

with greater capacity and, perhaps most important, the construction of greens and tees employing the latest materials and techniques developed through research will unquestionably contribute to efficiency. Such a program may require several years for completion, but with competent direction, supervision and adequate equipment, may be accomplished with only a reasonable increase in operating budgets.

#### **Selection of Adequate Equipment**

Adequate equipment for one course may be inadequate for another and excessive for a third; therefore, equipment must be selected on the basis of the individual requirements for a particular course. Features of the course, as developed earlier and incorporated in the plan of operation, will dictate the various kinds, sizes and types of

equipment required for efficient operation.

Other factors to consider when selecting equipment are: (1) Equipment purchases for the most part are capital expenditures and should be treated as such—amortized and depreciated; (2) The manufacturer or his representative should be consulted on the type of equipment needed. Information on new equipment and improved features, as well as the suitability of their equipment for the job at hand, is readily available from the reliable manufacturer. (3) The availability of parts and service facilities. This is of prime importance when selecting equipment. If repair parts are not available when needed and a machine is inoperable for extended periods, it is of questionable value and certainly will contribute little to efficient operation.

### **Question and Answer Session**

MODERATOR: *A. M. Radko—USGA Green Section Eastern Director*

PANEL MEMBERS: *Mr. Harris, Dr. Watson, Dr. Daniel, Mr. Noer, Mr. Andrew Bertoni, Superintendent, Meadowbrook Country Club, Northville, Michigan, Mr. Carl Bretzlaff, Superintendent, Meridian Hills Country Club, Indianapolis, Indiana, Mr. Charles K. Hallowell, USGA Green Section Mid-Atlantic Director*

MR. RADKO: With reference to equipment, do you have suggestions as to how a club could set up a machinery replacement reserve?

MR. BERTONI: The best thing to do is to set aside so much out of your budget each year for machinery replacement. Set up a depreciation schedule and find out what you have and what the turnover will be. This will help somewhat to prevent some board member from decreasing the maintenance budget in order to promote some other project.

MR. RADKO: Mr. Bertoni, will you tell us how you go about determining the rate of depreciation of equipment? Doesn't it vary a great deal depending upon the kind of equipment?

MR. BERTONI: I try to check with the manufacturer or the salesman. You can operate a piece of equipment for a long time but it may be more expensive than if it were disposed of sooner, because of the expense of repairs. Length of life depends

on use to a great extent. We try to figure the expected life of each individual piece of equipment.

QUESTION: Mr. Bretzlaff, what do you think your total inventory is worth?

MR. BRETZLAFF: If we were to sell our equipment, it would bring around \$22,000. If we were to go out on the market and buy it, we would have to pay around \$35,000.

MR. HALLOWELL: I think Mr. Bertoni and Mr. Bretzlaff have touched on something rather obvious, that the life of the same piece of equipment will vary considerably from one part of the country to the other. One approach to determining the life of equipment is to keep your own records of cost and maintenance and to develop these data for your own particular course.

MR. HARRIS: I'm glad you mentioned that about different parts of the country. On my own course in Florida we have a replacement budget of \$5000 a year. Here

in the Midwest we get by on about half that amount.

QUESTION: Do the members of the panel find that cheap labor plays havoc with equipment? Is cheap labor harder on equipment than good labor?

MR. BRETZLAFF: Labor has a lot to do with the maintenance of equipment. I have two tractors, one of which is twenty three-years old and has been repaired once. The other one, operated by a different man, is repaired quite often.

QUESTION: I'd like to have Mr. Harris discuss surface drainage of greens in relation to reduction of maintenance costs.

MR. HARRIS: I really should have discussed that in my talk because it is a very important thing. One common fault in the Midwest is that greens may have a low area where the cup is often set near a high area or mound that needs a great deal of water. The low area gets soaked because the water all drains to the center. Greens of this kind are susceptible to diseases and to *Poa annua*. So the central area of the green should not be the lowest area. It is good to have the drainage going to the side in several places.

QUESTION: Mr. Harris, what is the cost of a green in this area today?

MR. HARRIS: I hardly ever figure the cost that way. In the trade, we figure by the hole and it is seldom we make an 18-hole course for less than \$200,000. That would be a very modest golf course. Most of the courses we have been building, if they have a fairway watering system, will average around \$300,000 to \$325,000. I believe that is around \$15,000 to \$16,000 a hole.

MR. BRETZLAFF: I think he is trying to get the cost of rebuilding a green that is in poor condition. How much will that cost?

MR. HARRIS: It depends on how much is to be done. If you do the green right from the start it would probably run better than half the cost of the hole.

QUESTION: Mr. Harris, what has the golf architect or the USGA done in the past ten years that represents a valuable contribution to the effort of economical operation?

MR. HARRIS: I can't speak for the USGA but I can speak for myself and what I believe in. I believe that everything on a modern golf course should be streamlined. There shouldn't be any sharp slopes or angles because you cannot operate on such areas with big machinery. I believe in large greens that are well drained, bunkers being the width of the fairway mowers away from the putting surface. Sandtraps should be built above ground so you can see them, so they will drain naturally and slopes should be such that they can be maintained with fairway units. Tees should be large and should be suitable for mowing with fairway mowers. Bunkers should not be placed to penalize the beginner or poor player. Make the course a real test for the low-handicap player but a pleasant place for the beginner. That's my own code but I don't know if it is that of the USGA.

MR. RADKO: Speaking for the staff of the USGA Green Section, it is our thinking that modernization practices to eliminate things which increase maintenance costs should be encouraged.

QUESTION: This question is about sand. I'd like your opinion on the kind of sand for bunkers.

MEMBER: I am from Westchester, in New York. We have used silica which comes from the glass processing business. It is extremely white and is of very regular texture. It presents a problem because of glare and it tends to slide under the feet of the golfer.

MR. BRETZLAFF: Silica is a very pure grade of sand. Some clubs in this area use it but it is very expensive. Whether sand is suitable depends upon the physical condition of the sand particles. Mr. Harris, what kind of sand do you use?

MR. HARRIS: We always try to choose a sand that will not blow and will not pack. I cannot state just what size it is.

DR. WATSON: I'd like to comment on the question of what has contributed most to efficiency of operation in the last 10 years. It can be said in one word—knowledge. Knowledge gained through the exchange of ideas at meetings such as this will help us to be more efficient than we are today.