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# Evaluation Report 249

## Lamont Auger Transport Self-propelled Auger Attachment

A Co-operative Program Between
ALBERTA FARM MACHINERY RESEARCH CENTRE
PAMI
PRAIRIE AGRICULTURAL MACHINERY INSTITUTE

## LAMONT AUGER TRANSPORT

**MANUFACTURER AND DISTRIBUTOR**

Lamont Manufacturing
P.O. Box 2
Success, Saskatchewan
S0N 2R0

**Retail Price:**

$2130.00 (February, 1982, f.o.b. Success, Sask., less hydraulic winch drive and bin sweep control valve.)

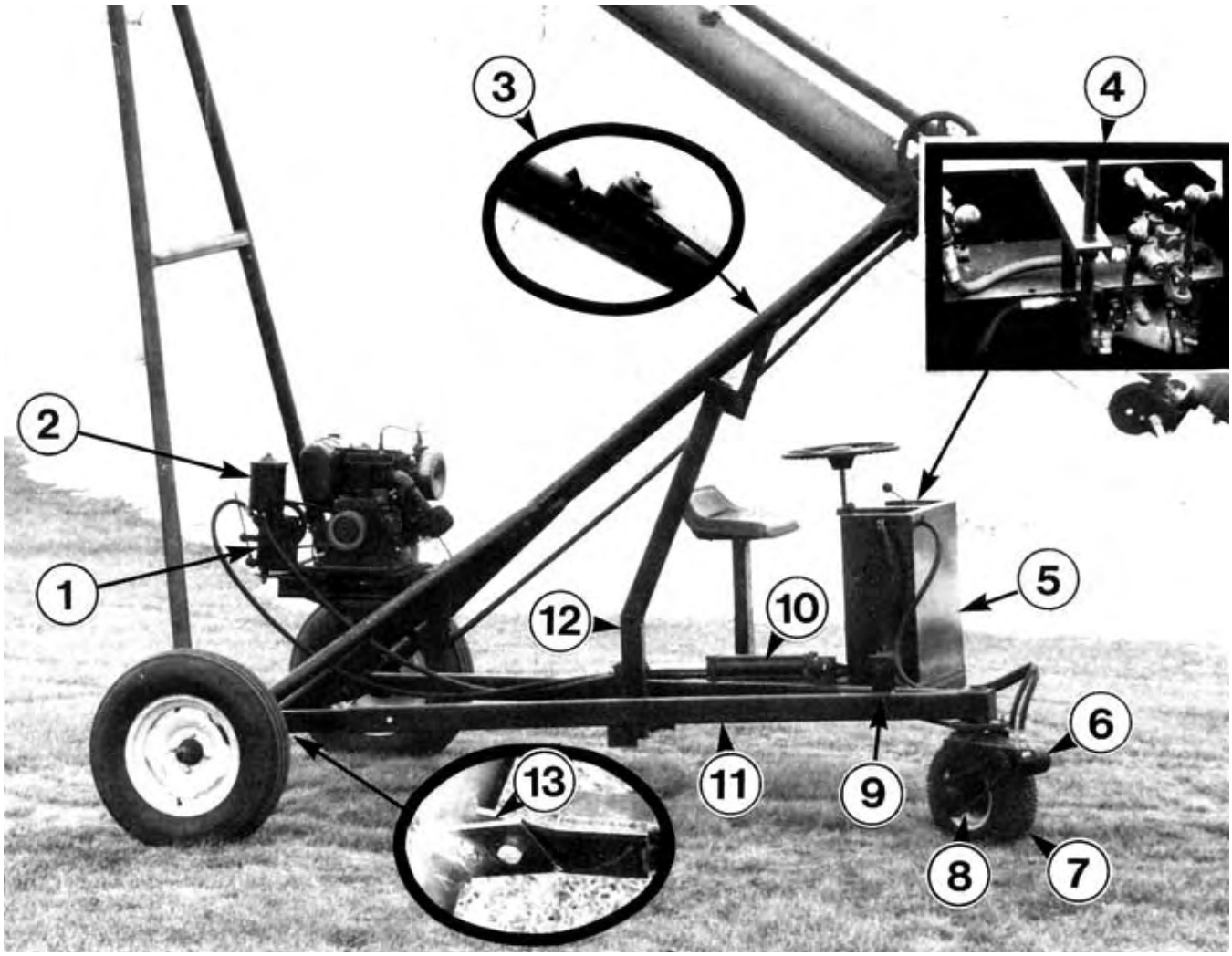


**FIGURE 1.** (1) Hydraulic pump, (2) Hydraulic oil reservoir, (3) Lift bracket, (4) Hydraulic controls, (5) Operator platform, (6) Hydraulic motor, (7) Drive wheel, (8) Drive chain, (9) Transport bracket, (10) Hydraulic cylinder, (11) Telescopic frame, (12) Lift arms, (13) Mounting brackets.

### SUMMARY AND CONCLUSIONS

Overall functional performance of the Lamont Auger Transport was very good. Maneuverability was very good on hard ground, but in muddy conditions traction was greatly reduced.

The attachment could move the auger at speeds up to 4.5 km/h (3 mph) on slopes up to 14°. Mounting the attachment to an auger did not affect normal road transport characteristics of the auger. The hydraulic lift arms and the hand cable winch were used to raise and lower the auger. The test machine was not equipped with the optional hydraulic winch.

The 10 kW (14 hp) auger engine had ample power to operate the attachment.

The Lamont Auger Transport was safe to operate if normal precautions were observed.

Assembly instructions were provided. Mounting of the attachment took two men about 3.5 hours. No operating instructions were provided.

No serious mechanical problems occurred during the test.

### RECOMMENDATIONS

It is recommended that the manufacturer consider:

1. Repositioning hydraulic controls for easier and safer operation.
2. Repositioning the oil filter for easier maintenance.
3. Providing a shield over the drive chain.
4. Providing more detailed illustrative instructions in the operator manual on operation and safety.

*Senior Engineer -- R.R. Hochstein*

*Project Engineer -- C. W. Bolton*

### THE MANUFACTURER STATES THAT:

With respect to recommendation number:

