B2 PAUL HAHN GLOVE

B4 PAR-D-LUX

B5 PAR-D-LUX

Completely Recreated for '57

PARGLOV PAR-D-LUX PARHOOD

A size and style for every player! Burgett's skilled designers have re-created the entire Parglov line — with new styling and new colors to capture sales in pro shops this coming season. Order early...order now!

G3W PARGLOV

MANUFACTURED BY

K. L. BURGETT CO.

PEORIA, ILLINOIS

A2 PARGLOV

40E PARHOODS

food absorption was distributed to courses in the Philadelphia area.

Research studies came later. Penn State reported on actual figures on increased root growth, the amount of rainfall going into the soil after aeration in comparison to soil showing compaction and how phosphorous was placed in the root zone.

Vertical mowing machines, which aided greatly in removing mat and improving the surface, took many demonstrations before they were adopted.

Japanese beetles arrived in this country 30 years ago and intensified studies on grub control. The application of 3 lbs. per acre of one of the new insecticides and the immediate control of grubs is much different from Joe Valentine's reports on use of so-called insecticides in the early 20's which then were harmful practices. Joe says that when the grubs died so did the turfgrasses.

Research workers first brought forth arsenate of lead, then DDT, followed by chlordane, aldrin, dieldrin and heptachlor. Each one was an improvement on its predecessor.

Fungicides found to have a place in controlling diseases on greens were Tersan and the cadmium compounds. Both were applied by Penn State research workers carrying on studies in the field. Field plots at Merion in 1942 showed the effectiveness of what is known now as Tersan, and in 1948 Bob Mean's work at the Philadelphia CC, in cooperation with Marshall Farnham, determined that cadmium was effective in controlling dollarspot.

The green section's research work showed how effective sodium arsenite was, and still is, in checking weeds. The first work was done by Fred V. Grau, when a graduate student, in the early 30's. Later Mrs. Fanny-Fern Davis, who was in charge of green section's activities during World War II, discovered that 2, 4-D was effective in controlling broad-leaved weeds. It is still in general use today. This work was followed by herbicides developed by Jess DeFrance at Rhode Island U. and others and showed the place of phenyl mercury and disodium methyl arsonate in crabgrass control.

William H. Daniel of Purdue developed facts giving supts. confidence in 2, 4, 5-T to control clover in fairway turf and better guidance in applying arsenate of lead for checking poa annua.

Ureaform fertilizer was offered for general use after studies had been made at Penn State. Plot studies were made at the Experimental nursery; then there were comparison studies on the use of ureaform and known proved fertilizers, these trials having been made on fairway grasses.

Now that ureaform fertilizer is on sale, most of it that is used is being applied to greens. How much to use after application, and how frequently to apply it, calls for further studies which are made from observations, the amount of clippings removed, etc. There has been a demand for additional facts on the use of ureaform. Again, supts. have been liberal in pooling their information on this new source of nitrogen fertilizer used on greens.

Research has been most helpful, and more is necessary, before we speak with confidence on how to get rid of poa annua. There is a strong demand for further facts on what to put into, or substitute, for soil when constructing greens. All of you know of other projects that show the need for more fundamental facts. As research data becomes available it is equally important that demonstrations be carefully carried out under actual maintenance and playing conditions.

1956 Was Great Year for Maintenance Contributions

By ALEXANDER M. RADKO
Northwestern Dir., USGA Green Section

1956 was a good year for supts. to try many things they had learned over the years through research, but had held for future use. When things are going well, it is difficult to sell a membership on needed course improvements, but after the hurricane season of 1955 in the Northeast, the membership was psychologically prepared, and the supt. had the opportunity to set wheels in motion to make necessary changes suggested through research.

