

**THRU THE GREEN****EDITOR**

**JEAN LADUC**  
1356 Munro Avenue  
Campbell, CA 95008

OUR OBJECTIVE: The collection, preservation, and dissemination of scientific and practical knowledge and to promote the efficient and economical maintenance of golf courses. Information contained in this publication may be used freely, in whole or in part, without special permission as long as the true context is maintained. We would appreciate a credit line.

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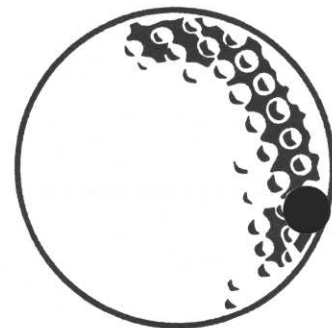
Each newsletter I try to touch on a pertinent message to our Association members. This time around I would like to convey a short but meaningful message. I would like to sincerely wish each and every member of our chapter and their families a very special holiday season. To me, this is the time of year when a person should stop and think about what is important in his or her life. Believe me, it isn't your job, golf course, or your next big order and sale. It is friends, family and the people who really care about you. I know it many sound corny, but its true. Try to imagine life without these special people. So, let them know how you feel, at this special time of year. It's a good feeling.

Thanks are also due to **Randy Gai, CGCS**, and the staff at Claremont Country Club for hosting our last meeting. I didn't get out on the course, but all the comments were positive. I did sample the lunch and it was excellent. Randy was also the recipient of the Judges Award presented by the California Landscape Contractors Association (CLCA). The award was presented by **James Duhig** of Contra Costa Landscape who did the work and is also a member of our Association, congratulations to both of them.

The recent GCSAA Seminar held in Pleasanton was an outstanding success. It was completely sold out. The topic was "Golf Course Restoration, Renovation, and Construction Projects" and was one of the most informative I have ever attended. This seminar is an annual event and is co-hosted by the Golf Course Superintendents Association of Northern California in conjunction with the Golf Course Superintendents Association of America.

Anyway, lets all have a Merry Christmas and a Happy New Year.

Joseph A. Rodriguez, CGCS



**GCSANC DUES ARE DUE AND**  
**PAYABLE NOW - BEFORE**  
**DECEMBER 31, 1990.**

**SEND PAYMENT TO:**

GCSANC  
1745 Saratoga Ave. Ste. A1  
San Jose, CA 95129

# A New List of Deer Resistant Plants For the Garden

*Editor's Note:* As the drought has affected landscape plants outside of irrigated gardens, it appears that deer have changed their behavior by aggregating more around gardens and munching on previously avoided plants. The damage is indeed staggering in some situations: "They eat everything." Our office is often asked for a list of deer resistant plants. Regularly we devote an article to inform you about innovations to prevent deer browsing. Last year Mary Lynn Cox, in her article "Co-existing with Deer" in *Pacific Horticulture* released a list of plants that deer seem to avoid and plants which are "safe bets"—deer may taste but usually do not destroy them.

## Plants Deer Seem to Avoid

*Acanthus mollis*  
*Acer circinatum*  
*A. palmatum*  
*Aconitum*  
*Agave*  
*Ageratum houstonianum*  
*Allium (some)*  
*Aloe*  
*Amaryllis belladonna*  
*Artemisia*  
*Arum*  
*Arundo donax*  
*Asarum caudatum*  
*Asparagus falcatus*  
*Baccharis pilularis*  
*Bamboos*  
*Beaucarnea recurvata*  
*Begonia tuberhybrida*  
*beris*  
*Brodiaea*  
*Buxus*  
*Actaceae*  
*Calycanthus occidentalis*

