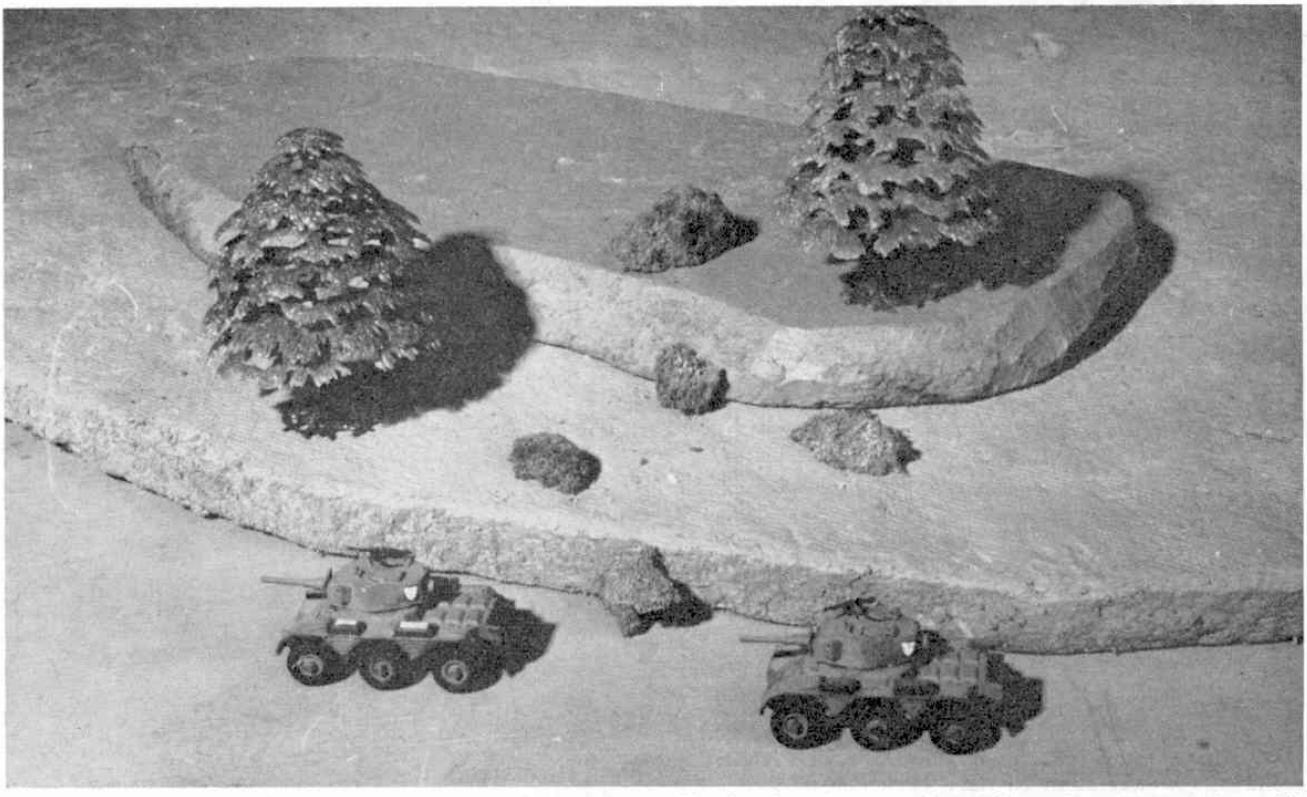


Showing how ' contour boards ' can be used to indicate hill levels.

# BATTLE by Charles Grant

## Part XXVII

## The effect of Terrain

UP TO THIS POINT we have not considered the effect that different types of terrain have on movement—and consequently on tactics—other than to note the primary rule which laid down the different moves for vehicles on roads and across country. It was obvious, naturally, that movement on metalled roads was much easier than it was through scrubland, across ploughed field, through marshy ground or what have you. Now we shall have to extend our horizon somewhat by considering other sets of circumstances in which varying types of ground or terrain features will have an effect on the movement of troops and their vehicles, for it is apparent that both the people fortunate enough to be carried about in half-trucks, trucks and so on will be just as involved as those who have to be content with getting about on ' shanks's pony '.