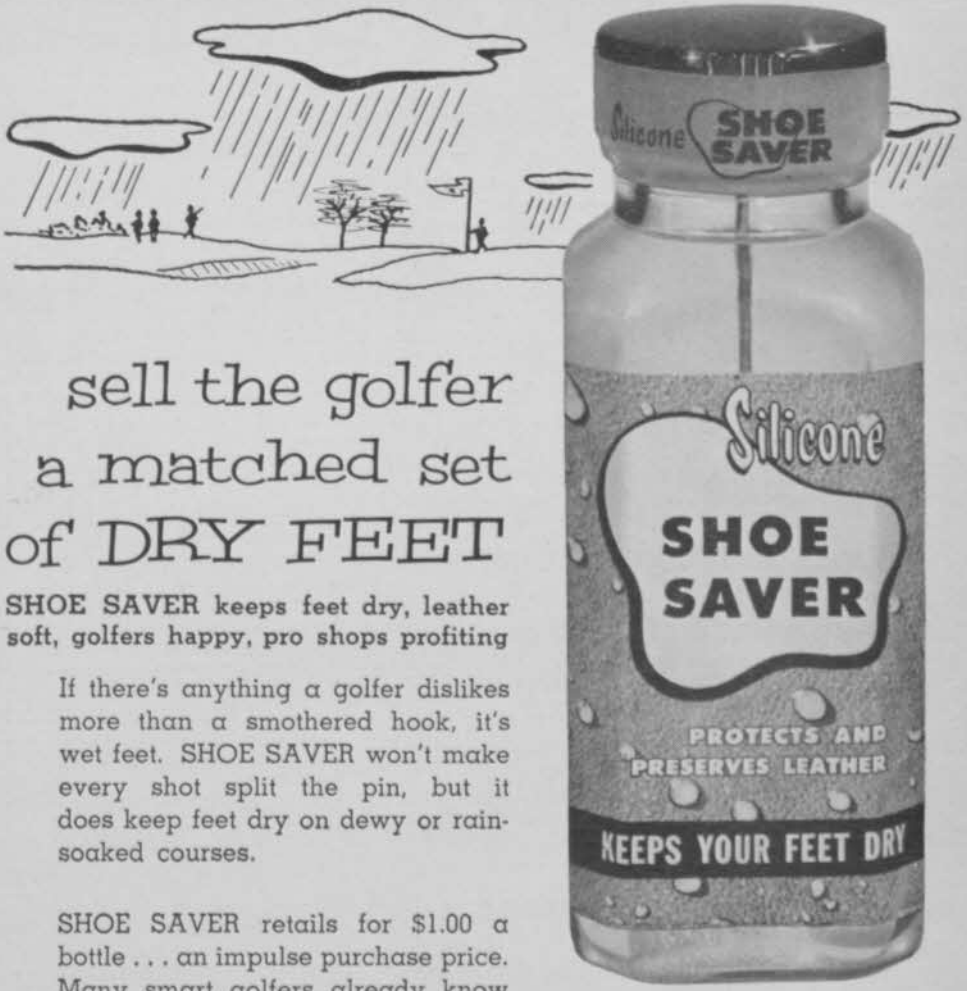
The use of select vegetative strains of creeping bentgrass has increased sharply. Most prominent among these has been use of C-1 Arlington and C-19 Congressional strains. Many new plantings of this mixture were made in nurseries or directly into greens. A notable example of the expanded use of these strains: an original planting of 6,000 sq. ft. by Arthur Anderson of Brae Burn CC, West Newton, Mass., has been used to plant 100,000 sq. ft. of putting turf in various courses in the Boston area. During the past two years, local comercial growers of C-1 and C-19 creeping bentgrass were unable to keep up with demand. These creeping bentgrass strains have been working out very well where tried.

Penncross is Popular

Demand for Penncross seed for putting green purposes also has been on the upgrade. Several nursery putting green plots have been installed for observational purposes. Supts. are enthusiastic about turf cover obtained. Texture, color, and quality generally have been most encouraging. The demand for seed in 1956 exceeded the supply . . . many more supts. would have tried it if they could have obtained Penncross seed.

Use of Merion bluegrass on tees has been on the upgrade. During the tough year of 1955, Merion bluegrass stood up better than most other cool season grasses at several courses in the Northeast. As a result, many new tees were planted to this strain in 1956.

