Evaluation Report

New Holland 900 Forage Harvester
NEW HOLLAND 900 FORAGE HARVESTER

MANUFACTURER:
Ford New Holland
500 Diller Drive
New Holland, Pennsylvania 17557

DISTRIBUTOR:
New Holland of Canada Ltd.
P.O. Box 1616
Calgary, Alberta
T2P 2M7
Phone: (403) 273-6771

RETAIL PRICE:
$46,754.56 (March 1989, f.o.b. Portage la Prairie, Manitoba with electronic metal detector, pickup header, three-row row crop header, hydraulic draw pole)


SUMMARY AND CONCLUSIONS

Rate of Work:¹ Work rates ranged up to 55.6 ton/h (50.6 t/h) in alfalfa and up to 40.6 ton/h (36.9 t/h) in corn. Dry weight work rates ranged up to 25.3 ton/h (23.0 t/h) in alfalfa and 20.3 ton/h (18.5 t/h) in corn. Performance of the pick-up header was very good. Performance of the row crop header reduced harvester capacity in weed infested crops because of the gathering chain plugging.

Power Requirements: A tractor with a maximum power take-off rating of 180 hp (135 kW) would have sufficient power to operate the New Holland 900 in typical prairie crops.

Ease of Operation and Adjustment: Ease of operation was very good. The electric remote controls were convenient and easy to use. Knife sharpening, shear bar adjustment, and daily lubrication were easy.

Operator Safety: The New Holland 900 was safe to operate if the manufacturer’s recommendations were followed.

Operators’ Manuals: The operator’s manuals were concise and clearly written.

Mechanical History: Two major and a few minor mechanical failures occurred during the test.

RECOMMENDATIONS

It is recommended that the manufacturer consider:
1. Modifications to prevent cutterhead bearing failure.
2. Modifications to provide more durable wheel spindles.
3. Modifications to prevent plugging of the row crop header especially in short or weed infested crops.

Station Manager: B. H. Allen
Project Engineer: C.W. Chapman

THE MANUFACTURER STATES THAT

With regard to recommendation number:
1. Modifications have been made to ensure that the cutterhead bearings receive adequate lubrication at the time of manufacture. This problem occurred on a defined serial number lot of machines, and as indicated on page 6 of the PAMI report, a Service Bulletin was issued to all Ford New Holland dealers as soon as the problem was discovered.
2. The wheel spindle design has been changed to address the failure described. A Service Bulletin was issued to all Ford New Holland dealers, advising them of the corrective action to take.
3. Modifications to prevent the plugging of the row crop header in the stalkway area have been implemented. The cause of the problem was traced to the self-adjusting rotary cut sickle binding on there mounting shafts. The bound sickles would, in turn, not properly cut fine grasses and weeds; and, in turn, allow those grasses and weeds to drag through and plug the stalkway. Improvements to the area include heat-treated sickle mounting shafts, and regreasable sickle hubs to prevent any future binding.

GENERAL DESCRIPTION

The New Holland 900 is a power take-off driven, pull-type forage harvester. The cylindrical cutterhead is fed by a reversible feedroll assembly. The cut length may be set either by changing feedroll drive chain sprockets or varying the number of cutterhead knives. Chopped forage is delivered from the cutterhead to the discharge fan, by a transfer auger.

The test machine was equipped with a 6.3 ft (1.9 m) windrow pickup and a three-row row crop header. Detailed specifications are given in APPENDIX I, while FIGURE 1 shows the location of the major components.

SCOPE OF TEST

The New Holland 900 was operated in the crops shown in TABLE 1 for 215 hours while harvesting 954 ac (382 ha).

