Twice winner of the USGA amateur championship and a Walker Cup member, Marvin (Bud) Ward is one of golf's greatest players. His is a real success story—told best by his long string of championships over the years. And right now that story seems far from complete!

• Just last year, for example, Bud set a brisk pace with impressive victories in the Reno, Montana and North-West Pro-Amateur tournaments, while placing second in both the Esmerelda and Oregon Opens.

• Bud has proved extremely valuable to Golfcraft. Working closely with Golfcraft's famous club designers, he has shown a knack for translating his vast tournament experience into a logical approach to specialized problems of club design. Yes, Golfcraft is proud of Bud Ward!
didn't. There's no need of telling an experienced golf professional how the individual element of pupil and teacher is a critical factor in determining how successful golf instruction is going to be.

But the point is that the pro always has to keep informed on everything that's latest in golf instruction. The amateur golf enthusiasts are. They'll question the authoritative rating of the home club pro if he brushes off some other pro's instruction idea casually or contemptuously.

Besides—and it's the big point—the other ideas mean money for the pro. Frank Walsh's articles in GOLFING last year on the grip were worth a couple of hundred dollars at least to me, in lessons and in leading around to putting new grips on clubs of people to whom I couldn't sell new clubs.

Pro Profit from Greenkeeper

But of all the ideas I ever got the one that has meant the most profit to me came from our greenkeeper. Like many another older pro I was on a pro-greenkeeping job right after I landed in this country. There wasn't any such a thing as a budget. We tried to make the course playable and operated on whatever money we could get when the course needed it. Course maintenance has come a long way from those days.

Several years ago I was talking with our greenkeeper (he is called superintendent now) after he and our wives and I had had dinner together. He told me he had to get home and work on his budget and get his plans for winter and spring work ready for the green committee meeting a few nights away.

Then it struck me that I had no budget and no organized plans for the pro department. I knew that the way course maintenance is conducted now the job couldn't be handled properly without budgeting and planning. The more I thought about it the more I wondered if my own operating hadn't failed to keep step with the course end.

So that night I sat down and after almost 30 years in pro golf began, for the first time, getting a picture of my business in black and white. I had a general idea of what my expenses would be and how much income I could count on in a normal year. After getting interested to the point that I finally got out the copies of my income tax returns I saw that I was really shooting at a blind hole. I only knew the general direction of the cup.

What About Your Members?

There isn't a man who deserves to be called a first class businessman pro who won't find himself fascinated by a study of his business with specific figures instead of hazy generalities.

What's the condition of each member's equipment? How long have they had their clubs and bags? What's been their per season purchases at the shop? How much can they afford? Are they playing as many times a season as they should? What is their attitude toward the club, the pro department and playing? Do their wives or children play? Do the kids use the pool a lot but never play golf? How many old members are dropping out and how many new ones can we expect? Who is going in the club events and the sweepstakes and who is staying out? And why? Who takes lessons and how many? Who should be taking lessons but never has expressed any interest? Who is buying golf goods and golf apparel elsewhere and how much and why?

Those were only some of the questions I asked as I looked over our membership roster and made notes—pages and pages of notes.

I thought I knew my club members as well as any pro in the country but when I went over the list, name by name, I was shocked at discovering how much I didn't know specifically about them, and what I should know, not only to directly benefit my own business but to directly benefit the members and the club. I was surprised to find how little golf was played by some of the members who should be playing a lot and getting their money's worth out of what they spend to belong.

I went over my expenses the same way. My bookkeeping had improved on account of the income and sales tax pressure but it had been a matter of records more for the tax men than for my own study in tipping me off how to save money and how to do things that would increase the earnings of myself and my assistants.

The result of this work and study, which kept me very much interested winter evenings, was a budget that was pretty far off the marks of the next season's actual income and expenses, but it definitely steered me into more business, better and more complete service to the members, and it stopped leaks in my expenses. The budgeting turned out to be worth a whole lot more in cash to me than an equal amount of time spent in the summer on the lesson tee, and weather didn't interfere with the budget work.

But that wasn't all that came out of the idea from the greenkeeper.

Prepare in Advance

I sat down and began planning my work on paper. Usually when spring was just ahead I'd begun fixing up my shop. At that time everybody else was doing some early spring work and I had a tough time getting labor. When I saw what I'd have to do I got a lot of the work done in the

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Course For "Typical Golfer"
Popular at Pinehurst

One of the most talked-about new courses in the United States is the 9-hole No. 4 course at Pinehurst, N.C. This isn't a championship course nor is it spotted with the punishing sand traps that make other Pinehurst courses, No. 2, especially, exciting tests of golf. There isn't a sand trap on Pinehurst's No. 4, although there are sandy areas bordering some fairways that provide some sand shots.

