(Continued from page 20)

detergents or emulsifiers or wetting agents.

Anionic's are negatively charged surfactants, usually a sodium, potassium, or ammonia salt, and are most frequently used as detergents or for rapid wetting.

Cationic's are positively charged surfactants, and frequently are phosphates or quaternary ammonium compounds. These materials tend to exhibit the highest degree of toxicity to plants.

Non-Ionic's are surfactants that do not form charged particles — negative or positive — and are therefore much less chemically active, much less toxic to plants, and have wider use applications.

To help understand this difference between nonionic and ionic (positive or negative) think of salt and sugar. Both white and granular and both dissolve in water. When salt dissolves, ions are formed — a cation, positively charged sodium and an anion negative by charge chlorine. This solution will transmit an electric current — because of these electrically charged particles. Sugar on the other hand, does not form ions. It stays as the sugar molecule $C_{12}H_{22}O_{11}$. This solution will not transmit an electric current. Let's go back now and look at each category of surfactant for a better understanding.

Detergents are substances that reduce the surface tension of water — specifically a surfactant that concentrates at oil-water interfaces, exerting emulsifying action, and thus removing soil. From a turf and Horticultural standpoint, these materials should be avoided because of the tendency to weaken soil structure (emulsifying the soil) and the high degree of toxicity to plant tissue. They are rapid wetters and can be used in small amounts but should be generally avoided.

Emulsifiers are compounds that hold in stable suspension two or more materials — usually liquids — that normally would not mix. This again is a surface-Active-Agent which reduces the surface tension at the interface of the suspended material and the solution. Many of the materials you use emulsions — flowables, emulsifiable concentrates, etc. — The surfactants in these materials are tiedup by stabilizing the suspension or emulsion, and usually have little or no effect on any other solution that they may be put into.

The third category, wetting agents are surfaceactive agents which when added to water, causes water to penetrate more easily into, and to spread over the surface of another material by reducing the surface tension of the water.

(Continued on page 22)

Does this make sense so far.

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(Continued from page 21)

Frequently, you hear the expressing that detergents, wetting agents or whatever are all the same. It is important that you see the difference. Detergents primarily wet and emulsify oils, dirt, soils — while wetting agents primarily penetrate, wet, and spread.

If everyone is still with me we all should be able to agree that the category of surfactant adjuvant that is best to use in horticultural work is a non-ionic wetting agent. Agreed?

Now, let's look at this category — wetting agents and see how they can be grouped. First, wetting agents are used as spreaders. By lowering the surface tension of water they allow a solution to spread out, and wet a larger area. The normal tension of water that holds a drop together — pulls a solution away from a surface — is greatly reduced by wetting agents so that the drop can no longer hold together and thus spreads.

Wetting agents are also used as spreader stickers, when the wetting is combined with a resinous material. These materials, upon drying will form a film that is tacky and resistant to washing by rain or irrigation water. Unfortunately, some spreaders are sold as Spreader-stickers and are little more than just spreaders — a non adsorbing wetting agent that does a good job of wetting but little for retention. The next group are called spreader-extenders. These materials are basically a good spreading wetting agent, combined with a material that absorbs ultraviolet light when the film dries. These materials are used to extend the life of pesticides that are photo sensitive — are broken down by sunlight. Many times these formulations may also contain a sticker type resinous material to also help retention.

Spreader-Activators are wetting agents that have good penetration and adsorption characteristics, as well as the wetting and spreading. Adsorbing and penetrating the spray materials usually increase their activity.

I want to refresh your memory here by repeating an earlier definition: "Surfactants behavior differ chiefly as a result of the nature of the surface or surfaces involved." One big difference in wetting agents is how they adsorb on soil or leaf surfaces and at what solution concentration they become active.

The final group I want to mention are called soil Wetting agents. These materials, while similar to the spreaders and spreader-activators, have some unusual characteristics that set them apart of other wetting agents or surfactants or adjuvants. Soil Wetting Agents are used to control the management of the rootzone of plants — especially the water (Continued on page 24)





(Continued from page 22)

distribution, drainage, and availability as well as aeration. In order to accomplish this management, much larger quantities of wetting agents are required as compared to spray adjuvant uses. University tests from Cornell, Michigan, Maine, Nebraska, Ohio, Texas, California, and others, all show the need for approximately 16-oz. of active ingredient / 1000 sq. ft. to effectively control the rootzone of turf or ornamentals. This would compare to a spreader treatment of maybe 16-oz. active ingredient / 100 gallons of spray per three acres. Thus you are looking at a 100 to 150 times as much materials being used as a soil wetting agent. Materials that are horticulturally safe as spreaders may not be safe as soil treatments.

