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grass root growth was the greatest at 60° F, whereas Merion Kentucky bluegrass and annual bluegrass produced maximum root dry weights at 70° F. All three species produced maximum shoot growth at 60° F. Penncross creeping bentgrass was adapted to a wider range of temperatures. This was particularly true at the extreme temperatures of 40° F and 90° F.

Other temperature observations revealed that all three species matured more rapidly at and above 80° F. The root systems turned decidedly brown at 80° F temperatures. In terms of seedhead production, annual bluegrass plants grown at 80° F produced seedheads during the first 15 days of the temperature treatment. However, seedheads were not produced until after 15 days in the 60°, 70° and 90° F constant teme treatments. Seedhead development was present on annual bluegrass plants throughout the rest of the growing season.

The quantity of seedheads produced was greatest on the sports turf maintained at a low cultural intensity and was the least on the golf tee maintained at a very high intensity. Examination of these areas revealed that the sports turf was composed primarily of annual bluegrass plants of the annual (subspecies annua) bunch type, whereas the golf tee maintained under a higher level of irrigation, nutrition and mowing was composed primarily of creeping, perennial types of the subspecies reptans. The percentage of annual bluegrass plants lost during the midsummer stress period was greater in the sports turf containing a predominance of annual types than in the golf tee containing predominantly perennial types. Seed germination. Seed germina-

tion of annual bluegrass did not differ significantly at temperatures ranging from 40° to 70° F. Very substantial decreases in seed germination occurred at the 80° and 90° F treatments.

Cutting height. A second phase of the investigation involved comparisons of the competitive ability of annual bluegrass as influenced by cutting height. Individucontinued on page 22



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BEARD from page 21

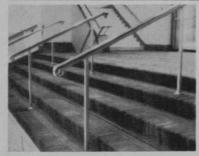
al annual bluegrass plants were transplanted into established Merion Kentucky bluegrass plots and into monostand annual bluegrass communities. Measurements were made of shoot dry weight, root organic matter, tiller number and shoot density of the annual bluegrass plants. Results of this study revealed that the oneinch cutting height produced the highest tiller numbers, shoot dry weights, and shoot density counts for annual bluegrass growing in both the Merion Kentucky bluegrass polystand and the annual bluegrass monostand. Based on several different studies in which comparisons of this type were made, the author concluded that the optimum cutting height for annual bluegrass in terms of competitive ability was one inch.

Rooting. The final factor evaluated was the comparative root growth and development of annual bluegrass in relation to Penncross creeping bentgrass and Merion Kentucky bluegrass. These investigations utilized special glassfaced root observation boxes. Root growth on the glass face was observed over 15- and 30-day periods after individual plants were transplanted into the root observation boxes. One set of plants was clipped three times weekly at one inch; the second set was not mowed.

Results after 30 days of growth revealed no significant difference in the rooting depth and root dry matter production of the three species. The annual bluegrass root system was more extensive and branched than for Merion Kentucky bluegrass. Visual observations during the initial 10day period following transplanting indicated that annual bluegrass root growth was more rapid during the seedling stage. The root organic matter production after 15 days supported this observation. Cutting the plants at one inch reduced the rooting depth of all three species with Penncross creeping bentgrass being more severely effected. The author concluded that the initial superiority in rooting capability of annual bluegrass could play an important role in its competition within a bentgrass or Kentucky bluegrass turfgrass community.

Comments: The above research was part of a three-year study of annual bluegrass supported by the United States Golf Assn. Green Section. The over-all objectives of this and several other investigations were to better describe the annual bluegrass plant so that those attempting to maintain it as a component of the turfgrass community, rather than controlling it, would have a better basis for decision making in terms of turfgrass cultural practices.