It's the absence of sand traps around the greens or to catch misplaced tee shots that is one of the main distinguishing features of this No. 2 layout which now is in its second season. Yet, without sand the course is testing enough for about 95% of American golfers. The grassy hollows strategically located to guard greens provide shots that are just as difficult as sand trap shots for the average golfer, and harder for the expert who has mastered the wedge so a trap shot near a green usually is not much more of a problem than a long putt.

The maintenance of the course without sand traps is reduced considerably. There are two factors that immediately occur as objections to a course without sand traps. One is that all of the leading private club courses and most of the public and semi-public courses have sand traps so a player coming from a course without this feature doesn't know how to play a required shot. The other is that if the grass in the sandless traps isn't Bermuda (as at Pinehurst) the grass may get so thick and long it is an unfair hazard.

The first objection might be answered by sand trapping on short holes of the otherwise sandless course, or by having a practice sandtrap.

The grass objection would have to be answered by selection of grass to seed in the traps or by trap design that would permit machine rough mowing.

But, as far as Pinehurst is concerned, the popularity of the No. 4 course indicates that there's certain to be more attention paid to designing and constructing courses that have no sand traps.

Short But Testing

The No. 4 course is short. It's only 2,732 yds., with a par of 35. The yardage by holes: 355-157-439-337-356-296-326-367. The 439 third is on the card as a par 5. Bogey is 41 for the course.

Despite the shortness of the course it gets a lot of play from the younger golfers who come to the American version of Scotland's St. Andrews. Eighteen holes on one of the tougher Pinehurst courses and 6 on No. 4 make a good day's golf for anyone. The stronger players—even the experts—confirm Horton Smith's observation after playing several rounds on No. 4 that it is a very pleasant, interesting and tightly exacting place for appraising one's iron game.

Design Features Outlined

The design features of Pinehurst No. 4 are related by Richard S. Tufts, Pinehurst pres., who laid out the course.

Says Tufts:
"In general what we were attempting to do in the design of this course was to present fair test of golf for the average short player who strikes a ball between 170 and up to perhaps 200 yds., and to at the same time make the course as difficult as possible for the golfer who can hit a tee shot between 190 and 250 yds. Therefore the course was made open at the shorter distances and as tight as possible at the longer distances.

"We also presumed the shorter player did not have the power to play a high shot to the green with sufficient spin on the ball to cause it to stop quickly. We therefore left all the approaches open so that a running ball could be played to the green. In a few cases the approach was complicated by the introduction of hollows or mounds, but we always left an opportunity for the golfer to play a spoon or a long iron to a green 140 to 160 yds. away. At the same time we tried to make the green tight enough so the golfer who was playing an eight iron to the green would have to be just as accurate as if the green were heavily trapped.

"The third feature was the complete absence of traps and the use of rough or mounds as a substitute. We felt the weaker player was not an expert with the wedge and did not wish to place him at any disadvantage by requiring him to use it. We felt that the contouring around the green would make the shot interesting enough for all types of golfers who did not succeed in getting on the green in their approach shots. The second reason for the elimination of bunkers was the cost of their maintenance.

"Following is a brief description of the
four holes shown by accompanying plans and photographs:

"Third hole: This is the only hole classified as par 5, even though it is under the standard length. The ground in front of the tee is approximately level for about 170 yds., when it drops away on a long slope to about 270 yds. from the tee. The photograph was taken at a point about 180 yds. from the tee. The hole is designed to be played in three shots by the average player. The first to the position shown in the illustration, the second down short of the green, and the third a little chip shot from approximately the position marked with a "B" on the plan. From this position there is a general slope of the ground from right to left, but the left side of the green is so built up that a ball can be run directly up the slope without taking much break. This is therefore not too difficult a par 5 for the short player, and he always has the chance for a chip and a putt.

Tougher for Long Player

"The long player will drive to the position marked with an "A" on the plan, or a little short of this position. This gives him a blind tee shot to a fairway that is narrowing sharply and at the same time sloping from left to right. It is therefore a much more difficult tee shot than the shorter player is required to make. From position "A", the longer player if he wishes to come home in two, has to make a shot of 180 yds. or longer across some intervening rough to a small green. Both these shots are far more exacting than the shorter player is required to make and this should therefore be an interesting hole for all types of players.

"The plan and photographs show the hole clearly except that the general slope of the ground around the green is not indicated.

"Fourth hole: Tee shot on this hole is up a gentle rise to a point about 180 yds. from the tee. From this point it is level to the green, the green being situated on a sort of knob beyond which the ground falls sharply away and also there is quite a drop on the left side of the green.

