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you haven't instructed."

The utility vehicle is a relatively simple unit of equipment to learn to handle. Anyone having the experience of driving a car with standard transmission can adapt quite readily. Proper respect and common sense in using any vehicle should prevail.

A portion of the training session should deal with the proper care and maintenance of new equipment. Many problems occur due to neglecting the crucial breaking in of a new unit.

New engines require a breaking-in period of minimum stress and constant monitoring for initial problems covered by the manufacturer's warranty. The following procedures are general in nature but apply to most new engines during the breaking-in period.

1. Keep speeds to a minimum for the first week of operation.
2. Increase speeds gradually over a period of two to three weeks until desirable maximum is reached.
3. After approximately two weeks, drain the crankcase oil while the engine is warm and replace with recommended type and weight engine oil.
4. Never race engine when in neutral or in low gears.
5. Do not subject engine to maximum stresses or speeds until after a month of operating time.

Safety considerations

Even though utility vehicles on the market today have low center of gravity designs, they should be driven with caution on slopes and when making turns. All manufacturers mentioned produce three-wheel models (Cushman has a four-wheel option) which when making sharp turns at high speeds can easily throw the operator off balance or dump the payload.

The utility vehicle is subject to specific safety rules of operation. Repetition of these key points should be included during the training period and periodically re-

TABLE 2

Four Step Training Program

STEP 1 — Prepare the worker

Put him at ease.
State the job and find out what he already knows about it.
Get him interested in learning the job.
Place in correct position.

STEP 2 — Present the operation

Tell, show and illustrate one IMPORTANT STEP at a time.
Stress each KEY POINT.
Instruct clearly, completely and patiently, but no more than he can master.

STEP 3 — Try out performance

Have him do the job—correct errors.
Have him explain each KEY POINT to you as he does the job again.
Make sure he understands.
Continue until YOU know HE knows.

STEP 4 — Follow up

Put him on his own.
Designate to whom he goes for help.
Check frequently.
Encourage questions.
Taper off extra coaching and close follow-up.

inforced through supervision of equipment operators.

1. Learn the reason for all of the controls on the vehicle. Read the owner's manual completely before operating the vehicle.
2. Place the gear in neutral and apply the handbrake before starting engine.
3. When vehicle must be towed be sure it is in neutral gear. If it contains an auxiliary transmission, it too should be in neutral.
4. Vehicles with hydrostatic transmissions should have special attention before and during towing. Before towing be sure to open tow valve

and it should remain open during towing. Towing should be limited to on and off trailers and in and out of maintenance complex at low speed. Do not tow for long distances or high speed.

5. Feet should be kept inside the vehicle when it is in motion.
6. Reduce speed when operating on slopes, rough ground and in wet conditions.
7. Steering of these vehicles is very responsive. Be careful not to oversteer, especially at higher speeds. Always keep both hands on the steering wheel or handle bars.
8. Be familiar with hand signals and use them when making turns in heavy traffic areas.
9. Do not hang anything or attach ropes, line, etc. to steering wheel or handle bars.
10. When parked, the hand brake should be locked and engine stopped.
11. Do not ride more people than is designed by the seating capacity.

The utility vehicle has been the mainstay of landscape maintenance procedures over the years. With the adoption of key accessory items that can be easily attached, it has gained a new status of efficiency and importance in today's modern management schemes.

By establishing and utilizing a systematic preventive maintenance program, being trained in the mechanical and physical limitations of specific units and keeping an adequate supply of key parts and special tools, these vehicles will give good performance over the duration of their life expectancy.

If and when problems occur, pleasant and proper communications with the service areas of the distributor and/or manufacturer will, in most experiences, achieve satisfactory solutions. **WTT**

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THE FORGOTTEN TREES

Sassafras, Catalpa, and European Alder

by DOUGLAS J. CHAPMAN

Three low-maintenance trees, almost forgotten in the trade, which have exciting potential for use in the landscape include Sassafras, Catalpa, and European Alder. These plants have differential adaptations to many of our difficult landscape situations, while being resistant to most catastrophic insect or disease problems.