1. We have had no customer complaints in this regard. No change will be made at this time.
2. A shallow pan placed under the oil filter will catch the waste oil when changing filter.

3. Shields for the drive chain and pump pulley are now provided with each machine.
4. Operation instructions are now included.

**MANUFACTURER'S ADDITIONAL COMMENTS**

Traction can be greatly improved in icy or muddy conditions by using a tire chain.

**Note:** This report has been prepared using SI units of measurement. A conversion table is given in APPENDIX III.

## GENERAL DESCRIPTION

The Lamont Auger Transport (FIGURE 1) is designed to mount on a conventional engine driven grain auger to make it self-propelled. The attachment, which is powered by the auger engine, consists of a telescoping frame, an operator platform, a hydraulically driven wheel, and a hydraulic inlet lift which are used for maneuvering and positioning the auger at a grain bin and for moving the auger short distances between grain bins.

The operator sits on the platform and uses the steering wheel and three control valves to adjust direction and speed of travel and the auger inlet height. An optional hydraulic winch to control the outlet height, and hydraulic outlets for powering a bin sweep are also available.

Detailed specifications are given in APPENDIX I.

## SCOPE OF TEST

The Lamont Auger Transport was attached to a 180 mm (7 in) diameter, 12 m (40 ft) long Brandt grain auger, powered by a 10 kW (14 hp) Kohler gasoline engine. The Auger Transport was operated for about five hours on a variety of ground surfaces and slopes. In addition, the grain auger, with the attachment mounted, was transported over gravel and paved highways for a distance of about 30 km (20 mi). The Auger Transport was evaluated for ease of assembly, ease of operation and adjustment, maneuverability, operator safety and suitability of the operator manual.

## RESULTS AND DISCUSSION

### EASE OF ASSEMBLY

It took two men about 3.5 hours to attach the Lamont Auger Transport to an auger, using tools normally found in farm shops. The two mounting brackets and the lift bracket had to be welded to the auger frame. Positioning of the lift bracket was critical to ensure that the auger could be raised to maximum elevation without lifting the wheel off the ground.