Putting green diseases were a major problem



sell the golfer a matched set of DRY FEET

SHOE SAVER keeps feet dry, leather soft, golfers happy, pro shops profiting

If there's anything a golfer dislikes more than a smothered hook, it's wet feet. SHOE SAVER won't make every shot split the pin, but it does keep feet dry on dewy or rain-soaked courses.

SHOE SAVER retails for $1.00 a bottle . . . an impulse purchase price. Many smart golfers already know what a great job SHOE SAVER does, and countless others are being convinced by advertising in . . .

POST | SPORTS AFIELD | Outdoor Life


EASY TO APPLY


DISPLAY PACKAGED

National advertising plus eye-catching displays add up to a fast-moving 40% profit item for your pro shop. Order SHOE SAVER from your local sporting goods or shoe finder distributor. If they can't supply SHOE SAVER, write direct for the name of your nearest distributor. Address Dept. 1416

first in silicones

DOW CORNING CORPORATION

MIDLAND, MICHIGAN

in 1956 because of exceedingly high and persistent humidity. It seems that every known disease was troublesome, even common diseases such as brownpatch and dollarspot.

Curvularia, pythium, and helminthosporium outbreaks were more numerous in 1956 than they had been in some years. Curvularia continued to be troublesome and a difficult disease to control. Various chemicals were tried with varying degrees of success and this led to supts. trying "shot-gun" mixtures of mercuries and Tersan, or mercuries, Tersan and cadmium.

Malachite green was used with success in checking spread of pythium. This dye product which has fungicidal qualities was recommended by Frank Howard of the University of Rhode Island for checking mycelial growth of pythium.

Results Called Inconclusive

The broad spectrum fungicides were used widely, but there are mixed feelings regarding results. Some supts. felt that excellent results were obtained with these new products; others felt results were disappointng. More practical work and observation of results are needed before we can say much about the use of this class of fungicides in the Northeast.

The urea formaldehyde fertilizer products received wide application throughout the Northeast. Many tested it on a limited scale. Here again, results were inconclusive.

There was a decided trend toward increasing the sand content of topsoil mixtures in building new greens. This trend is also evident in topdressing mixtures. Supts. are getting away from the old formula of 1/3 sand, 1/3 clay , and 1/3 organic matter in favor of a high percentage of sand. Research investigations of O. R. Lunt and Raymond Kunze, although conducted separately, generally agreed in findings. They have been widely read in the Northeast and many supts. have made adjustments in topsoil and topdressing practices as a result.

These are but a few of the highlights of recent developments in the Northeast. Results of research are slow in coming through educational institutions, sometimes painfully slow. Often after results of research are released, there is a further time lag before supts. get the opportunity to put these findings to work. However, research certainly is helping them make progress toward the goal of better turf for better golf.

Dogwood Tournament

Qualifying rounds for the annual Dogwood Invitational tournament to be held at Druid Hills GC in Atlanta, Ga., will be staged Apr. 7-10 with championship play starting on the 11th and extending through the 14th. An amateur event, the tournament will have A and B divisions of championship flights plus 12 other flights.

New Approach to Reducing Compaction in Putting Turf

By J. R. WATSON, Jr.

Chief Agronomist, Toro Manufacturing Corp., Minneapolis.

The study of soil compaction, its alleviation and relationship to turfgrass growth has received much attention from research workers in the past. More recently, a somewhat different approach has been undertaken, particularly in regard to the compaction of putting green soils. Efforts have been directed toward determining the mechanical composition of a soil mixture which resists compaction, yet supports desirable turfgrass growth. The work of two investigators, Raymond Kunze in Texas and O.R. Lunt in California, will serve to illustrate current status of developments in this field.

Raymond Kunze, studying under a fellowship grant by the USGA green section at Texas A. & M. College, completed a study during 1956 in which the primary objective was to synthesize a mixture of sand, soil and peat that would resist the effects of compaction, yet produce good turfgrass growth. Ratios of sand, soil and peat studied were 6-3-1, 7-2-1 and 8½-1/2-1 by volume. Percentages of sand (60, 70, 80 and 85) were made up of varying sizes. The soil used was a Houston black clay, which inherently contains 60 per cent clay, 10 per cent silt and 30 per cent sand. The peat content was constant in all mixtures — ten per cent by volume was used.

