

**T**HE Sunnyvale Golf Course, in its fourth year of play, was developed to increase the recreation offered by the Parks and Recreation Department of Sunnyvale, California. Designed by architect Dave Kent, the 6,400-yard course takes advantage of the natural hazards found in the highly industrialized San Francisco Bay area, and provides a much needed oxygen oasis.

The location of this golf course is probably as unique a land use as anywhere in the country. It has a major freeway running through the middle of the course. It has another one running along its east side. The fairways serve as a landing pattern for nearby Moffett Field, a naval air station. Where the highways and airfield permit, the golfer sees only industrial parks and manufacturing plants. And the soil from a worn-out walnut orchard had to be made to grow turf.

But none of this daunted superintendent Dick Viergever when he started construction in 1966. To connect holes 3 through 13 to the clubhouse side of the course, a tunnel was built under the highway. Since the highway and the golf course were being built simultaneously, the highway department included the tunnel in its plans.

The highway department maintains the fence and their side of the right-of-way. The problems on the golf course side have been solved by providing ground cover along the fence and by landscaping to hide the highway and protect drivers from misdirected golf balls. These mechanical and natural barriers also prevent movement of highway vegetation control chemicals onto the highly specialized golf turf. By proper placement of tees, fairways, and greens adjacent to the highway, there is minimum, if any, likelihood of golf balls going over the fences and onto the roadways.

Wind and noise add to the hazards designed into the course. Low flying aircraft increase the golfers' need for concentration. Constant winds from the bay can play havoc with the flight pattern of the golf balls. Part of the old walnut orchard serves as another natural site hazard. The last four holes are built through the low growing trees — only low-growing plant material can be used in landscaping because of the low flying aircraft.

A superintendent since the days the horses pulled the mowers as they fertilized, Dick Viergever knew how to select turfgrass and how to grow it.

Starting with Kentucky bluegrass



## SLOW RELEASE NITROGEN

## Golf Course Labor-Saver

and creeping red Fescue, fairways and tees were established. Fyrling and Windsor have been used for overseeding. The bent greens are Seaside overseeded with Pennncross.

To keep grass in condition for twelve months play in California, the fertilization program is considered as critical as the availability of water. Irrigation equipment was designed into the course, and five lakes were bulldozed to provide year-round reservoirs. Slow-release nitrogen was the fertilizer choice for fairways, greens and tees.

Fairways and tees receive annually 8 to 10 pounds of nitrogen per 1,000 square feet. Under normal conditions, three applications do the job — spring, summer and fall. Two applications are 10 pounds per 1,000 square feet of 38-0-0 ureaform. The third application is 10 pounds per 1,000 square feet of 21-8-8 with two-thirds of the nitrogen from ureaform.

Between May and October, the dry season, fairways and tees are watered three times a week. During the rainy season, irrigation is used only as necessary.

Greens receive annually 14 pounds of nitrogen per 1,000 square feet. A 27-6-10 with two-thirds of the nitrogen from ureaform has been used more than any other fertilizer. Greens are aerified at least twice a year, and Osmocote 21-5-5 has been used successfully with aerification. Under stress conditions, greens, as well as fairways and tees, may receive supplemental soluble nitrogen such as ammonium sulfate.

During the dry months, greens are watered four times a week, and as needed between November and April.

Greens require the proper attention to soil conditions during maintenance as well as during construction. All greens at Sunnyvale Golf Course are topdressed four times a year with a mixture of sand and organic. This not only keeps soil in condition but takes care of thatch by breaking it down and keeps a level putting surface.

With labor costs taking up to 65 percent of budget and equipment 20 percent, mowing practices are rigidly followed to keep bent-grass greens one-quarter inch or less and bluegrass fairways and tees one inch or more.

According to superintendent Dick Viergever, "Another reason the slow-release nitrogen fertilizers are used almost exclusively is to keep down the number of annual applications. This frees the labor force for those jobs chemicals and nature can-

(Continued on page 32)



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Safe from speeding automobiles above, golfers use the underground tunnel to connect holes 3 through 13 to the clubhouse side of the golf course.

not do. About 12½ percent of the annual budget goes for chemical helpers, with some 10 percent of this in fertilizers."