In addition how the wetting agent adsorbs on the soil can have a very pronounced effect on plant toxicity, leaching, and longevity. A weakly adsorbed material remains in the water phase of the soil solution. With heavy rains or excess irrigation these materials are rapidly leached and lost. If the wetting agent remains in the soil solution, it can be translocated into the plant, and data from the University of California and Michigan State have shown a detrimental effect on turf. One soil wetting agent, that has been shown to be irreversibly adsorbed on the soil, did not show the adverse growth effects in these same tests.

Thus, the soil wetting agent besides being good penetrants and spreaders must have a very low plant toxicity, and a very high adsorptive behavior. Much more must be known about these materials before you endeavor to use them.

To summarize all of this information I want to use some of the guideline questions that were put to us to answer in our talk.

1) What's the difference between all of these names?

Answer: They are all related. Adjuvant is the general name for a material added to your program that will enhance its performance. Surfactants are the type adjuvant you most commonly use. You don't want to use detergents or emulsifiers because of their higher plant toxicity; and their primary action of

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emulsifying liquids and solids — they tend to decrease soil aggregation.

Wetting agents are the type to use in the horticultural field. Here again anionic and cationic materials should be avoided because of greater toxicity. The non-ionic materials are preferred.

2) When do we need — What?

Answer: Spreaders will generally be the least expensive and are used where good coverage for short periods is the primary objective. Spreader-Stickers, Spreader-Extenders, and Spreader-Activators will all be more expensive and are used where a longer protection time, a light sensitive material, or an enhanced performance is a major factor.

Soil Wetting Agents frequently are more expensive than spreaders because of their special needs low toxicity, high adsorption, and flexible use under different soil conditions — They are used for rootzone management of water — which in turn manages all your programs — fertilization, soil pesticides, drainage, aeration, as well as watering.

3) When don't we need a wetting agent?

Answer: In our opinion, we feel that you should consider some wetting agent for every spray application, and soil wetting agent wherever you irrigate or have a water related problem.

4) How does one know when they are being taken to the cleaners?

Answer: Be a wise buyer. Read the label and ask questions. Don't accept hear-say and generalizations.

First point is to find out the amount of active ingredient. 10 out of 12 materials on the market contain large quantities of water — 75 to 90% don't buy water!

Second, Know the chemistry of the wetting agent. Is it a single type or a blend? Blends are broad spectrum — are active in more type of soils.

Third, Find out the residual. One marketed wetting agent biodegrades in 4 to 7 days — that's not much control. Many are weakly adsorbed and leach radily — again not much residual control.

Fourth, Ask about phytotoxicity. Remember, if they don't adsorb they can get into the plant and effect its growth. In addition some wetting agents are just plain toxic to plants!

I hope you can now see the reasons for the Results (both negative and postive); and that there are no more "Mysteries" remaining!

Be a wise Buyer — you now have a better base to shop from. ■

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By JAMES P. CALLAGHAN Rio Mar Country Club

Tide"ings

Treasure Coast

Correcting A Drainage Problem At Indian Hills

Nestled just east of U.S. 1 in downtown Ft. Pierce, Indian Hills Golf Club is fortunate because it sits right on top of the "east coast ridge". Because of its higher elevation (relatively speaking), drainage problems are few. In fact, the golf course is usually open when other area golf courses are closed due to wet conditions.

However, there is one low area at Indian Hills that resulted in problems after heavy rainfall. This situation was recently rectified by Golf Course Superintendent, Joe Briguglio.

The first and second holes at Indian Hills are situated on the lowest point of the golf course. Although this area is in the proximity of an irrigation lake, drainage had become a severe problem over the years due to compaction and high water table. Many times, this would be the only problem area on the golf course after heavy rainfall. Closing the golf course could not be justified because only two holes had standing water (especially since the golf course is operated for profit). Trying to direct golf carts around the sloshy areas proved futile and only added to the drainage problem by increasing compaction.