There are a number of observations from this study which apply to the maintenance of golf course fairways and tees containing a predominance of annual bluegrass. First of all, it might surprise many readers that both Penncross creeping bentgrass and Merion Kentucky bluegrass are able to ini-



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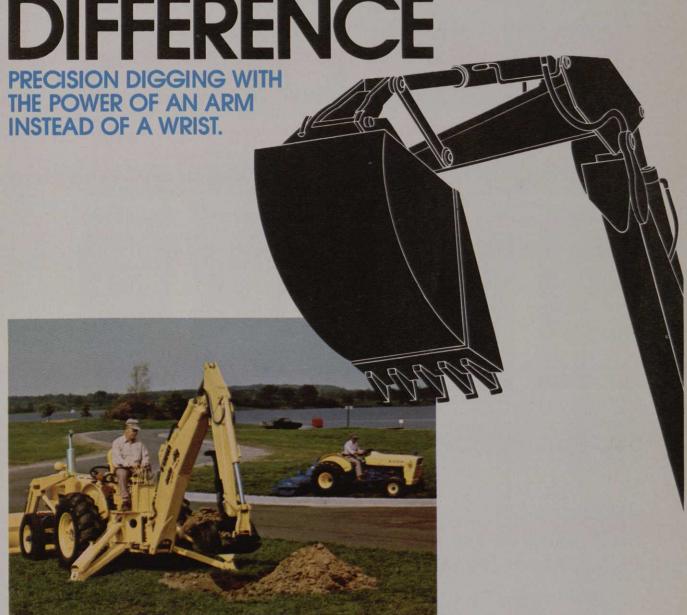
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#### BEARD from page 22

tiate shoot growth earlier in the spring than annual bluegrass. Keep in mind that this is growth from plants which have survived the winter period as perennials and that a predominance of the annual bluegrass in irrigated, close cut fairways and tees is of the creeping, perennial type. Many individuals feel that annual bluegrass initiates growth earlier in the spring than the other two species. This impression probably results from the very early spring germination and seedling growth of annual bluegrass in bare areas that are warmed by direct radiation from the sun. In most golf course fairways and tees we are concerned primarily with the plants that survive the winter rather than the germination and growth of new annual bluegrass seedlings.

In this regard, it it important to ensure adequate nutritional levels early in the spring in order to stimulate the growth of bentgrass and Kentucky bluegrass at a time when annual bluegrass is less competitive because of the lack of favorable growing temperatures. Withholding fertilizations until later in the spring will stimulate the growth of annual bluegrass, making it more competitive. Early spring stimulation of bentgrass and Kentucky bluegrass growth can be achieved by an early spring fertilization, by a late fall fertilization or by dormant fertilization, depending on the situation and climatic conditions.

The ability of Penncross creeping bentgrass to grow at a wider range of temperatures no doubt reflects its superior hardiness to both heat and drought stress compared to annual bluegrass.

Observations on seedhead production are of particular interest with 80° F soil temperatures producing the most rapid seedhead development and temperatures below 60° F impairing seedhead development. These data more specifically characterize the environmental conditions under which the greatest seedhead development can be anticipated. Keep in mind that seedhead development is usually greatest on turfs maintained at a low nitrogen fertility level and can

be reduced by nitrogen fertilization.

Observations on seed germination reveal that little germination of annual bluegrass seed will occur at soil temperatures above 75° F. Here again these data identify the specific periods during the growing season when the seed germination, establishment and encroachment potential of annual bluegrass in the turfgrass community will most likely occur.

The second study regarding cut-

ting height effects on annual bluegrass competition may also surprise a number of individuals. Many writers have suggested that annual bluegrass is most favored by cutting heights of 0.5 inch or less. Certainly annual bluegrass is adapted to these cutting heights and perhaps is better adapted than many of the turfgrass species we use. In terms of over-all competitive ability and potential for encroachment into other turfgrass

continued on page 70



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Preparing the budget is only half the battle. The other half is selling it to club officials

Okay, so it's budget making time again. You and your accountant have records of where the money came from and where it went, this year and last year. You know that your costs of doing business keep going up.