Sassafras (*Sassafras albidum*) is a native tree which is difficult to transplant but fills a unique place in the landscape. Its native range is from New England to Michigan

and south to Texas and Florida. Sassafras' mature habit is somewhat conical, reaching 30 to 50 feet in height and 20 to 35 feet in width when grown as a single stem. In a natural setting, it is often found as a plant that creeps over the landscape, spreading by root suckers. It has an interesting habit throughout the year. The foliage has three distinctly different leaves—with and without lobes and somewhat oval. The yellow-green summer foliage fades to a riot of color in the fall, ranging from scarlet-yellow to a deep maroon and purple. *Sassafras albidum* has a tap root, making it difficult to transplant but extremely drought resistant. This tree might propagate easily from softwood cuttings, thus leading to a new production technique. It is natively found growing in well-drained, sandy soils in the flood plain of a mature river. It requires well-drained soils, declining if clay is in the soil composition. It is somewhat sensitive to salt spray but has no real insect problems. When considering disease, there are few catastrophic problems. Foliar diseases are minimal but stem cankers can cause a problem. Normally stem cankers are an indication of stress, e.g. soil compaction or winter injury, but in the southern Appalachian region, *Nectria* Canker has poten-

tial to be a problem. In a native situation, Sassafras is often associated with redcedar, ash, oak, and hornbeam. It is a sun-labile plant, that is, it must be grown in full sun or decline will set in. When considering landscape use, it is particularly well adapted to parks, golf courses, and large area or commercial landscapes in a somewhat native—mass planting or as a single-stem specimen.

Catalpa (*Catalpa speciosa*), a tree often used during the early 1900's, is now difficult to find in the trade, almost forgotten. It has a somewhat oval, irregular habit at maturity, reaching 40 to 60 feet and 20 to 35 feet in width. The foliage is whorled, opposite, and very coarse textured. The leaf color is a dull yellow-green during the growing season with the leaves not developing color in the fall. Catalpa's bell-shaped white flowers (reminiscent of orchids) appear in late June. The fruit are 8- to 20-inch long pendulous green pods. Catalpa is native to Indiana and Tennessee but can readily be grown throughout the Northeast and Midwest. When considering soil adaptation, Catalpa adapts to almost any condition. It is often found in wet, poorly-drained soils, tolerating compaction well but will also do exceptionally well in droughty soils. It has a tap root and is a good companion plant in fine turf. Catalpa is somewhat resistant to salt and seems to thrive in most urban conditions. *Catalpa speciosa* is a tree that must be planted in full sun to thrive. It lends itself exceptionally well to home landscapes and park situations when a unique specimen is needed but is a problem as a street tree. When grown under the stress of street tree conditions, Verticillium Wilt is often a problem but, under ideal conditions of good vigor, this ring-poor tree often outgrows or overcomes early invasion of Verticillium Wilt. Catalpa is extremely resistant to breakage by ice storms and requires little pruning. Although it is somewhat coarse, almost grotesque in habit, *Catalpa speciosa* does have a place in the landscape.

Douglas J. Chapman is a Horticulturist at Dow Gardens, Midland, Michigan



Sassafras exhibits scarlet-yellow fall color and has three distinctly different leaves. Transplanting is difficult due to a tap root.

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Trees from page 54

European Alder (*Alnus glutinosa*) is an outstanding plant that adapts well to wet, heavy soil, has a rapid rate of growth, and, at maturity, has a somewhat oval habit, reaching 40 to 60 feet in height and 20 to 30 feet in width. European Alder foliage is a rich dark green during the growing season, but fall color is essentially nonexistent. The male flowers are pendulous catkins, 2 to 4 inches in length, which develop during early spring in central Michigan and earlier as one moves south to Northern Illinois and Ohio. The small, cone-like fruit remain on the tree throughout the winter, reminding one of a hemlock or other conifer. This plant has a lot of genetic variability. Several selections or cultivars should be considered. One particular selection of *Alnus glutinosa*, we have been interested in, develops red or maroon new growth which contrasts well against the dark green foliage. The soil conditions in which this plant thrives include heavy wet soil, although it does tolerate drought to some extent. Under normal conditions, it will grow 3 to 4 feet in height and rapidly can fill in as hedge or screen plantings. Disease problems are essentially nonexistent but two insects are worth considering. These include Leaf Miner and Wolly Alder Aphid. It should be stressed that these problems rarely require the application of pesticides. European Alder is outstanding as a hedge or in mass plantings for large area landscapes (replacing Lombardy Poplar).

When looking for unique trees which adapt well, why not consider European Alder for its tolerance of wet soils and its ability to grow as a dense screen or hedge; Catalpa as a tree which thrives in turf, is drought tolerant, and a unique specimen for home, park, or large-area landscapes; and Sassafras, the difficult to transplant native, which can provide a riot of color during the fall.