### EASE OF OPERATION AND ADJUSTMENT

**Ground Drive:** The grain auger was very easy to maneuver on smooth, hard ground. In wet, muddy conditions, the auger was difficult to maneuver.

The Lamont Auger Transport was able to move the auger on grassy slopes up to 14°. This is steeper than slopes found in most farmyards. The turning radius of the attachment, when mounted on the Brandt 740, was 2.9 m (9.5 ft). Moving speeds were adjustable from 0 to 4.5 km/h (0 to 3 mph) in both forward and reverse directions.

**Raising and Lowering:** The hydraulic cylinder was used to change the height of the auger inlet. The hand cable winch was used to change the angle of elevation of the auger. The optional hydraulic winch would permit control of the auger elevation from the operator platform.

Operation of the Lamont requires that the operator be seated facing the auger inlet. The inlet was clearly visible for easy maneuvering. The auger outlet was also clearly visible, however, the operator was required to look over his right shoulder. The location of the controls on both sides of the steering column made it difficult to safely control the auger attachment when guiding the outlet into a grain bin. It is recommended that the manufacturer improve the convenience of the controls by repositioning them to the right of the steering column or incorporating a foot control to vary the ground speed.

**Transporting:** Mounting the Lamont Auger Transport on a grain auger did not affect the transporting characteristics of the auger. The test machine transported well and was stable at speeds up to 80 km/h (50 mph) on paved highways and at speeds up to 50 km/h (30 mph) on gravel roads. The drive wheel ground clearance in transport position was 150 mm (6 in.)

**Lubrication:** The location of the hydraulic oil filter made replacement difficult and messy. It is recommended that the manufacturer reposition the oil filter for easier access.

### POWER REQUIREMENTS

The 10 kW (14 hp) engine had ample reserve power to operate the attachment under all test conditions.

### OPERATOR SAFETY

The Auger Transport was safe to operate if normal precautions were followed. The drive chain was not shielded. It is recommended that the manufacturer provide a safety shield over this chain.

### OPERATOR MANUAL

No operating instructions were provided. The assembly instructions were adequate. It is recommended that the manufacturer provide an operator manual to include assembling, operating and safety instructions.

### DURABILITY RESULTS

The Lamont Auger Transport was operated for about five hours. The intent of the test was to evaluate the functional performance. An extended durability evaluation was not conducted. No mechanical problems occurred during testing.

**APPENDIX I**
**SPECIFICATIONS**

| | |
|---|---|
| **Make:** | Auger Transport |
| **Serial No.:** | 1980111 |
| **Model No.:** | AT-2 |
| **Mass:** | 216 kg |
| **Hydraulic Components:** | |
| -- pumps | one, Vickers Van Pump |
| -- motors | one, Char-Lynn |
| -- controls | |
| -spool valves | two, Gresen, 4 way, 3 position |
| -flow control | one, Brand Hydro |
| -- cylinders | one, Shur-lift |
| -- hoses | two, 16mm |
| | seven, 10 mm |
| -- reservoir capacity | 1.8 L |
| -- operating pressure range | 2100 to 13,300 kPa |
| **Drive Wheel:** | |
| -- tire size | 16 x 6.50 - 8, 2-ply |
| **Lubrication Points:** | |
| -- sealed bearings | 2 |
| **Optional Equipment:** | |
| -- hydraulic winch | |
| --hydraulic bin sweep control valve | |

**APPENDIX II**
**MACHINE RATINGS**

The following rating is used in PAMI Evaluation Reports:

| | |
|---|---|
| (a) excellent | (d) fair |
| (b) very good | (e) poor |
| (c) good | (f) unsatisfactory |

**APPENDIX III**
**CONVERSION TABLE**

| | |
|---|---|
| 1 kilogram (kg) | = 2.2 pounds mass (lb) |
| 1 newton (N) | = 0.2 pounds force (lb) |
| 1 metre (m) | = 3.3 feet (ft) |
| 1 kilometre per hour (km/h) | = 0.6 miles, per hour (mph) |
| 1 kilowatt (kW) | = 1.3 horsepower (hp) |
| 1 litre (L) | = 0.22 Imperial gallons (gal) |
| 1 kilopascal (kPa) | = 0.15 pounds per square inch (psi) |

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