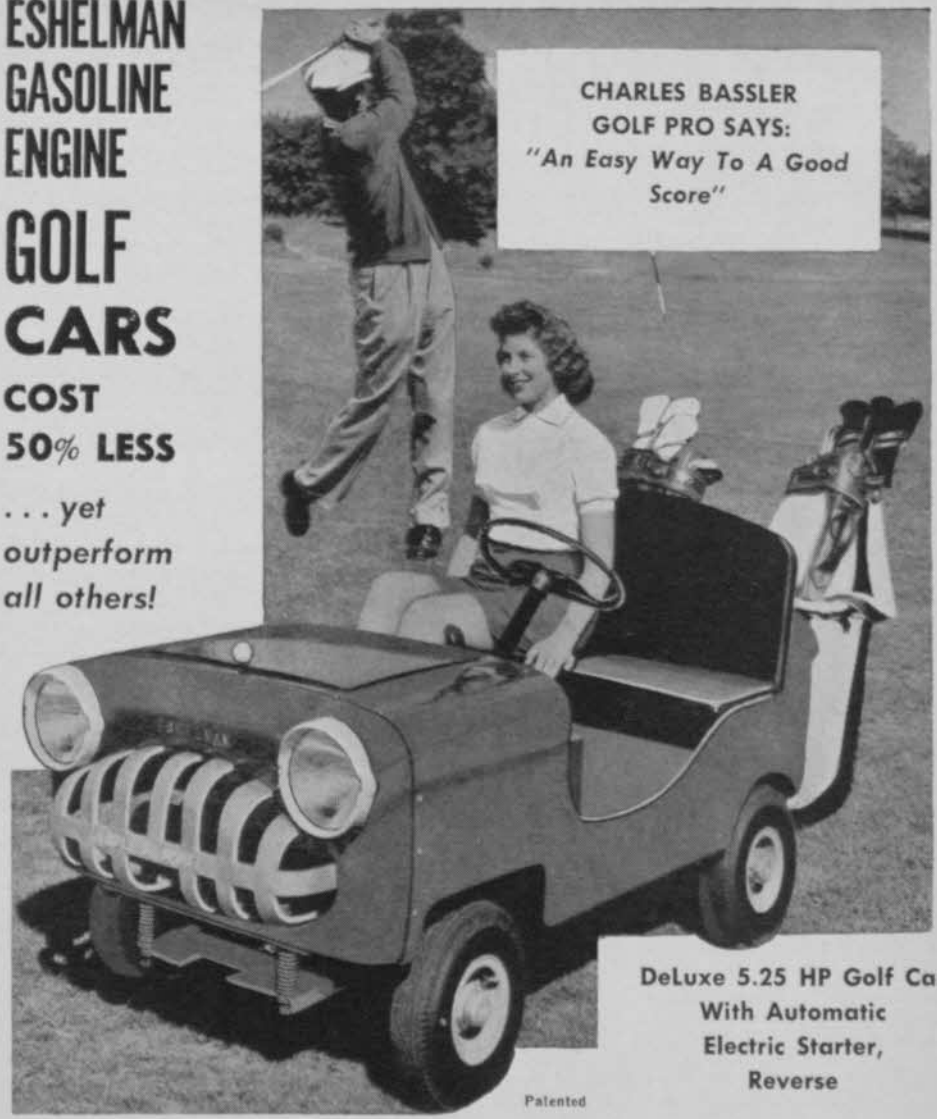
Kunze concluded from this study that: (1) A mixture containing (by volume) 80 to 85 per cent sand (all sizes), 5 to 10 per cent of a well aggregated clay soil (60 per cent clay) and 10 per cent peat met the requirements set forth as the primary objective. (2) Some compaction was beneficial when applied to mixtures containing 10 per cent or less of clay soil. Such mixtures, when compacted, produced the largest amount of top growth. (3) Differences in particle size of compacted soil mixtures produced significant differences in the amount of top growth. The smaller the particle size, the less top growth produced. (4) In compacted soil mixtures, root growth increased as particle size decreased. (5) Yields of root and top growth did not correlate.