*Carex*  
*Catharanthus roseus*  
*Ceanothus gloriousus*  
*Cerastium tomentosum*  
*Chrysanthemum frutescens*  
*C. maximum*  
*Clivia miniata*  
*Corokia cotoneaster*  
*Cortaderia selloana*  
*Corylus cornuta californica*  
*Cotoneaster buxifolius*  
*Crinum*  
*Crocsmia*  
*Cycas*  
*Cyclamen*  
*Cymbalaria muralis*  
*Cyperus*  
*Cytisus scoparius*  
*Dicentra formosa*  
*D. spectabilis*  
*Digitalis*  
*Dodonaea viscosa*  
*Echium fastuosum*  
*Elaeagnus pungens*  
*Eleocharis montevidense*  
*Epimedium*  
*Erica*  
*Eriogonum, except*  
*E. arborescens,*  
  
*E. giganteum*  
*Euphorbia Euryops pectinatus*  
*Fatsyhedera lizei*  
*Ferns, except Pellaea*  
*Festuca ovina glauca*  
*Filipendula*  
*Fragaria chiloensis*  
*Garum odoratum*  
*Gamolepis chrysanthemoides*  
*Gaultheria shallon*  
*Genista monosperma*  
*Grevillea*  
*Griselinia lucida*  
*Gunnera tinctoria*

*Hakea suaveolens*  
*Halimium atriplicifolium*  
*Helichrysum*  
*Herbs, except basil*  
*Hibbertia scandens*  
*Hippophae rhamnoides*  
*Hosta*  
*Hypericum*  
*Illex, except thornless*  
*Impatiens walleriana*  
*Iochoroma cyaneum*  
*Iris*  
*Jasminum*  
*Juniperus*  
*Kniphofia waria*  
*Lamium Lavandula*  
*Lawn grass, when kept mowed*

*Leonotis leonurus*  
*Leptospermum*  
*Leucojum*  
*Liriope*  
*Lychnis coronaria*  
*Melia azedarach*  
*Melianthus major*  
*Mentha*  
*Mesembryanthemum*  
*Michelia fiao*  
*Mirabilis jalapa*  
*Monardella macrantha*  
*Myrtus communis*  
*Myosotis*  
*Nandina*  
*Narcissus*  
*Nerium oleander*  
*Nepeta*  
*Nolina perryi*  
*Ophiopogon japonicus*

*Paeonia suffruticosa*  
*Pandorea pandorana*  
*Papaver orientale*  
*Phlomis fruticosa*  
*Phormium tenax*  
*Plumbago auriculata*  
*con't on page 5*

## Professionalism and the Golf Course Superintendent

The Golf Course superintendent come across the term "Professional" on a regular basis. Whether it be watching professional football, basketball, baseball or hockey players compete or watching the Golf Professionals compete on PGA Tour, it is a word that comes into view quite often.

The word **profession** as defined in the American Heritage Dictionary is "an occupation or vocation requiring training in the liberal arts or the sciences and advanced study in a specialized field." The word **professional** when used as a noun according to the American Heritage Dictionary is "one who has assured competence in a particular field or occupation."

The term professional, when it applies to the Golf Course Superintendent, is a combination of both previously mentioned definitions. One who has training in the sciences through advanced study (hands on experience and continuing education) in a specialized field (golf course maintenance) which creates an assured competence in that particular field. It sounds like nonsensical rhetoric but it really does make sense.

**TO BE VIEWED AS A** professional by your club or employer requires different sets of circumstances in varied situations.

Some clubs want to see their Golf Course Superintendent clad in golfing attire without a trace of grime or grit on them. fine. Other clubs or companies want to see their Golf Course Superintendent dressed in jacket and tie and carrying out only administrative duties from his office while delegating other responsibilities. this is fine. some clubs want to see their Golf Course Superintendent dressed in blue jeans, wearing sneakers or the like, and not minding one bit if he had to jump in and help out in certain situations on the golf course. This is fine also., Each situation is different and one is no more professional than the other.

**IN BEING CONSIDERED A** professional by your peers or employers there are some definite requirements. While at your place of employment to be always clean shaven, hair neatly combed or brushed, teeth clean, and dressed as neatly as the situation dictates is of utmost importance.

