TEN DO'S

1. Feed him to attain maximum growth.
2. Provide him a means for exercise.
3. Ring him while young.
4. Separate him from heifers at six months of age.
5. Teach him to be handled with a staff.
6. Limit service while young.
7. Keep records of service.
8. Keep him until proved.
9. Take precaution against disease.
10. Try to place him in another herd if he has proved good.

TEN DON'TS

1. Don't allow him to become too fat.
2. Don't allow him to run in pasture with cows.
3. Don't annoy or tease him.
4. Don't take chances in handling him without a strong staff, or better provide a pen where handling is not necessary.
5. Don't neglect to keep a strong ring in his nose.
6. Don't let him know his strength.
7. Don't neglect to furnish exercise yard.
8. Don't allow excess service.
10. Don't kill him until his value has been tested.

Cover picture—

A Jersey Sire.
Lilac St. Mawes Remus Rex 396711. A superior sire with a type classification of Excellent. Sixteen classified daughters have an average rating of 85.63. Fifteen tested daughters in 305 days, 2 x milking, have a mature equivalent average of 11,153 pounds of milk, 6.03 per cent, 673 pounds butterfat.
PROPER management and proper housing of the dairy sire are the two most neglected features of dairy herd management. Many potentially good sires are lost to the industry by being sold before they are proved. Facilities should be provided to keep each sire until his transmitting ability is known.

![Bull pens at the OSC dairy farm.](image)

The pens are long and narrow. Note the extra planks nailed on the inside of each pen so that if the bull pushes against the fence, there is little danger of pulling the spikes.

The usefulness of the sire and the safety of the operator are the main factors to be considered. Many valuable bulls are lost to the industry through poor care and mismanagement. The lives of too many dairy operators are lost by careless, improper handling of the herd sire.

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Feeding

Bull calves should be fed to obtain maximum growth without putting on excess flesh. Improper nutrition of the growing bull may seriously affect his future breeding efficiency. When skim milk is available it may be fed until the animal is 8 or 10 months of age. A mixture of 300 pounds of oats, 200 pounds of wheat bran, 200 pounds of barley or wheat, and 100 pounds of linseed meal with 1 per cent bonemeal and 1 per cent salt will make a good grain feed for a young bull. A good quality legume hay will make up the rest of the ration. When a cereal hay is fed, more protein will be needed in the grain ration. This increase may be made by adding 100 pounds more of high protein feed to the foregoing grain mixture. Pasture is excellent for bulls of all ages and should be used whenever possible.

Mature bulls can be fed the same grain mixture recommended for growing bulls. The amount of hay should be limited to about 15 pounds daily for the average-sized bull. Only green leafy high-quality hay should be fed to the bull. He should then be fed enough grain to keep him in a thrifty but not fat condition. From 4 to 8 pounds of grain will do for the average bull.

Figure 2. Good sapling poles will make a good fence. They should not be spaced wider than 7 inches. The poles in the photograph should have been nailed on the post side next to the bull or on the inside of the pen.

Silage for bulls should be limited to about 15 pounds or one-half the amount normally fed to dairy cows. Kale or root crops should be added to the ration whenever possible. Pasture should be used whenever possible for its value both as a feed and for exercise.
The herd sire should have free access to fresh water. It is a good practice to have salt and bone meal available even though they may be included in the grain mixture.

Figure 3. Safety pens and breeding chute gates are opened from the walk on top of pen fence. Note foot rest in breeding stall to support heavy sires.

Figure 4. A satisfactory shelter and pen where more than one bull is kept.
Management

The dairy bull must be kept under control at all times. Every bull is potentially a very dangerous animal and must always be handled as such. The most docile and gentle bull is the most dangerous because he is not watched carefully.

The properly fed bull will be ready for light service between 12 months and 15 months of age. At this age a ring should be placed in the nose and used whenever the bull is handled.

If the bull’s horns have been allowed to grow, they should be taken off by the time he is a year old. A dehorned animal is less dangerous and is more easily handled. Dairy bulls should have all the exercise possible.

Figure 5. Perspective of a good bull shelter.