It was evaluated for rate of work, quality of work, power requirements, ease of operation and adjustment, operator safety, and suitability of the operator’s manual.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Average Yield at 60% M.C.</th>
<th>Hours</th>
<th>Field Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ton/ac</td>
<td>t/ha</td>
<td></td>
</tr>
<tr>
<td>Alfalfa</td>
<td>3.0</td>
<td>6.8</td>
<td>36</td>
</tr>
<tr>
<td>Rye</td>
<td>3.5</td>
<td>8.0</td>
<td>9</td>
</tr>
<tr>
<td>Oats/Millet</td>
<td>3.7</td>
<td>8.4</td>
<td>55</td>
</tr>
<tr>
<td>Corn</td>
<td>5.6</td>
<td>12.7</td>
<td>115</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>44</strong></td>
<td><strong>121</strong></td>
<td><strong>362</strong></td>
</tr>
</tbody>
</table>

RESULTS AND DISCUSSION

RATE OF WORK

TABLE 2 presents typical workrates for the New Holland 900 in a variety of field conditions. The workrates for alfalfa were measured in crops yielding 4.5 ton/ac (10 t/ha), which had been windrowed with a 12 ft (3.7 m) wide mower conditioner. The workrates in corn were measured in standing crops yielding 7.6 ton/ac (17 t/ha) and harvested with the three-row row crop header. The reported values are for average continuous feedrates, with the harvester loaded to optimum levels. They do not include time for maintenance and unloading wagons.

Both actual workrates and dry-weight workrates are reported in TABLE 2. The actual workrates, which include moisture in the crop, indicate the total mass of the crop harvested. These should not be used for comparing performance of different forage harvesters. The dry-weight workrates, which consider the mass of dry matter

¹The actual workrates, which include the moisture in the crop, indicate the total mass of crop harvested, but should not be used for comparing performance of different forage harvesters. The dry-weight workrates, which consider the mass of dry matter harvested, provide a better comparison of performance of different forage harvesters and assessment of the effect of crop variables and machine settings.
harvested, provide a better comparison of performance of different forage harvesters and assessment of the effect of crop variables and machine settings. Actual workrates ranged up to 44.4 ton/h (40.4 t/h) whereas dry-weight workrates ranged up to 25.3 ton/h (23.0 t/h).

<table>
<thead>
<tr>
<th>Crop</th>
<th>Moisture Content (%)</th>
<th>Length-of-Cut Setting</th>
<th>Workrates</th>
<th>Actual Dry Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>in</td>
<td>mm</td>
<td>ton/ac</td>
</tr>
<tr>
<td>Alfalfa</td>
<td>42.9</td>
<td>0.25</td>
<td>6</td>
<td>31.3</td>
</tr>
<tr>
<td></td>
<td>45.7</td>
<td>0.25</td>
<td>6</td>
<td>35.2</td>
</tr>
<tr>
<td></td>
<td>61.2</td>
<td>0.25</td>
<td>6</td>
<td>55.6</td>
</tr>
<tr>
<td></td>
<td>42.9</td>
<td>0.375</td>
<td>9</td>
<td>44.4</td>
</tr>
<tr>
<td>Com</td>
<td>50.0</td>
<td>0.375</td>
<td>9</td>
<td>34.6</td>
</tr>
</tbody>
</table>

Workrates were influenced by crop moisture content, cut length setting, use of a recutter screen and the type of header attachment used. Reducing the cut length setting from 0.375 to 0.25 in (9 to 6 mm) decreased the dry-weight workrates by 30% in alfalfa. Reducing the cut length setting from 0.44 to 0.375 in (11 to 9 mm) decreased the dry-weight workrates by 15% in corn. The performance of the three-row row crop header limited the machine capacity in corn. The pickup header permitted ground speeds up to 7.0 mph (11 km/h).

QUALITY OF WORK

Uniformity of Cut:

FIGURE 2 presents typical particle length distributions in second-cut, one half bloom alfalfa, harvested at 47% moisture content. Particle length variations are given for 0.25 and 0.375 in (6 and 9 mm) cut settings, with and without the use of a slotted hole, progressive size recutter screen. At a 0.25 in (6 mm) setting, only 7% of the silage had a length greater than 1.0 in (25 mm), while at the 0.375 in. (9 mm) setting, 12% had a length greater than 1 in (25 mm). The slotted hole recutter screen reduced the percentage of longer particles at each cut length setting.

