Rooted in Tradition on Very Hallowed Ground
Man and Nature, in Delicate Balance at Arlington Cemetery

By Elizabeth Redden
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In the delicate green matrix of Arlington National Cemetery, interspersed with the graves of long-dead veterans, are spaces reserved for their next of kin. Here, trees have had time to spread and arriving caskets may disturb soil webbed by the roots of one of the cemetery's leafy sentinels.

Last year, about 4,100 graves were dug, and about 25 risked becoming severely entangled with one of Arlington's 8,000 trees.

"The fact is," says Stephen Van Hoven, the cemetery's urban forester, "we're still burying throughout the cemetery. It's a challenge in that it's not left alone. It's a totally dynamic place."

Yet, even as the cemetery fills in, taking down a tree is always the last resort.

The cemetery is rightly famous for its rows of white headstones, hundreds of thousands of them gleaming uniformly up and down the hill like calcified ghosts. But Arlington's ambiance also depends upon the trees dotting its 652 manicured acres.

"Our primary mission at Arlington is twofold," says Erik Dihle, a horticulturalist by trade and division chief for grounds, burial operations and ceremonial support at Arlington.

"One, we honor those who served through a proper and dignified burial service. And then we honor them this way, by providing a perpetual resting place that is beautiful and well maintained."

Dihle says the cemetery boasts the finest collection of old trees to be found in any urban area in the mid-Atlantic region, with 600 trees estimated to be more than 100 years old and "quite a few" over 200. "Considering we have 28 to 30 funerals a day and we're constantly digging grave sites that can disturb the roots of trees, I think it's remarkable that we have the population of old trees that we do," he says.

Largely oaks and maples (about 25 percent and 15 percent, respectively), the trees have stories that are in some cases inseparable from those of the headstones they shade.

A rare yellowwood by former secretary of state John Foster Dulles's resting spot, for instance, offers a hiding place, as all the best trees do. Some say it provided a vantage point from which Dulles's Russian counterpart inconspicuously watched the funeral during the height of the Cold War. Or so the folklore goes:
Richard Immerman, a Temple University history professor and Dulles biographer, points out that reporters had, in fact, widely reported Andrei Gromyko's not-so-hidden appearance.

A 300-year-old, slowly dying white oak with pasty, patchy bark -- it's believed to be the oldest tree in the cemetery -- extends a thick limb low over the pathway to former president William Howard Taft's grave, having grown into an archway. Its April buds stick up every which way, each branch studded with dozens of bad spiked hairdos.

Two of the biggest water oaks in Virginia sit amid World War II-era graves. A famous post oak, or "Arlington oak," shades John F. Kennedy's eternal flame. A cedar of Lebanon planted to honor casualties of the 1983 bombing of Marine Corps barracks in Beirut stands over their graves in Burial Section 59. All around, flowering dogwoods -- the memorial tree most often planted at the request of families -- bloom their soft coral and cream bracts each spring.

About 200 new trees are planted each year, 20 or so donated by families who work with Van Hoven to choose a species and site. The rest are planted through two different contracts. In all, contractors account for 54 percent of the cemetery's $20.9 million operations budget. About $3.4 million of that goes toward tree and shrub maintenance.

Still, Van Hoven says, "it's our main mission here to bury our service members with honor and dignity. If a tree is imposing on a burial space, the burial takes priority."

Van Hoven came to the cemetery in April 2006 from another venerable Washington institution, the Smithsonian, where he was lead horticulturalist for the National Museum of American History and arborist for the entire Smithsonian complex. He assesses each possible conflict himself and determines the best course of action for the tree and the grave.

If the terrain is flat and no large surface roots are showing, landscaping crews can use a root cutter or root pruner, a circular blade mounted to a trencher. The contractors -- the cemetery maintains three contracts for tree-related services, and typically about 20 contract employees work with the trees during the busiest months, from May through October -- pierce the soil to a depth of 14 to 18 inches. Dragging the blade along what will become the sides of the grave, they cut the roots cleanly so they can regenerate.

In tighter corners, generally when the grave site is within about 10 feet of the trunk of a tree, Van Hoven says, a crew will take an extra step. Angling an air spade, a handheld air compressor attached to a nozzle, the landscapers blast the soil away in supersonic gasps to make more precise snips. As Susan Day, a research assistant professor of urban forestry at Virginia Tech, points out, a clean, contained slice causes substantially less damage than a gravedigger would, and the tree stands a chance.

Whereas when a backhoe chips a root, it can tatter a tree's chi. Snagged and torn, the roots -- shallow and stretching like a pancake, their length generally equal to several widths of a tree's branch span -- suffer in their ability to absorb water and nutrients. Pathogens can find pathways in, and the tree's structural stability and storage capacity can be compromised.

An old tree especially "won't have the water uptake and the nutrients to support the top, so the top will start to die back. It will never be able to get ahead of the game again, so it will continue to die," Day says, although the process may take 20 to 30 years.
Some species such as maples and willow oaks, and younger trees, which have a greater proportion of their biomass above ground relative to older specimens, are typically more resilient than the smaller, flowering trees, among them dogwoods.

Whenever a burial threatens a tree, Van Hoven makes a note in his geographic information system database, which precisely plots each tree. Those at-risk trees on his "critical watering list" soak up special attention after the funeral, with extra watering and in some cases fertilization or treatment with Cambisstat, a chemical that stimulates root growth. "We try to take every means that we possibly can to maintain the tree," Van Hoven says.

In Section 42, a weathered headstone and its neighboring tree have settled into one another, the marker now seriously askew. A stone marking the 1963 death of Paul Portu, a sergeant in World War II, and that of his wife, Elsie Marie, in 2002, sits within the loose embrace of a tree's wooden tendrils.

Preventive pruning, extra care and general forethought on the part of the cemetery staff -- and adaptability on the part of the trees -- mean that few of the trees are sacrificed. Dihle says he can count on one hand the number of times in his 25 years there that he "winced" when he saw the site of a new grave.

For his part, Van Hoven recalls one case in his short tenure at Arlington in which an attempt to rescue a tree too close to a grave site would have been futile. The roots never would have recovered.

It was a "good-sized" Kentucky coffee tree, a member of the pea family with silky buds and whitish flowers. They once bloomed in May and June in Section 42.
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