When representing your club at a Golf Course Superintendents meeting or at an educational seminar it is important to wear a jacket and tie or a jacket with a golf shirt at minimum. Looking good never hurts in these situations.

While attending board or green committee meetings always dress as the situation dictates. Some clubs have laid back dress requirements at those functions, others don't. Dress accordingly.

Being considered a professional by your employers obviously will hinge a great deal on your finished product - the golf course. Producing the best quality golf course possible with the particular funds available while always giving one hundred percent effort in all categories will gain the respect of most people.

**BEING VIEWED A** professional by your fellow Golf Course Superintendents has its own set criteria. Participation at the local level is of utmost importance. Involvement at the board level, on a committee, at monthly meetings, hosting monthly meetings, and contributing when asked are all vital in being considered a professional. Everyone's involvement in our local Association will only help solidify our being viewed a group of professionals. So get involved, it's only going to help.

The Golf Course Superintendents involvement with available continuing education is a must in becoming a professional. Through GCSAA regional seminars are offered. They are excellent and you're missing out if you don't participate. Local Golf Course Superintendents Association's offer educational seminars with varied topics. Try to participate, they are excellent also. And above all, local Golf Course Superintendent Association's monthly golf/educational meetings are on going and excellent. When speakers are present they are usually excellent and interesting. I learn more at times just talking with my fellow Golf Course Superintendents about related problems than I do in many other situations, educational or other. Having five or six Golf Course Superintendents sit down and discuss whatever comes to mind can be a tremendously educational experience.

**ANOTHER PART IN** being considered a professional is in how you treat people.

Always treating your employees with respect and dignity will show in their work on the golf course. Your ability to communicate with golfers and members at your club while treating them with respect will help insure your being viewed as a professional. Having a solid line of communication with the Commercial people in our industry, for they are very important people, is a must.

Remembering that it is a two-way street is important, and to give them a chance when warranted. Sometimes it works out but other times it doesn't. At least you tried and they will respect you and view you as a professional for it.

In conjunction with the aforementioned subject matter, to be viewed as and to become a professional, four matters are of the utmost importance.

**FIRST, YOU MUST ALWAYS USE** common sense. Taking unnecessary chances and not thinking things through are examples of not using common sense. Second, one become adept in the art of people management. Properly communicating with people from all levels of society is a must in succeeding as a Golf Course Superintendent. Third, you must be or become educated. Whether you are a two or four year college graduate, a holder of an educational certificate, a holder of a Masters degree, or a person who is involved with continuing education as a Golf Course Superintendent, becoming educated is vital.

Fourth, and last is participation. To be considered a professional you must have participated or are participating now on a local level. Remember, everyone's involvement on a local level will solidify our being viewed as professionals. Get involved. You'd be surprised how it will help.

Credit: "The Hole Nine Yards" March 1990,

27th Annual Northern California  
**TURF AND LANDSCAPE EXPOSITION**

**EFFICIENCY**  
IN THE  
**LANDSCAPE**

**The Oldest and Largest Educational  
Event for the Turf & Landscape  
Industry in Northern California**

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***A Complete Trade Show  
For the Green Industry***

Over 300 Exhibit Spaces filled with equipment,  
materials, supplies and services for construction  
and maintenance of turf and landscape.

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Continuing Education Credits***

Free attendance for the topics of your choice during  
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**Free Admission to the Exposition and Seminars  
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**Free Parking in the Adjoining Parking Garage**

**For Seminar Programs or Other Information**

**Contact: NCTC, 425 Oak St., Brentwood, CA 94513**

**Phone: 415/516-0146**

**FAX: 415/516-1301**

An Educational Event presented by the Northern California Turfgrass Council

**SANTA CLARA CONVENTION CENTER  
Santa Clara, California**

**Wednesday, January 23, 1991, 8:30 a.m.-5:00 p.m.**

**Thursday, January 24, 1991, 8:30 a.m.-3:00 p.m.**

**27th Annual Northern California  
Professional Turf and Landscape Exposition**

**EDUCATIONAL SEMINARS**

Presented by  
The Northern California Turfgrass Council  
in conjunction with  
The University of California Cooperative Extension  
Seminar Chairman: Dr. Ali Harivandi, U.C. Cooperative Extension

