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at Your **CARLOAD FOOD MKT.**,
Stouffville.

- VELVEETA **KRAFT CHEESE** - lb. pkg. 63c
- BOSTON BROWN **AYLMER BEANS** - 5 for \$1.00
- LIBBY'S CHOICE **SLICED BEETS** - 2 for 29c
- AYLMER CHOICE **TOMATOES** - 2 for 63c
- JELLO **JELLY POWDERS** - 3 for 31c
- PUREX **TOILET TISSUE** - 8 rolls \$1.00
- JUG MILK**
- HOMO** 2% 55c 49c

PLUS DEPOSIT

This Week's **MEAT FEATURES**

- FRESH GRADE "A" OVEN READY - 2-3 lb. av. wgt. **CHICKENS** - lb. 31c
- TENDER LOIN **PORK CHOPS** - lb. 69c
- MAPLE LEAF SWEET PICKLED **COTTAGE ROLLS** - lb. 51c
- DAISY RINDLESS **SIDE BACON** - lb. pkg. 59c
- Fresh Sliced **PORK LIVER** - lb. 27c
- HAMBURG** - 3 lbs. \$1.00

- GRAPEFRUIT** - 10 for 69c
- CELLO-PAK TOMATOES** - 2 pkgs. 39c
- SOMETHING EVERY **NEW!!** THURS.

6 P.M. TO 8 P.M.
HAMBURG 4 lbs. \$1.00
LIMIT 4 LBS. PER PERSON
Reg. 45c lb. **SAVE 80c**

Store Hours
THURSDAY TILL 9 P.M.
FRIDAY TILL 10 P.M.
OPEN ALL DAY MONDAY



Horsepower and What It Costs the Farmer

Just what do you know about horsepower? Horsepower is a word used daily by almost everybody, yet few — very few people know what horsepower is and how it is estimated. As we all know, horsepower plays a very important part in the farmer's life and work; without it we would all be back in the days of pitchforks and spades.

The first question is... why is energy coming from a metal contraption called 'horsepower'. The famed inventor of the steam engine, James Watt, was at one time faced with the problem of describing how much work an engine can do — and coined the word horsepower, presumably because horses were the main source of power at that time. Watt defined horsepower as the amount of work done by a strong dray horse pulling a load of 150 pounds at the rate of 220 feet per minute all day.

The old time dray horses have long disappeared from the general work scene; in fact, as we look around us we also realize that the steam engine has been replaced by the diesel and gasoline power units, yet the term horsepower is still with us and there is no indication that a better term will replace it. Every truck, tractor and car in the country has one or more horsepower ratings. Why is this? For the simple reason there are several different kinds of horsepower.

Brake Horsepower
First, brake horsepower is the as-installed horsepower of the engine and is roughly equal to the horsepower as given by automobile manufacturers. Car manufacturers advertise 'gross' engine horsepower. This is the maximum power developed by the engine at sixty degrees air temperature, atmospheric pressure and optimum spark conditions, minus an allowance for the power consumed by the exhaust fan, generator, air cleaner, water pump, air conditioning etc. The fan will take away two horsepower, the starter, lights and ignition another two h.p., the exhaust 15 horsepower, etc. When a car is actually in operation, brake horsepower will be further decreased by 15 h.p. by the automatic transmission, 5 h.p. for the rear axle, 12 h.p. for the rear tires, 4 h.p. for the power brakes and 8 h.p. for the air conditioning.

Indicated Horsepower
Then there is what is sometimes called 'indicated horsepower'. This is actually the power developed in the engine's combustion chambers by the

Elect Officers for Crop Improvement Assoc. '65

The annual meeting of the Ontario County Soil and Crop Improvement Association was held in the Legion Hall, Uxbridge, on Wednesday, January 6, 1963, with approximately 100 farmers in attendance. The meeting started at 10:30 a.m. with President, Harvey Meek, Sandford, in charge.

The report on the various projects carried out in 1962 were discussed by Lynn Fair, Agricultural Representative, and Harvey Wright, Soils and Crops Specialist, for this area; and the various co-operators who took part in the different tests and demonstrations during the year. A very interesting program was carried out during the year. 156 different farmers took an active part in one or more crop improvement projects this year. Tests and demonstrations were carried out on a total of 129 acres.

Prof. W. T. Ewen, Soil Science Department, University of Guelph, addressed the meeting. Prof. Ewen emphasized the importance of good pasture management through rotational grazing, clipping, fertilization, etc. He also emphasized the importance of soil testing, and suggested that if the best results were to be obtained from soil testing, then extreme care should be exercised in taking the soil samples. He also emphasized the importance of potash in preventing winter killing in alfalfa.

It was decided to hold the Annual Seed Fair and Hay Show again this year. The detail regarding the place, date, and the program was turned over to the 1963 officers and directors.

