

The "Second" Mission

Keeping the grounds of the Johnson Space Center in top flight condition takes streamlined planning and patience with fickle Houston-area weather.

In the course of a year, Ray Meyer has had to deal with hurricanes, record-breaking cold temperatures, an inordinant amount of rain, drought and a deer problem.

As the management agronomist for the Lyndon B. Johnson Space Center in Houston, Meyer has the added responsibility, in the face of what Mother Nature dishes out, of keeping the 1,595 acres of the jewel of NASA's space program in "perfect" condition.

While the JSC's first mission may be training astronauts and undertaking space missions, public relations is its "second mission"; providing the two million

"The Johnson Space Center has really become somewhat of a national landmark."

visitors who flock to the site every year, a pleasing and attractive physical plant along with the latest display in extraterrestrial hardware.

"The Johnson Space Center has really become somewhat of a national landmark and must be maintained as one," said Meyer.

Uncooperative weather

That, sometimes, is easier said than done.

Last August, a hurricane hit Houston and totally uprooted 600 trees. Another 650 were blown over so badly they had to be

staked. Of the staked trees, Meyer said he only lost about 10 percent.

"The other 600 that were totally uprooted, we had to cut up."

Last December, nature struck again. This time it was below normal freezing temperatures.

"I still don't know the extent of that damage," Meyer told WEEDS TREES & TURF. "It will probably take the better part of the spring to tell what's going to green-up and what's not."

In February, Meyer was battling deer. He spotted as many as 68 eating and trampling plants on the complex.

"Most of the crew has been working 14 hour days trying to net them and carry them away from the Center."

And then there's the rain.

Average rainfall in Houston is from 50 to 60 inches. When it rains, it usually pours, causing flooding and severe runoff problems.

"On the other hand, we have to deal with drought during some seasons as well," he said.

As management agronomist for the past five years, Meyer is responsible for all 1,595 acres, including 600 acres with the highest visibility, 920 secondary acres at the Center and 75 NASA-occupied acres at Ellington Air Force Base North of the JSC.

"I'm employed by NASA to manage the grounds contract," explained Meyer. "Our maintenance work is contracted out to Chemical and Vegetation Control, Inc. in Baytown."



Ray Meyer, management agronomist for the JSC for the past five years.

The grounds care budget is around \$1 million.

"That really isn't as high as it may seem when you consider the standards we're expected to keep," says Meyer, who earned degrees in ornamental horticulture and forestry at the University of Missouri and completed his MBA degree from the University of Houston at Clear Lake in December.



Simple, efficient landscaping and use of native Texas plants and trees are hallmarks of the Johnson Space Center. Water lilies and fish in ponds add beauty as well as keep algae under control.

Controlling costs

Meyer said that those standards aren't maintained simply by spending money.

"Part of the job," he says, "is seeing that all of the funds made available to us are spent wisely and efficiently. We find ways to

The grounds care budget is around \$1 million.

stretch our financial resources and our manpower."

Some of those ways, Meyer said, is purchasing more efficient equipment, using slow release fertilizers and improved chemicals.

"We now have 10 Toro Groundsmaster 72s and a Howard-Price Hydro-80 (15-foot mower) that really suit our needs well. We've also increased our

mobility by using Cushman trucksters to get around."

Meyer explained when he first came to the JSC it took 12 people five weeks to mow the entire complex. Now, with the more efficient equipment, it takes seven people three days.

Turf at the JSC is divided into three classes. Class A turf is highly maintained and manicured. It surrounds most buildings and visitor areas and is mowed weekly. Class B turf receives moderate care and is found beside roads. Class C is the turf in fields most distant from main public areas. The latter two classes, Meyer says, "are mowed less frequently with most fields being mowed only once yearly. In some areas we let it go to six inches before taking off 50 percent of the foliage." The growth rate is roughly 1.5 inches a week.

"I've also changed to slow release fertilizers and now only have to fertilize twice a year

instead of four or five times. We have very alkaline soil which we're trying to make more acidic. By using sulfur-coated urea, we're accomplishing that and avoiding an extra pass over the fields for sulfur application. Doing it this way saves us both time and money in the long-run."