FIGURE 3 presents typical particle length distributions in corn, harvested at 50% moisture content, for 0.375 and 0.44 in (9 and 11 mm) settings (APPENDIX III, FIGURE 7). None of the chopped corn had a length greater than 1 in (25 mm) at both 0.25 in and 0.44 in (9 and 11 mm) settings. The smaller percentage of longer particles in corn, compared to alfalfa, was due to perpendicular feeding of the row crop header.

FIGURE 3. Particle Length Distribution in Corn.

Windrow Pickup Losses: Pickup losses were insignificant at speeds up to 7.0 mph (11 km/h), provided that the windrows were not severely wind scattered.

Three-row Row Crop Header Losses: Losses from the row crop header were insignificant at speeds below 7.5 mph (12 km/h) provided care was taken to keep the divider points centred between the rows.

However, plugging of the lower gathering chains and cutting discs reduced harvester performance, especially in short or weed infested crops.

POWER REQUIREMENTS

Tractor Size: The peak power take-off requirement, at maximum workrate, was about 180 hp (135 kW) in alfalfa and 150 hp (110 kW) in corn. Corresponding average power requirements were about 150 hp (110 kW) and 120 hp (90 kW) respectively.

Power requirements increased with shorter cut settings, higher moisture contents and use of a recutter screen. For example, reducing the cut setting from 0.375 to 0.25 in (9 to 6 mm) while harvesting 42% moisture alfalfa yielding 4.5 ton/ac (10 t/ha), increased average power by 18 hp (13.5 kW). An increase of 10% moisture content in alfalfa increased the power requirements 7.0 hp (5.3 kW). The use of a slotted hole recutter screen increased average power 42.0 hp (31.5 kW) in alfalfa.

Total drawbar power requirement on firm, level fields was about 24 hp (18 kW) at 8 mph (13 km/h). This included the draft of the forage harvester and a dump wagon with a 3.3 ton (3 t) load. In soft, hilly fields, drawbar power requirements could be as great as 34 hp (25 kW).

A tractor with a 180 hp (135 kW) maximum power take-off rating should have sufficient power to operate the New Holland 900 at optimum workrates, in most field conditions.

Specific Capacity: FIGURE 4 shows the specific capacity of the New Holland 900. Specific capacity is a measure of how efficiently a machine operates. A high specific capacity indicates efficient energy use, while a low specific capacity indicates less efficient operation. As shown in FIGURE 4, a 10% increase in crop moisture content increased the specific capacity by about 10% in alfalfa. Changing cut length settings from 0.375 to 0.25 in (9 to 6 mm) reduced specific capacity by about 35%. The use of a slotted hole recutter screen reduced specific capacity by 60% at a 0.375 in (9 mm) cut setting.

FIGURE 2. Particle Length Distribution in Alfalfa (R: with slotted hole progressive size recutter screen.)

For each cut length setting, a forage harvester produces a range of particle lengths. Although variation in particle length has little effect on silage palatability, the performance of some silage unloading equipment may be adversely affected if a significant quantity of material is longer than 1.5 in (40 mm). FIGURES 2 and 3 show material length distribution at various cut length settings, with and without recutter screens. A narrow curve with a high peak indicates uniform particle length distribution. The average material length is about that at the peak of the curve. Forage with a wide range of particle lengths has a wide curve with a low peak.
In corn, specific capacity was 0.237 ton/hp-h (0.285 t/kW-h) at 50% moisture content.

**FIGURE 4.** Specific Capacity.

**EASE OF OPERATION AND ADJUSTMENT**

**Hitching:** Ease of hitching was very good. The New Holland 900 was equipped with an equal angle hitch which attached to the tractor drawbar, extending it 8 in (200 mm). The driveshaft height was not adjustable. The New Holland 900 was equipped with a 1000 rpm power take-off drive.

