



An 'International' 10/20 tractor and binder. Two men were required to work this tackle; cutting with scythes would have clearly required many more. One of the children is my father. COLLECTION TIM WATSON

PERIOD AGRICULTURE

TIM WATSON, farmer's son and one-time 'farmer's boy', applied his expertise to the landscape of the MRC's 'Chiltern Green' 2mm layout, which deservedly picked up trophies at every turn. Here he offers some 'prototype notes' for those who wish to run their railways through accurate countryside:

Many layouts are set in the almost mythical time known as 'summer'. On these, if open countryside is modelled, the chances of seeing a cornfield or a field of hay would be very high. Indeed, from late June until the end of September the corn would be either 'on the turn' from green to yellow or well and truly ripe. One of the golden rules is 'go and see for yourself' when trying to answer a challenge like this.

Fortunately, or unfortunately (depending on your viewpoint), the modern harvest scene is vastly different from that of 25-30 years ago, so it is difficult to get an impression of a 'pre-nationalisation' cornfield. The advent of the combine harvester after the war, and the increased mechanisation in the 'fifties, laid the foundations for the present readily observable scene. I will not, therefore, describe the modern, but the pre- and immediate post-war scene. It is worth noting that farming had been in a depressed state since the late nineteenth century and so, with a few minor differences, a 1939 cornfield would look much the same as one in 1909.

Before embarking on details, a few overall points should be made. The keystone of good husbandry at this time was Norfolk four-crop rotation. This basically meant that after two or

three years of cereal crops, a root crop followed to return fertility to the soil or, if the ground was choked with weeds, a fallow or bastard fallow was used. This meant that the field was not cropped but 'worked' over the summer; the field was first ploughed in one direction with a 9-10 inch furrow and then ploughed at 90 degrees to leave largish lumps of sod. These were then exposed to the sun and desiccated in the hope of killing the weeds. The field would be cultivated throughout the summer. Thus, modellers are quite justified in having a ploughed field in high summer (and even a nice pair of ploughing engines sited on two headlands).

The mechanisation alluded to is brought home by the following statistic: our farm employed twelve men before the war – it now requires just *two*. The prime mover in those days was, of course, the horse. The larger modern farms perhaps had a tractor; the advent of war dramatically increased the use of them, the standard Fordson being the most notable.

Grassland was seldom cultivated before the war – 'permanent pastures' were used. Again, the need for grain during the war led to the breaking up of these pastures. The advent of herbicides has, of course, dramatically 'cleaned up' farming, as weeds were formerly controlled



Broadcasting cereal seed by hand in 1934. S. H. FREESE



Quite apart from its Art Deco magnificence, this 1950 photograph, taken at Saunderton, Bucks, clearly illustrates the spacing of shocks, or stooks, as described in the text.

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by cultivation, which was only successful to a limited extent. Weeds could dramatically alter the appearance of a crop, especially when in flower.

Readers may appreciate that this article is not from first-hand observation; I do, however, have a very good source of reference – my father. Most of what will be described applies to the southern half of the country; even so there were, of course, considerable geographical variations in style, and if nothing else, the information given is accurate for Bedfordshire.

The three main cereal crops in this country are wheat, barley and oats. Modern cereals have undergone considerable development from the species about to be described. Nowadays they are much shorter and yield heavier. All the old cereals were much more golden in the straw.

Wheat could be between four and five feet tall and was browner/redder than nowadays (modern height about three feet). For the 18.83 modellers, the most common varieties were 'Rivet' (you too can be a 'Rivet' counter!), 'Little Joss', 'Square Head Master' and 'Yeoman'. Barley was again taller than nowadays – 2 ft 6 ins to 3 ft would be the normal height. These older varieties layered very easily, having a weak straw. The soil type determined the variety grown. 'Spratt Archer' was grown on light soils whilst 'Plumage Archer' was chosen for heavier ground. 'Pioneer' was an early winter-sown barley. All these early barleys were excellent for malting – their main use – and only after the war was barley used

for animal feed. Oats grew very rank, about six feet tall.