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VEGETATION MANAGEMENT

By Roger Funk, Ph.D., Davey Tree Expert Co., Kent, Ohio

Q: Where is the best time to control spotted spurge in bermudagrass, and what chemical do you recommend? (Florida)

A: DCPA (Dacthal) applied before the soil temperature stabilizes above 55° F. and reapplied one or two times at 60-day intervals has reportedly given good control. However, multiple applications are costly and potentially phytotoxic to the turfgrass, particularly if applications are made over several seasons.

Postemergent control with two treatments of bromoxynil applied about four weeks apart also provides good control of spotted spurge. Some phytotoxicity evidenced as temporary tip burn may occur on common bermudagrass.

Q: How much ryegrass seed should be mixed with Kentucky bluegrass seed when fusarium blight is a problem? (California)

A: A mix containing 10%-15% perennial ryegrass has been found optimal in most cases to mask the disease symptoms. This mix should result in a 50:50 bluegrass:ryegrass plant count relationship.

Q: Is red fescue the best turfgrass for shaded areas? (Pennsylvania)

A: Red fescue (*Festuca rubra* L.) is still the recommended species for shade in the northeastern states. Also, some of the newer Kentucky bluegrass cultivars will tolerate up to 60% shade. If the area is also wet, rough bluegrass (*Poa trivialis* L.) is sometimes recommended.

Q: What is a stool sprout? Is it any different from what we call a stump sprout? Could you also tell me how long a stump will continue to live after the tree is cut? (Ohio)

A: A "stool sprout" develops from adventitious buds which arise from between the bark and wood of stumps. (Adventitious buds do not originate in the axils of leaves but are formed irregularly on older portions of stems.) Such sprouts are usually short-lived.

"Stump sprouts" are normally described as arising from dormant buds which developed in leaf axils and are connected to the pith by a bud trace. Stump sprouts can produce new trees.

If deprived of sprouts, most stumps die within two years as the stored carbohydrates are depleted in the root tissue. However, the root system can survive for many years if root grafted to a remaining tree which supplies carbohydrates and growth regulators.

Q: Could you tell us how lightning actually kills the tree when it strikes? (N.Y.)

A: Although trees are attractive lightning targets because of such factors as height, root depth and wood properties, they are highly subject to damage since trees are not good conductors of electricity and offer resistance to the travel of lightning current.

When the bark is smooth and uniformly wet, electric current may be effectively conducted through this external water resulting in leaf scorch, bark fissures and

other superficial injuries. However, internal conduction along the cambium or other moist tissue causes heat buildup resulting in a disruption of physiological processes, cellular death and mechanical splitting or tearing of wood and bark tissues. The thermal death point of most active cells occurs between 50° and 60° C. In many cases, when only minor injury is evident on the trunk, considerable injury has occurred to the roots.

In addition to direct injury, lightning may predispose the injured tree to pathogens and/or bark beetles that are ultimately responsible for death.

Q: A disease on two of the Kentucky bluegrass lawns we service was identified as fading out. I have not been able to find it in any of our disease books. What is it and how do you control it? (Maryland)

A: Species of *Curvularia* have reportedly caused a disease called "fading out," often in combination with leaf spot. Irregular patches of turf turn pale green, then yellow during the hot summer months and appear to be drying out, even when there is sufficient soil moisture. Kromad, Daconil 2787, or Actidione thiram, applied before the disease starts or in its early stages, should control *Curvularia* fading out. However, since there may be another disease known locally as fading out, you should ask the person who identified the disease to provide the scientific name of the causal organism.

Send your questions or comments to: Vegetation Management c/o WEEDS TREES & TURF, 757 Third Avenue, New York, NY 10017. Leave at least two months for Roger Funk's response in this column.



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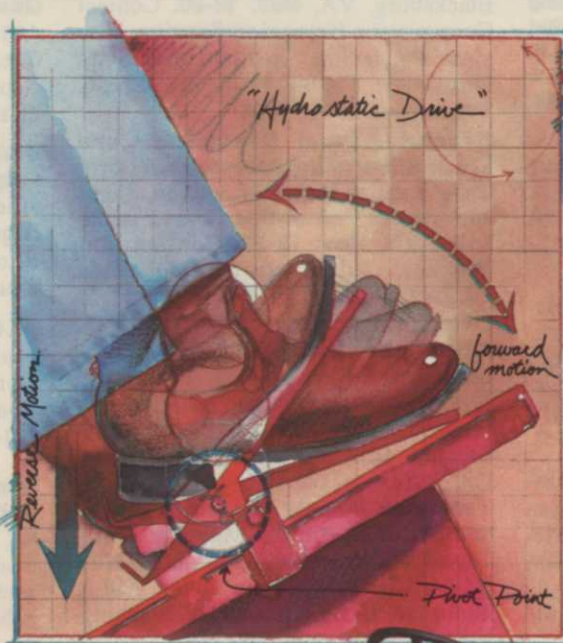
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WT&T EVENTS

The current issue of **WEEDS TREES & TURF** carries meeting dates beginning with the following month. To insure that your event is included, please forward it, 90 days in advance, to: **WEEDS TREES & TURF Events**, 757 Third Ave., New York, NY 10017.