**Remote Controls:** Ease of operation of the remote controls was very good. The New Holland 900 was equipped with electric remote controls for adjusting discharge spout direction, deflector cap angle, and the forward/reverse feedroll clutch.

The electric control console, which mounted in the tractor cab, controlled the individual electric actuators.

The controls were effective and convenient to use.

**Electronic Metal Detector:** Operation of the metal detector was very good. The test machine was equipped with an optional electronic metal detector. The metal detector was mounted in the front lower feedroll and scanned incoming forage for the presence of metal objects which might result in damage to cutterhead or “hardware disease” in cattle. If metal objects were detected, the system automatically locked and disengaged the feedroll drive, and signalled the operator with an audible alarm from the tractor mounted control box. The detection system response was quick and effective, stopping the feedrolls and catching ferrous metal objects before they entered the cutterhead.

**Windrow Pickup:** Performance of the windrow pickup was very good. The pickup header had excellent feeding characteristics in most crops. Pickup losses were insignificant at speeds up to 7.5 mph (12 km/h). Only one windrow pickup speed was possible. Adjustable shied shoes made it possible to match pickup height to field and windrow conditions.

**Three-row Row Crop Header:** Performance of the row crop header was fair. The three-row row crop header (FIGURE 5) was equipped with lower gripping chains, upper gathering chains and rotary sickles which operated at a row spacing of 38 in (960 mm).

Four header chain speeds were possible by changing header drive sprockets. This matched gathering chain speed to ground speed up to 9 mph (14 km/h).

The lower gathering chains plugged several times during the test in short corn and weed infested crops. Adjustments to the header did not alleviate the problems. It is recommended the manufacturer consider modifications to prevent row crop header plugging.

In crops taller than 5 ft (1.5 m) the header performance was very good.

**Feedrolls:** Performance of the feedrolls was very good. The feedrolls were very aggressive in all crops. Occasional plugging occurred in bunchy windrows. Unplugging was possible from the tractor seat by reversing the feed roll drive. The upper feed roll was protected with a jump clutch.

Access to the cutterhead and shear bolts were very good.

**Discharge Spout:** The lift and reach of the discharge spout could be adjusted by adding or removing pipe sections as shown in FIGURE 6 or by tilting the spout at its base. The extension used for testing was a 24 in (600 mm) horizontal. Several other extensions were available. The dimensions in FIGURE 6 were determined at the maximum ground clearance setting of the adjustable axle, which could be positioned to give discharge heights 3 in (75 mm) and 6 in (150 mm) lower than those shown. Tilting the spout would give discharge heights 6 in (150 mm) higher or lower than those shown. The forage discharge direction was controlled by spout rotation and deflector cap angle, which were operated by the remote controls. The range of adjustments was adequate for operation with wagons and trucks.

**Recutter Screen:** Ease of installation and adjustment of the recutter screen was good. An oval hole, progressive size recutter screen was used for about 5 hours of field testing. The recutter screen was effective, providing close tolerances were maintained between the cutterbar knives and the screen.

The clearance was adjusted with eyebolts at the rear of the screen. The screen seated against adjustable stops, which were bolted to the side sheets of the harvester.

Initial installation of the stops and other hardware took approximately 2 hours. Installation of the screen took an experienced operator 30 minutes. Removal of the screen took about 10 minutes.

**Knife Sharpening:** Ease of operation of the knife sharpener and adjustment of the shearplate clearance were very good. The New Holland 900 was equipped with a cylindrical sharpening stone and a reversing cutter head drive for knife sharpening. To reverse the cutterhead, the cutterhead driveshaft was moved to an alternate input shaft. This operation was easy.

A ratchet mechanism automatically lowered the stone to contact the knives while a lever mechanism was used to draw the
stone across the cutterhead.