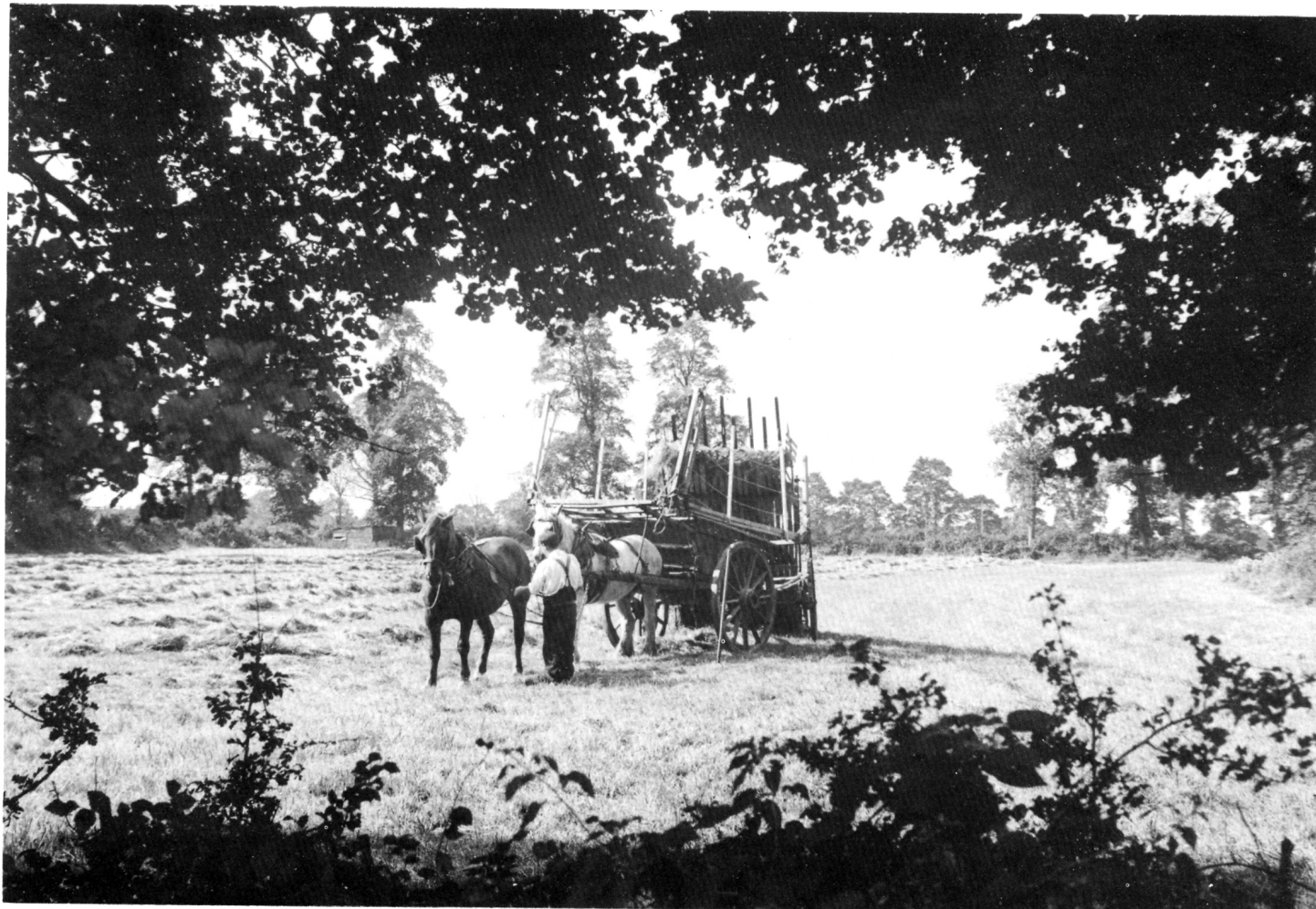
Oat straw is a very golden yellow colour: on the older varieties the head was much greyer and darker than nowadays. This is reflected in some of the names – 'Grey Winter', 'Black Supreme', 'Black Tartar' and, the odd one out, 'Victory'.

Weeds would, of course, grow with the cereal. These would be most noticeable when they flowered. Thus, a field with poppies would be red only towards the end of June. Mayweed would act similarly with its daisy-like flower. On chalk ground charlock could turn a field bright yellow in June. Larger weeds such as creeping thistles and docks would always be



Another picture from the Watson family album, – farmhands shocking oats. Notice the height of the crop.

COLLECTION TIM WATSON



Hay being collected at Stoke Mandeville in 1935. The hay loader and a two-wheel cart are being pulled by a pair of horses – one in the cart shafts and one in traces (a 'forest horse'). The cart's capacity is increased by 'ladders' front and rear, and vertical hay frames which would have had ropes between them.