"The short player has ample room in which to play, but because of the elbow anyone striking the ball beyond 200 yds. has an extremely difficult narrow opening into which to play and must take into account the elbow feature of the whole hole. The approach to the green is open and level and the only problem is presented when the player goes either to the left or the right or over the green, in which case there is quite a difficult chip shot back to the green.
"From the standpoint of the long driver the feature of this hole is the very difficult tee shot. The photographs of this hole do not show the green as well as I would wish.

"Seventh Hole: This hole is the shortest of the par 4 holes. The hole plays very much like the fourth hole except that it gives the opportunity for a really short chip shot to the poor player. The back of this green is built up considerably and is quite a penalty for being bold. Unfortunately, we designed this hole to bend around the pine tree shown in the photograph and this pine tree was killed by lightning last summer. I had forgotten this fact when I had the pictures taken of this hole, and the dead tree is not very decorative.

"I would have liked to photograph this hole from the tee, but there is no chance at all to see the green from this position.

"Eighth Hole: This hole crosses a valley, the tee shot striking into a slight hill, the crest of which is about 180 yards from the tee. It is quite difficult to see the green very much short of this position. One of the features of this hole is the little hollow in front of the green, which has to be carried in a high approach shot to the green. On the other hand, a low ball runs through this hollow without difficulty and onto the green. The photograph was taken from a position nearer the green than even a long driver would be likely to reach, but it was necessary to get this close in order to show the hollow in front of the green.

"Again you will observe the fairway becomes narrower for the long player. However, comparatively speaking, this is a much easier hole for the long player than either No. 4 or No. 7.

"The plans for the four holes are all drawn carefully to scale, and you would be safe in taking any measurements from them."

Maples Describes Construction

The construction of the course, which adjoins the famed No. 2, scene of the 1951 Ryder Cup matches, and the North and South Open, is described by Henson E. Maples, supt. of the Pinehurst courses. Maples says:

"For some time it had been felt that there was a need for a course that was short and relatively easy, designed for the average golfer and stressing maintenance economy. On April 14, 1950 I received word from Richard S. Tufts to arrange for
constructing the new course. It had previously been decided that we would use part of the old 18 hole No. 4 sandgreen course, which had been closed for about 17 years.

"Plans were drawn up for the nine holes and each hole was staked out on the ground showing the location of tees and greens, as well as the outlines of fairways which were planned wider at about 150 and 300 yards for the short player and narrower between these distances to make it tighter for the long player. Total length was planned to be between 2700 and 2800 yards with two par 3’s of approximately 100 and 155 yds., one par 5 about 440 yds., and six par 6’s ranging from 295 to 370 yds.

"Work was begun on May 3 with our regular crew of about 18 men and was on a part time basis until Nos. 2 and 3 courses were closed on May 14 and May 27 respectively. All of the clearing was done by hand since for the most part it consisted of a very thick stand of young long leaf pines that had grown up voluntarily during the past 17 years and were too small to be taken out with heavy equipment without destroying topsoil and possibly tearing up ground. All areas to be planted were burned to get rid of the waist high growth of broom sedge and other weeds so the soil would be cleaner to work later, to kill weed seeds, and provide a small amount of potash.

"After clearing, the soil was thoroughly pulverized by plowing and discing several times with Ford tractors. Then it was harrowed several times in every possible direction with a spike tooth harrow to smooth and also bring to the surface some of the numerous pine roots, which were removed as the work progressed. The furrows were cut down with blades attached to the Fords and a 12 ft. wide drag made from a 4 in. x 4 in. with a piece of flat iron on the front edge was used to float the surface smooth.

**Fertilizing and Seeding**

"One ton of dolomitic pulverized ground limestone and 1000 lbs. 5-10-5 commercial fertilizer per acre were then applied to all fairways, tees and walks. On June 3 seeding was completed using 15 lbs. hulled bermuda seed per acre, mixed with Milorganite, sowed with the Cyclone seed sower in two directions and then harrowed thoroughly about 1 in. deep. All loose surface material was raked off and the
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final smoothing was done with a drag made of 2x6's overlapping, and in two sections hinged together so it would follow contours.

"After a light rain on June 4, all seeded areas were rolled with a 3-gang tractor roller, and after two more showers on June 9 and 10 germination was noticed. On June 13, 700 lbs. Milorganite per acre was applied and on July 1 all seeded areas were rolled and mowed for the first time. On July 7 spiking was done with a Rotary hoe, 1000 lbs. Milorganite per acre applied and then rolled. Dolomitic ground limestone was applied again on July 25 at ¾ ton per acre and on the 27th 800 lbs. Milorganite per acre. Again spiking and rolling was done. An attack of fall Army and cut worms made it necessary to poison on August 25. Two gallons of 50% Chlordane per acre was used and gave excellent results.