Shearplate clearance was easily adjusted with two bolts, while the cutterhead was slowly rotating in reverse rotation. The average period between knife sharpening was about 10 hours. During the 215 hour test, the knives incurred about 0.44 in (11 mm) of wear due mainly to sharpening.

One edge of the reversible shearplate was worn and was retracted at 165 hours to provide a new shearing edge.

Cut Length: Ease of adjustment of the cut length was very good. The length of cut could be adjusted either by adding or removing cutterhead knives or by changing the feed roll drive sprockets. Changing the sprockets was the easier method and was used with either the windrow pickup drum or the row crop header.

Transporting: Ease of transporting was very good. The drawpole could be placed in four positions. The extreme right position was used when transporting with either header. The extreme left position was used with both headers during field testing.

The New Holland 900 was easy to maneuver and towed well in transport position. Ground clearance was adequate and there was ample hitch clearance for turning sharp corners. Three hitch positions were provided for towing a wagon.

Protective shields were opened easily for service. The New Holland 900 was equipped with a slow moving vehicle floatation spring.

Lubrication: Ease of lubrication was very good. The New Holland 900 had 51 pressure grease fittings of which 31 required lubrication at 10 hour intervals. In addition, the main unit had 5 drive chains, and 12 gathering chains. The pick-up header had 3 drive chains, and 12 gathering chains. The pick-up header had one drive chain. Complete daily lubrication could be completed in 20 minutes.

OPERATOR SAFETY

Safety of the New Holland 900 was very good. The New Holland 900 was safe to operate and service, as long as common sense was used and the manufacturer’s safety recommendations were followed. A comprehensive safety section was included in the operator’s manuals. Protective shields were opened easily for service. The New Holland 900 was equipped with a slow moving vehicle sign bracket.

OPERATORS’ MANUALS

The operators' manuals were excellent. The operators’ manuals were concise and clearly written, containing much useful information on operation, adjustment, servicing and safety.

MECHANICAL HISTORY

TABLE 3 outlines the mechanical history of the New Holland 900 during 215 hours of operation while harvesting 596 ac (239 ha) of windrowed crop and 358 ac (1 43 ha) of corn. The intent of the test was evaluation of functional performance. An extended durability test was not conducted.

DISCUSSION OF MECHANICAL PROBLEMS

Cutterhead Bearings: The main cutterhead bearings failed after 108 hours of operation. A service bulletin from the manufacturer indicated improper lubrication at the time of manufacturing. It is recommended the manufacturer consider modifications to prevent cutterhead bearing failure.

Wheel Spindles: The right and left wheel spindles failed at 111 and 21.5 hours respectively. It is recommended the manufacturer consider providing more durable wheel spindles.

<table>
<thead>
<tr>
<th>Item</th>
<th>Operating Hours</th>
<th>Equivalent Field Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>-The metal detector locking nuts loosened and were tightened at</td>
<td>12</td>
<td>79 28</td>
</tr>
<tr>
<td>-A snap ring on the header drive shaft failed and was replaced at</td>
<td>104</td>
<td>616 247</td>
</tr>
<tr>
<td>-The main cutterhead bearings failed and were replaced at</td>
<td>108</td>
<td>621 249</td>
</tr>
<tr>
<td>-The right wheel spindle brake and was replaced at</td>
<td>111</td>
<td>626 250</td>
</tr>
<tr>
<td>-The left wheel spindle broke and was replaced at</td>
<td>215</td>
<td>895 358</td>
</tr>
</tbody>
</table>

APPLENtüD I

SPECIFICATIONS

<table>
<thead>
<tr>
<th>MAKE:</th>
<th>New Holland</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODEL:</td>
<td>900</td>
</tr>
<tr>
<td>SERIAL NO.:</td>
<td>799753</td>
</tr>
</tbody>
</table>