**Wednesday, January 23, 1991**

Session Moderator: Mr. Phil Reiker, N.C.T.C. Secretary

- 9:45 a.m. Welcome and Introductions  
*Mr. John Holmquist, N.C.T.C. President*
- 10:00 a.m. Turf for Champions -- The Candlestick Park Story  
*Mr. Barney Barron, Superintendent, San Francisco Parks*
- 10:40 a.m. Turf in the Fast Lane: Grasses for Sports Fields and Other High Traffic Sites  
*Dr. William Meyer, Vice President, Turf-Seed, Inc.*
- 11:20 a.m. Compaction: Sports Fields Under Pressure  
*Dr. Ali Harivandi, U.C. Cooperative Extension, Hayward*

12:00 p.m. LUNCH BREAK

Session Moderator: Mr. David Gilpin, N.C.T.C. Treasurer

- 1:30 p.m. Surviving Drought -- What Water Agencies Have Done and Will Do for the Green Industry  
*Mr. Richard Bennett, East Bay Municipal Utility District*
- 2:10 p.m. The Present and Future of Water Conserving Turfgrasses  
*Dr. William Meyer, Vice President, Turf-Seed, Inc.*
- 2:50 p.m. Estimating Water Requirements of Landscape Plants (non-turf)  
*Dr. Larry Costello, U.C. Cooperative Extension, Half Moon Bay*
- 3:30 p.m. Adjournment

**Thursday, January 24, 1991**

Session Moderator: Ms. Paula Blanchfield, N.C.T.C. Director

- 9:45 a.m. Welcome and Introductions  
*Mr. Ray Dawson, N.C.T.C. Expo Chairman*
- 10:00 a.m. Insect Immigrants -- Newly Arrived Pests of California Landscape Plants - An Update  
*Dr. Carl Koehler, U.C. Cooperative Extension, Berkeley*
- 10:40 a.m. Controlling Gophers, Moles, Squirrels, and Other Animal Pests  
*Mr. Rex Marsh, University of California, Davis*
- 11:20 a.m. Calibration and Application of Herbicides  
*Mr. Richard Molinar, U.C. Cooperative Extension, Hayward*

**Continuing Education Credits to be Awarded:**

- C.D.F.A. Continuing Education: 6 hours
- Certified Golf Course Superintendents: 0.5 hours
- Certified Arborists: 2 hours

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*Docarpus*  
*Prunus caroliniana*  
*Raoulia australis*  
*Rhododendron*, large-leaved,—  
 except in northwest

*Rhus ovata*  
*Ribes*  
*Ricinus communis*  
*Romneya coulteri*  
*Rosmarinus officinalis*  
*Ruscus aculeatus*  
*Salvia*  
*Santolina*  
*Scabiosa*  
*Senecio*  
*Scilla peruviana*  
*Silene acaulis*  
*Sisyrinchium*  
*Soleirolia soleirolii*  
*Sparaxis tricolor*  
*Stemmatium junceum*  
*Stachys byzantina*  
*Strelitzia reginae*  
*Syzygium paniculatum*  
*Taxus*  
*Tecomaria capensis*  
*Teucrium fruticans*  
*Tolmiea menziesii*  
*Trillium*  
*Vallota speciosa*  
*Verbena tenuisecta*  
*Vinca major*  
*Yucca*  
*Zantedeschia*  
*Zauschneria*  
*Zinnia*

#### Reasonably Safe Bets

*Achillea*  
*Aaonis flexuosa*  
*Asyogyne huegelii*  
*Diomedea polifolia*  
*Arabis*  
*Armeria maritima*