In order to rectify the situation, a drainage system had to be installed in this area. With his Greens Chairman, Joe surveyed the area and proposed a plan to correct the problem. After lengthy discussion and cost analysis, the project was approved.

As illustrated in figure 1, a basic herringbone drain field was installed in the first and second fairways to drain the surface water into the lake located to the south of the area. The first phase of the project included digging three parallel drainage ditches (4' - 5' deep x 2' wide) along the far sides of each fairway and between the fairways. A slope of 6" per 100' toward the lake was provided.

After the main ditches were in place, the project continued by installing the herringbone drain field. All the lateral drain flows into the drainage ditch between the two fairways as the purpose of the other two ditches is to aid in draining the area when the water table is naturally high or to relieve pressure from the system after extremely heavy rainfall. Again a slope of 6" per 100' was provided for when digging the herringbone field. Now that all main and lateral ditches were excavated, phase 2 could begin. Fill rock was placed on the bottom of all ditches to a depth of 12'' as diagrammed in illustration 2. On top of the fill rock, ADS drain pipe (4'' - 6'') diameter) was installed. Additional fill rock was then placed in the ditches to a depth 6'' from the surface. In the area near the lake, tarpaper was placed over the fill rock to prevent water from entering the system in the event the lake overflowed and to enable the playing areas to drain more rapidly. The remaining 6'' was filled with a sandy topsoil and aerifier plugs for regrassing. Within 5 weeks, no one could tell that the area had been disturbed.





Joe Briguglio stated, "After the first downpour, the system proved successful. We are now able to get the golfers off the first tee without the delays we encountered when the area held excessive amounts of water." Joe's employer is estatic about the drainage improvement more golfers being able to tee off equals more revenue. Total cost of the project was \$4,800.00, \$200.00 below estimate!

Like many drainage problems encountered in Florida, Joe's predicament was unique. Although poor drainage was confined to a limited portion of the golf course, a COMPLETE analysis of the situation was in order. There are many variables that determine the cause of poor drainage (i.e. elevation, soil texture, water table, etc.).

(Continued on page 28)







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(Continued from page 26)

Only after one understands why an area holds water can solutions be proposed. At Indian Hills, high water table had to be considered or the system wouldn't work. Along the east coast of Florida, a high water table is normal during "spring tide" -when the moon and the earth are at their perigee (closest point). At this time, the moon exerts a tremendous gravitational pull creating abnormally high tides (the oceans and water table "spring up") which occurs in the autumn of the year. Even during the drought three years ago, "spring tide" created a high water table along the Treasure Coast. Joe's newly installed drainage system takes into account for any limitation imposed by an abnormally high water table.

Another variable that had to be considered was "return period" -when a given amount of rainfall in a 24 hour period can be expected. In Ft. Pierce, a 3" rainfall can be expected every year whereas a 6" rain returns (on the average) every 2.5 years. Joe's system was designed to drain off a 3" rainfall in 24 hours. By estimating cost vs. lost revenue, Joe determined that a system designed to drain larger amounts of water would not be cost effective.

As more golfers pay more money to play the game, closing of the golf courses due to standing water will not be tolerated as much. Today's golf course superintendent must master the art of drainage to maintain the purpose of a golf course -BEING ABLE TO PLAY A GAME OF GOLF WHENEVER THE ELEMENTS ARE FAVORABLE.

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Florida Golf Day

Governor Bob Graham declared May 5, 1984 as Golf Day. The Florida Golf Course Superintendents Association in regional tournaments raised thirteen thousand dollars for turf grass research. Pictured here is the golf tournament held by the Palm Beach Chapter at East Lake Country Club. Golf Course Superintendent and Tournament Director was Gary Grump.



Left to right (winning team at 14 under par 56) Steve Pearson, Rodger Gamblin, Walt Christensian and Earl Christensian.



Left to right David Bailey, President Palm Beach G.C.S.A. Kevin Downing, Public Relations Director, Florida G.C.S.A., Steve Pearson, Superintendent Boca Grove.