O. R. Lunt of the Department of Irrigation and Soils at UCLA reported "A Method for Minimizing Compaction in Putting Greens" in the July, 1956 issue of "Southern California Turfgrass Culture." This work likewise was supported in part by a grant from the USGA green section. From tests, Lunt demonstrated that soil mixes containing as much as 80 per cent sand could be compacted so that percolation rates became low. When sand content of the mixture was as high as 90 per cent, compaction treatments

ESHELMAN GASOLINE ENGINE GOLF CARS

COST 50% LESS

. . . yet outperform all others!



DeLuxe 5.25 HP Golf Car With Automatic Electric Starter, Reverse

Patented

Automatic clutch . . . no battery charging to worry about. No danger of being stranded in mid-course with rundown batteries. Economical to operate (up to 36 holes per gal.) Seats 2 adults, has double bag rack on back. 4 large ball bearing wheels give powerful transportation on rugged terrains without tipping or sliding. Engine Parts and Service Available In Over 7000 National Service Stations.

No Batteries To Recharge . . . No Power Failure Eshelman Gasoline Golf Cars make electric cars as old fashioned on the golf course as on the highway.

Economical To Operate—Up To 36 Holes Per Gal. Actually cost less to operate than the ordinary caddy fee. Saves time and energy.

Makes Golf More Profitable For Clubs and Pros Eshelman golf cars provide new source of revenue. It costs only pennies a day to operate. They speed up each round, lets players get in more late afternoon play. Solves caddy shortage.

WRITTEN GUARANTEE — WRITE FOR FREE LITERATURE

Dept. 85 ESHELMAN

109 LIGHT STREET, BALTIMORE 2, MARYLAND
Phone — SAratoga 7-0922

SHIPPING POINTS: Chicago, Baltimore, Reno (you pay freight only from shipping point nearest you)

(35 pounds per square inch) did not reduce percolation rates to low values. He concluded that, in all probability, 85 per cent sand in a putting green would maintain high infiltration rates, provided sand particle size distribution was right. He suggested that the sand contain at least 75 per cent of the particle sizes in the 0.4 to 0.2 millimeter range, and not more than 6 to 10 per cent in the range smaller than 0.10 mm., and not more than 1 or 2 per cent of silt and unaggregated clay. Using a mixture of 85 per cent sand, principally in the 0.42-0.21 mm. range, 7.5 per cent aggregated Krillium treated clay, and 7.5 per cent peat by volume, Lunt demonstrated the ability of soils to maintain infiltration rates in excess of one (1) inch per hour after having received a compaction treatment.

Through other tests, it was shown that compacted layer on putting greens occurred in the upper 2-ins., and that maximum compaction occurred in the top 1½-ins. He next determined mathematically, and demonstrated by rather ingenious laboratory studies, that a 4-in. layer of sand on top of a soil susceptible to compaction would protect soil underneath from compaction.

Lunt points out that when constructing a green over which a sand layer will be placed, it is important to prepare the underlying soil so that it will possess good physical properties and be well drained. It is not necessary to mix the sand layer with the underlying soil. According to Lunt, it would be desirable to incorporate Krillium at a rate of 7.5 lbs. per 1000 sq. ft. into the underlying soil. An experimental green has been constructed along those lines at UCLA and records are being taken on its performance. To date, infiltration rates have remained high and the quality of turf is satisfactory.

Both Kunze and Lunt have pointed out that blending of 5 to 10 per cent well aggregated clay, and approximately 10 per cent peat into the sand mixture improves water holding ability and fertilizer retention. Lunt indicates the fertilization program will have to include frequent applications, or use of fertilizer materials of low solubility which do not leach rapidly. Deeper rooting can be expected in sand greens, and indications from the UCLA experimental green are that two irrigations per week are adequate to support growth during hot weather.

