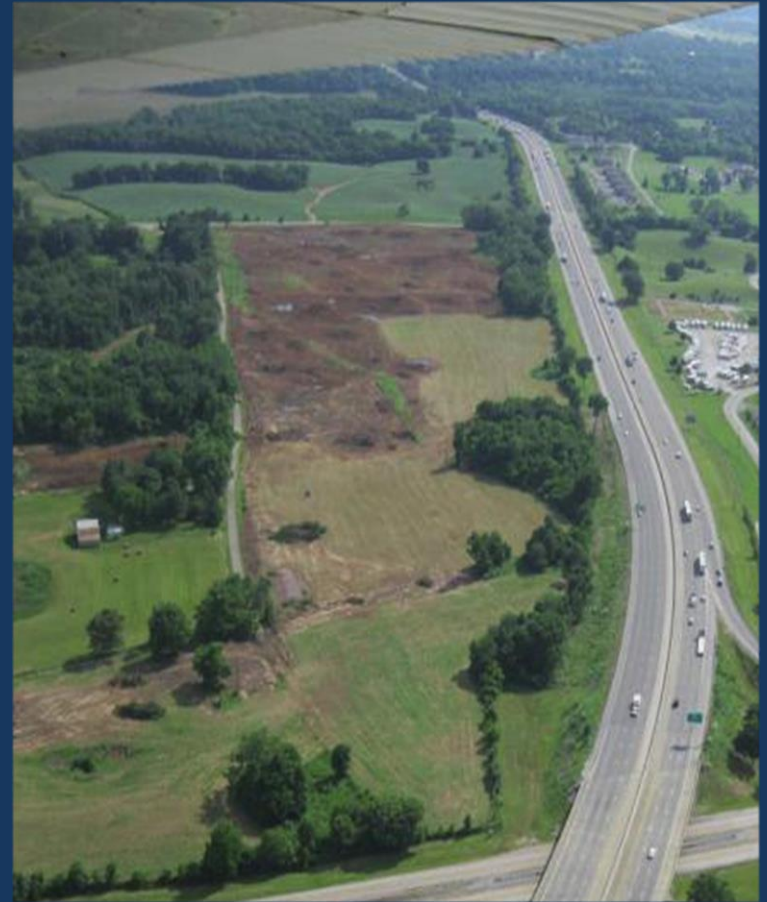


Multiple Track Configurations



Preparation for Construction

- Scotty's was asked by the NCM to give input for construction
- Fast "track" schedule
- Begin before design complete
- To begin clearing in June 2013
- To be complete by July 2014
- Labor Day 2014
 - Grand Opening for track
 - Museum's 20th Anniversary



Scope of Work

- 184 acre site
- .5 million cubic yards of excavation
- Utilities
- Over 1 mile of storm pipe
- Lime stabilization
- 85,000 tons of base stone
- 60,000 tons of asphalt
- Repaired over 90 sinkholes



Earthwork

- Mass earthwork began in August 2013
- Trimble GCS900 machine control on all dozers, compactors, excavators and graders
- 90% of earthwork complete by November 2013

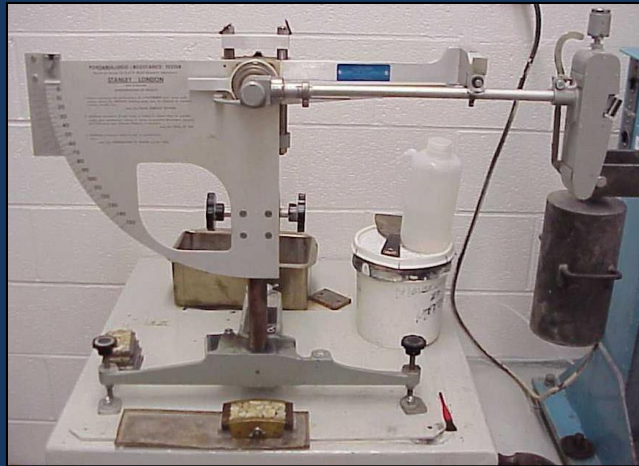


Pavement Design

- Aggregate
 - Spec calls for Granite on track surface mix
- Mix Design
 - 75 Blow Marshall with high stability
 - ½" Nominal size mix
- Liquid Asphalt
 - PG 82-22 highly modified, highly polymerized



