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	RESERVE LEFT IN BATTERIES	HOW MANY OF THE 400 CYCLES IN THE BATTERIES ARE EXPENDED?	HOW MANY CHARGES BEFORE BATTERIES MUST BE REPLACED?	ELECTRICAL COST OF CHARGING BATTERIES	COST OF LIFE REMOVED FROM \$20.00 BATTERY (\$120.00 A SET)
1 GOLFING ROUND (18 HOLES)	50%	1/2 cycle	800 charges	13.6 cents	15.0 cents
2 GOLFING ROUNDS (36 HOLES)	0%	2 cycles	200 charges	27.2 cents	60.0 cents
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## Approximate electrical and battery costs per golfing round for CLUB CAR.

	RESERVE LEFT IN BATTERIES	HOW MANY OF THE 400 CYCLES IN THE BATTERIES ARE EXPENDED?	HOW MANY CHARGES BEFORE BATTERIES MUST BE REPLACED?	ELECTRICAL COST OF CHARGING BATTERIES	COST OF LIFE REMOVED FROM \$20.00 BATTERY (\$120.00 A SET)
1 GOLFING ROUND (18 HOLES)	83%	1/6th cycle	2400 charges	04.5 cents	.05 cents
2 GOLFING ROUNDS (36 HOLES)	66%	1/3rd cycle	1200 charges	09.1 cents	.10 cents
3 GOLFING ROUNDS (54 HOLES)	50%	1/2 cycle	800 charges	13.6 cents	.15 cents

CLUB CAR OF CANADA now manufactured in Kingston, Ontario, Canada, 141 Ontario Street.



The name of the game is PROFITS. The above charts document a cost of 87.2 cents in electricity and battery drain for two rounds of golf with any electric golf car other than CLUB CAR. Two rounds with CLUB CAR costs only 19.1 cents. This is a savings of 68.1 cents.

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CAR for three rounds is the same as for one round with any other golf car.

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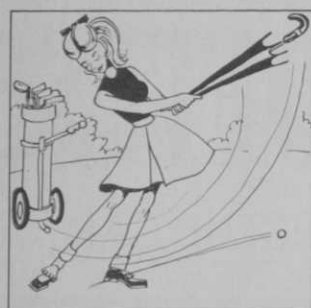
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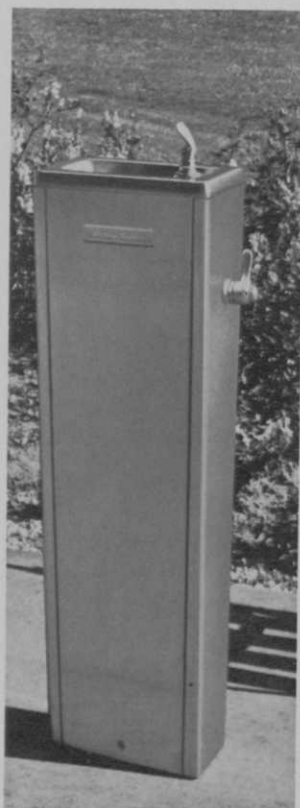
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## Grau

*continued from page 30*

pared for these problems and the answers are not at once forthcoming. Certainly we do not have the grasses to meet the demands. Neither do we know how water should be managed for the kind of turf we have now.

In the absence of enough money to support research for both concepts, developing drought-tolerant, non-irrigated fairway turf must be relegated to a secondary position.

The "middle ground" is partly research and partly educational. We have some grasses for fairways that can produce excellent turf with far less water than is usually applied. When turf loses a little color, even though it is healthy and it provides excellent playing conditions, members are prone to pressure the superintendent into irrigating (or the super does it himself to avoid the criticism he knows will follow) even though it should not be watered at that time. "We have the water system—why don't we use it?" We may never be able to educate golfers to adopt a sensible approach to irrigation even though the superintendent knows what to do. A national water shortage could bring this about and in my opinion we ought to be ready. Water most certainly is not the final answer to green playable fairway turf.

