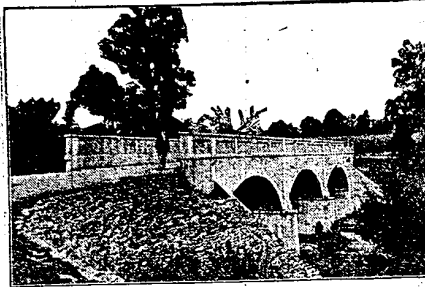


Maintaining Bond-Built Roads

Make Ample Provision for Upkeep—Analysis of State Highway Reports on Cost of Maintenance

(Prepared by the U. S. Department of Agriculture)



Cedar Creek Concrete Bridge, Louisville, Ky.

The problem of maintaining highways constructed with borrowed money should be given as much consideration as is devoted to the more permanent features of the roadbed. It has not been customary in the past to face frankly the cost of the maintenance and repair of bond-built highways at the time the bonds are issued and before construction begins. As a matter of fact, investigations made by the department show that in the majority of cases where bonds have been issued by local authorities there has been no provision whatever for maintaining the roads when built. This is perhaps the greatest defect in the method of building highways by issuing bonds.

Maintenance is necessary in order to insure to the community the maximum economic service by the road and also to preserve the investment. The cost of maintenance and repairs must, therefore, be studied at the outset. In the absence of general data, the reports on maintenance from states which have highway departments should be of interest to county officers preparing to issue road-building bonds.

Cost of Maintenance. The following opinions as to maintenance cost represent the results of careful analyses of state highway reports, as well as much first-hand information gathered by the department's specialists.

Well-constructed gravel roads will sometimes sustain several years of farm traffic without showing marked deterioration, even where there has been no maintenance. Such roads sometimes actually improve during the second season; more frequently, however, they show ruts or chuck holes. It cannot be expected that the average life of a gravel surface will be greater than that of a macadam surface, which in the New England and eastern states is between six and seven years. If a sum equal to two-thirds of the original cost of the gravel surface itself is provided for renewals at six-year intervals, it should be estimated at from \$150 to \$250 per mile per year. If \$30 is allowed for annual dragging and minor repairs, the total annual cost of repair and maintenance for gravel roads would be from \$180 to \$280 per mile. The annual cost of maintenance alone is sometimes below \$20 in Bondington county, Vt., during 1912, 175 miles of gravel roads were maintained at a cost of \$20.70 per mile. The annual cost of maintenance and repair on sand-clay roads, including all necessary resurfacing at periodic intervals, should not be fixed at less than 10 per cent of the original cost.

What Figures Show. The cost of repair and maintenance has been determined with considerable exactness from Massachusetts figures and checked by resurfacing charges in other states and in Germany. Prior to 1913, from \$150 to \$215 per year ordinarily paid for necessary annual

DAIRY

COST OF KEEPING A HEIFER

About the Surest Way to Avoid Any Possible Error Is to Keep Complete Set of Accounts.

We sometimes get the impression that the cost of keeping a horse or a cow is determined by the amount of feed consumed, plus the amount of labor expended, and possibly a trifle of interest charges. The government has published figures on the cost of raising, from birth, a two-year-old heifer which show that 55.6 per cent of the total cost was expended for feed, 12.3 per cent for labor, 8.5 per cent for interest, and 15.6 per cent for other charges, such as buildings, equipment, bedding, etc., with a total expense of \$62.95. These items which might be called "other charges" amounted to \$4.72.

This emphasizes the need of caution in determining the cost of any single enterprise of the farm. Too frequently these "other charges" are omitted in reporting profits. About the surest way to avoid the possible error is to keep a complete set of accounts. Of course, there is some work attached to this method of bookkeeping it isn't such a bad job.

IMPORTANCE OF PURE WATER

Essential That Supply for Cows Be of Mild Temperature, Especially in Cold Weather.

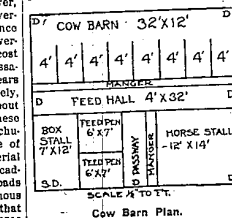
A large amount of water is needed by the average dairy cow for the upkeep of bodily functions. In addition to this, much more is needed in the production of milk as the latter contains 77 per cent of water. Practical dairymen have found that it is a good policy to provide the cow with plenty of good, clean water. That water drawn from a muddy ditch is not suited for a dairy cow.