Housing

The pen and shelter should be constructed in a convenient and well-drained place, selected with care and with reference to the layout of other farm dairy buildings. Accessibility to feed and water will save many steps. The bull is less likely to become cross and vicious
Figure 6. Plan of exercise yard, shelter, and service stall.
if he can see the rest of the herd. The shelter should be faced away from the prevailing winds, giving protection both inside the shelter and in the pen.

A separate shed, re-modeled or specially built, or a box stall strongly constructed in the barn, provides a suitable shelter for the bull. The plans in Figures 5 and 6 show a building 12 x 18 feet for housing and feeding. The floor is made of concrete placed over a gravel fill and sloped toward the bull entrance. No curb is used at the bull entrance, so as to allow floor drainage out this door. A concrete ramp is built for the approach to the doorway, and has a rise of 3" per foot of run. The concrete floor and ramp are finished rough to minimize any danger of slippage and injury. The interior wall is finished with one-inch sheathing about 5 feet high—6 feet for large bulls—on all sides with no spacing between the boards. A hinged door as shown in Figure 7 is used at the bull entrance. The bull entrance door may be closed or opened by means of a pulley and rope, which can be manipulated from the feed alley. This allows the caretaker to shut the door while cleaning and bedding the pen. A door size 5' x 3' of similar construction is used between the feed alley and shelter, and is also hinged, with very strong hinges, preferably three on each door.

The manger may be made of wood or concrete. Two optional plans are shown in Figures 8 and 9. A watering bowl, if water under pressure is available, will add to the convenience of caring for the bull. In areas where there is danger of freezing, water may be installed by using a frost-proof hydrant and a small thermostatic electric water warmer immersed in a small drinking tank.
The stanchion details are shown in Figures 10 and 11. All this framework is bolted, using ½-inch bolts. This stanchion should be sufficiently strong to secure the bull. The stanchion and partition wall curb is formed and poured at the same time the floor is made.

The exercising yard

A bull will get more exercise in a long narrow yard, and with such a pen it is also easier to drive a bull without getting inside. The principal points to keep in mind in building the fence are to make it so strong that the bull cannot break through it, and so high that he cannot jump over it. A good rule is to build a fence so that he cannot get his head either through, over, or under it.

The fence may be built of a number of excellent materials. Posts and planks make a satisfactory fence where lumber is readily available. For more permanent construction, concrete or steel, or a combination, will make the most satisfactory fence. A solid wall either of concrete or wood should be avoided as it makes the bull unruly, vicious, and nervous, and may impair his breeding efficiency. A bull, like all animals, wants an opportunity to see what's around him, and a chance to see the cows going and coming from pasture. A woven wire fence used alone is undesirable as, in time, the bull will bunt it out of shape and it will sag. Two electric fence wires placed inside the woven wire will keep the bull away from the fence. Electrified wires will, in most cases, prevent unruly bulls from breaking planks or wooden fences.
The fence shown in Figures 6 and 12 uses 8" x 8" posts or posts not less than 8 inches diameter. Treating of posts will add considerable life. Extension Bulletin 658, *Poles and Fence Posts for Oregon Farms*, tells how to treat posts, suggesting a number of optional methods.

The height of the fence should be 6 feet, using either 2" x 8" or 2" x 10" planks, spaced not more than 6 inches for the 2 x 8's, and 7 inches for the 2 x 10's.

**Concrete posts**

Concrete posts are not difficult to make and will last indefinitely. The size of concrete posts should be 8 to 10 inches square with a ½-inch reinforcing bar in each corner. The posts should be set 2½ feet in the ground for a 6-foot fence, thus requiring an 8½-foot post.

Figure 14 shows the plan of a home-made mold satisfactory for casting the posts. This is a four-post mold but may be made to cast more at a time. For dividers, 2 x 8's are used. Side pieces are cut 8'8" long, fitting into the cleats of the end pieces. The bottom is made of two-inch lumber. The sides and ends are held together by means of blocks and wedges. It is a good plan to toe nail the end pieces to the bottom, however, and the side pieces should be spiked at the four corners, driving the spike only part way in so it may be pulled with a hammer or bar when removing the mold.

The mold should be well oiled with old crankcase oil before each use so that the planks will not stick.