There's higher operating costs to contend with and probably some capital improvements to be made. Maybe it's about time to paint the clubhouse, modernize the kitchen, buy 10 more golf cars, replace a tractor and add a triplex greensmower for the golf course and rebuild the green that always dies in the August heat.

Will the ownership buy those things and dare to increase dues or green fees to pay for them? Maybe, maybe not. Not all clubs and boards are alike. They may need convincing. You have to sell them.

Of course, selling yourself and your management policies and new ideas for a better club goes on all the time. It's a continual exercise in human relations. But budget time is the showdown for measuring what you've been doing with the money. Your budget presentation must show where the club is and where it's going.

Again, no two clubs and their budgets are alike. You have to know your own operation. Don't compare it with someone else's club; defend what you're doing on its own

Remember the philosophy of the club makes a difference in the budget and priorities. Just consider the variety of golf facilities in this country: member-owned private clubs; corporation-owned private clubs; privately-owned daily fee; resort; municipal; military; university and industrial. Each operates under a different philosophy with different administrative structures and goals. The private club spectrum alone includes old and new, large and small memberships, golf-only or family recreation, high and low dues and golf courses ranging from nine to 54 holes.

Differences among golf courses may often account for big differences in budgets. For example, the size of the labor force depends on climate, location, local wage rates, standards desired, type of watering system, equipment, strains of grass, whether the course is treecovered or open, size of greens and tees and number of traps. For 18 holes these factors may produce a maintenance budget ranging from \$40,000 to \$200,000.

Many of the decisions within this range are shaped by policy or club philosophy. That's the way it should be. The budget is merely a means to an end; it does not decide policy by itself.

Putting together a detailed budget proposal is work, but the document can be important to the club as a management guide. In that sense, the process can be at least as

continued

important as the product, because it makes management plan. Some other advantages of producing a formal budget are:

- 1. To help fix authority and responsibility among key staff members, club officers and committee chairmen or owners;
- 2. To provide an organized means of communication between key management people and owners;
- 3. To measure the club's operation and management, thus making possible consideration of new ideas and improvements;
- 4. To help educate new board members and committeemen in the operation, policies and finances of the club;
- 5. To help define long-range objectives;
- 6. To create a shield against naive or irresponsible fiscal policies.

If you know your board or ownership at all, you can anticipate what they will want to know and what they ought to know. As you start putting together the budget, ask yourself and other department heads:

- ☐ Will last year's standards of operation and physical plant be good enough next year?
- ☐ What will be needed to correct the major problems left from last season?
- ☐ What improvements should you recommend?
- ☐ What improvements might the ownership, board and membership want most?
- ☐ What is the current financial status of the club and the outlook for the coming year?
- ☐ What major expense items are going to increase significantly?
- ☐ Is any new Federal, state or local law or regulation going to affect the cost picture?
- ☐ What methods can be used to manage the operations more efficiently next year?

Putting together the figures, estimates and new ideas for the upcoming year should be a team effort. Every key person in the club—from owner to accountant to chef—can contribute. If they have to live with the budget later, then they should participate now. If you plan with people, selling the plan later on is much easier.

The actual budget document you present to the board or ownership ought to answer all the above questions and more.

It should include actual expenses from the previous year and the current year. It ought to estimate every category for the coming year, with good reasons for any major increase. It should include projected income and sources to balance expenses and include what you intend to do about any big profit or loss.

A separate section for capital improvements should indicate priorities, what has been spent previously on that category and what it will probably cost to finish the job.

Repeating: Every major line item should be accompanied by a written explanation of where the money goes, why and whether the trend is up, down or static. Emphasize the positive. Tell what the money has done and will do for the club and members or golfers.