*Q.—Is "Turf Management" by Musser still available? Where can we get it?*

*(Nebraska)*

*A.—Yes, the book still is available. Parts of it are a bit outdated but nothing has been printed to take its place. See your golf course supplier—often he stocks this book for his customers. The United States Golf Assn., 40 East 38th Street, New York, N.Y. 10016, can supply you or advise you of the closest source. Most bookstores carry it.* □





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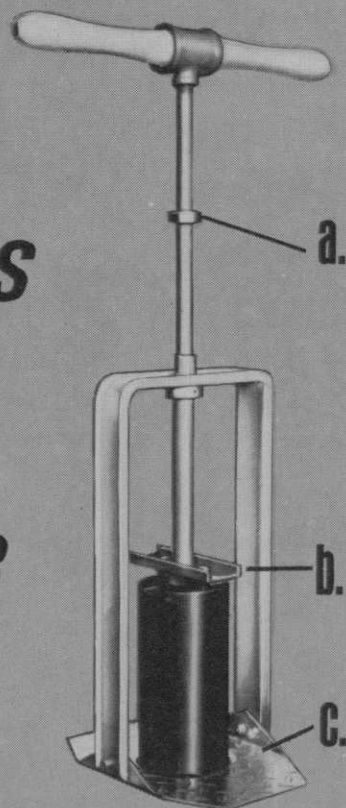


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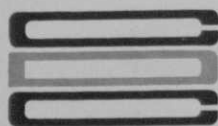
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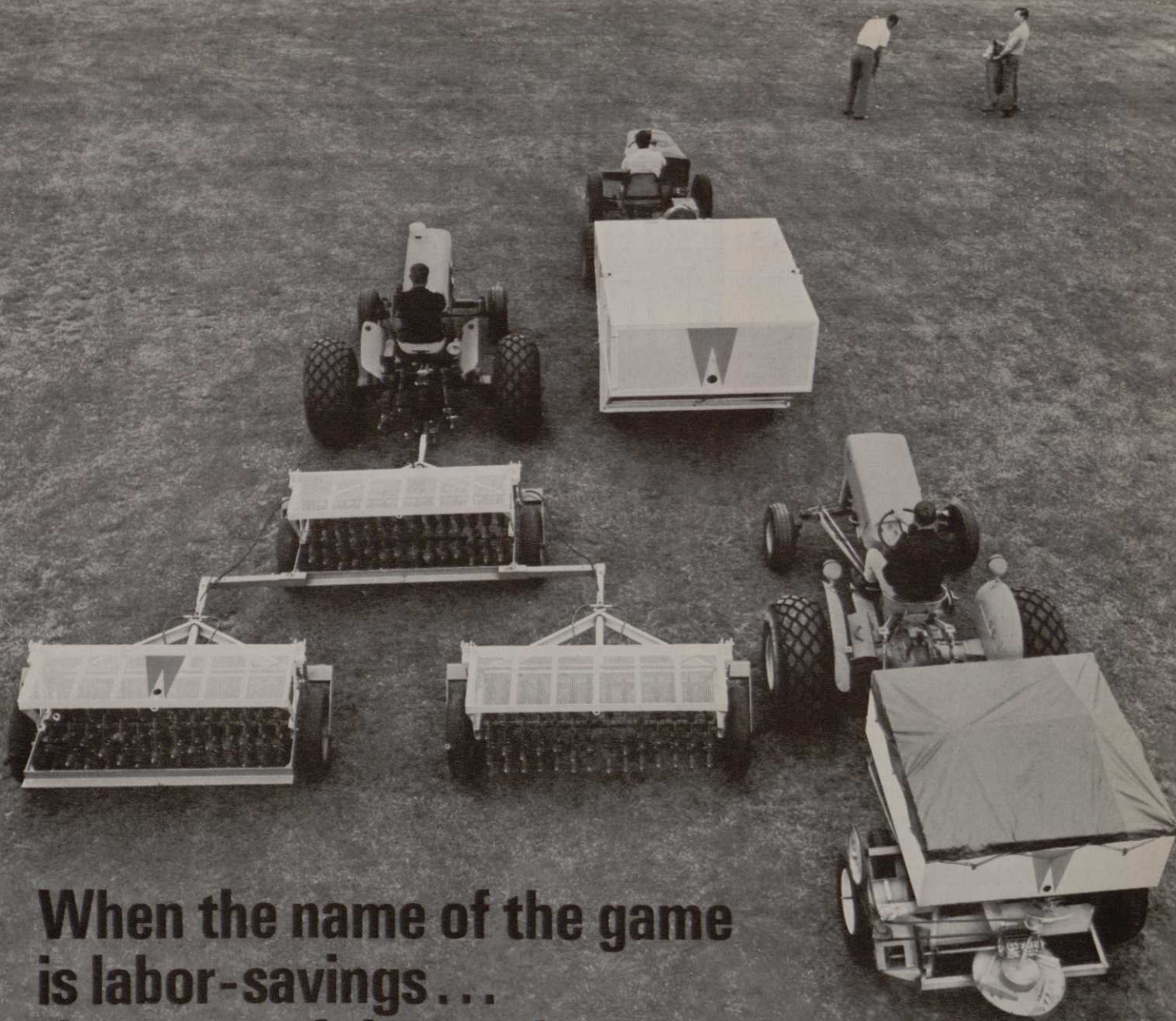
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CD-34





