Something's Afoot...

BY STEPHANIE STEPHENS

PHOTOGRAPHY BY ARND BRONKHORST

Imagine a shirt hanging from the rack at your favorite store, and on it, not one size tag, but three, reading "small," "medium," and "large," indicating that "one size fits all." But just as one shirt does not fit all humans, neither does one type of arena footing work for all horses and disciplines.

As many things in our lives have become increasingly specialized, so, too, have the materials we place in our arenas, taking us far beyond the simple terminology of "dirt." And while some might argue otherwise, no footing is devoid of maintenance requirements and all need a generous dose of elbow grease on a regular basis; if not, we might as well adapt that well-worn phrase "no footing…no horse!"

First Things Feet-First

Let's not put the cart before the horse: a discussion of footing could not take place without mentioning arena location and design. The arena must first be built in a location that's dry and has sufficient drainage; the site then must be leveled. The ground need not be perfectly flat, but it should possess a degree or two of grade. Water must flow down through the surface and then continue off of the base, which lies below the surface and forms an intermediary layer between the surface and the earth.

Wayne Gregory, president of St. Louis, Missouri-based Footings Unlimited, has provided footing advice to most major show facilities in the United States. With 15 years in the business and 85 defined footings, Gregory has serviced more than 7,000 customers in North America. He recommends that, while your arena is still in the design stage and since you know what discipline(s) will be performed there, you first decide footing composition and then evaluate potential additives.

Thoughtful consideration must be given when planning a safe, comfortable and low-maintenance footing.

For English disciplines, he recommends a firm base made of stone dust or other highly compacted material, with two to three inches' total depth of riding surface. He's observed that formal bases are not as predominant in the Western and Saddlebred realms, where many owners have fine natural clay bases serve their purpose.

"Variable depth, or the ability to pack down and then loosen, maybe up to six inches, might be needed for barrel racing, cutting or reining," says Gregory, where more pressure is on footing and hooves dig deeper down. He cites a basic law of physics: only one thing can occupy one space at one time, so when a hoof comes down, footing must move out of the way.

Most English discipline riders in either hunter/jumper or dressage require a basic sand/clay mixture on the top, also called surface or cushion, advises Gregory, and ideally in an 80/20 ratio; dressage riders tend to like more sand, while hunters and jumpers may want more clay. "It's that upper blend where most people make mistakes." He names four basic materials for creating the top: sand, clay, silt and organics, and then, possibly an additive.

Straight washed sand is too loose and will shear, while clay in very fine particles absorbs moisture and is excellent for stabilizing, says Gregory, who recommends quarry unwashed sand for a price break from washed sand; silt doesn't absorb as much, being loose sedimentary material with rock particles.

"The more clay or silt you add, the denser and more stable it will be, and compact, which means higher maintenance in terms of water and drag," says Gregory. He teaches that those deeper-digging Western disciplines need heavier, deeper footing, while Western flat-

work can go with the same footing as for Saddlebreds or dressage. "Saddlebreds are more comfortable on footing that shifts less, versus straight sand," he believes.

Gregory does the lion's share of footing analysis and correction after an arena is complete and owners are unhappy. He calls it "unbaking the cake. If an arena's too loose with coarse washed sand, and say, jumpers can't get any traction, you can blade off an inch of sand, replace with an inch of clay and readjust the mix, usually making it even better."

Scientific technology has influenced footing for the better, presenting an appealing and extraordinary list of additives to complement what Mother Nature has provided. Choose from rubber, with more than 60 types, and yes, some include ground-up tennis shoes; polymer-coated sand (polymers are dry crystals that retain moisture when wet), which can be very pricey; fabrics; plastics; and finally, the best, attests Gregory, water, the often-overlooked additive.

Acceptable natural additives include shavings or manure, but "Water is a natural binder, like glue," says Gregory, "and it takes the shear out. Shear happens when sand or footing moves from side to side, like when you walk on the beach and the sand feels too deep, but you're really experiencing shear. Water fixes deepness and controls dust, and provides some cushioning because it softens footing. The droplets sit in between sand and clay, creating a sponge effect."

Footings vary among disciplines – a reining-type footing requires more variable depth to allow hooves to dig deeper.

Western Ways

Bob Kiser of Western Arena Specialists in Warsaw, Illinois, recently returned from a linguistically challenging trip to oversee the footing for reining at the World Equestrian Games in Jerez, Spain. He reveals that four out of five jobs he usually works entail repairing footing that arena owners have done themselves.

There's no one magic formula, says Kiser. "I analyze what's available and try to make that work for the owners." He might use one material in one location and then travel 50 miles away and have to find another completely different material. "Geography has a lot to do with it," Kiser figures.

He's a proponent of footing that's "changeable," again preferring sand, clay and silt for their ability to accommodate depth alterations.

Kiser observes that, generally speaking, horsemen and women are really aware of footing these days, which is ultimately good for horses. It's an evolution, he believes, that's "trickled down" from the influence of professionals like himself, who prepare footing for major events. He's known for footing solutions used at the Oklahoma State Fairgrounds, Oklahoma City, which annually hosts three major Western events in a row: the American Quarter Horse Association (AQHA) World Show, the National Reining Horse Association (NRHA) Futurity and then the World Barrel Racing Futurity.