Give yourself plenty of time to meet with department heads, check past records, get demonstrations of new equipment and just think. Then, when the budget proposal is ready on paper, schedule a formal presentation meeting. Here are tips on being prepared for that:

- 1. Select a meeting place and time convenient to the group. The room should be large enough to be comfortable, well-lighted and ventilated, have proper furniture for a group meeting and be free from any distractions;
- 2. Duplicate the proposed budget or at least a summary, then send it out with a written notice of the meeting 10 to 14 days ahead of the meeting. The notice should list date, time and place and agenda and be personally signed by you or the meeting chairman. Urge the board or committee members to study the budget in advance and call you ahead of time with their questions;
- 3. If the decision-making group is more than just one owner, follow up the mailing about three to five days ahead of the meeting by calling each participant. Make sure he got the copy of the budget and gently remind him to study it or ask you questions right then;
- 4. Spend some personal time in the final few days with the meeting

chairman—owner, club president or director—to make sure he understands the budget document, the process, the philosophy and answers to the tough questions;

6. Don't hesitate to use visual aids: charts or graphs showing cost trends, blackboard sketches to introduce a new process or capital plant, a guest expert to testify on why a new idea will pay off.

After the meeting, don't forget to send a copy of the final approved/amended budget to those who participated in the process, plus any other officials who should be informed.

Finally here are some very important don'ts to remember:

Don't just put figures together by adding 10 per cent to last year's budget or actual expenses. Maybe some agencies work that way, but most hard-headed businessmen won't buy that approach:

☐ Don't just toss in contingency factors because you're afraid to predict how well you can manage. A contingency or emergency fund as a separate item may be all right, if you're figuring to get hit with a fire, flood or excessive vandalism next year;

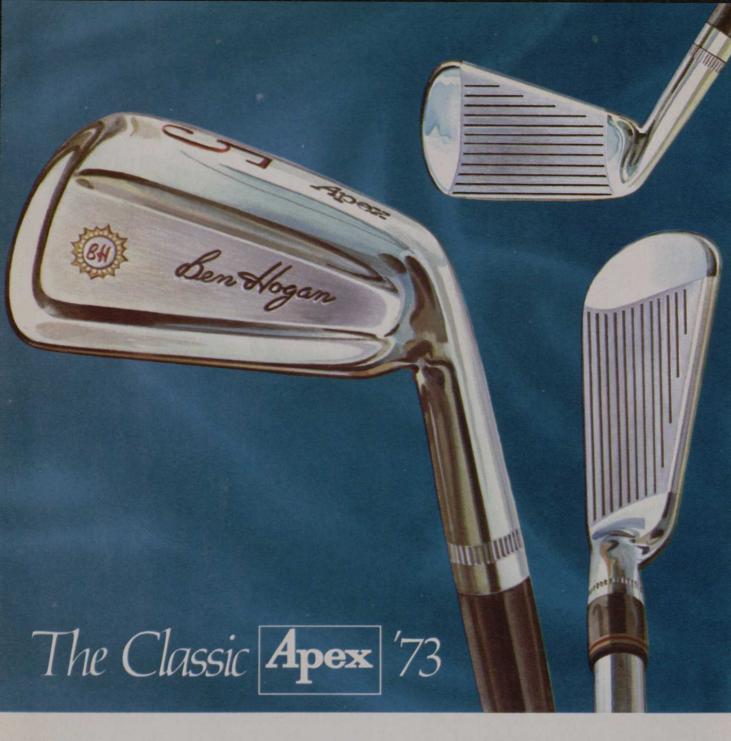
☐ Don't try to con anybody with a flashy sales talk not backed by lots of homework and facts. You will be judged on what you are, what you do and the results, not by what you promise;

☐ Don't play off one person or group against another. A club is too small a battlefield and budget planning is much too serious to play politics. You need everybody's help and trust in equal amounts, if that's possible:

☐ Don't assume that any board member knows or cares about the details of club operation. Members and golfers always take a fragmented view of things, depending on their interests and time involved. But a conscientious board member always has the right to ask why, and you better be able to answer.

Budget requests usually fail because the management team either doesn't put together a salable product or does a poor selling job. If you do your homework and make it easy for your bosses to say yes, you will find that selling a budget is easy.





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