What we shall do, then, is to take certain prominent terrain features—the principal ones which influence tactics—and consider them from two points of view, first, the most convenient way to reproduce them on the wargame table, and second, just how rules will have to be created to cope with their presence thereon. These features are not terribly numerous and in fact we can reduce their number to but three, although I

realise that they can be added to in many ways by the player who would like more subtle differences in his terrain. Those dealt with, however, should be sufficient to cope with most occasions when we have to reproduce some specific area of map on the table. The three are as follows: (1) hills, or any sort of rising ground; (2) woods, and (3) rivers. Here it should be stressed that what is being looked at is something pretty definite and substantial and which will have an appreciable effect on troop movement. For example, when we think of a ' hill ', we don't mean a gentle sort of rise from ground level, but something of sufficient gradient to cause some slowing down of the speed of the troops or vehicles climbing it. With this in mind we can continue with the first part of our discussion, to wit, just how it is proposed that we create the necessary pieces of equipment for our wargame, and how far we are going to go to achieve a pictorial or dioramic setup, if you like.

Let us then have a look at the question of hills, then, and before anything else is said, I have to point out that my own approach—and that is what I'm writing about—is a purely functional one. There comes a point, in relation to the realism of one's scenery, where the wargamer has to make a decision, an important one, but one which can be decided only by personal taste and inclination. This is whether to adhere to a ' functional ' type of approach—mine, in actual fact —or to ' have a go ' at a more decorative and pictorial sort of thing, something I can liken to the model railway background idea, where great efforts are made to build up a completely realistic stretch of scenery, with every detail of landscape minutely simulated. Now, I have no option but to agree that it is extremely satisfactory to wargame over terrain which has been made with this ' dioramic ' idea in mind, with tree-clad hills, waterfalls and rivers, tiny houses, all created with painstaking thoroughness so that the finished article would suffice for any film ' backdrop '. Very nice so far as it goes, BUT there are several disadvantages, of which the first is that the more realistic the ground, usually the more unwieldy it becomes, depending upon how it was constructed. What I mean is this. Once upon a time (to coin a phrase), when I was a bit of a devotee of this sort of technique, I constructed some really elaborate pieces of battlefield scenery, using the time-honoured method of having squares of hardboard of varying sizes as bases. The method of construction is well-known, and is briefly that blocks of wood of different heights are glued to the hardboard base, covered with strips of glued paper until the whole forms an irregular surface, with the paper—hardening as the glue dries—forming an uneven sort of hill. The thing is then covered with a thin layer of plaster of paris, which, when set, is painted in the appropriate colours, green, brown and so on. When a number of such pieces are placed on the wargame table, there is no question but that the result—if care has been taken—is highly spectacular and looks good from any point of view. The disadvantage—the unwieldiness I referred to—is that one tends to over-emphasise the features being created—hills are made too high and steep, and human nature what it is, there is a tendency to over-employ certain favoured pieces of terrain. I recall, during this phase, that, with much labour, I built a high mountainous affair, two peaks with a pass between them, the top rising to something like eighteen inches from ground—or table-level. When in use, this had a seemingly fatal fascination for wargamers, and possibly because it looked too good not to fight over, the most unlikely scraps took place upon it and up and down the gorge. Anyway, what with all this fighting, it rapidly began to acquire a rather " tatty " appearance, fragments of plaster flaking off and holes being punched in the surface by over-eager fingers. There are always strong domestic reactions at the sight of powdered plaster being trodden into carpets and so on all over the house.

One other minor point might be noted is the one of storage. These plaster covered terrain pieces have to be put away with some care and take up a fair bit of room, this not always being a practicable proposition.

Furthermore, if you have, for example, a square of 18 in. sides covered by some particular type of hilly ground, this can be used for no other purpose than the one applicable to its specific construction.

