

MOVING LARGE TREES¹

by David C. Shaw

Before moving a large tree there are many factors that must be taken into consideration. Determine the species and variety. Is it worth the effort to move it? I would not move a large silver maple or Lombardy poplar. Both are problem trees. The former is fast growing, very susceptible to storm damage, and shows signs of decay in the early stages of its life span. The latter is a very short-lived tree. Before moving large trees, determine if it is a suitable species for transplanting.

Transplanting a large tree is expensive and must be considered a long-range investment. Is the tree healthy? It is unwise to transplant a tree with evident cavities or weak branches. A tree should be thoroughly checked for defects. A large Norway spruce full of insect galls should not be moved nor should a large maple with *Verticillium* wilt or maple decline. The tree must show signs of good growth and good leaf color and texture.

Is the species transplantable? Some varieties of trees are extremely difficult to transplant and the utmost care must be given them. I have found the sour gum difficult to transplant.

Is it accessible? Can you get to the tree and properly ball it? If so, how easily can the tree be removed from its present location to its new environment?

Will it be able to survive? Is the new location adapted to the species? You should not move a sugar maple to a wet location or to the seashore near the salt water.

Are the soil conditions suitable for proper balling? If soil conditions are sandy, preparing a soil ball is difficult. On several occasions, we have encountered sites where the subsoil is extremely sandy. In one case, as we broke off the bottom to tie the underside, the sandy soil came out just like an hour-glass. We have saved several trees where sandy subsoil was a problem, however. Once we moistened the soil, packed the ball with peat moss, and hoped for the best. Luckily, it survived. Another tree, a 10-inch Japanese red

maple, was moved nearly bare-rooted. In several other instances we have made a false ball because the subsoil was too sandy. We packed the sides and the lower portion of the ball with heavy clay soil and filled the ball with sod.

If the tree is a preferred species, in healthy condition, and able to be moved without major problems, we must determine which method of digging will be used. We most often dig by hand, but a trencher, backhoe, or mechanical digger such as the Vermeer Tree Spade can be used.

Though digging equipment can be used, I feel the actual balling and cutting of the roots should be done by hand. We use digging equipment only when the hole must be widened or to cut back a side in order to winch out the tree or to get a piece of machinery or equipment near the ball to lift it.

We ball a tree larger than the standards specify. After the soil has been cut to the depth desired, comb the roots by taking away excess soil from the ball, leaving the hairy and fibrous roots. As we approach the desired ball size, we add wet peat moss to keep the roots moist. At no time should the roots combed from the ball become dry.

Place burlap systematically around the ball. We use opened burlap bags or burlap squares obtained commercially. The feed-type burlap seems to work better because of its strength. The size of the ball and type of soil will determine if we use one, two, or three layers of burlap. On larger trees, we have used three layers of burlap and in some instances nearly 1000 feet of twine.

Twine is systematically woven up and down to bind the ball. Large nails are placed in the ball at the top and bottom and twine is woven around the nails in an up-and-down manner. When this has been completed, the twine loops are pulled taut. The top strands are then interwoven around the base of the trunk and continually pulled taut. Burlap is wrapped around the base of the trunk so as not to damage the bark.

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When the tree is large, we use a platform. The platform is a double layer of oak planks nailed together and laid at right angles to each other for added strength. At each corner a hole is drilled through the platform for a loop cable. The ball is then securely placed on the platform. When winching the tree out of the hole and on to the carrying vehicle or equipment, the stress is applied to the platform via the loop cables, not to the soil ball.

Once the tree is lifted out of the hole without damaging the ball, the ball is tied underneath and criss-crossed with twine until taut. All roots should be cut before the tree is tilted on its side.

Remember to have one flat side on the ball to facilitate transporting. If you do not have a flat side, chances are the ball will be damaged when tilting. Large trees need to be tilted in order to travel over roadways without coming in contact with overhead wires, cables, branches, and when going under bridges. The minimum height for utility wires are 17' and bridges from 13'6" to 17'. When moving a large tree check your route first and measure the heights of overhead wires, trees, and bridges. Occasionally an overhead blinker light or street light may prevent use of a logical route.

In New Jersey, permits from the state are required for oversized moves. For a governmental agency there is no cost but for a commercial operator there is a charge of \$75. The state transportation department must know your route, the time you are to move the tree, and how long it may take. The move must be properly flagged with warning lights flashing. The local police and nearest state police barracks must be notified before you start.

At the new site adjustments may be necessary to set the tree properly in the ground. I recommend the ball be slightly higher than originally found in case of settling and to insure good drainage. A three to four inch wood chip mulch should be spread over the ball area and over an additional two feet of diameter around the ball. This insures better moisture retention and helps control soil temperature throughout the year.

Guy large trees. We lost a large Colorado blue spruce because a guy cable broke during a severe windstorm. It went unnoticed for several weeks, and the ball had broken.

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ABSTRACT

REIL, W.O. 1979. **Pressure-injecting chemicals into trees.** California Agriculture 33(6): 16-19.

Equipment to inject pesticides or nutrients into trees under high pressures has been developed and used in the last five years. Because of such recent development, limited knowledge is available on techniques, procedures, and uses of injection. Observations and the experiences of researchers and farmers are summarized here to improve injection techniques. Drill holes on the thickest areas of the trunk (ridges). These areas are in active growth and will take up liquid rapidly. Liquids move more rapidly in the recently formed xylem directly underneath the bark and transfusion rate decreases with depth. The screw, therefore, needs to be set as shallowly as possible. Materials inject most readily when the tree is vegetatively active; therefore, late spring, summer, and early fall are the best times for maximum uptake. The ideal injection pressure is that amount that will provide the maximum movement of solution into the tree without physically damaging it; pressures may vary from 100 to 200 psi, depending on tree species. Water-soluble materials can generally be injected easily, although many of the larger-molecule organic materials go in at progressively slower rates.