OVERALL DIMENSIONS:
- height 5.3 ft (1.6 m) (discharge spout removed)
- length 18.7 ft (5.7 m)
- width 10.5 ft (3.2 m)

WINDBROW PICKUP:
- model 919W3
- serial number 718667
- type floating cylindrical drum
- height adjustment adjustable skid shoes
- working width 6.3 ft (1.9 m)
- overall width 7.9 ft (2.4 m)
- tooth spacing 2.75 in (70 mm)
- number of tooth bars 4
- pickup speed 90 or 110 rpm
- auger diameter 23 in (630 mm)
- auger length 7.0 ft (2.1 m)
- auger speed 50, 60, 66, 86, 93 rpm

THREE-ROW ROW CROP HEADER:
- model 939-R3
- serial number 748684
- distance between rows 38 in (950 mm)
- type of cutter rotary disk
- cutter speed 145 rpm
- type of stalk gatherer chain (upper and lower)
- gathering chain/ground synchronization speed:
  - upper 1.6, 1.8, 2.0 mph (2.5, 2.8, 3.3 km/h)
  - lower 1.7, 1.9, 2.3 mph (2.8, 3.0, 3.6 km/h)

FEEDROLL ASSEMBLY:
- throat opening 22x6.5 in (56x160 mm)
- roll width 21 in (530 mm)
- front roll diameter -upper 11 in (280 mm)
- -lower 9 in (230 mm)
- rear roll diameter -upper 7 in (180 mm)
- -lower 5 in (130 mm)
- front roll speed -upper 87 rpm
- -lower 108 rpm
- rear roll speed -upper 153 rpm
- -lower 201 rpm

CUTTERHEAD:
- type Cylindrical
- number of knives 12
- width 23 in (580 mm)
- diameter 21 in (530 mm)
- speed 848 rpm

RECURTER SCREEN:
- width 24 in (610 mm)
- arc length 24 in (610 mm)
- opening size Progressive size 1.2 x 5 in to 3.2 x 5 in (30 x 130 mm to 30 x 130 mm)

KNIFE SHARPENER:
- type Cylindrical stone
- size (diameter) 2 in (50 mm)

CONVEYING ASSEMBLY:
- Transfer Auger -diameter 10 in (250 mm)
- -length 76 in (1930 mm)
- -speed 575 rpm
-- Fan
- diameter 31 in (775 mm)
- blade width 9 in (230 mm)
- discharge spout (diameter) 9.5 in (240 mm)
- speed 720, 1000 rpm

TIRES:
- Two, 31 x 13.5 - 15, 6-ply implement

WEIGHTS:

<table>
<thead>
<tr>
<th>Field Position</th>
<th>With Pickup Header</th>
<th>With Row Crop Header</th>
</tr>
</thead>
<tbody>
<tr>
<td>left wheels</td>
<td>2072 lb (942 kg)</td>
<td>1800 lb (818 kg)</td>
</tr>
<tr>
<td>right wheels</td>
<td>2765 lb (1269 kg)</td>
<td>3659 lb (1664 kg)</td>
</tr>
<tr>
<td>hitch</td>
<td>551 lb (296 kg)</td>
<td>1591 lb (716 kg)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>5508 lb (2504 kg)</td>
<td>6420 lb (2918 kg)</td>
</tr>
</tbody>
</table>

LUBRICATION:
- Main Unit
  - grease fittings 51 (31 @ 10 hrs, 19 @ 50 hrs, 1 @ 100 hrs)
  - chains 5 (5 @ 10 hrs)
  - wheel bearings 2 (annually)

- Window Pickup
  - chains 1 (1 @ 10 hrs)
- Three-row Row Crop Header
  - grease fittings 19 (18 @ 10 hours, 1 @ 50 hours)
  - chains (drive) 3 (3 @ 10 hours)

OPTIONAL EQUIPMENT:
- auxiliary header lift spring
- tandem wheel axles
- spout extensions
- driveline
- hydraulic controls
- recutter screens
- stationery feeder attachment