It is for these reasons given above, and probably others, that for some time I have used another method of making up battlefield terrain from the point of view of hills, this being one which oodles of practice suggest is by far the best proposition. As a matter of fact, it will be found, too, that a little attention can ensure that it is not without scenic merit itself. Fundamentally, what we do is this. We take an ordnance survey map, or any other type whereon heights are shown by contour lines, and with this as a kind of inspiration, we bring the contours to life, as it were, by reproducing them on our wargame table by showing them as corresponding shapes cut from some suitable material. This can be inch-thick insulation board (half-inch will suffice, although this thickness can be doubled for use quite easily). This material can be readily cut to any desired shape—round, oval or indeed any irregular form (hills are not always perfect circles in area) and these can be used over and over again in many different ways. The photograph shows how these shapes appear—note that a little " chamfering " of the edges does enhance their appearance somewhat, and one ' shape ' can be placed upon another to represent increases in height in exactly the same manner as do the contours of a map (each contour usually represents an increase in height of 50 metres over its outer neighbour).

The ' contour shape ', it is apparent, gets full marks for convenience—both from the actual wargaming point of view and for its ease of storage between games. Certainly, as I hope to show, they are functionally highly suitable for any sort of wargame. Anyway, there you are—the choice is with the reader. You can either have the very dioramic and pictorially very attractive pieces of terrain I have referred to above (they can now, of course, be made by the simpler process of using commercially produced plaster-impregnated material to cover the blocks of wood on the hardboard), or to use the more convenient, and not necessarily ill-looking-contour shapes, which are more than adequate in use, are convenient for storage and for adapting the table terrain to the requirements of any particular engagement which might be on hand. Naturally, the more ' shapes ' one has, and the greater variety that might be available, the easier it is to set up an interesting game or to reproduce on one's table a section of an actual map over which to fight. There are all sorts of ways by which one can add to or alter one's contour shapes. Should they have been cut from one piece of insulation board, two or more can be fitted together to provide a large area of rising ground, and, as can be seen from the photograph, the judicious addition of pieces of lichen—representing low bushes —as well as trees, can result in a very realistic sort of appearance. It is with the subject of trees—and then with rivers—that we shall presently deal.

Finished Dinky Toy Spitfires being inspected and tested at the end of one of the Assembly Lines.

top end of the Line and, at each station, a specific component is added or a special operation carried out. Wheels and axles are fitted to bases; bonnets, boots and interiors, etc., are fitted to bodies; bases are mated to bodies, and so on. The toy, in short, gradually takes shape as the castings progress down the line.

Before the end is reached, not only assembly is completed, but the models are also closely inspected and tested, then boxed and the boxes themselves wrapped in packs of four or six, ready for selling. These " outers ", as the packs are called, are passed through to the Stockroom, from where they are supplied as orders for them are received. The Stockroom itself covers a huge area and is a collector's paradise likely at any time to contain hundreds of thousands, if not millions, of pounds worth of Dinky Toys and other Meccano products.

Contrary to many people's vague impressions, the Meccano works in Liverpool is not a sort of legendry toyland inhabited by old red-coated gentlemen with long white beards, patiently turning out individual toys to order. Instead, it is a typical up-to-date in dustrial concern making full use of modern mass-production techniques. We have seen here, for instance, the tremendous amount of work and equipment; the advanced methods and the large numbers of people involved in making a new Dinky Toy and, of course, all the preparation work is the same for any model, no matter how many examples are required. Naturally enough, complete production costs vary from model to model, depending on individual complexity, but it is safe to say that anything from £10,000 to £15,000 must be spent before even one model can be made. Unless you have an awful lot of money to spend, therefore, do not expect Meccano to be able to make a " one-off " model specially for you!

# BATTLE by Charles Grant

## PART XVIII—MORE ABOUT TERRAIN

IN CONSIDERING THE SECOND of the terrain features we listed in Part XXVII—the wood—we concern ourselves initially with its composition, which, not surprisingly, is ' trees ', in varying number, and we now have to decide on how to make the said trees and the best manner in which they may be used to indicate a forest, wood or copse. The individual tree may be acquired in two ways, the first, by constructing it oneself, the second, by purchasing same. Let us deal with the first, then.