*Astilbe*  
*Aubrieta deltoides*  
*Bougainvillea*  
*Calendula officinalis*  
*Calliandra tweedyi*  
*Callistemon*  
*Campanula isophylla*, and others  
*Carpenteria californica*  
*Cassia*  
*Ceanothus griseus horizontalis*  
*Ceanothus BlueJean*  
*Concha 'Ray Hartman'*  
*Celosia*  
*Centaurea*  
*Ceratostigma plumbaginoides*,  
*C. willmottianum*  
*Cercis occidentalis*  
*Chamaecyparis*  
*Chaenomeles japonica*  
*Cheiranthus cheiri*  
*Choisya ternata*  
*Cissus rhombifolia*  
*Cistus*  
*Citrus*  
*Clarkia*  
*Clianthus puniceus*  
*Coleonema album*  
*C. pulchrum*  
*Convolvulus cneorum*  
*Coprosma kirkii*, *C. repens*  
*Coreopsis*, except *C. gigantea*,  
*C. grandinora*  
*Correa*  
*Cotinus coggygia*  
*Dendromecon*  
*Diets vegeta*

*Duchesnea indica*  
*Erigeron glaucus*,  
*E. karvinskianus*  
*Erysimum kotschyianum*  
*Eschscholzia californica*  
*Ficus*  
*Forsythia*  
*Freesia*  
*Gaillardia*  
*Gazania*  
*Geranium*

*Gerbera*  
*Hedera helix*  
*Hebe pinguifolia 'Pagei'*  
*Helianthemum nummylarium*  
*Helianthus*  
*Kerria japonica*  
*Lagerstroemia indica*  
*Lantana*  
*Ligularia tussilaginea*  
*Liaustrum japonicum*  
*Lithodora diffusa*  
*Lobelia erinus*  
*Loropetalum chinense*  
*Lupinus*  
*Lysimachia nummularia*  
*Magnolia*  
*Mahonia*  
*Melaleuca nesophila*  
*Mimulus*  
*Monarda*  
*Muehlenbeckia complexa*  
*Myrica californica*  
*Nierembergia hippomanica*  
*Omphalodes cappadocica*  
*Osmanthus*  
*Oxalis*  
*Pachysandra terminalis*  
*Penstemon*  
*Philadelphus mexicanus*  
*Phlox subulata*  
*Polygonatum*  
*Potentilla*  
*Pulmonaria*  
*Punica granatum*  
*Rubus calycinoides*  
*Rudbeckia hirta*, *R. 'Goldsturm'*  
*Sarcococca*  
*Saxifraga*  
*Scaevola 'Mawe Clusters'*  
*Sollya heterophylla*  
*Stokesia laevis*  
*Syringa vulgaris*  
*Tellima grandiflora*  
*Tibouchina urvilleana*  
*Trachelospermum jasminoides*  
*Tradescantia*  
*Tropaeolum*  
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*Tulipa*

*Vaccinium ovatum*

*Valeriana officinalis*

*Vancouveria hexandra, planipetala*

*Viburnum tinus*

*Viburnum burkwoodii*

*Viburnum davidii*

*Viola odorata*

*Wisteria*

Article seen in *Growing Points*,

November 1990

**HELP WANTED**

Assistant Superintendent wanted on Lone Tree Golf Course located in Antioch. We are seeking a person with overall skills in all areas of Golf Course Maintenance. Medical and Dental Benefits provided. Salary based on experience. Please send resume to: Wayne Lindeloff  
Antioch Public Golf Corporation  
P.O. Box 2115  
Antioch, CA 94531

**OUR HOST FOR  
JANUARY  
1991**

Our host Superintendent for January is **Robert Leas**, at Hidden Valley Lakes Golf Course. Robert is a graduate of University of California at Davis and worked in the landscape construction for ten years with Leisure Lawns. After spending one year in Boise, Idaho he returned to California as the Assistant Superintendent to Bob Tyler at Fountaingrove. He moved to Hidden Valley Lakes in 1989. Robert lists his hobbies as organic gardening, furniture building. He is a member of GCSAA, GCSANC and Sierra Nevada Superintendents Association.  
Hidden Valley Lakes Golf Course is a men's par 72, 6237 yards with an average of 35,000 rounds of play and 120 tournaments each year. The # 15 tee is 190 foot elevation drop and recently rebuilt. The course was built by Boise Cascade as a housing project in 1968.