Soil tests performed yearly by Texas A&M University, determine his soil needs.

Meyer maintains that Roundup is his favorite herbicide. Where a long-residual non-selective is

Meyer saves expense and effort by using growth retardants.

needed, he uses Krovar and Spike.

"Much of the weed control work quite simply wouldn't be done, at least not at the level we're doing it, without the help of chemicals," he said.

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An aerial view of the expansive NASA Johnson Space Center in Houston, encompassing 1,596 acres of developed and undeveloped land.

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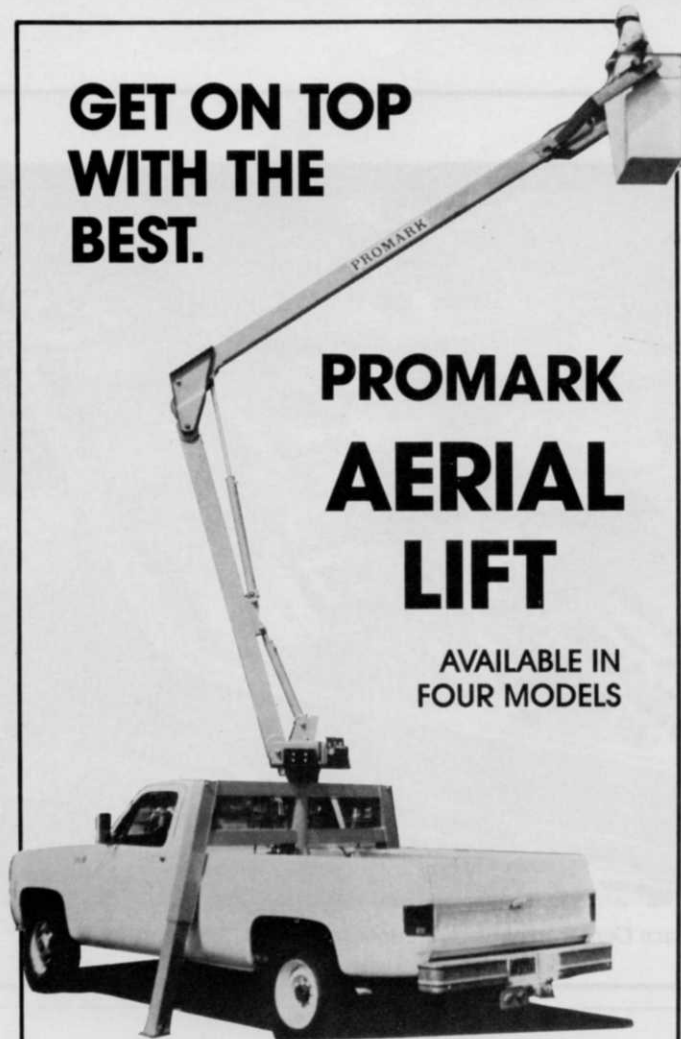
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Meyer usually has the contractor apply around 100 gallons of Roundup yearly to enable a "very intensive weed control job to be done for about half the cost of manual labor."

"One of our major weed problems is dallisgrass, but we also use Roundup to control encroaching St. Augustine and bermudagrass as well as for edging and renovating," he said.

Another herbicide Meyer uses is MSMA, which plays an important role in a practice Meyer believes should be more widespread.

"Where possible," he explains, "I try to turn a tough weed problem into an asset by incorporating that plant into my program. For example, in one area where we would normally want to have our 'premium' grass, St. Augustine, we've stopped fighting encroaching bermudagrass. Now we favor bermuda in that area."

Meyer also saves expense and effort by using growth retardants and limiting his mowing program to what's absolutely necessary.

"We apply Embark on turf along sidewalks and the site's street curbs. Atrinal is usually applied once in the spring to shrubs and hedges.