Two Florida beauties helping with tournament.



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Naples Beach Hotel And Golf Course Adds To Its Charm With \$5 Million Refurbishing

NAPLES, FLA — She has been described as a grand old lady filled with grace, charm and memories.

And among her admirers she has attracted such notables as Gary Cooper, Hedy Lmarr, Greta Garbo and Gertrude Lawrence.

In the past few years she has undergone a name change and today she has just concluded a "face lift" . . . a \$5 million glamorizing program to give her a smart, up-todate look.

The "lady" in question is The Naples Beach Hotel and Golf Club, a plush 315-room resort nestled on 135 acres of sun-drenched Gulf of Mexico beachfront in the city of Naples, the southernmost city on Florida's southwest coast. The comprehensive refurbishing program included

most guest areas at the resort, a direct descendent of the now-defunct three-story Naples Hotel, built in the 1880s.

The Naples Beach Hotel and Golf Club — still the sunkissed dowager of southwest Florida where she reigns in a class by herself — is both a deluxe stopover for the casual tourist and seasonal visitor, as well as a popular meeting place for state and national groups wishing to combine business with the amenities of gracious comfort, plus an 18-hole championship golf course, four Har-Tru tennis courts, three fine restaurants, a huge heated swimming pool and access to fishing, windsurfing and water sports and recreation of every variety, all in a setting offering miles of unblemished sandy beach and warm, gentle Gulf waters.



Insulated from the hectic pace of Florida's larger east coast cities by 100 miles of Everglades and snugly tucked away in a quiet, peaceful corner of a tropical paradise, the city of Naples remains a clean, thriving and attractive urban center of 20,000. "What Naples has to offer is one of the best kept secrets of our time," explains Henry B. Watkins, Jr., president of The Naples Beach Hotel and Golf Club, "and it is only in the last 20 years that people have begun to find that out."

But both the city and its illustrious hotel had humble beginnings.

The original Naples Beach Hotel had been constructed a century ago by General John Williams who apparently went quickly into bankruptcy and sold out to a Louisville, Ky., newspaperman named Walter Haldeman who was to become Naples founding father. The hotel changed hands



twice again, meanwhile catering to a gentleman-class huting and fishing clientele that had to travel 40 miles by boat from Ft. Myers to reach the remote village.

Eventually the hotel was inherited by three sisters whos only interest was to sell it.

"That's when my father first saw it," said Watkins, who succeeded his father as president of the hotel company. "He had been in the toy manufacturing business in Ohio and during World War II had been a defense contractor for the Army. He wanted to sell out and move south into the sunshine. The hotel looked like a way to do it.

"But when he found that the hotel deed also included more than 20,000 acres — three-fourths of the platted City of Naples — he decided it was more prudent to also involve other investors. In 1946 he found his participants and the deal was made," Watkins said.

Meanwhile, an 18-hole golf course had been built, then abandoned, just a few blocks north of the hotel, and the senior Watkins immediately leased it from its owners, the Joslin family (Jergens lotion) and in 1946 restored the first nine holes for use by himself and his hotel guests. It was at that time the only course in that part of the state. Later he (Continued on page H)

(Continued from page G)

restored the back nine and, in 1950, he and his partners bought the property outright. He then moved his offices from the old Naples Hotel into the existing two-story clubhouse.

During the ensuing years, the partnership disposed of its extensive real estate holdings in Naples and Watkins bought sole ownership of the hotel and golf properties. Hen then started adding to the hotel complex, first by the construction of a two-story 35-room structure completed in 1953 that marked the start of the Naples Beahc Club. For a time he operated both properties, but eventually all operations were transferred several blocks up the street to the new location and before long the 100-year-old original Naples Hotel was demolished.

Each couple of years saw a new section of the Naples Beach Club added until the complex reached its present make-up of six residential buildings, including the fivestory tower, the two-story main wing, the two-level patio wing, the five-floor penthouse, two-level cabana wing and the nine-story Watkins wing, the newest addition.



The senior Watkins, who was active in the resort until 1978 when the role of president was passed on to Henry Junior, died in 1981 at the age of 92. A third-generation Watkins, Michael currently serves as general manager of the resort.