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conspicuously different from the corn; at the end of the season, docks turn quite red. It is important to note that cut corn and red poppies would be an extremely unlikely combination!

HARVESTING

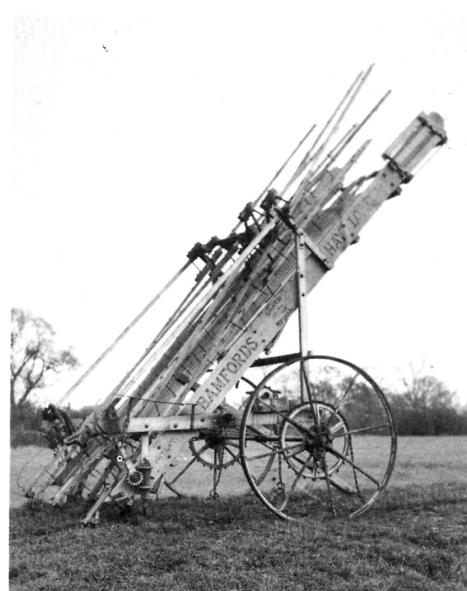
Harvest in former days was much more lengthy than nowadays. In the exceptionally hot summer of 1976 we had finished inside two weeks, yet in an average year, two months would have been usual by the old methods. The first corn cut was usually oats, in the first week of August (in Bedfordshire). A fundamental difference between then and now is that most corn was cut with sap in the straw (especially oats) and allowed to ripen in the field. Hence the old saying 'Oats should hear church bells chime three times' (spend three weeks in the field, in other words). Oats, in particular, if allowed to overripen were very prone to shedding; when shocked, half the corn would end up on the ground.

Before any mechanisation came to farming, all the corn was cut by hand with scythes. Even with mechanisation the headland around the field would have to be cut by hand and sheaved by hand, otherwise the horse team would trample the corn. A good man with a

scythe could keep another man busy binding the corn. The first stage of mechanisation was the horse-drawn reaper which would cut the corn ready for hand binding. This was developed into the binder which tied string around the sheafs of corn. Tractors eventually replaced horses on the larger farms for towing the binder. Incidentally, all cornfields were infested with rabbits: as less and less standing corn remained in the centre of the field so the rabbits became concentrated. The gamekeeper would often be present with his gun and all the boys in the village would lend assistance with sticks to help despatch the rabbits to the pot.

The binder tied sisal string about five-eighths of the way up the sheaf: this gave the sheaf a good base for shocking (or stooking).

The spacing of shocks in the field depended upon two variables: the width of binder and the heaviness of the crop. Six rows would be taken to make a shock; thus, the distance between shocks would be thirty-six feet with a six feet binder and forty-two feet with a seven feet binder. One man, the leader, would set the two centre sheaves in the third and fourth rows and the second and third men would add the remaining sheafs. This would produce a shock of six sheaves (although more could be included if necessary) and there would be three paces between each shock in an average crop. The



Close-up of a Bamford's hay loader, shown in correct working stance in 1934. Pulled slowly over a swarth of hay, chain-driven tines would lift the hay; this would then be 'walked' up the slope by reciprocating action and tipped into the leading cart.

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A Cottis hay sweep (left) being pulled by two horses – one each side – with a large mound of loose hay between them. The horse on the right is driving a geared power unit for the elevator. Parked behind the paling fence is a hay rake. This scene was taken at Little Missenden in 1934 with the Met & GC Joint line in the background. S. H. FREESE

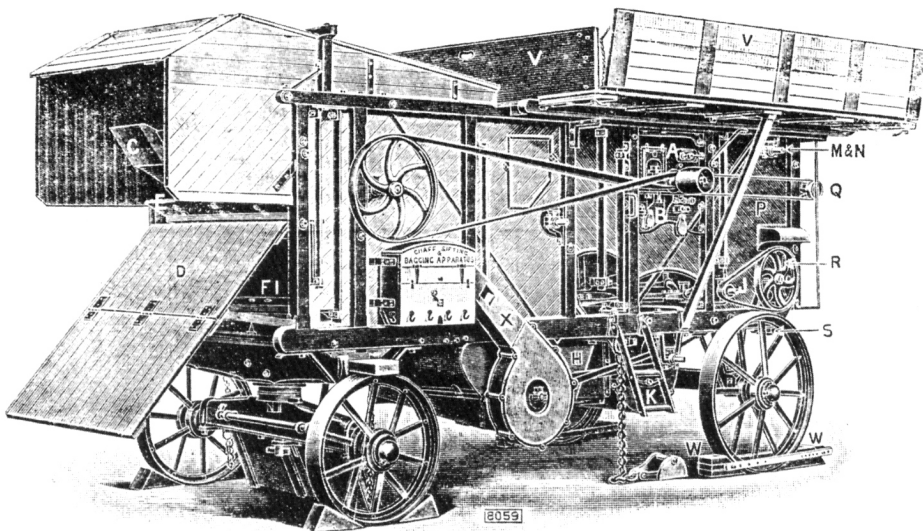


FIG. 29.—THRESHING MACHINE (NEAR SIDE).