**HELP WANTED**

City of Sunnyvale announces an opening in the Golf Course Division of the Department of Parks and Recreation for Utility Worker/Golf. Under the general supervision, perform a variety of semi-skilled and skilled tasks in the maintenance, repair, construction and operation of golf courses, grounds and facilities; do related work as required. Since the golf course is open 7 days a week, the regular work week may include weekends.

Duties will be to operate various equipment involved in the maintenance of golf courses: mowers, light tractors with attachments, utility vehicles, front-end loaders, light equipment such as chain saws, weed trimmers and trenchers. Prune small trees and shrubs. May perform some tasks regularly assigned to senior-level classes, particularly on a training basis.

To qualify for this position any combination of education and experience equivalent to the completion of the eighth grade and two years of related parks, golf course or landscape construction and maintenance experience at the level of Maintenance Worker or above. Must possess a valid California Driver's License. Highly desirable qualifications include: possession of a California Pesticide Applicator's License, current golf course work history and knowledge of irrigation and golf practices.

**TO APPLY** complete a City of Sunnyvale application and supplemental questionnaire and return to the Personnel Department by 5:00 pm on January 7, 1991.

City of Sunnyvale  
Personnel Department  
456 West Olive  
Sunnyvale, CA 94086-3707  
408-730-7490

**BE SURE TO FOLLOW  
PRE-REGISTRATION  
FORMAT FOR JANUARY  
MEETING**

**SMOKING TO BE  
PROHIBITED AT  
'RECLAIMED'  
GOLF COURSE**

Smoking will be banned at a new municipal golf course opening in December on reclaimed land in Tokyo Bay, to prevent the ignition of methane gas emitted from garbage beneath the golf course, according to an announcement by the metropolitan government.

The new golf course is being constructed on top of what was once a garbage dump site, according to metropolitan government officials.

The new golf course has been under construction in Koto-ku since 1988, at a total cost of Y5.5 billion. The 54 hectare course, was designed by professional golfer Ayako Okamoto.

Knowing that as large number of golfers will seek to play at the conveniently located course, the metropolitan government has formulated a set of regulations in an attempt to see that all users receive the same treatment, the officials said.

For instance, if users seek to play Saturdays, Sundays or holidays, they are to send in a postcard during the first week of the month which falls two months before their projected date of play. The actual users are to be determined by lottery on the 20th of each month.

Those golfers hoping to play on weekdays are to book the use of the course one month prior to the date of play. An individual golfer or a group is not allowed to make two reservations at a time, according to the officials.

The user's fee is Y 14,000 on weekdays and Y 18,000 (\$138) on Weekends and holidays. The fee, which is about half that charged by private golf courses, includes caddie charges.

As seen in "The Daily Journal" September, 1990

**MEMBERSHIP FOR  
DECEMBER**

30 day Wait

**ASSOCIATE**

Lawrence Wise, City of Ukiah

**AFFILIATE**

Mel Brim, Napa Valley CC

# SPECIALIZED VALVES FOR SPECIAL SITUATIONS

We know that valves are used to control the movement of water through the irrigation system. So all you need are some automatic valves to control which sprinklers come on, some other manual valves to isolate areas of the course for maintenance, and a few valves here and there to give you a hose attachment in case you have problems with the automatic valves that control the sprinklers - right? Maybe so.....but probably not!