It is also important that the water be of a mild temperature, especially in cold weather. Ice water taken into the stomach of the cow causes a shock to the system that is not conducive to high milk production. The tempering of this cold water in the cow uses some of the energy that might be better applied to other purposes. In the winter, freshly pumped water is much better than the cold water in the tank. Tank heaters aid in overcoming this trouble. A cow will drink a much larger quantity of warm water in the winter than of ice water.

CONSTRUCTION OF COW BARN

Foundation Should Be of Concrete and at Least Two Feet Above Ground—Illustration Explains.

Nothing a request for a small barn plan, I am sending a sketch of one I should build if I wanted one of that size, writes Andrew White of Milledale, Iowa, Homesteaded. The foundation should be of concrete and should be plenty high so as to have room above.



I would make the foundation at least two feet above ground, more would be better, thus saving the timbers from the water and use sixteen feet siding. The sketch is self-explanatory.

RIGHT PASTURE FOR CALVES

Most Young Animals Better Off in the Barn Than Fighting Flies in the Hot Fields.

(By R. M. WASHBURN.) While it is very important that heifers should have free access to pasture during the second summer, to develop strong bodies, the calf need not have pasture the first summer. In fact, for calves born after the first of the year, pasturing may be a disadvantage. Most young calves in this country are better off chewing tender hay in the quiet and half-dark stable than fighting flies, panting from the heat, and cropping tough grass in the pasture.

VALUES OF THE DAIRY COWS

Animals Supply Cheapest and Most Wholesome Food for Family—Save Much on Food Bills.

The first reason for having good milk cows on the farm comes from the fact that they provide the cheapest, best and most wholesome food for the family.

Their value is hard to estimate when we consider the amount saved on the bill. Their produce is a superior substitute for many foods necessarily purchased at high prices.

In fact, there is no economic way of doing without plenty of good milk cows on the farm.

Vom Schauplatz des europäischen Völkerrkrieges.

Bei dem Angriff auf die Nordfront von Verdun mit der sich daran anschließende Entlohnung tritt der abtätigste Wechsel in der Tätigkeit der einzelnen Waffen hervor. Artilleriekrieg folgt auf die Anlage der Batterien und die ununterbrochene Verfeinerung für die Tätigkeit der Geschütze, und dann, wenn die feindlichen Linien erschöpft sind, nimmt die Infanterie im Sturm, und das Spiel beginnt aufs Neue. Das der Feind mit aller Kraft dieses Ineinandergreifen aller Teile seiner Kräfte zu verhindern sucht, liegt auf der Hand. Er entwirft die verlorenen Punkte, sucht die verlorenen Punkte, wenn ihre Lücke zu groß ist, und bemüht sich, ein weiteres Vorwärtsschieben des Angriffs aufzuhalten. So ergeben sich in Wirkung und Gegenwirkung Vorfälle, bis der Angreifer wieder gewonnen ist, von neuem die Infanterie zum Sturm eingesetzt. Dieser hat die feindliche Stellung bei den verschiedenen Vorfällen, die der Weltkrieg anbreitet, diesen Wechsel den jedesmaligen Verhältnissen angepaßt und ist zum Ziele gelangt. Die freie Bewegung der Kräfte, die sich nicht an ein Schema bindet, ist dabei das kennzeichnende Merkmal.

Beispiele für diese Aufgabe bietet der Kampf um Verdun, der allmählich, während der Schlacht, fanteig wurde. Die Infanterie, die im Sturmangriff durch die Infanterie genommen werden, doch wird dies nicht angestrebt, bis die gründliche Artillerie der Vorbereitung die Eroberung der geringsten Stellung mit möglichst geringen Verlusten gewährleistet. Ziel war dieses langsame, schrittweise Vorwärtsschieben der Infanterie auf die feindliche Stellung, bis die feindliche Stellung nicht mehr zu halten war. Um dies zu bewerkstelligen, mußte man mit den Kräften der Infanterie betraut sein, was natürlich nicht der Fall ist. Dieser war es, der die deutsche Infanterie nicht nur im Sturm, sondern auch in der Verteidigung, und unter allen Umständen erforderte.