When preparing a soil mixture along the lines suggested by Kunze and Lunt, the type and amount of topsoil is of prime consideration. Kunze used a clay soil of exceptionally high clay and low silt content. This soil in its natural state is very well aggregated. Lunt, likewise strongly emphasizes the necessity of using a well aggregated clay soil, and further the importance of good physical properties in underlying soil. He also points out that any topdressing after the green is built should be done with a mixture of the same composition as that of the surface with which the green was constructed. Both investigators were working with soils of extremely low silt content. The undesirability of this fraction should be emphasized. The extreme variation which exists in topsoils in various regions make it mandatory that the proportions of sand, silt and clay naturally present in the soil be carefully considered, and that the proportionate volumes of sand and soil be based on an analysis of the soil. For example, Lunt states that if it were the objective to construct a green containing approximately 10 per cent by volume of peat, 7.5 per cent of aggregated clay and 82.5 per cent sand, and if the clay content of the soil were 50 per cent, then to obtain the proper proportions, 15 per cent of the prepared soil, 10 per cent peat and 75 per cent sand should be blended.

Preliminary investigations are underway at Purdue University in which moderate temperature clays are being studied as a soil substitute. William H. Daniels reports that these materials have a very high capillary absorption and a very high large (macro) pore area. To date, very preliminary studies have been made and no conclusions are available.

Earthquake—What's That?

Not snow, nor rain, nor heat . . .
Which is fine for postmen.

But what about golfers? Art Glaser, starter at Harding Park GC, tells how he was having trouble getting players up and off the first tee the other day in San Francisco, minutes before the first tremor was felt. When he recovered his aplomb following the quake, Art's first thought was: "Well, maybe these guys'll get off my neck now."

But nary a golfer fled. Within a few minutes, the players were back clamoring to get the foursomes on the fairways.

Some players reported that otherwise impossible putts dropped when the earth rumbled. One geologist is reported to have said that a golf course probably is as safe a haven as any during an earthquake.

Make Reservations Now

Dick McGeorge, press chmn. for the 1957 Open, which will be held at Invernesss in Toledo, June 13-15, suggests making room reservations now if you are planning to take in the tournament. There will be a scarcity of hotel rooms and motel rooms in and around Toledo by the above date.

How to Secure A Lease on Municipal Property for A Golf Course

By CECIL B. HOLLINGSWORTH

Editor's Note: Demands for new courses throughout the country have made it imperative that private promoters as well as officers of municipalities be familiar with the details involved in the securing and granting of municipal leases for golf courses. In a speech at a recent recreation conference in Southern California, Hollingsworth outlined the many factors involved in the application for such leases from the standpoint of both applicant and municipal representative.

1. Survey: Survey the community for its needs for golf courses; existing courses, population, business and professional income, success of club activities, participation in sports activities, sampling of interest in golf among clubs, business organizations and selected individuals from other classifications, etc.

2. Survey the community for available properties; municipal park properties, military, naval and marine holdings, public domain, tax delinquent, flood control, airport and like properties; locate the most desirable of these for development.

3. Lay out your proposed golf course and draw it up to scale. Lay out proposed clubhouse, including golf shop, locker rooms, grill, lounge, etc., with architect's sketch of the building. Lay out the proposed water system complete. Lay out parking facilities. Lay out practice range, putting and chipping greens.

4. Prepare a Brochure: Prepare a brochure presenting needs of the community for adult recreation and golf courses, number of people who can be accommodated annually on a golf course, advantages to the community in business, in health, in recreation, in prestige, in supporting the American tradition of private enterprise.

Present plans for development of properties.

Operators' Qualifications

Present full statement of operators' qualifications to execute the project to sucessful completion.

Present all operational phases of the project showing alignment of objectives, motives, interests, incentives, attitudes and efficiency of operation under private enterprise.

Present an outline of the municipal operational code and philosophy of recreational service.

Present an outline of the code of private enterprise and your philosophy of recreational service; compare these with municipal operations where civil service employees serve all.

Present a document implementing these principles to be included in the lease agreement. Secure a lawyer to draw up a proposed lease assuring alignment of interests, incentives, objectives and enabling agreements for efficient operation.

Present all of these to the Director of Parks and Recreation, the councilman in whose district the project lies, the county supervisor or the chief of the agency under whose jurisdiction the property is assigned.