# When the name of the game is labor-savings... the name of the product is West Point

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The Hahn Big Boy S-4000 Spreader (right) covers acres of fairway in minutes. It distributes a swath up to 50 feet wide from a 60 cu. ft. storage hopper. Precision selector gauge permits use of a wide range of turfgrass fertilizers. High flotation tires eliminate turf damage and two-wheel design makes the Big Boy easy to trail—smooth, stable to corner. Stainless steel chains and anti-corrosive finishes guarantee long life. Request Bulletin WP-100 for complete details.

And the classics of the turfgrass industry—West Point Aerifiers®—ganged-up in the Grasslan Triplex (left). Cultivates a swath 18' wide. 420 exclusive "one-bolt" spoons open and loosen soil while special "flexi-pads" prevent turf damage. It features "straight-line" cultivation that concentrates on troublesome high-spots and a unique blade-changing design that converts the equipment to a spiker or slicer. Request Bulletin WP-300 for complete details.

The big three are part of West Point's complete line of turf equipment—all designed to convince you that we really care for your turf.



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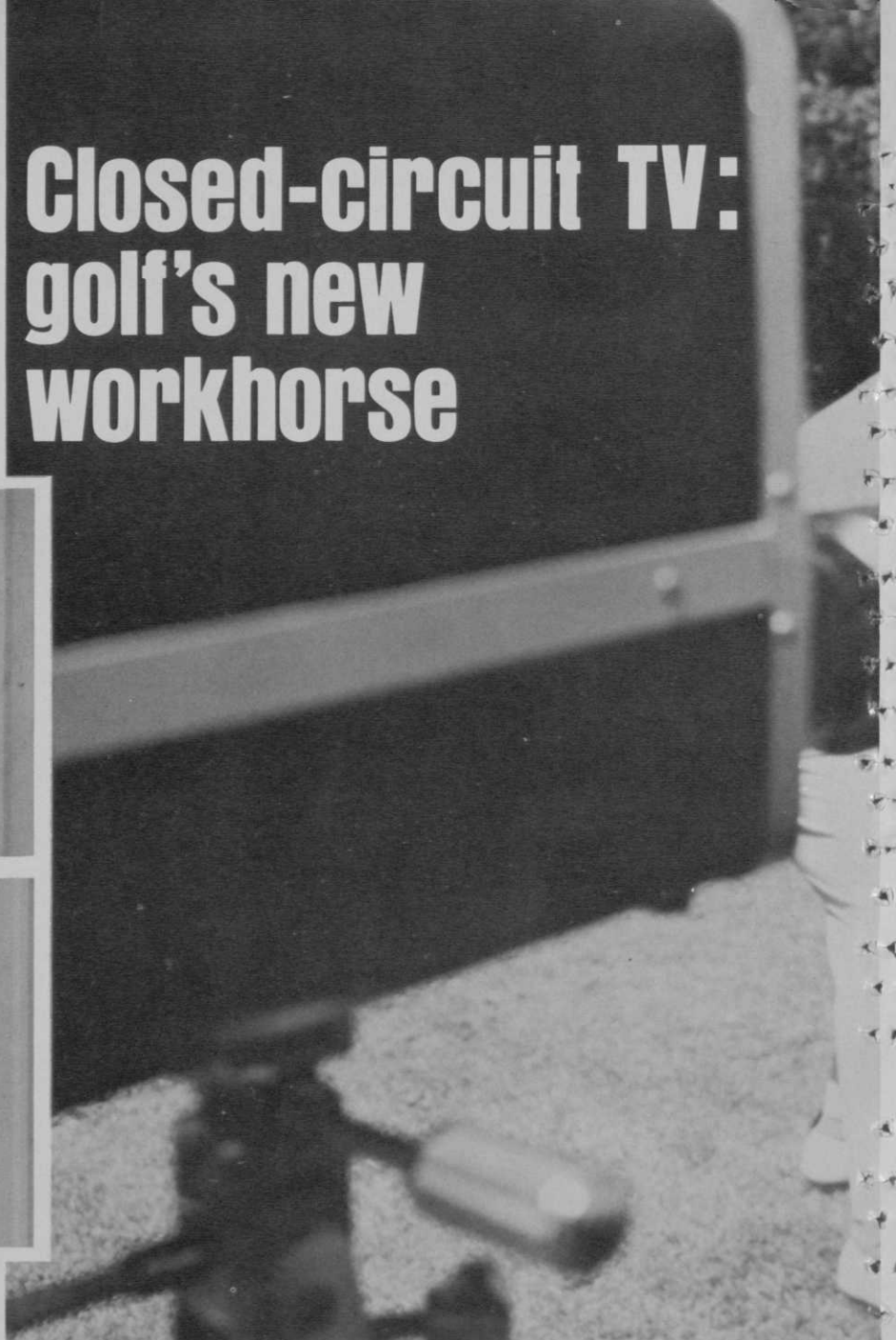
Closed-circuit TV could, if used imaginatively, be the answer to many problems plaguing today's country clubs

By **JERRY MARLATT**  
Manager Northmoor CC, Highland Park, Illinois

# Closed-circuit TV: golf's new workhorse



The camera, hidden in a birdhouse (above) is part of an experimental video system at Northmoor CC, Highland Park, Ill., used by superintendent Jerry Dinelli to view large areas of the course. In another application, Dick Canscioni (right), pro at Green Acres CC, North Brook, Ill., focuses in on his pupil to capture the most minute details of his swing.



On the grounds of a Northern country club, a birdhouse is turning in a 360-degree arc. It is in reality housing a closed-circuit TV camera, mounted atop a rotating antenna. From one of the openings, the camera peers out and views an entire section of the golf course and watches the groundsmen as they mow greens, rake traps and move tee markers. An approaching foursome nears a hole on which the automatic

sprinklers are operating, and the superintendent, who is viewing the activity in his office, manually turns off the system so the golfers might play the hole.

Out on the practice tee, the golf professional is giving a lesson. In the background a TV camera is recording the scene on a video tape unit for later replay by both the student and the professional. Stop-action, slow motion and close-ups are used as the pro





## What you need...

**Cameras:** Generally, those used at golf courses are vidicon tube pick-up types, varying from the low-cost closed-circuit camera to the more expensive and sophisticated viewfinder camera.