Suppose the valves that you're using to control the sprinklers work best at a certain pressure, and suppose your pump station has to run the sprinklers at the top of the hill at the same time you're running some heads way down in the valley. You should have "pressure regulating valves" in your mainline pipe network if the difference in pressure required by one leg of mainline exceeds any other leg by a margin that is greater than the optimum pressure to operate your sprinklers. Pressure regulating valves are usually spring and diaphragm operated valves that have the ability to be set within a range of operating pressures by tightening or loosening the spring tension within the valve body. You need to know the volume of water (gallons per minute) and the dynamic (working) pressure that you want at the valve location in order to determine what size and type of pressure regulating valve is best for your particular situation.

Now let's say you have a mainline that runs a long way in a straight line down hill and you've been having a problem at the end of the line because the fittings are always blowing out. Your problem may be due to something other than faulty fittings.....namely "surge pressure" or "water hammer". Detrimental surge pressure is the result of several factors which combine to create a pressure wave within the pipe that increases the water pressure to a level that far exceeds the rating of the pipe. The main factors contributing to surge pressure are:

- 1) The closing speed of the automatic control valves within the system,
- 2) The length of uninterrupted pipe runs without direction changes, and
- 3) The dynamic water pressure within the system.

If you have a valve that closes quickly it will send a "shockwave" through the pipe that will tend to grow unless it is deflected at some point along the way.

If it is not deflected soon enough it may weaken (or even wipe out) the unlucky fitting that happens to be at the end of the line. One method of dealing with this problem is to continually replace this fitting. Another method would be to install a "spring-loaded check valve" within the mainline that would allow water to pass through when needed downstream but would artificially deflect any surge pressure waves before they get unmanageable. Spring loaded check valves are valves that allow water to flow through them in one-direction when the water exerts more pressure than the integral spring is capable of holding back. An added advantage to having this check valve within your mainline is that if you should have a mainline break downstream from the check valve, you could shut down the water pressure or flow at the source and the valve will hold back the water rather than letting it all drain to the break. Be aware, however, that this check valve will only allow water to flow one way through the mainline and will create some pressure loss through the valve itself. You should seek the advice of a professional irrigation consultant prior to installing these valves in your existing systems.

O.K., so your pump station has come on just like it's supposed to but the valves that are supposed to come on didn't. Wow, the pressure is really building up in your system and it has nowhere to go. You need a "pressure relief valve" but quick. This type of valve is usually installed near the discharge of your pump station on a bypass line so it doesn't impede the normal flow of your system. Pressure relief valves usually include a "pilot valve" that allows you to set the pressure at which the relief valve will open and allow water through. This water can be piped back into your water source lake for use when the next control valve is opened.

There happens to be some hills on your golf course. And, just your luck, they're irrigated. Your mainline is running up and down, up and down. You may not know it but at the crest of these hills the water in your mainline may not fill the pipe when the system is running. This is where "air release valves" come into play. If you install these valves at the high points along your mainline, they will let the air out and keep the water in. This will allow your system to operate at the proper flow that the pipe was designed to

accommodate.

What if you have a break in your mainline on the downslope of one of those hills and the pump system shuts down? More that likely the water will drain out from the top of the hill and create a potentially damaging suction vacuum behind it. What you need is a valve at the top of the hill that will recognize a loss of pressure in the mainline due to the break and will open up to let air in to displace the vacuum caused by the loss of water. This type of valve is naturally called an "air and vacuum valve". As you can see, we are able to use different types of valves to control the flow of water within the irrigation system in a variety of situations found on the golf course. If you have any specific situations on your course that may require a specialized valve not mentioned here, please write a letter to this

## A LOOK AHEAD

**January 7, 1991**  
Hidden Valley CC, Middletown, CA

February  
GCSAA National Convention

**March**  
Joint Meeting with USGA, NCGA

**April**  
GCSANC Annual Meeting, Rossmoor

**May**  
Open

**June 13**  
Orinda CC

**July 15**  
Supt./Pro Tournament, San Francisco Golf Club

**August**  
Oakland A's Baseball Game, Oakland Coliseum

**September**  
Richmond CC