Sunnyvale Golf Course was constructed to provide good air circu-

lation. Thus, fungicides are usually used only in winter months. The big three in this area south of San Francisco, with few hot humid days, are dollar spot, Fusarium patch, and Helminthosporium spp. The newer



Sunnyvale Golf Course serves as a landing pattern for nearby Moffett Field, a naval air station. Maintaining a golf course in A-1 condition is no small job for superintendent Viergever. He constantly battles air pollution and noise pollution. Success with his turfgrass is due in part to a good fertility program involving the use of ureaform fertilizer.

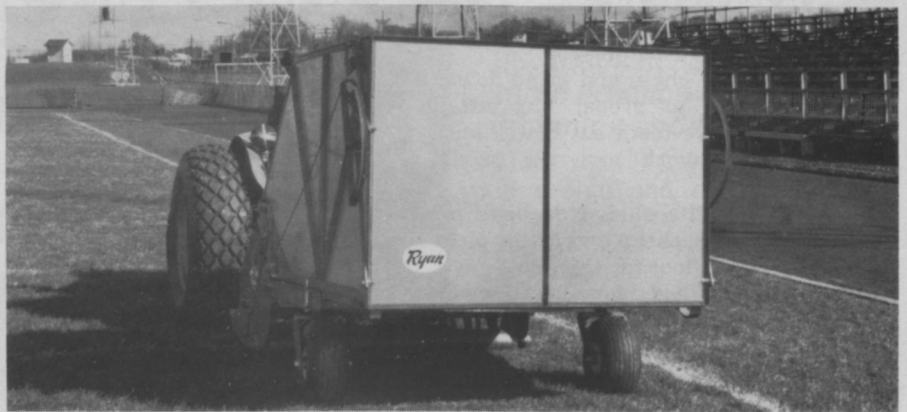


Superintendent Dick Viergever (l) and park foreman Mario Nappi check the condition of a new planting of a California Redwood.

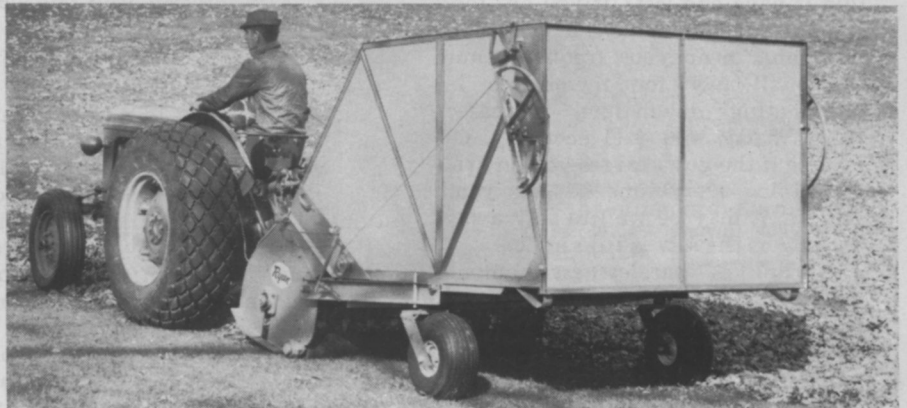
broad-spectrum fungicides give good control. The materials most widely used by Dick over the years have included the cadmium compounds for dollar spot and mercury compounds for the latter two.

Two applications of Dacthal a year keep out annual bluegrass and crabgrass. Twice a year materials such as MCPP and 2,4-D are used to control broad-leaved weeds. Chlordane is used for serious infestations of sod webworm. Even with knowledge of proper use of these chemical helpers, superintendent Viergever needs all the daylight hours to keep the course in top shape for over 75,000 annual rounds of golf.

When asked if growing turfgrass was harder in this area of concentrated air pollution from ground and air traffic, Dick replied, "The issue is not growing the grass, but the contribution the grass and landscaping plants are making to help this air pollution. Turfgrass is an important oxygen factory. It takes the carbon dioxide out of the air and returns the much needed oxygen. It's too bad that there cannot be more oxygen factories constructed to help the ecology of such areas with highly concentrated air pollution."



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