**Lenses:** The lenses available are of two basic types. One includes single focal length lenses, such as wide angle, normal and telephoto, which permit the viewing of a general area from one location. This type could be utilized to view a section of the golf course or one hole. It also could be used to view a golfer's entire swing. The other type is the variable focal length, or "zoom" lens, which can be used to focus in on such things as wrist action, diseased turf or even a salad table.

**Recorder:** Like the tape recorder used for audio pickup, the video counterpart records electrical impulses emanating from the camera and places all that the camera has seen onto magnetic tape. The video tape is either one-half inch or one inch, as opposed to the one-fourth inch used in audio units. Initial cost of video tapes average about \$1 a minute of recording; tapes are re-usable.

**Tripod:** This is one of the most important elements in the video setup. It holds the camera so that the picture is taken with a smooth appearance and permits scanning or lens adjustment without jerking or shaking. Remember, any vibration while shooting is greatly emphasized when played back. Depending on camera weight, prices of good tripods range from about \$50 (for a 10-pound camera) to \$150 (for cameras 20 to 30 pounds).

**Monitor:** This is quite similar to a small TV set. By wiring it directly to the camera or to the recorder, the image immediately being seen by the camera or that which has been recorded on tape can be viewed. When occasions demand larger screens, RF converters are available that permit utilization of a standard TV set without modification of the video tape recorder or the TV.

analyzes the student's swing, down stroke and wrist action.

The club manager is at a local motel, viewing with other club managers and personnel a video tape presentation produced in New York and which is being shown simultaneously in 25 cities across the United States. As the film speaker finishes, an amplified telephone system permits questions and answers, handled by the speaker on the taped presenta-

tion; only today he is in Houston. Perhaps the above sounds like something in the year 2000. Well, it is 1969 and all these seemingly impossible things are possible and available to the average club. For example, the birdhouse is now being used experimentally by superintendent Jerry Dinelli at the Northmoor CC. Golf pro Dick Lenzioni utilizes his tape recorded golf lessons at the Green Acres

*continued*

# A guide to VTR systems

Here is a sampling of video equipment available from various manufacturers:

**Ampex Corp.** Portable video tape recorders, with stop-action capability, range from \$1,500 to \$3,500. Also, portable color VTR, \$5,000. Camera with 25mm F/1.9 lens, \$475. Camera kit, including optical viewfinder, remote record/stop control, microphone input, 25mm F/1.4 lens, tripod, cable, lens tissue, and microphone, \$675. Camera with 3-position "C" mount lens turret, 25mm (close-focus) F/1.4 lens, video and RF outputs, \$995. Monitors: 12-inch, \$225; 20-inch, \$285; 20-inch color, \$695.

**Apeco.** An extensive line of cameras and monitors. A suggested video system for golf course applications, including portable recorder, high-resolution camera with built-in automatic light control circuit and 12-inch monitor, costs about \$1,600.

**Concord.** Manufacturer's suggested VTR system for golf course applications, including camera, recorder and monitor, costs under \$1,500. Recorder can play back through monitor or TV set and has still-frame monitoring capability. Viewfinder accessory for camera available for \$10.

**Craig.** Suggested video setup: video tape recorder with stop-action, camera with optical viewfinder and automatic light compensation, monitor with 16 by 12 1/4-inch screen, tripod, microphone and mobile cart. Total cost, \$1,815.

**General Electric.** Mobile video recording system, including console, camera, lens, cable, tripod, microphone, 30-minute tape, empty reel, tape deck and monitor, \$1,995. Tri-Pack portable system, including three luggage-

type cases for 1) tape deck with 30-minute tape and empty reel, 2) monitor and cables, 3) camera, lens, cable, tripod, mike, \$1,695.

**Norelco.** Available this summer, the Model TTS-2 TV training system. It includes a recorder with slow and stop-motion capabilities, large screen monitor and compact camera with tripod dolly, all contained in a console on casters. Total cost about \$3,950.