Today the property includes three restaurants to support the 315 rooms, plus six meeting and convention rooms. Its accommodations include 24 deluxe one-bedroom suites with a parlor, 32 one-bedroom standard suites with sitting rooms, 50 efficiencies and a combination of 209 deluxe and standard double-double guest rooms, all of which overlook either the Gulf of Mexico or the golf course.

The 18-hole, par-72 course is a comfortable 6,462 yards long. Redesigned in 1981 by golf architect Ron Garl, more than \$750,000 was spent enlarging the greens, adding traps and bunkers and installing an automatic irrigation system.

The course has been the home of the Southern Seniors Golf Association for 17 years and the Florida Senior Golf Association tournament for 15 years. It was the scene of the original Florida PGA tournament in 1963. Each October the Florida Seniors Open is played there and the Florida State Womens Senior Golf Association Tournament has been held there for 25 years.

"It is not the toughest course in the world, but is a fun course," says Jim Duffy, head professional who has been on the pro staff at the course since 1958. "It has a good balance of three, four and five-par holes and is just the right test for a low handicapper or the week-end golfer. After all, our guests are here to enjoy themselves ... and they do."

- ME –

You had better take good care of me. Perhaps you don't think much of me at times, but if you were to waken some morning and realize that you did not have me, you would start the day with an uneasy feeling.

From me you get food, clothing, shelter and such luxuries as you can enjoy.

If you want me badly enough, I will get you a 12-cylinger automobile and a home on Park Avenue.

But I am exacting...

I am a jealous mistress; yet sometimes you seem hardly to notice me at all.

In fact, you make slighting remarks about me at times and neglect me.

Considering the fact that you need me, not only for the material things of life but the spiritual as well, I wonder that you neglect me as you do.

Suppose that I should get away from you?

Your happiness would flee, for a time at least, your friends would worry and your bank account would dwindle.

So, after all, I'm pretty important to you.

Cherish me, take good care of me, and I promise that I will take good care of you.

I AM YOUR JOB.

PEOPLE LIKE TO WORK FOR A LEADER who is fair and square in every respect. It's a pleasure to work for someone you can trust, always a problem to work for someone you can't.

Leaders who want to enjoy this kind of reputation have to earn it. This first step is to make up your mind to show the same consideration for everyone whether they're weak or powerful, loudmouthed or mousey, a personal friend or someone you don't care much for. Run a fair ship without favorites.

And don't try to kid anybody. Call a spade a spade. Say what you mean and mean what you say. People don't like double-talk. They prefer a leader who gives them straight facts — even when they're not very pleasant. It's a lot better than a manager who tries to gloss things over and make black look white.

Be obvious, simple, straightforward. When people know for sure you're being fair with them, there's a good chance they'll be fair with you.■

William E. Nass

The Florida Turf-Grass Association is pleased to announce the appointment of William E. Nass to the newly created position of Director - Member Services.

As explained by William Wagner, FT-GA President, "We feel we can do more for our members, and we need to do more. Turf-grass managers, like everyone in agriculture, need better information, and they need it sooner. Mr. Nass will play a key role in filling this gap."

Wagner continued, "Today's turfgrass manager is faced with an information explosion. He must stay current with developments in such fields as pesticides, turf breeding, equipment, labor law, water conservation and regulatory affairs. We feel FT-GA can help, especially in the technical aspects of warm-season turfgrasses, by consolidating research information and extracting that which is relevant to the manager's day-to-day operations."

Nass, 32, was formerly Agronomist for Lawn Doctor, Inc. (Matawan, N.J.), a chain of 280 franchised professional lawn care companies. Earlier had been associated with Chemlawn Corporation and Cornell University in turf related positions. He holds a Bachelor of Science in Agriculture degree from Kansas State University, where he majored in Horticulture.

The Florida Turf-Grass Association serves turf-grass managers in the fields of golf turf, professional lawn care, parks and recreational turf, sod farms, cemeteries and other turf sites.

Through individual and corporate contributions, FT-GA actively supports research on warm-season turfgrasses. It also awards five named scholarships annually in support of students in turf-related subjects at the University of Florida and Lake City Community College.