Ein Angriff auf Verdun mit der großen Infanterie im Sturm, der die feindliche Stellung nicht mehr zu halten war, was natürlich nicht der Fall ist. Dieser war es, der die deutsche Infanterie nicht nur im Sturm, sondern auch in der Verteidigung, und unter allen Umständen erforderte.

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Auf dem italienischen Kriegsschauplatz haben schwere Kämpfe am mittleren Laufe des Jongs, bei Österg und Zermün, stattgefunden. Sie waren für die österreichisch-ungarischen Truppen günstig, blieben aber auf lokale Aktionen beschränkt. Aus Vercelli und Mesopotamien liegen keine neuen Meldungen vor.

Salonisi von deutschen Fliegern angegriffen.

Die Griechen haben bereits die Folgen für ihre ununterbrochene Janderpolitik an eigenen Leiden in fühlbarer Weise zu verspüren. Nicht allein, daß sich die Allierten in Süditalien, das Land ist jetzt fast direkt zum Schauplatz des Krieges geworden, indem Salonisi kürzlich den ersten Besuch von Fliegern der Zentralmächte zu befehlen hatte. Dabei sind über 200 Millionen Soldaten getötet, 27 Millionen Wagnisse mit Munition und sonstigen militärischen Bedarfen aufgebracht worden. Natürlich ist es ganz selbstverständlich, daß auch Privatbesitzungen beschädigt und Zivilpersonen verletzt oder getötet wurden.

Die Alliierten Presse hat sich allgegenwärtig dem Gebrauch nach natürlich diese Gelegenheit nicht entgehen lassen, sondern ist mit Wohlmut ins Gedächtnis gekommen, von der Welt, besonders die griechische Bevölkerung, gegen die deutschen Vorkämpfer, dieses neuen Aktes des Völkerrrechtsbruchs wegen aufzufahren.

Die Griechen jedoch sind klug genug, um sich selbst ein richtiges Urteil zu bilden und die infamen Lügen und Verleumdungen der Alliierten zu durchschauen. Der griechische Bevölkerungsbildung ist es sehr leicht darum, die öffentliche Meinung im Lande der Griechen in schärfer Weise sich gegen die fremden Eingliederung fest, welche Salonisi widerrechtlich in die griechische Zone gebracht haben, indem sie daselbst die militärische Hauptquartier errichteten. Die Verletzung der Neutralitätsbestimmungen, den Angriff auf die Freiheit zu erregen, hat die Gesinnung der Alliierten nur erhöht. Doch damit ist nicht geholfen. Die Griechenlands, welches sich im Anfang, wenn auch mancherlei Bedenken dagegen bestehen, mit Rechtigkeit hätte der aufrechten unermüdeten Güte erreichen können und so ebenfalls nicht eher weichen. Der im griechischen Haus, als bis die Alliierten sich gezwungen durch die Zentralmächte hinausgedrungen werden.

Amerikaner als "Schwengel" auf Munitionsschiffen.

Daß die Engländer sich die größte Mühe geben, Amerikaner als Schwengel auf ihre Munitionsschiffe zu engagieren und sie in Notfälle setzen zu lassen, als solche zu fungieren, geht aus den nachfolgenden Zeugnissen hervor.

St. John, New Brunswick. Der hiesige amerikanische Konsul Culver erklärt, daß der vom britischen Dampfer "Gaggle Point" getriebene Amerikaner wahrscheinlich Joseph Oleson von Boston sei. Dieser habe sich bei der letzten Reise an ihn gewendet, um seine Munitionsschiffe zu engagieren, aber der Kapitän habe sich weigert, ihn freizugeben. Der Konsul konnte nichts für den Mann tun und dieser müßte die Stelle mitmachen.

New London, Conn. Kapitän Sawforth von England, der hier amerikanische Zerstörer zu hohen Preisen ankauft, erklärte einen Bericht über die Tätigkeit der "Gaggle Point" an, daß sie sich weigert, ihn freizugeben. Der Konsul konnte nichts für den Mann tun und dieser müßte die Stelle mitmachen.