Aggregate Selection



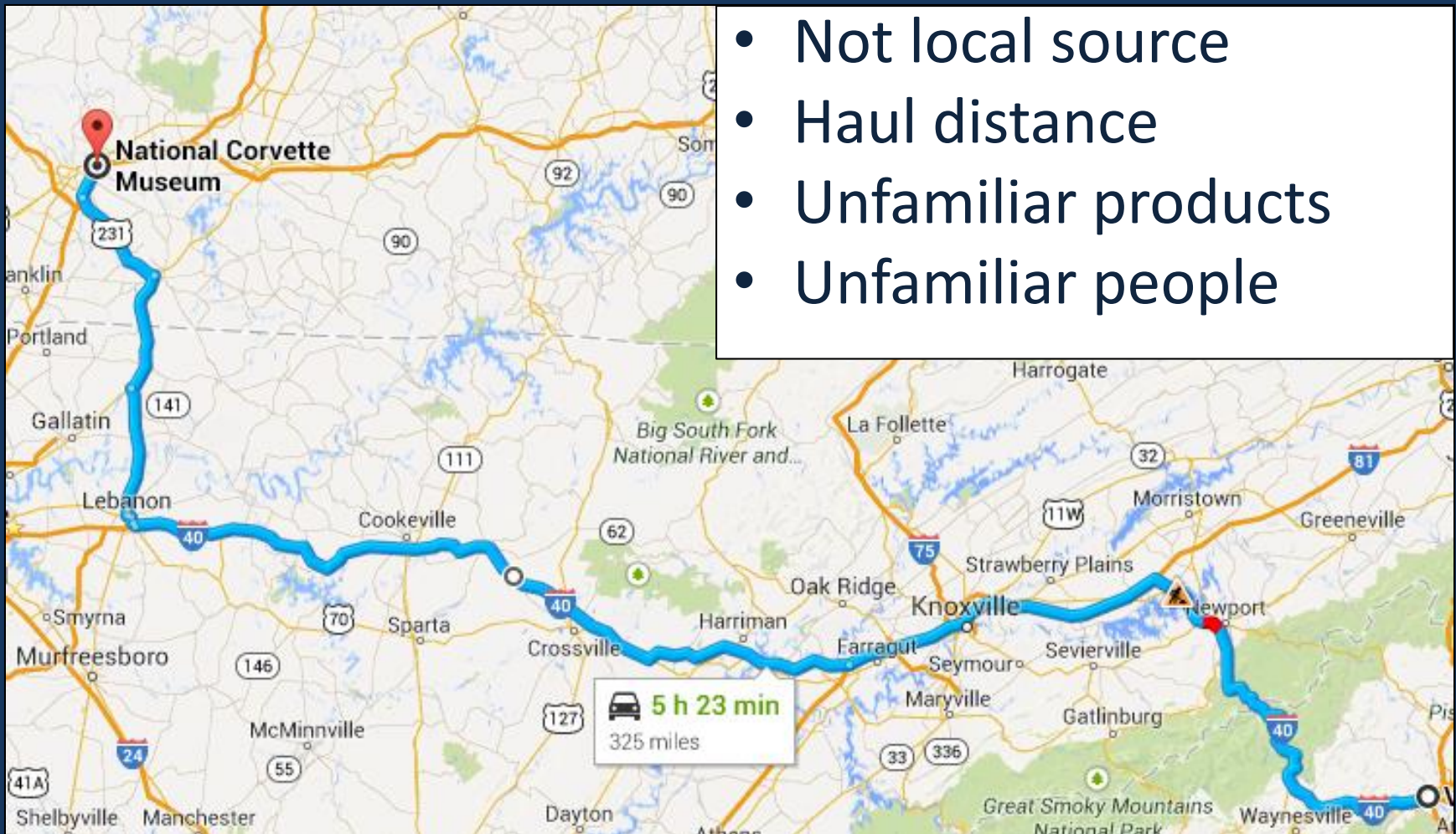
Finding a suitable stone

- Granite
 - Silica-based
 - Durable
 - Hard
 - Used at other tracks
 - Long haul
- 3/8" Surface Mix



