Solve your water coverage automatically

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We superintendents in southern Florida have been slow to realize the importance of irrigation in our area because we have what appears to be abundant rainfall. Although southern Florida receives approximately 60 inches of rainfall a year, they are unevenly spaced. We have, in reality, two arid periods: one during July and August, and the other running from November to May, when our courses receive most play.

Also, the sandy conditions of the majority of Florida soil change the water requirement of the turf on the same course many times. This requires a complex watering program which can only be achieved through an automatic irrigation system—which was recently installed here at the Diplomat.

One major problem that I, and others have had here, has been determining water requirements. The golf architects and the irrigation engineers employed on most installations were from northern states and were unfamiliar with the requirements of turf in south Florida. Thus, it has become up to the superintendent to evaluate just what is needed.

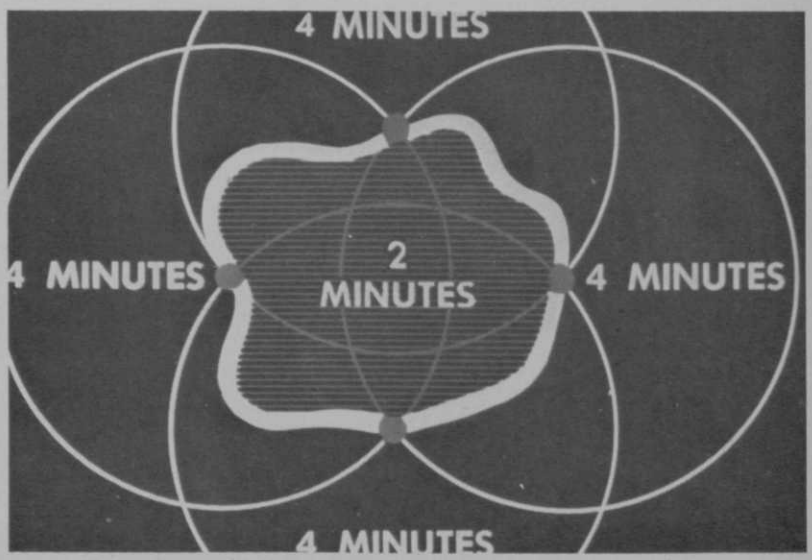
Water needs are based on a combination of factors:

1. Size of the area to be irrigated.
2. The weekly requirements of each area of the course.
3. The amount of time to be allocated to program precipitation.
4. Water supply needs for other than golf-course irrigation.

These are the bases on which the engineer must figure pumping capacity, line sizes, sprinkler nozzle sizes, and the other technical aspects of an installation. A rule of thumb for electric pumping requirements is one hp per acre using the most efficient (86 per cent) pumps with shallow well or lake inverts. (Remember, lake, pond or fresh stream water is far superior to well water because it acts as a clearing pool.)

Superintendents must consider the location of the timing devices used to control the valves of their systems. The trend has been to put all or as many as possible of the controls in one location (with the theory in mind of making as few stops as possible to shut off systems during rainy days, and for reprogramming).

This method has some basic disadvantages: It requires a good deal more wire and tubing in installation since each time clock that monitors the area has to be connected up individually. Furthermore, when parts of the course must be irrigated during playing hours, the superintendent operating this centrally-located control system has no way of knowing if anyone is in those areas. He must send out another man to clear the area.



Two-speed heads now precipitate twice as much on slopes, banks and green approaches. So if a green has four heads equidistant around the perimeter of green, water distribution will be evenly proportioned.

To overcome these problems, we installed the Vari-Time system, made by Moist O'Matic, at the Diplomat. Timers or controllers are out in the zone area, placed so that the operator can see all the area being serviced by this particular controller. (Photo p. 53.) A central control clock is used as a master timer to energize the zoned control timers. Thus, we can have the advantages of both zone and central control, and the savings on clocks alone for

each controller pays for the extra wire involved.

When planning a system, some means should be incorporated—either by large storage tanks or small jockey pumps—to keep the lines loaded and to afford small amounts of water when needed. The theory of running 50, 60, 75 or larger horsepower motors to supply a one-inch hose outlet through a dampered control is ridiculous.

Before installing new systems, management should also investigate new developments in automatic sprinkler systems. One such advance, I discovered, has solved another problem which has always beset superintendents.

Until recently, most greens that were automatically or manually watered received more than twice the amount of water on some areas of the putting surface than they did on the banks. With the trend to increased use of golf cars, these banks and slopes became a more serious problem, and required special attention by the irrigating engineer. Many superintendents requested that sprinklers be installed in back and on the sides of the greens to alleviate this problem. Now, however, two-speed heads have been developed which precipitate twice as much water on the slopes, banks and approaches of a green than they do on the putting surface. So, if a green has four heads equidistant around the immediate perimeter of the putting surface, the distribution will be evenly proportioned.

I was surprised to discover just how little water is actually needed to grow superb grass when the water distribution is programmed to suit the im-

Photo at left shows how underground pipe for automatic irrigation system was laid at the Diplomat. Picture above illustrates the use of one of the many controllers that have been spotted at various zone areas. Each zone controller enables the operator to see all of the area being serviced. A central control clock is used as a master timer so that the course can have the advantages of both central and zone control.

mediate needs of each area of the course. You will also discover, as I did, that weeds and diseases become minimized, resulting in the saving of dollars previously spent for herbicides and fungicides. I think in the future we can expect even additional advances in automatic irrigation, such as truly effective tensiometer-activated systems for night watering. I also think it has possibilities for applying fertilizers, insecticides and fungicides.

I want to warn other superintendents, however, not to rush into or be led into an inadequate, out-dated irrigation plant. Take enough time to assess your requirements and be prepared to spend lots of time evaluating all phases of the plans and different types of equipment. It will cost less in the long run if you install a system that anticipates *all* your watering needs. □