The delegates to the Annual Soil and Crop Improvement Convention, to be held in the Coliseum, Exhibition Park, Toronto, on January 27-29, are

Walter Beath, Oshawa and Charles Hadden, Blackwater. The election of officers and directors resulted as follows: Honorary President, Harvey Meek, Sandford; President, Walter Beath, Oshawa; #2, 1st Vice-President, Charles Hadden, Blackwater; 2nd Vice-President, Albert Hockley, Claremont #1; Secretary-Treasurer, Lynn Fair, Uxbridge; Auditors, Clarence Armstrong, Uxbridge, #4, Ted Croxall, Uxbridge #3.

Township Directors
East Whitby, Elmer Powell, Oshawa #1; Whitby, John Batty, Brooklin #1; Pickering, Cecil Disney, Brooklin #1; Uxbridge, Rae Ewen, Uxbridge; Scott, Maustyn McKnight, Uxbridge #2; Scugog, Clifford Redman, Port Perry #3; Reach, Lloyd Smith, Port Perry #2; Brock, William Heron, Sunderland; Thorah, Clarence Hewitt, Beaverton #3; Mara, John Speedie, Brechin #1; Rama, Lawrence Cooper, Washago #1.

141 DOGS DESTROYED LAST YEAR

A total of 141 unclaimed dogs in the Twp. of Whitchurch were destroyed last year by the canine control officer, Ollie Pellett of Ballantrae. This information was revealed at the first regular meeting of council on Monday night.

Mr. Pellett denied a charge by Mrs. Allan Middleton of Lake Wilcox that the officer had shown discrimination in issuing a total of three summonses against her while owners of other uncontrolled dogs were overlooked.

Councillor Jim Smith noted that he had not received any preferred treatment since his dog had also been picked up and he paid the court fine.

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YORK COUNTY HOG PRODUCERS ASSOCIATION
Annual Meeting
WED., JAN. 20th
Anglican Parish Hall, Newmarket
10 a.m. to 4 p.m.
Election of County Directors.
— Lunch Provided —
Murray MacMillan, President John Sytema.

WINTER SPORTS SALE
CANADIAN TIRE CORP.

Fast-Action HOCKEY OUTFITS
Regular \$8.77 **SAVE \$1.33**
7.44
Black pebble-grain leather uppers with tendon guards. Sewn-in web reinforcement gives firm ankle support. Waterproof rubber soles, excellent quality tube skates. Sizes: 3 to 12.

Save on Beginners' Skates
Boys' 3 to 7 years Reg. \$4.99 **3.99**
Girls' 3 to 7 years Reg. \$4.99 **3.99**
Strong leather uppers with built-in ankle supports, outside straps and buckles. Composition soles.

White "EIK" FIGURE SKATES
Girls' 11-2 Reg. \$6.99 **5.94**
Ladies' 3-9 Reg. \$8.99 **7.64**
Ladies' Sizes: 3 to 10 **8.44** Reg. \$9.99
High-white leather uppers with shaped top. Foam-rubber lined tongue. Black sole and heel with reinforcing steel shank. Chrome-plated steel blades. Girls' sizes 11 to 2.

Hespler Green Flash HOCKEY STICKS
Assorted Lies. Reg. 1.99
RIGHT or LEFT HAND **1.68**

Hockey Gloves
Up to 12 years. Maple Leafs or Canadiens. Reg. \$3.99 **2.96**
Hockey Gloves
SENIOR DESIGN Reg. 6.98 **5.58**

Hockey Helmets
Unbreakable polyethylene Adjustable chin strap. Boys' 1.49 Men's 1.87 Reg. 1.99 2.49 **1.87**

SHIN PADS
Good quality, 2-popular sizes. 20 1/4" Reg. 3.98 23" Reg. 4.99 6.25 **4.99**
SHOULDER PAD
Youths' Strong, lightweight polyethylene. Regular \$3.99 **3.19**
Polyethylene **Skate Scabbards**
SMALL, Reg. .69 MEDIUM, .58 LARGE, .58

30% OFF MASTERCRAFT MARK III SKI SET
15.36
REDUCED FROM \$21.95
Steel edges to tip. Complete with Senior Release Binding! Lengths 5'9" - 6' - 6'3" - 6'6" - 6'9". **SAVE \$6.59**

"BLUE TEMPEST" MULTI-LAMINATED SKI SET
Includes Skimeister release toe and "Nordkapp" Super Safety release cable. 6'1" - 6'3" - 6'5" - 6'7" - 6'9". **31.95** Regular \$39.95 **SAVE \$8.00**

BOOT PRESS
Regular \$1.98 pr. **1.59** PAIR

CAR TOP SKI CARRIER
Rust proof channel-steel holds up to 6 pairs of skis. Regular \$5.95 **4.77**

SKIERS' HEADBAND
Warm, comfortable wool. Red, Black or Blue. Regular 79c **.59**

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the Cambridge once-a-year
SALE
during which our customers can save twenty percent on a fine suit, individually custom-tailored, of course.