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|---------------------------|--|------------------------|----------------------------------|
| A, threshing drum. | H, lower jog shoe (1st dressing apps.) | M, awner. | S, corn spouts. |
| B, concave. | J, crank for driving jog shoes. | N, chobber. | VV, guard boards round platform. |
| C, straw shakers. | K, first fan. | P, 2nd dressing shoe. | WW, wheel chocks. |
| D, straw board. | | Q, 2nd fan. | X, chaff bagging apparatus. |
| E, upper collecting tray. | | R, rotary corn screen. | |
| YI, caving riddle. | | | |

Threshing machine from a turn-of-the-century textbook. The strawboards (D) would not normally be used, the threshed straw normally dropping straight onto an elevator.

sheaves were butted into the 5-6 inch stubble to produce a firm structure. In areas subject to strong winds the shock would have its long axis in the direction of the prevailing wind to prevent blowing over. Wheat could be carted in the rain and 'ricked' (stacked) wet, so long as it was not thrashed before the following March or April. The corn 'matured' in the rick.

Having considered the growth of the corn and the way it was gathered in, let us now consider how it was stored and processed. Nowadays the grain is separated from the straw in the field by the combined harvester. Previously this was done by threshing the grain from the sheaf in the winter months or whenever grain (or money) was needed by the farmer. Before any mechanisation this was achieved by flailing the corn by hand on the floor of a barn with the doors open. This is why many barns had large doors to produce a draught to remove the chaff. Alternatively, barns had false floors with grids, which allowed the grain to fall through. The barn on 'Chiltern Green' is modelled on such a barn.

The advent of steam power in the form of portable and traction engines altered all this. The well-known threshing drum separated the sheaf into grain, chaff and straw. A great deal of this threshing was done by contractors. A set of threshing tackle would consist of engine, drum, press baler (used to bale the straw) and

a float trailer. Instead of the press baler, a chaff cutter could be used to cut the straw for feed, or an elevator could be used to restack the threshed straw. These contractors would 'pull in' to a farm for three or four days – the tackle had to be precisely aligned to prevent belts slipping off – and thresh, if possible, a rick a day. Thus the size of the rick was determined by the number of men required to thresh it out in one day. Latterly (i.e. after World War II) the traction engine was replaced by the Field Marshal tractor. This was a single cylinder two-stroke diesel-engined tractor with flywheel. Like the engines they replaced, they were extremely slow running: 'thunk, thunk, thunk.' They were characterised by a curiously shaped exhaust and gave a hell of a kick when started by hand. Some had explosive cartridge starting.

To prevent vermin getting in, ricks were built on boards supported by staddle stones. These were mushroom-shaped and so stopped mice and rats getting in (in theory!), but were not used universally. A rick was usually wired off at the bottom when it was almost thrashed out; the ground could be crawling with rats and mice, giving terriers and lads with spades some good sport!

The shape of the stack depended a great deal on the location and who was making it. Round ricks or cocks, as they were called, were more popular up North. Bedfordshire ricks tended to have a pitched 'roof' whilst in the larger grain areas, such as Hampshire or Norfolk, a hipped 'roof' was favoured. A cock would be eight to ten yards in diameter whilst an oblong stack would measure nine by five or ten by six



Hay ricks in a summer landscape in Kent in 1935. The pole behind the sheeted rick is supported by three stay ropes and acts as a hay crane, the cross-arm (which has a grab attached) being hauled up by a horse towing a rope. Note props on one side of complete stack to prevent excessive settlement, and hay rake in foreground.
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yards (size was, of course, very variable). The rick would measure twelve feet to the eaves and eighteen feet to the ridge. Obviously, the butts of the sheaves pointed outwards. The rick was best made high or 'full' in the middle; if it were low or boat-shaped, the rain would run to the centre and make for a rotten rick. Similarly, the sides of the rick were 'grown out' by as much as

as a yard, measured at the eaves, from the base. This was dependent upon the skill of the stacker and the length of the straw. If this were not done the rain would again come in and the rick was said to 'piddle itself'! The rick was thatched with long straw in much the same way as a thatched cottage although not so thickly. Thatch pegs and strings were driven in one foot