5. Prepare a Prospectus: Prepare a prospectus pointing out in detail:

Proposed cost of the project on an itemized listing; of rough contouring; finishing, pipe and water system, seed, soil amendments, imported soil, fertilizers, etc., and clubhouse.

C. B. (Cece) Hollingsworth has been associated with golf in Southern California since the sand green era of the early '20s. He worked his way through college doing course construction work for the late Billy Bell, the architect. He was graduated from UCLA in 1925 and stayed on as supervisor of physical education, a position he has held since 1926. He was UCLA's first coach and has scouted for the Bruins 20 of the 25 years he has been at the university. In 1944 he formed a partnership with Gomer Sims and they purchased Meadowlark CC, which they still operate near Sunset Beach. In 1948 Hollingsworth took a leave from the university and with a group of associates, leased 185 acres of county land and built two golf courses, one a 3-par, which is operated as Alondra Park CC. In 1955 he and his associates bought acreage in San Diego county near El Cajon and opened the Singing Hills Golf course, soon to be a 36-hole layout complete with clubhouse and driving range.

Proposed schedule of outlay of capital.

Proposed time schedule for construction to opening.

Method of Financing

Outline method of financing: individual ownership, partnership, close corporation, open subscription.

Be sure to have adequate financing for emergencies.

Estimate income by day, week, month and year.

Estimate profit before taxes, after taxes, net to operator. Estimate total income to governmental units; city, county, state, federal, including taxes and lease.

Compare this income with municipal operation minus tax contribution to federal agency, state agency and incidentals such as leasehold interest taxes.

A rough sketch of an existing facility:
Capital outlay, $250,000.00
Profit before taxes, $60,000.00 for year
Corporation tax, $30,000.00
Net profit, $30,000.00

Recreation service and government income at no expense to the taxpayer for capital outlay, use of municipal funds or other expenses:

Number of people served per year: at 200 on week days; 300 on Saturdays, Sundays, Holidays—
200x5=1000x50=50,000 rounds
300x2= 600x50=30,000 rounds
50,000x20 years.=1,000,000 rounds
30,000x20 yrs.= 600,00 rounds
Total, 1,600,000 rounds

At 3 hours per round this represents 4,800,000 hours of supervised adult recreation provided at no expense to the municipality.

Actual cash outlay looks like this roughly:

Expense of operation per year $100,000.
Over period of 20 year lease, $2,000,000.
Add cost of capital outlay, $250,000.00
Add cost of interest @5% for 20 years, $250,000.00

Add total of rent and percentage (Cash income), $384,000.00

Add corporation tax, $30,000.00 for 20 years, $600,000.00

Cash outlay by private enterprise for services rendered under the lease of 20 years, $3,000,000.00

All of this without turning a hand or outlay of a dollar of municipal funds. Secure a conference with the city manager, the councilman, the county supervisor; anyone who has to face the public and answer for the expenditure of municipal funds and sell it to them. Get your local papers behind your project.

How can they turn down such a good proposition?

Leasing of Municipal Properties to Private Enterprise for Golf Courses

1. All propositions and conditions of the lease agreement shall be to align mutual interest, objectives, incentives and operations of the project for mutual benefit of the municipality and the private enterprise. (The more people playing golf the better the community is served.)

2. All conditions leading to the lease agreement should be based on excellence of service to be rendered.

3. All conditions of penalty should be for mutually detrimental execution of the lease.

4. Permissive arrangements should be made to permit revision, alteration and renegotiation of the lease whenever change occurs altering a situation of mutual benefit.

5. A percentage base for the lease should be negotiated to enable profit sharing, increased incentive, and protection in periods of stress for the worthy operator.

6. The lease should insure adequate installation and quality of materials to remain in operation substantially beyond the term of the lease.

7. The lease should insure proper maintenance and operation of the lease.

8. Standards should be set for construction and specified to assure mutual accord on nature and extent of improvements.

9. Standards should be set for operation and specified to align interest of municipality and private operator assuring mutual accord on policy.

10. The golf course lease should be of sufficient duration to enable long time planning, investment and profit.

11. The golf course lease should be in intervals with option on the part of the operator for renewal.

12. The lease should protect the operator in times of adverse economic conditions, war, or other conditions outside the control of the operator.