Granite Concerns

- Not local source
- Haul distance
- Unfamiliar products
- Unfamiliar people



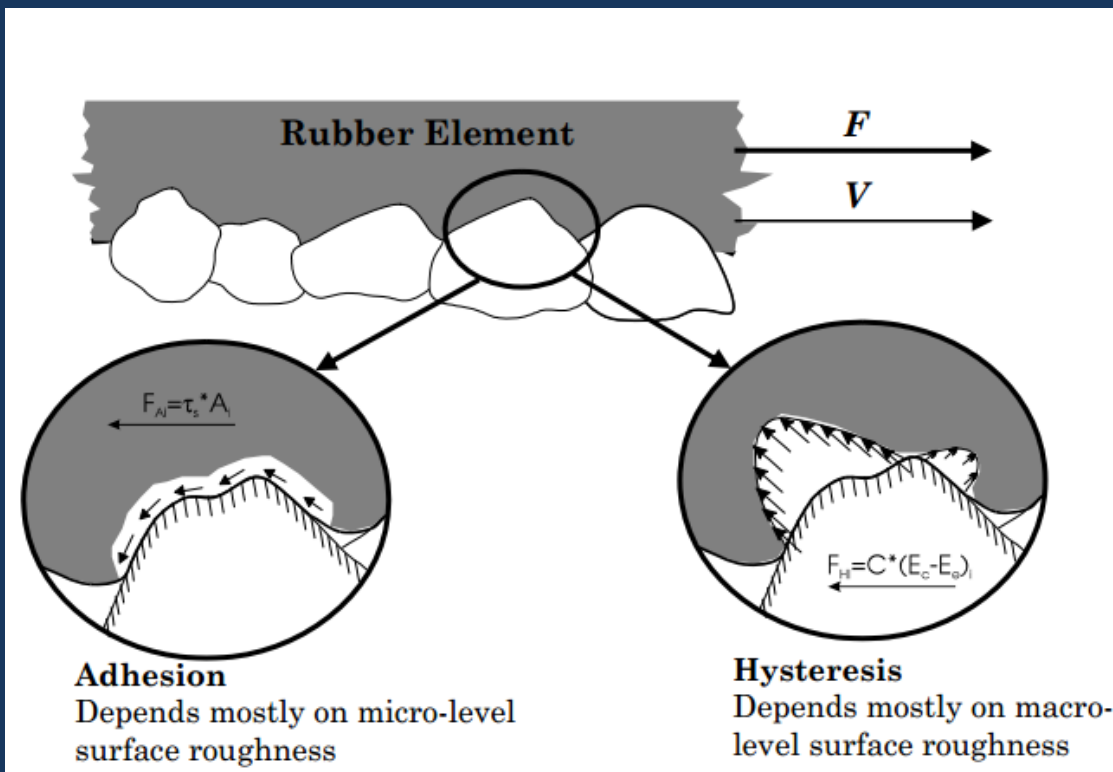
325 Miles

Challenges...

- Find a high quality skid resistant aggregate
- Convince project engineer to use something other than granite
- Convince that 5/8" top size makes an excellent surface mixture