A load of loose, storm-damaged corn being led onto the farm at Reedham, Norfolk in 1935. In comparison with the cart beneath, the load looks enormous but was not in fact in any way abnormal.
S. H. FREESE



Over the hedge at Laxfield, Suffolk, in 1935, a canopied traction engine drives a threshing drum (centre), while an elevator raises the stack of 'threshed' straw – probably driven by the horse gear visible in front of the locomotive. The original unthreshed stack has all but disappeared. A good modelling point is the fineness of the wheels on the little pony cart in the foreground.
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and three feet down from the ridge and fifteen inches above the eaves. The pegs themselves were fifteen inches long and made from willow or ash. Sawmills used to produce pegs three quarters of an inch square from offcuts of wood. Common sense dictates that no farmer would build a rick next to a railway line and any farmer worth his salt would not build a rick under a tree.

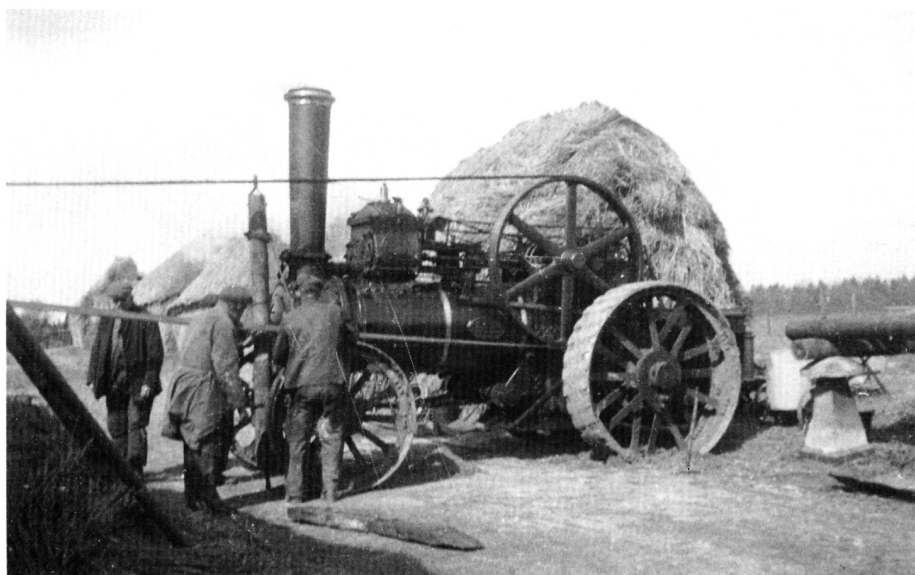
Many people confuse hay and straw. Hay is dried grass and is used for feeding to animals. Straw is usually used for bedding. The hay-making scene has changed remarkably little insofar as its processing is concerned. The grass is cut (June is the hay fever month) and allowed to dry in the field. The swarth of hay is moved around to let air get to it. This was originally done by hand but machines were made to obviate this. Nowadays a pick-up baler is used to bale the swarth. In days gone by, the hay was swept up (using a large implement called, surprisingly enough, a hay sweep) and stacked in the field at a convenient place near the outside. This haystack was similar in shape to a straw stack and was thatched with straw. The stacks were fenced off temporarily to prevent cows eating the hay; when required, cakes would be cut out of the stack and carted to the farm. Further north, wooden poles were used to support the hay to produce a hollow stack called a haycock (q.v. fireboxes). This was to allow air through the hay. Incidentally, the hardwood baseboard end-piece for the track on Chiltern Green come from the hay sweep at

our farm, which was dismantled twenty-five years ago (the hay sweep, that is!).

Considering the number of layouts which are supposedly set in summer, cornfields and fields of hay are conspicuous by their absence. I hope that I have succeeded in conveying some of the skills in the old ways of farming. It is

still a very skilful profession, but the skills are directed in different ways. With a modicum of information available will we see the summer scene modelled more accurately in future?

This text is a revised version of an article which first appeared in the Model Railway Club Bulletin.



A very large Fowler compound traction engine at work at Highway Farm, Minehead, in 1940. Note the 'staddle stone' to the right.
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