**Panasonic.** Video tape recorders for golf course applications range from \$800 to \$1,050. Vidicon cameras: with 25mm F/1.8 lens and RF matching transformer, \$300; with microphone, viewfinder, and RF matching transformer in portable case, \$335; with high resolution, internal and external sync switch, front pilot lamp, intercom input, \$400; with 5-inch built-in monitor, \$900. Monitors: 8, 11, 18 and 22 inches, \$150 to \$350.

**Shibaden.** One of the video setups suggested by the manufacturer for golf course applications: SV-700U video tape recorder, \$995, or SV-800U with built-in monitor, \$1,295; FP-100 viewfinder camera, \$795 (\$1,295 with a zoom lens). Monitors, depending on screen size, range from \$195 to \$295.

**Sony.** Video tape recorders range from \$795 to \$1,250. Camera ensemble, including camera, tripod, microphone and cables, \$395. Camera only, \$350. Battery operated viewfinder camera with microphone, \$695. Monitors: 8 inches, \$195; 18 inches, \$250; 22 inches, \$295.

**Videonetics.** Total VTR system with mounted vidicon camera (shutter speeds from 1/1,000 of a second down to 1/60 of a second), stop-action recorder and monitor, \$2,885.

## CLOSED-CIRCUIT TV

*continued*

CC. Both these clubs are in the Chicago area.

Holiday Inns of America now has the 25 city TV networks available to its patrons for sales meetings, seminars and educational presentations by manufacturers, associations and schools. Supermarkets, department stores, airports, police stations and hospitals have already begun using them for surveillance, security, information and to save labor.

Much is being done also by the manufacturers. New cameras, lenses tripods and recorders are rapidly reaching the market with price tags that are not only attractive but make such setups practical to use in the various departments of the club. (A video setup can be had for as little as \$1,300.) Low-cost color is close to being perfected and it too will allow the superintendent to view grass disease, changing weather conditions and watering effects. But the pro will benefit also. He can present some of his remote merchandise to locations such as the ladies' locker room and cocktail lounge. The manager will be able to sit in his office and view the arriving meat delivery as the storeroom man opens one box of steaks for him to take a look.

Among the manufacturers of such video equipment are: Ampex, Panasonic, Concord, Craig, Sony, General Electric, Shibaden, Norelco, Apeco and Videonetics Div. of Newell Industries. Data concerning these products and demonstrations can be obtained by contacting your local National Audio Visual Assn. dealers. With their help and assistance, you can outline your usage intentions, and they can arrange a demonstration of the feasibility of the various products for your particular job. Suggestions and price quotations for both present needs and future budgets can be secured through

*continued on page 56*



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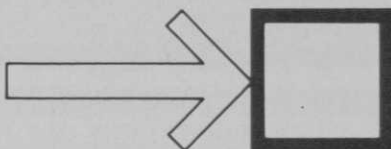
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## COMING EVENTS

**International Turfgrass Research Conference**, Harrogate England, July 15-18.

**U.S. Department of Agriculture Turfgrass Field Day**, Plant Industry Station, Beltsville, Md., August 6.

**Golf Course Superintendents Field Day**, University of Rhode Island, Kingston, R.I., August 20.

**Lawn & Utility Turf Field Day**, University of Rhode Island, Kingston, R.I., August 21.

**Fifth Annual Turfgrass Management Conference**, Hawaii Turfgrass Assn., East West Center, University of Hawaii, Honolulu, August 27-29.

**V.P.I. Turfgrass Field Day**, Virginia Polytechnic Institute Experimental Plots, Blacksburg, Va., September 3-4.

**Annual Turfgrass Field Day**, Michigan State University, East Lansing, Mich., September 4.

**Sod Producers' Field Day**, Michigan State University, East Lansing, Mich., September 10.

**National Hardware Show**, Coliseum, New York, N.Y., September 20-October 2.

**National Sporting Goods Assn. Trade and Consumer Exposition**, Astrodome, Houston, Tex., September 25-28.

**1969 Southern California Turfgrass Equipment and Materials Educational Exposition**, Brookside Park, Pasadena, Calif., October 15-16.