Skid Resistance Mechanisms



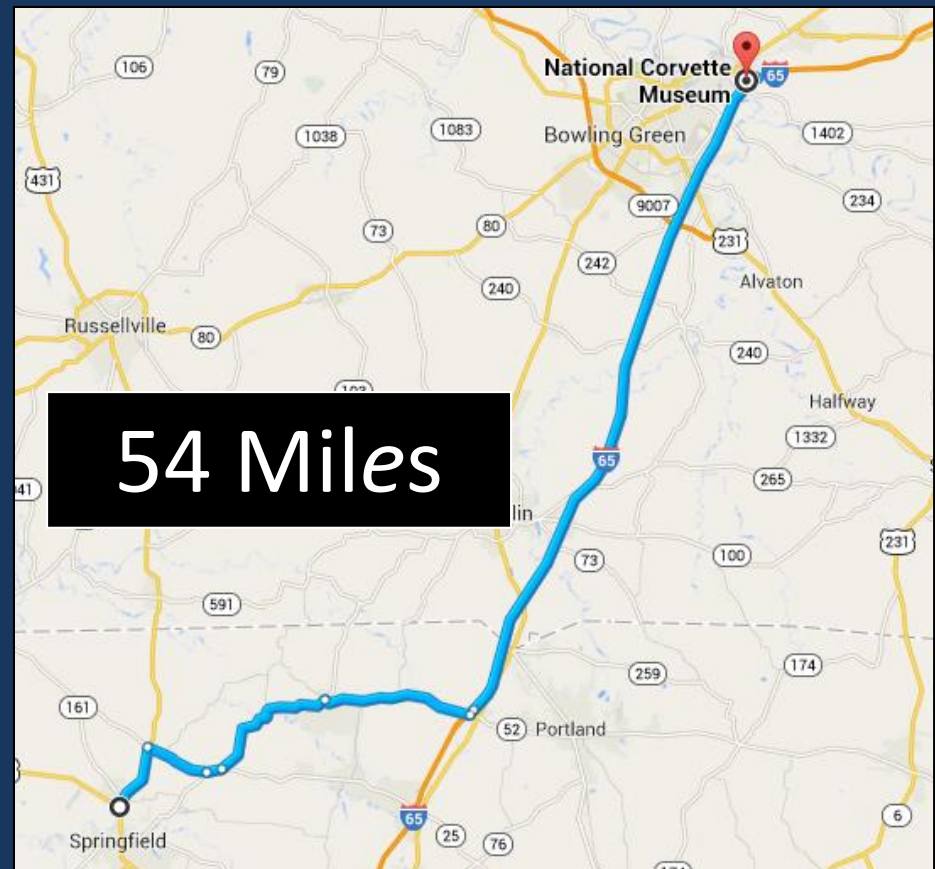
- Adhesion
 - Bonding/interlocking of rubber and the pavement surface
 - Influenced by micro-texture
- Hysteresis
 - Enveloping of the tire around the texture
 - Influenced by macro-texture

Testing for Skid Resistance Performance

- No single test will provide the answer
- Indicators
 - Silica content
 - Acid insoluble residue
 - Field skid numbers
 - British Polish
 - Micro Deval
 - Dynamic Friction Tester