Now, I'm not going to say that what will be produced bears any accurate relationship to any known botanical species, but it is most assuredly identifiable with that growth comprising trunk, branches and foliage, and it is made in this way. The first requirement is four or five lengths of wire—they need not be enormously thick, but should be sufficiently strong to maintain any shape they may be bent to assume, and at the same time pliable enough not to make the tree-making a hand-lacerating job. The lengths of wire—bearing in mind that we are dealing with a scale where the average man is less than an inch in height—should be about five or six—not more than seven inches—long. They can vary a little among themselves. These wires are twisted together for something like a half of their total length, leaving about ½ in. free (untwisted, that is) at one end and something like 3 in. at the other. If the process is a little hard on the fingers a pair of pliers—or two pairs, really, are better, twisting in different directions, and will make the job much more easy. The shorter loose ends are splayed out as flat as possible—they represent the ' roots '—and at the other, the longer ends are bent about irregularly, and they of course will be the branches.

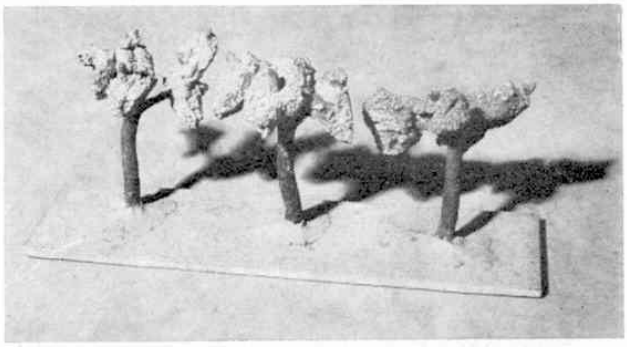
So far, so good, we have at least the ' skeleton ' of a tree. For added security and firmness, a length of Sellotape can be twisted around the trunk, although this is not really necessary. The ' trunk ' and ' branches ' are now covered with a thin layer of plastic wood—a messy job, I find, but an essential one

—and when the result has thoroughly dried, one gets to work on the foliage. This is done by begging, borrowing or just committing plain domestic theft to acquire an old rubber sponge. This is fiercely attacked and torn into small pieces of different sizes, but round about an inch thick generally is about right. The pieces are now soaked in liquid glue—the office stuff in a bottle is fine—and when well and truly permeated with the liquid (again a trifle messy) the piece of sponge is attached to a branch of the tree to represent the foliage. If the branch can be poked through a hole in the 'foliage', so much the better. It will adhere more securely, and looks better. The tree is then fixed to a base, and this can be just what the individual wishes—a small piece of hardboard, or a thick card are both perfectly adequate, although I have used myself a square of plywood. One can usually pick up 'offcuts' at the local hobbies shop. Fixing to the base—hardboard or plywood—is done by covering the wire 'roots' with plastic wood and pressing this onto the base, moulding it to give it a better appearance.

One can have one tree on a single base, or a number placed together on a multiple one, but I would offer one word of warning. It is unwise to take a square or rectangular base and cover it thickly with trees—although the results will be effective from a purely scenic point of view. The snag will arise in a wargame when it becomes necessary to move, for example, a section of infantry through the area—fingers get caught in the 'trees', troops fall over and can be extricated only with difficulty (plus curses) and the entire wood might be swept into the air as a branch gets caught on a sleeve or cuff, and tempers fray easily when such mishaps take place. It is far better to have the trees arranged in rows—two, three or four trees per row, or possibly more. To make the wood is then dead easy, one simply arranging as many rows of trees as may be necessary to form the desired circumference, with single trees placed here and there within just to show that it *is*, in fact, a complete wood. It is not necessary to place a lot of trees inside the circumference, as the same will happen as did with the wood on a complete base. As we shall see, rules for movement through wooded areas are just as easy to operate—in fact easier—in such a wood as I have described than in something which is a solid mass of foliage, branches and goodness knows what else.