**Central Plains Turfgrass Conference**, Ramada Inn, Kansas State University, Manhattan, Kan., October 15-17.

**Ninth Annual Missouri Lawn & Turf Conference**, University of Missouri, Columbia, Mo., November 5-6.

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# THERE IS A FALL FASHION MARKET

By **BARBI ZINNER**

Fashion editor

Coordinates, plaids, vests and not-so-traditional knickers are some of the items your customers will ask for this fall. Will you be ready for them or are you going to let this profitable business pass you by?

In past years, fall golfwear lines have been notoriously weak. Those manufacturers who felt it necessary to sell the market, did so unimaginatively, disclaiming any possibility of large sales to what they believed was essentially a spring-summer sport. Yet as increasingly large numbers of golfers are finding the crisp air and fresh mornings a welcome change to the blistering sun, and as New England and other Northern courses gain in popularity, manufacturers are discovering a more enthusiastic fall market. The result: an interesting collection of fall fashions.

**Country Club Sportswear** shows matching ladies' and men's 100 per cent wool doubleknit blazers for fall. In tune with the fashion trend, these six-button, double-breasted blazers have two back vents as well as two inside front pockets. Colors are gold, white, red or navy (\$45 women; \$60 men). Country Club Sportswear offers matching double-breasted wool blazers in a heavier rib for women (\$65) and men (\$80). Knit pants (\$30) and A-line skirt (\$25) in 100 per cent wool coordinate with the women's blazers. Of further interest to the lady golfer are hand embroidered and appliquéd sweaters in 100 per cent wool in eight different designs (\$25). Country Club Sportswear also features Trevira shirts from Italy. These shirts look like silk, yet are machine washable. They come for men in short sleeves with a placket collar or a mock-turtleneck and for women in a sleeveless, mock-turtle style (\$12-\$17).

**David Crystal, Inc.**, continues to broaden its Lacoste dress line. The fall chapter should include 25 new styles in a variety of colors (\$33-\$42).

**Di Fini Originals, Inc.**, turns to plaids for fall golfwear. Using a block plaid in a machine washable bonded fabric (green, rust or red combination), Di Fini produces its action "D" skirt (\$20). Switching to a bias plaid for a modified swing skirt, Di Fini uses adjustable tabs on each side of the waistband (\$16). Color combinations come in black/red, black/camel or black/yellow. Coordinating with this skirt is a 100 per cent acrylic flat knit sweater with cuffs and long front placket collar in a contrasting color (\$16). For men and women, Di Fini features modified (two-inch flare from knee to cuff) bell-bottoms (\$22). The ladies' pants come in machine washable nylon/polyester doubleknit in solid camel, yellow, Shannon green, olympic blue as well as in district checks. Pants slip on with an elastic waistband. The men's trousers in Dacron/rayon come in pin checks of light blue, black, rust and olive.

**Etonic** features patch pockets on its 100 per cent Acrilan bonded plaid golf dress (\$28). With buttons down the front, a self-belt and v-neck, the dress can be worn over a sweater as a jumper on colder days. The Broadmoor plaid comes in four color combinations. Also available in this same plaid and fabric are a pleated culotte (\$20), a plain culotte (\$20) and a wrap skirt with side pleats (\$20). In the style of double-breasted jackets, the wrap skirt sports three buttons on each side of the front panel. Etonic also offers a long-sleeved Orlon turtleneck (\$9) in seven colors coordinated to the Broadmoor plaid. For additional fashion in colder weather, there's a Wintuk Orlon vest with two front pockets and a self-tie belt (\$12), available in wild honey, wine, royal blue and natural.

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