dept. to curtail supply. In many cases the supt. is ordered to water at designated times which are either of insufficient duration or don't fit in with his schedule of work operation. This problem has been overcome by excavating a lake for water storage on the course. The water for filling the lake may be taken from the main at greatly reduced volume and over a long period, thereby relieving the load on the main. A pressure pump then takes the water directly from the lake and supplies it to the irrigation system.

Lake excavations in the Chicago area average 50 cents per cu. yd. Thus construction of a lake can be a costly job and its size, depth, inlet and overflow structures should all be carefully considered. Where a lake used for water storage serves as a waterhole, it becomes an important part of the landscape. Its size should be such that during any pumping period the water level is not lowered more than 12 ins. If it is lowered considerably more, an unattractive, non-vegetated area will be revealed and will detract from the landscape.

In cases where it hasn't been possible to obtain sufficient surface area for a lake, and the desired amount of water has been obtained only by making it quite deep, it has been found that when such lakes are lowered 5 or more ft. a night by pumping, it's only a matter of a few years before a drag-line had to be brought in to re-excavate part of the lake. Repeated lowering of water causes the banks to cave in.

Area vs. Gallonage

If, in using a lake, we only plan on using the top 12 ins. of water, the lake does not have to be too deep. Since 12 inches of water over an area of one acre equals 325,850 gals. it is evident that one acre of lake area is the minimum size that should be considered for water storage.

An average depth of five feet has proved to be suitable at many courses. Some lakes have helped to provide additional club revenue from winter sports. From the safety angle in such cases it is not advisable to have them too deep.

The type of pump commonly used for boosting water pressure from lakes, well discharge or city main is the horizontal centrifugal type. It is directly connected through a flexible coupling to a suitable size of electric motor and mounted on a steel or cast-iron bed plate. In purchasing such a pump, I can't stress too strongly that you should get as high efficiency as possible.

75 Per Cent Efficiency

It is not unusual to obtain 75 per cent efficiency from a well designed pump. Further, you should bear in mind that the pump will have to operate under varying water load conditions. There will be times when you will be operating all sprinklers and times when you might be only using one half or less of them.

The curve of the pump you select should be such that when you are only using a few sprinklers the pressure will not be increased too much. This is commonly known as a flat pressure head curve. I am sure many of you have had experience with pumps that upon only supplying a few sprinklers, pressure shot up to dangerous heights. This condition can be avoided by specifying correct performance when purchasing the pump.

Stewart's series on Irrigation will be concluded in October GOLFDOM.

Leads Bermuda Amateurs

George Wardman is the playing captain of the Bermuda entry in the first World Amateur team championship which will be held at St. Andrews, Scotland, Oct. 8-11. Other Bermuda team members are Ronnie Dwyer, Ford Hutchings and Richard Pearman. At least 35 countries are expected to take part in the event.

Texas A & M Holds Annual Turfgrass Field Day

Texas A & M College's annual field day, held in July, was attended by about 100 turfmen who made a tour of test plots and the campus and heard reports on various experiments conducted by the College's agronomy dept. Of particular interest were the St. Augustine and Bermudagrass experimental plots and height of mowing tests that the agronomists conducted. Agronomy dept. experts who spoke were E. C. Holt, John Long and Bill Bennett. Ted H. Filer and Leon Hart, graduate students, also gave reports. The height of mowing demonstration was conducted by Marvin H. Ferguson of the USGA green section.