13. Base necessities must be assured under the lease for its duration: Supply of water, etc.

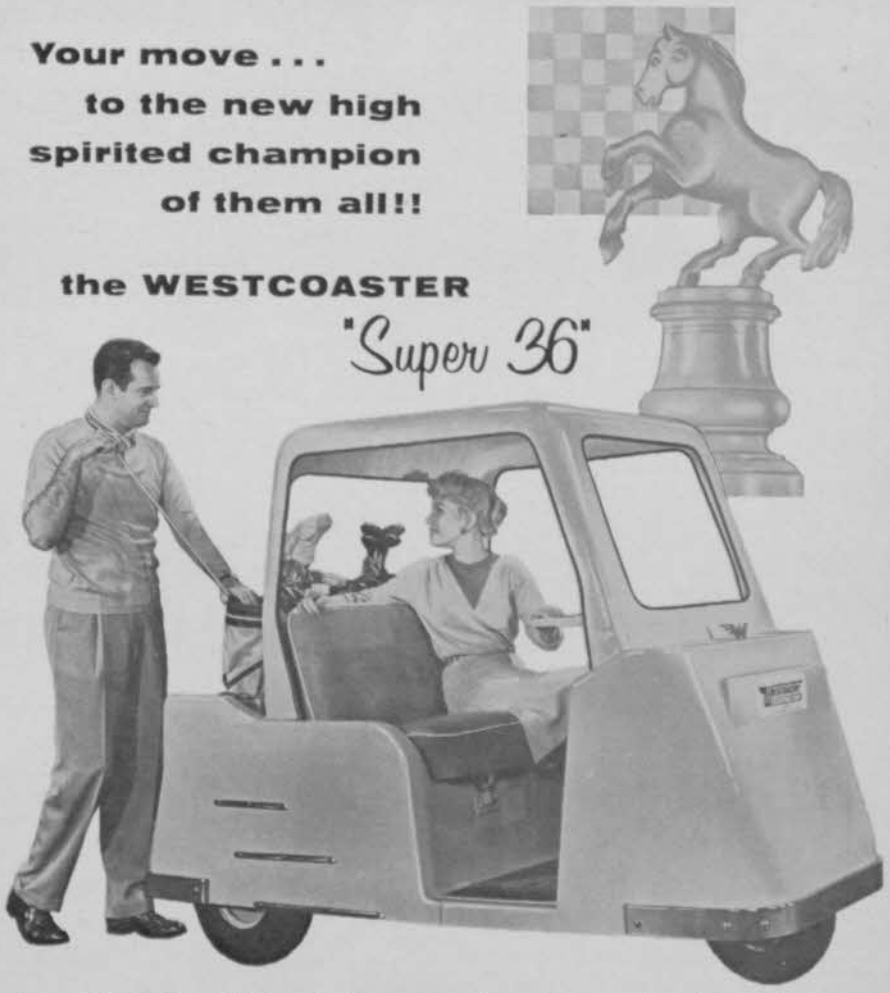
14. Extra contractual improvements of mutual benefit should be permitted and the cost should be shared equitably.

15. The lease should secure the invest-

(*Continued on page* 92)

Your move . . .
to the new high spirited champion of them all!!

the WESTCOASTER
"Super 36"



Here it is! The all-new Westcoaster "Super 36" — with the Bold New Look and unmatched stallion-spirited performance. The body of the "Super 36" is tough Fiberglas. Color is molded-in. No chance for rust to mar its sleek beauty.

Eliptical rear leaf springs, shock absorbers and aero-type front suspension give you a feather-bed ride, ground-hugging stability. New adjustable seat automatically tailors the "Super 36" to fit you.

A new fool-proof built-in recharger is a Westcoaster exclusive. These are only highlights, of course, — actually you can count at least a dozen engineering features that make the Westcoaster "Super 36" your most comfortable golfing companion.

Prove the facts for yourself with a demonstration.

Write for the name of your nearest dealer right now.

WEST COAST MACHINERY, Inc.

1802 EAST CHARTER WAY • STOCKTON, CALIFORNIA