For those shows, Kiser trekked to the South Canadian River and "found a vein I believed would allow me to change the depth of the material by the way I worked it; it's 82 percent sand, the rest, silts and clay. We have to add more sand every year because it's very fine, and as it breaks down, it begins to pack." The material is stored on grounds under a roof for use during the annual three-show run.

Footings Unlimited's Gregory cautions private owners that "what a showground does won't work for a private facility. The show arena is only used for a short period and doesn't incur the normal wear and tear. You don't have the maintenance staff at home, so your footing must be more resilient. That's why it's wise to consider additives to reduce maintenance."

Right the First Time

With plenty of English-discipline footing experience to his credit, Charleston, South Carolina's Dean Rheinheimer concurs with Gregory and Kiser that, for private owners, "if you don't do it right the first time, it can be too expensive later."

He finds sand and water a "quick cure for most anything: if it's too sticky or hard, sand helps, and if it's too deep, water helps. Consistency is the best thing always, and that's what people want and sometimes have trouble getting…an even ring with no sticky or deep spots."

For his designs, Rheinheimer avoids ground-up rubber for hunters and jumpers, believing that "it gives them a false sense of security when jumping, feeling like there's nothing really firm there. I find the more natural the soil, the better they perform. The bigger the jumps, the firmer I like the footing."

With hunter/jumper footing credits like Washington and New York on his resumé, Rheinheimer remembers using crushed limestone in Washington, six to eight inches deep, and clay with a sand mix at New York, approximately eight to 12 inches deep…both footings laid over concrete floors.

Further reinforcing his "less is more" philosophy, Rheinheimer, also in concert with his colleagues, reaffirms that "the more maintenance you do, the better," and proffers that a well-thought-out homemade drag can work just as well as the most high-tech model. He suggests making the front teeth dig a little deeper for dressage.

Wood Works; Dust Doesn't

Wood can be good, and for footing, too, as in the case of an all-weather product manufactured from sawmill chips and offered by Zeager Brothers in Middletown, PA, HORSECARPET Resilient Wood Surfacing is recommended not only for arenas and tracks, but also for round pens, sheds and even walkways.

Company spokesman Jim Strange explains that HORSECARPET consists

only of recently harvested wood that has been debarked and is free of soil, leaves, twig material and other contaminants that hasten decomposition. No chemical treatments or additives are used in HORSECARPET, nor are recycled wood or waste wood.

"The larger and smaller sizes knit together to trap the air between them, resulting in cushioning and resiliency," explains Strange.

He admits that for disciplines that produce plenty of surface friction, like barrels or reining, the tightness of the product's compaction probably isn't ideal. "Dressage or other flat work works just fine," explains Strange, as does racing. The product is in use at the Fair Hill Training Center in Elkton, MD.

Above, Left: Acceptable natural footing additives include wood shavings or manure. Below: Arenas must be built in a location that has sufficient drainage to allow water to flow down through the surface and off the base.

"Gaited horses also benefit because of the extra stress they may incur when their feet come down so hard," suggests Strange.

Another footing consultant, Midwest Industrial Supply, Inc., in Canton, OH, is where Product Manager Stephanie Marek makes recommendations to people building new arenas or revamping ones they buy or inherit. She recommends a quartz or granite sand, "a very hard material that doesn't break down as fast."

Footing that breaks down quickly, such as organic material, can become airborne dust and that can be very unhealthy, cautions Marek.

She counsels on problems such as bases breaking up and entering the footing, or, in the case of someone taking over a previously constructed arena, "sometimes, if it's really fine [particles of] footing, people tend to add more footing without pulling out the old. I've tested footing that is 50 percent fine dust."

Midwest Industrial Supply manufactures Arena Rx®, a dust-control product, and also Base-Bldr™, an arena stabilization system.

From the experts whose opinions are quoted here, it's obvious that if you've got footing questions, they've got answers. You want fewer hassles and less money wasted when it comes to providing a riding area that's safe, comfortable and low on maintenance. As with most things, extra time and thoughtful consideration spent in the very beginning will likely pay off down your riding road; you can build and maintain an arena that will work for you and your horses now, and for many joyful years to come. ■

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Footing Kitchen Capers... Courtesy of footing chef Wayne Gregory of Footings Unlimited

Particle Parfait:
"The coarser the particles, the less they tend to compact and the more unstable they are. The finer they are, the more stable, but they tend to compact more." Place an inch of your footing in a filled water glass; stir vigorously with spoon, then wait one minute. In that minute, sand falls to the bottom. Leave overnight and you'll observe striations the next morning, like a parfait: sand on bottom, clay on top of that, clear water, then organics or other particles on top.

The cloudier the water when stirred, the more clay and silt in the footing; stirring clean sand leaves water mostly translucent. You can take an accurate visual relative measurement of your footing composition using this method.

Playing Spoons:
Put some sand on a counter. Place your thumb on a spoon and press on the sand. If it breaks down easily to finer particles, don't choose it: it contains too much sandstone and limestone and will break down too quickly in the ring. True quartz particles or other similar types will stay gritty under the spoon, and that's desirable.

Snap, Crackle and Pop:
To determine whether your base materials contain limestone or calcium—ideally, limestone is the best—and analyze whether the sand material is too soft, pour on vinegar. If the material contains limestone or calcium, it will fizz, so it's too soft for sand but good material for base.