The ½-inch triangular-shaped strips used to line the corners of the mold produce posts with beveled edges. These are better looking and easier to remove from the molds than square-cornered posts.
Figure 11. Section AA showing partition and stanchion.
Figure 12. Shelter and yard plans where more than one bull is kept.
The placing of reinforcement should receive special care. For bull pens a $\frac{1}{2}$-inch round reinforcing rod is used, placing one in each corner not less than 1 inch in from the sides. The rods are 6 inches shorter than the posts, allowing a 3-inch covering of concrete at the ends.

Concrete posts may be made to use pipe, rails, or wood for fencing. If pipe is used, it should be $1\frac{1}{2}$-inch or larger galvanized pipe. Pipe may be fastened to the posts with "U" bolts, a $\frac{8}{9}$-inch eye bolt with eye welded together, or the pipe may be cast in place along the center line of the post. Casting in place requires special forms erected at the site of each post. If "U" bolts are used, a shallow pipe groove should be cast in the post so as to prevent the pipe from sliding down on the post. Pipe should be spaced about 12 inches on center.

Holes extending through the posts are made at the time of casting to hold wooden fencing. Holes are bored in the bottom of the mold at the proper spacing and size to hold well-greased wooden dowels or iron pipe to serve as the core or mold for the bolt holes. Refer to Figure 15 for spacing holes using 2 x 8 inch planks. The pipes or dowels are driven out after the concrete has become well hardened. One-half inch machine bolts with washers on each end are used to hold the wooden fencing. A 9/16" dowel or a $\frac{3}{8}$-inch pipe is satisfactory for making the holes. Poles may be used for fencing by fastening a 3 x 8 inch board on the post to which the poles are spiked.

Figure 13. Gate between bull pen and breeding stall.
DETAILS OF MOLD

Figure 14. Plan for building the concrete post mold and placing of reinforcing bars.
Figure 15. Plan for attaching 2 x 8-inch plank fencing to concrete posts.
The concrete mix recommended for precast posts is 1 sack of portland cement and 2 cubic feet of sand to 24 cubic feet of gravel, with not more than four gallons of water added per sack of cement where average damp sand is used. Amounts of sand and gravel may be varied slightly to get a rather stiff but workable mix. Do not increase the amount of water per sack of cement, however, as this will reduce the strength of the concrete. Maximum size of gravel should be \( \frac{4}{3} \) inch.

Although generally less economical, bankrun gravel may be used if it is clean and well graded—i.e., with a good mixture of sizes from fine to coarse. The mix should be 1 sack of cement to 3 cubic feet of gravel. For average damp material, \( 3\frac{1}{4} \) gallons of water is added per sack of cement. Silty gravel should never be used. Water for the concrete mix should be clean enough to drink.

After thorough mixing, the concrete is placed about 1 inch deep in the molds. Two reinforcing bars are accurately placed, molds filled to 1 inch of top, and the remaining two reinforcing bars placed. The mold is then filled to the top. As the concrete is placed it is tamped and spaded, especially against the sides to assure smooth surfaces on the finished post. The concrete is then struck off with a straightedge and troweled lightly to form a smooth top surface.

The method of fastening the fencing, such as dowels for the holes, must be incorporated into the post at the appropriate time. After hardening for 24 to 48 hours under damp cover, the posts may generally with care be removed from the molds and kept in the shade, and kept constantly wet by sprinkling. Posts should be at least one month old before using.

**The breeding stall**

The breeding stall or chute consists of two side panels, a heavy stanchion at the front end, and a special double swinging gate at the rear to allow entrance from both the inside and outside of the pen. The gate, Figure 13, should swing inside the pen and strike against the post, making it difficult for the bull to escape. A chain with a heavy snap makes a good fastener.

The swinging stanchion should be made sturdy, and the side panels boarded rather tight to prevent injury to the cow or bull. The swinging stanchion must be securely mounted with heavy hinges and securely held in place while the bull is servicing.

A 14-inch passage is provided in the event access is required to the service stall.

Detailed plans for individual breeding stalls are available from *Extension Service, Oregon State College, Corvallis.*