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MANUAL PREVIEW

Caterpillar

Operator's Manual

**How To Be A Good
Motor Grader Operator**

Operator's Manual

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CATERPILLAR TRACTOR CO.

Peoria, Illinois

FOREWORD

THE "12" Series of "Caterpillar" Motor Graders has greatly broadened the field of uses of this type machine. The wider range of blade positions, combined with ample power and traction make it possible to do all kinds of grading, reshaping and bank sloping jobs, as well as maintenance, oil mix, scarifying, snow removal, etc.

In order to take advantage of the extra capacity and range of work built into these machines, better trained operators are necessary. It is essential that the operator know how to get every useful blade position quickly, and just what can be done with each position.

It has been attempted in this manual to outline a definite procedure for one type of grading job from start to finish, illustrating uses of the various blade positions.

Nearly every grading job, of course, presents a different problem, and the procedure must be varied to fit each individual job. It is hoped, however, that the blade positions and uses shown herein will serve as a guide, and that the knowledge gained from studying and following the job outlined, will enable the operator to make better use of these machines on all types of construction and maintenance work.

It is suggested that the operator first put in a few hours of practice with the blade controls, in placing the blade in the various positions illustrated and described in the following pages. He will then be able to proceed much better with the operations outlined.

This book deals only with the application of machines to the job. Proper care and adjustment of machines is of utmost importance in getting the most out of them in satisfactory performance and long life.

Separate Operator's Instruction books are available covering care, lubrication and adjustment, starting and other mechanical matters. These should also be carefully studied.

PLAN YOUR WORK

IN ORDER to make every operation count and complete the job in the shortest possible time, it is essential that a definite plan be followed. This applies to regrading and reshaping roads, as well as all other types of work.

If both sides of the road require the same operations and are to be worked together, the procedure differs somewhat from that used in working one side of the road only (or finishing one side before starting the other). This is especially true in using the "Caterpillar" full revolving blade feature to the best advantage in saving turning time.

If a new ditch is to be laid out, stakes should be set to mark the ditch line and enable the operator to make a straight cut. Measure the required distance from the center of the road to a point where the first furrow is to be cut. This point will become the toe of the outside slope (the bottom of a "V" ditch, or the outside edge of a flat bottom ditch). Set stakes at intervals close enough that two or more of them can be seen by the operator at one time.

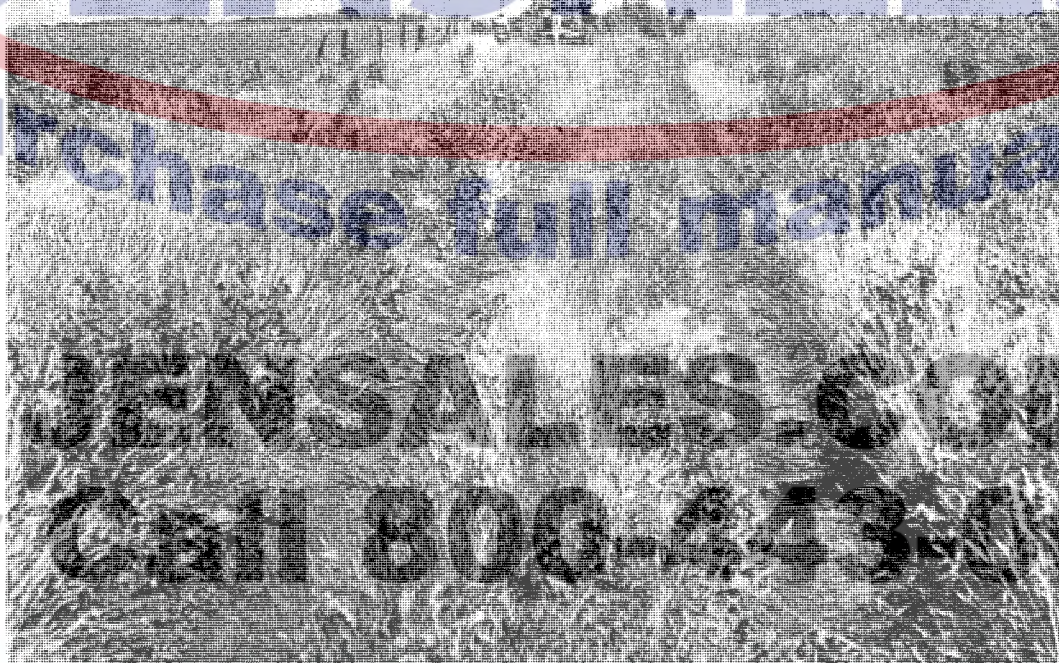


Figure A—Start the job on the line of the new ditch whenever possible. A properly established ditch line forms the basis for subsequent rounds.

SETTING OF BLADE LIFT LINKS AND SIDE SHIFT LINK FOR ORDINARY WORK

"CATERPILLAR" Motor Graders will do a wide range of average work with both lift links extended one hole from the top, and the side shift link set in the regular short position.

With this setting the blade can be placed in an ordinary right hand bank-sloping position, as well as right or left hand ditching positions, without making manual adjustment of the links and without offsetting the blade on blade beams.

Blade should always be left in center position on blade beams except for unusual jobs as described on page 27. Blade tilting straps are generally set one notch forward of center for all around work.

Usually slopes are not steep enough to require the extreme shortened setting of the right lift link, and for ordinary jobs it will be found that this link can remain extended one hole from the top. This does not interfere with ditching positions, and improves side reach outside the wheels for picking up windrows.

The grading job illustrated and described on the following pages was done from start to finish with both lift links extended one hole from the top, and not a single manual change was made in any of the blade or supporting link settings in completing the job.



Figure B—Work toward a definite objective, always keeping in mind how the finished job should look.

STARTING THE DITCH

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Figure C—A light cut should be made the first trip through. This will enable the operator to drive according to the ditch line stakes, and assist him in laying out a straight ditch line. If working both sides of the road, one complete round is made with this blade position.

To obtain a right hand forward ditching position:

1. Operate side shift to almost extreme left.
2. Rotate circle until point of blade is directly behind the right front wheel.
3. Raise left lift crank to high position.
4. Lower right lift crank to set point of blade for desired depth of cut.
5. Lean the front wheels sufficiently to the left to counteract side draft of blade, so machine will travel in a straight line.

MOVING THE WINDROW

To change the blade from reverse ditching position to a side reach position for moving windrow from shoulder line:

1. Leave side shift at almost extreme left until adjustments 2 and 3 are made.
2. Set right and left cranks so that blade is horizontal and clears ground.
3. Rotate circle to the right until point of blade is about two feet back of right front wheel.
4. Operate side shift to right until right end of rack is visible above the blade lift shaft.
5. Lower left and right lift cranks until blade is horizontal.
6. Lean the front wheels to the left to hold the machine against the load.



Figure G—In moving the windrow from the shoulder line, keep wheels to left of windrow and reach out with the blade. This should be done on the right hand side because, with normal setting, the blade reach to the right is greater than to the left.