"I've found Mavrik Aquaflow to be one of the best insecticides on the market. It's very concentrated, doesn't smell and is very efficient. It costs more initially, but in the long-run, it is less expensive to apply and lasts longer," said Meyer.

Flowers and fish

Before Meyer became responsible for maintenance, the several ornamental ponds at the Center were cleaned once or twice yearly.

"That involved opening the drains and cleaning them by using fire hoses," he said. "Now the ponds are stocked with water lilies and various species of goldfish (carp).

"The water lilies make the ponds look attractive and the fish eat sufficient quantities of algae to keep it from getting out of hand.

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People don't mind seeing a little leaf cover on the bottom — and I'm sure don't mind saving the \$12,000 a year we were spending on algicides ... not to mention the money and time we're saving, by cutting out some useless work."

Meyer is in the first year of a 5-year renovation plan. Plans are to add wildflowers, native trees and shrubs, and stone mulch.

Irrigation, too, is only done on an as-needed basis. Much of Houston's rain comes in heavy downpours.

"Since I've been here, we've had two rains of 18 inches or more.

We've also had some very dry periods," said Meyer. "Despite those ups and downs, however, we've managed to maintain a reasonable irrigation program that meets better-than-the minimum needs of our plants without excessively damaging the budget."

Down the road

Meyer is in the first year of a 5-year plan that calls for the renovating the landscapes of all 48 buildings on the site.

He has also started a native Texas wildflower program.

"We've planted 12 acres of 1,200 acres available to us with bluebonnets, the state flower of Texas. They're low maintenance and add a lot to the beauty of the grounds."

The most common trees on site now are live oak, slash pine and sycamores. Fairly common are cyprus, red maples, water oak, willow oak and yaupon. Other species Meyer would like to see

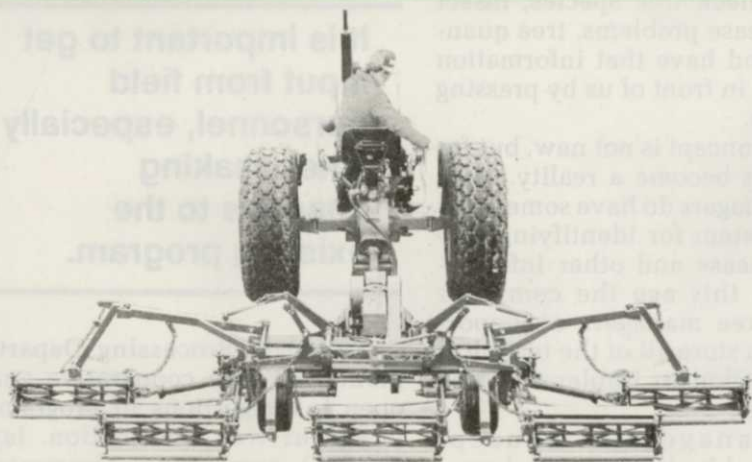
on the grounds are spruce pine, sand pine, Italian stone pine, mesquite, Texas mountain laurel, Chinese pistachio and sugar maple. The latter, he says, will grow "quite well here, but not many people try planting it."

Last year he bought primarily Parkinsonia, Chinese pistachio and mesquite and about 3,000 shrubs - mostly dwarf Nadina, dwarf Indian hawthorne, dwarf abelia, azaleas, several varieties of junipers, cotoneaster, Japanese boxwood and dwarf yaupon. Most of the shrubs' new homes are in already-established ornamental beds. Others, though, will be used to replace honeysuckle beds throughout the site which became badly infested with weeds. For attractive cover in this area, he uses stonebark, a volcanic rock.

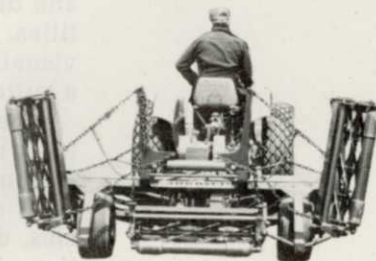
"I bought 60 tons of the rock and it was worth every penny because of what it will save on manpower in years to come," he commented.

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