APPENDIX II
MACHINE RATINGS
The following rating scale is used in the PAMI Evaluation Reports:
- excellent
- very good
- good
- unsatisfactory

APPENDIX IV

ALFALFA

LESS THAN
5 mm

5 to 9 mm

9 to 13 mm

13 to 26 mm

GREATER THAN
26 mm

CORN

LES THAN
5 mm

5 to 9 mm

9 to 13 mm

13 to 26 mm

FIGURE 7. Distribution of Particle Lengths (20 mm grid).
# SUMMARY CHART
## NEW HOLLAND 900 FORAGE HARVESTER

<table>
<thead>
<tr>
<th>RETAIL PRICE</th>
<th>$46,754.56 (March 1989, f.o.b. Portage la Prairie, Manitoba with electronic metal detector, pickup header, three-row row crop header, hydraulic draw pole)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATE OF WORK</td>
<td>Maximum 55.6 ton/h (50.6 t/h) in alfalfa. Maximum 40.6 ton/h (36.9 t/h) in corn.</td>
</tr>
<tr>
<td>QUALITY OF WORK</td>
<td></td>
</tr>
<tr>
<td>Uniformity of Cut</td>
<td>7% greater than 1 in (25 mm) at 0.25 in (6 mm) setting in alfalfa, 0% greater than 1 in (25 mm) at 0.375 in (9 mm) setting in corn.</td>
</tr>
<tr>
<td>Windrow Pickup</td>
<td>Losses Minimal</td>
</tr>
<tr>
<td>Three-row Row Crop Header</td>
<td>Losses Minimal</td>
</tr>
<tr>
<td>TRACTOR LOSSES</td>
<td>180 hp (135 kW)</td>
</tr>
<tr>
<td>Power Requirements</td>
<td>0.190 to 0.240 ton/hp-h (0.230 to 0.290 t/kW-h) in alfalfa. 0.237 ton/hp-h (0.285 t/kW-h) in corn.</td>
</tr>
<tr>
<td>Specific Capacity</td>
<td></td>
</tr>
<tr>
<td>EASE OF OPERATION AND ADJUSTMENT</td>
<td></td>
</tr>
<tr>
<td>Hitching</td>
<td>Very Good; equal angle hitch</td>
</tr>
<tr>
<td>Remote Controls</td>
<td>Very Good; effective and convenient</td>
</tr>
<tr>
<td>Electronic Metal Detector</td>
<td>Very Good; effective</td>
</tr>
<tr>
<td>Windrow Pickup</td>
<td>Very Good; adjustable height</td>
</tr>
<tr>
<td>Three-row Row Crop Header</td>
<td>Fair; some plugging occurred</td>
</tr>
<tr>
<td>Feed Rolls</td>
<td>Very Good; adequate adjustments</td>
</tr>
<tr>
<td>Recutten Screen</td>
<td>Good; adjustments required for optimum performance</td>
</tr>
<tr>
<td>Knife Sharpening</td>
<td>Very Good; easy to use</td>
</tr>
<tr>
<td>Shearplate Clearance</td>
<td>Very Good; 2 bolt adjustment</td>
</tr>
<tr>
<td>Cut Length</td>
<td>Very Good; easy to adjust</td>
</tr>
<tr>
<td>Exchanging Attachments</td>
<td>Very Good; 2 men 30 minutes</td>
</tr>
<tr>
<td>Transporting</td>
<td>Very Good</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Very Good; 30 minutes</td>
</tr>
<tr>
<td>Operator Safety</td>
<td>Very Good; if manufacturer’s recommendations were followed.</td>
</tr>
<tr>
<td>Operators’ Manuals</td>
<td>Excellent; concise and clearly written.</td>
</tr>
<tr>
<td>Mechanical History</td>
<td>3 mechanical failures</td>
</tr>
</tbody>
</table>