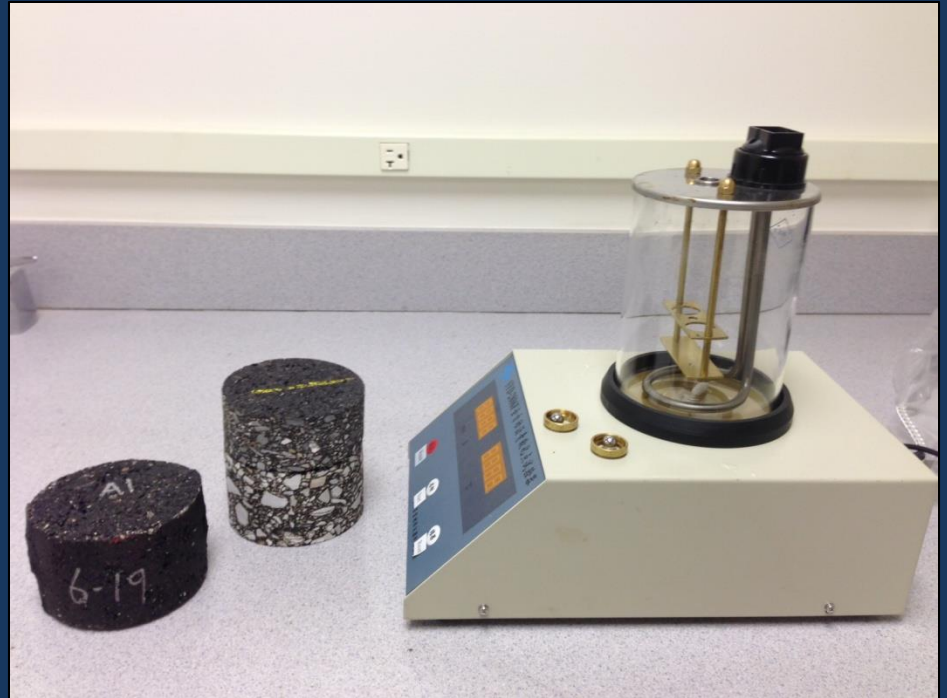


Vulcan Springfield

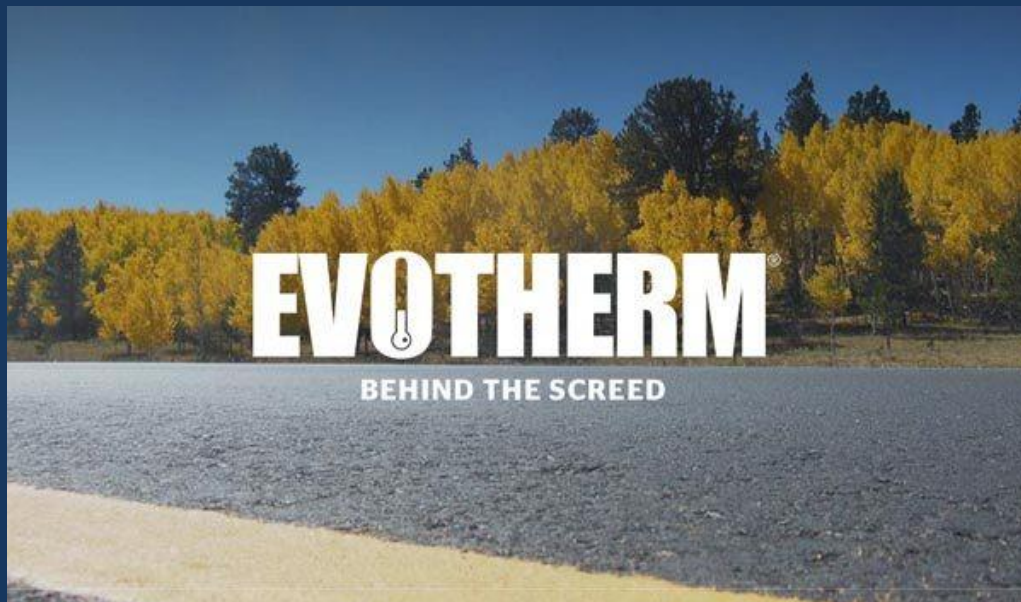


Liquid Asphalt testing

- Softening Point test for each load of PG82-22 delivered to plant
- Material Supplied passed as a 94-32



Teamwork



Corvette Escort



Challenges

- Will it rain today?
- Plant and Paving Logistics - Communication
- Make it Flawless Everyday
- Minimize Handwork
- No Breakdowns
- Teamwork
- July 12th Paving Deadline – Paving finished before the 4th of July.
 - 30,044 Tons of Base Mix
 - 8,037 Tons Standard Surface,
 - 19,988 Tons of Track Mix



Paving

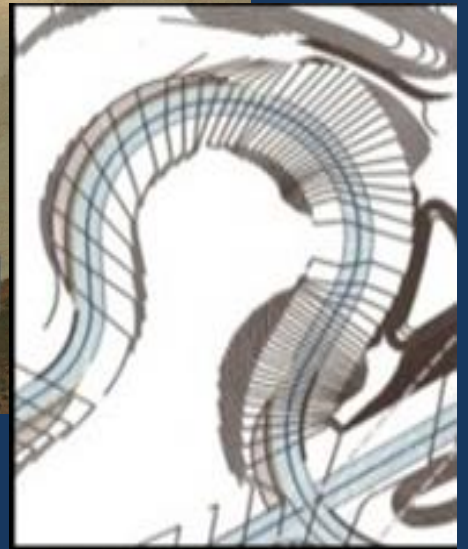
- Echelon Paving Required – 20 ft/min. max allowable speed
- Material Transfer Vehicle – Limit segregation and provide uniform texture
- Smoothness and limited joints were critical



3D Paving

- Maintained Production
 - Up to 4,800 Tons of Asphalt per day
- Typically within .02' or less
- Base Asphalt Quantity within .3% of Estimate
- Ultimate Smoothness!!







The Final Product

- Praises from the Experts
 - Brian Prowell, Track Paving Consultant
 - Corvette Racing
 - Mitch Wright, General Manager



Happy Enthusiasts!!!