Greens Construction

"The last fertilizing was made on August 31 using 700 lbs. Milorganite per acre. The fairway grass was in wonderful condition by fall even though rainfall was below normal, and all the grass came back good in 1951.

"In constructing the greens, grading was done with two Ford tractors on four greens where there was a need for it. The other five, as well as all tees, were built by hauling in soil with dump trucks which were loaded with a 1 yd. capacity tractor. Approximately 2,000 yards were hauled at a cost of 54 cents per yard. Since no traps were being used, it was necessary to elevate most of the greens, at least at some point, so they would show up better as a target. No sub drainage work had to be done since all of the soil on the course is sandy and drains freely. However, in grading the greens, care was taken to see that each had surface drainage in at least two directions.

"The soil hauled in was roughly scattered with a blade on the front end of a Co-op tractor, then smoothed down with a spike-tooth harrow. A Ford tractor with pan was used to move soil as needed in forming contours. For the final contouring I drove the tractor pulling the 12 ft. drag and directed the man handling it so that I would get each green exactly as I wanted it in the least possible time. This operation took about two hours per green.

"On June 19 all greens and approaches had 1500 lbs. of 5-10-5 fertilizer and 1 ton dolomitic ground limestone per acre. Planting was begun using stolons of the

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Nothing, in the way of equipment, can do more for your game than this—a set of superfine precision-made Hagen Woods and Irons, "The Ultra in Golf Equipment," fitted exactly to your personal requirements by your Golf Professional. Hagen woods and irons and "The Haig" golf ball are sold by Golf Professionals exclusively.

quality beyond question
The Story Course Cost
Records Must Tell

By TAYLOR BOYD
Supt., Camargo Club, Cincinnati, O.
(GCSA Paper)

Every newspaper, magazine, or trade paper today carries news dealing with labor management and cost controls. The colleges have recognized, for quite some time, that there is a vast field for men who can properly cope with these problems and are trying to learn what they can and teach what they can learn.

Records are a “must” today to keep the politicians busy with tax reports and all other red tape. Most clubs keep adequate records to satisfy the tax people, but for the most part, it seems, there is not the proper breakdown to give the course superintendent and a chairman the picture they want. Good records are a good picture, too, in fact the best you can have.

Every club knows, of course, what they have spent at the end of the fiscal year and can base a budget on that lump sum figure.

There are many, however, who don’t know what the money was used for. They don’t stop to consider that labor has gone up so much and that fertilizers and chemicals have reached the figures they have. As an example, when I built Meridian Hills CC, labor was 25 cents to 40 cents per hour and it was good labor. Teams with driver and equipment were paid 75 cents per hour.

Everyone knows that labor gets much higher prices today. Wouldn’t it be interesting to know how many hours were used to do a specific job—by hand—in the 1920’s and 30’s and how many today? I have such a record and it is very interesting. While on this subject it might be surprising to learn that some equipment doesn’t save money, or to put it another way, too much motorized equipment can become costly because of machinery maintenance costs. That’s another very good reason for records that tell you where you are going. (If you are approaching 10% of inventory for maintenance you had better check.)

Men Understand Costs

There is another thing that good cost records can do. There is always someone around a club wanting changes made—traps added and removed, tees rebuilt, trees planted, etc. Records will show what additions cost to make in the first place and to maintain once they are done.

If men working on a course know you are keeping a record of how long it takes each one to cut greens, rake traps, roll tennis courts, etc., each will, most of the time, do his part to keep up, if he is worth keeping.

There are so many ways that records actually help that it seems unnecessary to enumerate them. The real value of records is, in my estimation, the good they do the superintendent. Sure, they are extra work, and when you are busy and perhaps worried about turf disease, you question the time consumed.

Let’s admit right here that too many superintendents watch their courses like hawks but don’t keep up on their records, or know what was spent for which. When you are having trouble it is very comforting to be able to tell your directors that such and such a bad spell cost so many dollars for labor and chemicals. A wind storm cost so much. A dry spell cost so much, etc.

One other thing records do for the superintendent is it keeps him thinking straight. Mathematics is one factor that has been proved through the ages to compel straight thinking. You may be downright sore at your chairman, or the pro or anyone else, but if you take an hour or two and make up a report, I guarantee you will forget you are mad, or your report will not be correct.

Here is also a good place to admit that men who carry the responsibility that a golf superintendent does should have someone to do the records for the business he runs. It is my opinion that if the superintendent would show his club a good record system, the club would gladly pay someone to keep the books or at least make out the reports.

The actual work of keeping basic records should not be such a burden if you set up or select a system that is easy to keep. One that is a burden won’t be properly kept anyway so it would be useless.

Costs in Labor Relations

The keeping of records can affect the superintendent just like anything on the