Japaner setzen im Stillen Wer. San Francisco. Auf der deutschen Warft, oder Zaboron, Inselgruppe im Stillen Meer, in der Mitte zwischen Salonisi und den Philippinen, haben sich die Japaner hässlich niedergelassen, ergötzen sich an der Fortschritt der dort stürmischen Aufregung. Prof. heimkehrend, Sturz von der Chicagoer Universität. Japan beabsichtigt nicht, diese Inseln wieder aufzugeben. Ein ausgezeichnetes Vorkämpfer. Wer ausgezeichnete Vorkämpfer. Wer ausgezeichnete Vorkämpfer.

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IN WESTERN CANADA

"He Who Will and Does Work Will Not Want."

As in the United States it is said, that the Mennonites in Canada are very much oppressed, and have to suffer from a great deal (on account of the war in Europe) and I have been requested to write something about this, I will do so.

I came with my parents A. D. 1874, from Southern Russia to America, South Dakota. A. D. 1897 I came with my family

here to Western Canada, here we have found a healthy climate; the acre yields on an average more and wheat is better than in South Dakota. What concerns the Government, up to now we have had a good one, have been able to live according to our creed and have not been oppressed in any way, and I believe: all Mennonites, who live according to the fundamental beliefs of the Mennonites and to God's word, as their guide, will agree with me.

He, who, here in Canada, will and does work, will not want. So much as an answer.

Remain your friend, (Sgd.) DIEDRICH GOOSSEN.

Very few farmers cultivate the habit of keeping careful accounts of their receipts and expenditures, showing at the end of the year a balance, either for or against. The farmer of Western Canada is no exception to this. It is Canada is no exception to book-keeping were reported to there that much better results would be obtained and shown.

Statistical State. There is the case of the Crowfoot Farming Co. of Crowfoot, Alberta.

It has just issued a certified statement of its operations for the years 1912, 1913, 1914 and 1915. This Company has had for the past few years about 1300 acres in wheat and between 200 and 250 in oats. The total operating, and general expenses for 1912, included interest at 6 per cent, depreciation at 15%, were \$12,567, for 1913 \$17,506, for 1914 \$18,729, and for 1915, \$29,804.42. Expense per acre of land in crop was \$7.80 in 1912, \$11.57 in 1913, \$11.57 in 1914, and \$17.87 in 1915. Total receipts were \$15,521 in 1912, \$20,491 in 1913, \$21,589.87 in 1914, and \$25,202.26 in 1915. The percentage earned upon capital invested was 64% in 1912, 30% in 1913, 23.3 in 1914, and 60% in 1915, in which year it paid a cash dividend of 58%.

The Company's statement shows that the average dates of finishing seedling was April 20th; the average date commenced cutting was August 18th.—Advertisement.

Salts If Backache Or Kidneys Trouble You

Get Less Meat If Your Kidneys Aren't Acting Right. If Back Hurts or Bladder Bothers You. When you wake up with backache and dull misery in the kidney region it generally means you have been eating too much meat, says a well-known authority. Meat forms uric acid which overworks the kidneys in their effort to filter it from the blood and they become sort of paralyzed and loggy. When your kidneys get so tired they stop you must relieve them like you relieve your bowels; removing all the body's urinous waste, else you have backache, stiff headache, dizzy spells; your stomach rots, tongue is coated; and when the weather is bad you have rheumatic twinges. The urine is cloudy, full of sediment, channels often get sore, water seals and you are obliged to seek relief two or three times during the night.

Either consult a good, reliable physician at once or get from your pharmacist about four ounces of Jad Salts; take a tablespoonful in a glass of water before breakfast for the next four days. This famous salt is made from the acid of grapes and lemon juice, combined with lithia, and has been used for generations to clean and stimulate sluggish kidneys, also to neutralize acids in the urine so it no longer irritates, thus ending bladder weakness.

Jad Salts is a life saver for regular meat eaters. It is inexpensive, cannot injure and makes a delightful, effervescent lithia-water drink.—Ad.

Public Officials' Bonds.

We bond more people than any other company in the world. Maintain a special department for bonding public officials. Agents everywhere. Write for rates to Official Bond Department, National Surety Company, 50 West St., New York City, "America's Leading Surety Co." Adv.

A woman, always has to get some "Mentor" in her life.

Sho-Yorba, Mr. Jones, I thought you much older than you are. He—Oh, no; not a bit, I assure you.

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