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- TWEEDS! TWISTS!**
- TERYLENE BLENDS!**
- HERRING BONES!**
- MOHAIRS! HOPSACKS!**
- GABARDINES! CHECKS!**

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TAILORED TO YOUR INDIVIDUAL MEASURE
in suits, topcoats and sportcoats

REX NASH M. TO M. CLOTHING
\$64. up

20% to 50% OFF
ALL MEN'S and BOYS' READY MADE
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And All Winter Stock

Ignition and burning of the gasoline/air mixture and is calculated from the formula... P.L.A.N./133,000. In this formula the P. represents the mean effective pressure in pounds per square inch; the L is the length of stroke in inches, while A equals the area of the piston in square inches and N equals the engine r.p.m.

Friction Horsepower
Much of the indicated horsepower never reaches the wheels because of the friction in the engine and accessories which drains off some of the horsepower. This latter is known as friction horsepower.

Rated Horsepower
Rated horsepower is the basis for taxation in Ontario. This is arrived at by using the following formula: Rated horsepower equal $D^2N/2.5 D$ is the cylinder bore in inches, N is the number of cylinders (2.5 is a constant, established as a conservative rating for a four cycle engine at 1,000 feet per minute piston speed).

In applying this formula to an 8-cylinder engine with a 3-inch bore; for example, the square is 9. This multiplied by 8 is 72. Divided by 2.5, the answer is 28.8. This, then is the rated horsepower.

Thus, a few simple facts should enable us to better understand what we are dealing with as we sit on a tractor seat. It should also enable us to do a better job of farming.

But there is still another aspect of the power unit that farmers need to know. It is how to estimate tractor costs. A knowledge of power costs are useful in calculating custom charges, and for the comparison of different models of tractors.

There are two groups of tractor power costs, (a) basic costs and (b) operating costs. It is most certainly advantageous, for ease of calculation, to determine all costs on an hourly basis. It has been estimated that a tractor kept in fairly good state of repair can be used for 10,000 hours of operation before it is worn out.

Interest, repairs and depreciation can be regarded, for this study, as basic costs.

With regard to interest, a charge of six per cent on one-half of the replacement value of the tractor is charged against the tractor each year. The interest charge compensates for the earning power of the money if it had been invested wisely, or serves to meet the interest charges on money borrowed to buy the tractor.

Overall, a charge of eighty per cent of the replacement value of the tractor is made to cover the cost of repairs and labour that will go into the tractor during its lifetime. This figure is based upon the records kept on gasoline tractors. An interest charge is made on a yearly basis and is charged whether the tractor is used or not. Depreciation and repair charges are made on an hourly basis and therefore apply only when the tractor is in operation.

A charge for depreciation is made so that money will be available to replace the tractor by the time it is unfit for further use.

In order to illustrate what basic costs mean, and how they are arrived at we will study this example. Suppose your gasoline tractor has a replacement value of \$3,000 and it operates for about 600 hours per year, and it is rated 30 h.p. at the drawbar.

Interest charge per year $6/100 \times 1/2 \times \$3,000$ equals \$90.
Interest charge per hour when operating 600 hours per year is \$90 divided by 600 equals \$0.15.
Depreciation during the lifetime of 10,000 hours is \$3,000. Depreciation per hour is thus equal to \$0.30. Depreciation therefore is equal to \$180 (600 hours of use \times \$0.30).

Repair costs during the life of the tractor (10,000 hours) is regarded as being \$0/100 \times \$3,000, of \$2,400. Per hour of use, this amounts to \$0.24, and per year is 600 \times \$0.24 or \$144.

Total basic costs, for 600 hours use per year is equal to:
Interest \$90.00
Repairs \$144.00
Depreciation \$180.00

Total \$414.00
Basic costs per hour (660 hrs. of use per year) is \$414 divided by 600 which equals \$0.69.

ATHA

Mrs. Nellie Tran and Mrs. Boud of Markham had supper Sunday evening with Mr. and Mrs. David Tran.

Mrs. Annie Davidson from Whitby and Mrs. A. Carruthers were supper guests with Mr. and Mrs. Murray Dunkeld on Sunday evening. Mrs. Davidson is spending a few days with Mr. and Mrs. Murray Dunkeld.

Mr. and Mrs. James Melton, from Burketon called Sunday afternoon on Mr. and Mrs. Elsie Melton and family.

Mr. Lorne Lehman and little daughter Leah, 7 years old from London had dinner with Mr. and Mrs. Norman Lehman and family.

Mrs. Reg Strong and Mrs. Spence from Toronto spent last Thursday with Mrs. Carruthers and family.

Mr. Allen Lehman from Whitby spent the weekend with Mr. and Mrs. Grant Wagg and David of Stouffville.

It's unfortunate that the symptoms of fatigue and of laziness are practically identical.