For additional information, contact Mrs. Ruth Sheperd, Administrative Assistant, Florida Turf-Grass Association, 302 S. Graham Avenue, Orlando, Florida, 32803, (305) 898-6721.■

32nd FTGA Show To Be In Tampa

"Turfgass Bowl I" will be the theme of the 32nd annual Turfgrass Conference and Show to be held October 1-3, 1984 in Tampa, Florida.

The Turfgrass Conference and Show is sponsored by the Florida Turf-Grass Association in cooperation with the University of Florida-IFAS, and the Florida Cooperative Extension Service. The Conference provides the latest up-to-date information in turfgrass management in addition to its trade show where exhibitors display the newest in turfgrass equipment and supplies.

Last year, the Conference and Show had 1165 attendees with over 70 exhibitors. "This year, we're projecting 2,000 attendees with more than 110 exhibitors," says Bill Nass, Director of Member Services for the Florida Turf-Grass Association.

The Conference and Show will be held at the Curtis Hixon Convention Center and the Hyatt Regency Hotel in Tampa. The Conference will begin as a general turf session with research reports sponsored by the Florida Turf-Grass Association. The keynote speaker will be Bobbie Gee, a consultant who has achieved national prominence as a specialist in the fields of corporate image and personal awareness.

The Conference and Show will have 3 concurrent sessions: golf, lawn care, and parks and recreation. Featuring speakers from the University of Florida and nationally, the topics will include discussions on both a technical and business nature with the goal of providing a wide diversification to meet the individual needs of the turfgrass professional. Registration for the Conference and Show can be

for all 3 days or on an individual day basis. For more information, contact Bill Nass, Florida Turf-Grass Association, 302 S. Graham Avenue, Orlando, Florida 32803-6332. The telephone number is 305/898-6721.■



Is A Young Person You Love In Trouble With Alcohol Or Drugs?

EDITOR'S NOTE: My family has gone through the insanity of drug abuse and risen above it with the help of God and Straight, Inc. When we put our daughter (age 16) in Straight she was failing school and our family was out of control. She is back in school with a straight "A" average and our family is a solid loving and supporting unit. If you, a relative or friend thinks they may have a drug and/or alcohol problem and would like someone to talk with, please do not hesitate to call me, Dan Jones.

BEHAVIOR

- Does your child go through frequent or extreme mood swings?
- Have you noticed a change in your child's friends?
- Has your child lied or do you suspect lying?
- Has your child been involved in acts of vandalism?
- Has there been evidence of other people in the home when you have been out?
- Have you noticed objects missing from your home? (money, silver, jewelry, liquor, etc.)
- Has your child used obscene language or gestures?
- Does your child seem withdrawn or prefer the seclusion of his/her room?
- Does your child demand that no one enter his room, or at least without permission?
- Does your child prefer to keep his room dark?
- Have there been sudden or explosive outbursts of anger?
- Does your child suffer from memory loss or disorientation?
- Are you aware of or do you suspect sexual activity with opposite sex or same sex?
- Have you ever discovered drugs or paraphernalia left out where they could be easily found?
- Has your child ever run away or threatened to?
- Has your child dropped out of favorite activities or sports?

- Has your child been charged with an auto accident or reckless/drunk driving.
- Has your child been involved in other court/legal matters?

APPEARANCE - HEALTH

- Does your child neglect personal appearance/hygiene?
- Have you noticed bruises on skin?
- Is your child's coloration pale, flushed, or blotchy?
- Have you noticed a constant or persistent cough?
- Have you seen your child with dilated pupils?
- Have you noticed that your child is going long periods without eating or sleeping?
- Has your child lost weight?
- Does your child appear hyperactive or nervous?
- Have you detected odor of pot or alcohol on your child?
- Have you seen your child staggering, stumbling, or disoriented but does not have any odor of alcohol on breath?

FAMILY

- Does your child attempt to withdraw from family functions?
- Has there been verbal abuse within the family?
- Has there been physical abuse within the family?

ACADEMIC

- Are you aware if your child has been:
 - a. Sleeping in class?
 - b. Skipping classes?
 - c. Cheating on tests, etc.?
- Does your child want to quit school?
- Have you received scholarship warnings or failing grades?
- Has your child been in trouble at school this year?

For more information on what to look for, call Straight, St. Petersburg 813-577-6011, for an information packet.