Aquatic Plant Control Research Planning and Operations Review, Annual Meeting, Radisson Plaza St. Paul, St. Paul, MN, **Nov. 16-18**. Contact W.N. Rushing, 601/634-3542.

New York State Turfgrass Association Conference & Trade Show, Albany, NY, **Nov. 16-19**. Contact Ann Reilly, NYSTA, 210 Cartwright Blvd., Massapequa Park, NY 11762, 516/541-6902.

1981 New York State Turfgrass Conference and Trade Show, Empire State Plaza, Albany, NY, **Nov. 17-18**. Contact Janet Worthington Dudones, Ed Worthington Corp., 50 Petrova Ave., Saranac Lake, NY 12983, 518/891-1830.

Landscape Management Minicourse, Blacksburg, VA, **Nov. 18-20**. Contact Cooperative Extension Service, Virginia Polytechnic Institute and State University, Patton Hall, Blacksburg, VA 24061, 703/961-6491.

Second Annual Convention and Trade Show of the Professional Lawn Care Association of America, Commonwealth Convention Center, Louisville, KY, **Nov. 18-20**. Contact Jane Stecker, Administrative Director, PLCAA, Suite 1717, 435 N. Michigan Ave., Chicago, IL 60611.

Christmas Nursery Retail Tour, Southern California, **Nov. 19**. Contact Lanny E. Walker, Public Relations Director, California Association of Nurserymen, 1419 21st Street, Sacramento, CA 95814, 916/448-2881.

American Society of Landscape Architects 81st Annual Meeting, Washington Hilton, Washington, D.C., **Nov. 21-24**. Contact William Oyler, ASLA, Suite 750, 1900 M Street NW, Washington, DC 20036 (202) 466-7730.

12th Annual GCSA/University of Georgia Turfgrass Short Course, Athens, GA, **Nov. 23-24**. Contact George M. Kozelnicky, University of Georgia, c/o Dept. of Plant Pathology & Plant Genetics, Athens, Georgia 30601.

Seventh Annual Professional Landscape Management School, Evansville, IN, **Nov. 24-25**. Contact Allen Boger, Extension Agent, Horticulture, Room 202, City-County Building, Evansville, IN 47708.

ALCA Design/Build Symposium, Marriot-North, Dallas, TX, **Dec. 2-4**. Contact ALCA, 1750 Old Meadow Road, McLean, VA 22102, 703/821-8611.

Minnesota Nurserymen's Association Convention, Radisson South Hotel, Minneapolis, MN, **Nov. 29-Dec. 1**. Contact Minnesota Nurserymen's Association, 1360 Terrace Drive, St. Paul, MN 55113, 612/633-4987.

American Society of Agronomy, Crop Science Society of America and Soil Science Society of America, 73rd Annual Meeting, Atlanta, GA, **Nov. 29-Dec. 4**. Contact American Society of Agronomy, 677 South Segoe Road, Madison, WI 53711, 608/274-1212.

Ohio Turfgrass Conference and Show, Columbus, OH, **Dec. 2-4**. Contact David P. Martin, Ohio Turfgrass Foundation, Ohio State University, 1827 Neil Avenue, Columbus, OH 43210, 614/422-2591.

Minnesota Golf Course Superintendents Association, Annual Conference, Sheraton Inn Northwest, Minneapolis, MN, **Dec. 2-4**. Contact Nathan Dunn, 1900 Hazeltine Blvd., Chaska, MN 55318.

Texas Turfgrass Conference, College Station, TX, **Dec. 7-9**. Contact Dr. Richard L. Duble, TTC, Soil & Crop Sciences Dept., Texas A & M University, College Station, TX 77843, 713/845-4826.

New Jersey Turfgrass Expo '81, Cherry Hill Hyatt House, Cherry Hill, NJ, **Dec. 7-10**. Contact Dr. Henry Indyk, Soils & Crops Dept., Cook College, P.O. Box 231, New Brunswick, NJ 08903, 201/932-9453.

Turfgrass Short Course, Blacksburg, VA, **Dec. 7-11**. Contact Cooperative

Continues on page 62

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