Now, for the wargamer who does not wish to make his own trees, the problem has an easy solution, of course. He just goes out and buys them. There are several firms who produce most suitable trees for wargame purposes. The old and famous concern of Britains Ltd. has some extremely fine and realistic examples in plastic—they are built up branch by branch and look really fine, but they are, in my view, much too large for use in our scale, being rather more appropriate to the 54 mm. size of figure. They come rather expensive as well. Probably the best, although even in these days they cannot be said to be cheap, are those by the firm of Merit Ltd. They consist of three species, the alder—my own favourite, as readers of "Battle" will have seen already—the poplar, and the fir. Rocco (Minitanks) also make fir trees. The Merit trees are of softish plastic and can be bashed about without much risk of damage. Treatment of these commercially produced trees is exactly as for the home-made ones, although, as they are light, a simple card will suffice for the base. The photographs show the differences in base material, and also the arrangement of two on the same base.

Third, and last, of the terrain features for consider-

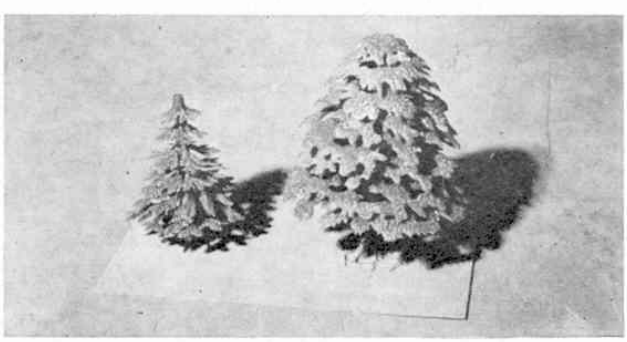


**Home made trees—of an indeterminate species—mounted on a plywood base.**

ation is the river. Again, it will be no secret to readers that I prefer the commercially produced article—in point of fact the Bellona river sections, or to be more accurate, the 'stream' sections. They are nearly 1½ in. wide—the actual stream part, that is—and as this, in our scale, is equivalent to 50 yards, I feel that this is normally sufficient to provide the obstacle we have to consider in our rules. True, one can make the most realistic rivers—I have done so myself, in the past—by using lengths of hardboard, angled at the end in some cases so that when joined up the resulting river can 'meander' a bit. 'Banks' can be provided by using plaster of Paris and the river course can be painted in appropriate colours—blue/green and so on—while a highly realistic appearance can be achieved by sticking crumpled cellophane sheet along the course of the stream. Indeed this can be done first, before the 'banks' are constructed, and these can be brought over the cellophane to assist in keeping it in place as it does tend to come away pretty easily. The plaster 'banks' are painted in suitable colours, green of various shades, etc. If desired, the presence of a ford can be shown by painting tracks leading down towards the river or by otherwise indicating the presence of shallow water. When fighting a wargame involving river crossings it is obviously of the greatest moment to seek out and locate as early as possible the points where a crossing may be made in safety. Incidentally, the Bellona stream sections can be purchased in straight lengths and curves and are by no means expensive. This is not intended as a plug, but it simply happens to be the case.

This is the procedure for producing or obtaining the terrain features we deemed as being of sufficient importance to warrant rules governing their presence on the wargame table. In Part XXIX we shall consider the application of these rules.

**A commercially produced pair—an alder and a fir—on a card base.**



# BATTLE

## by Charles Grant

## Part XXIX
## The effect of terrain on the rules

WHEN WE DISCUSS just how terrain can influence our wargame rules, I have to repeat yet again that the effect we consider will generally have to be a standard one. By this I mean that, when we place one of our 'hills' on the battlefield, i.e. the wargame table, we must perforce consider it as being of an average sort of steepness, if such a thing exists. It is not easy —although it is possible—to legislate for every sort of hill from the gentle slope to the precipitous cliff, and such an undertaking would result in a body of rules approaching in bulk the Oxford English Dictionary. Hills, obviously, come in every conceivable shape and size, but the more extreme can be readily ignored. The very slight slope which has little retarding effect on a man moving upwards on it and the totally inaccessible cliff are not necessary for our purpose. The latter can, of course, be catered for if required for some commando operation and such like, but this is not for us at the moment. What we want is a hill which, although it can be mounted by infantrymen without their having to drop on all fours, will nevertheless cause them to climb it at a rate notably slower than their normal progress along the flat.

Incidentally, it is only fair to announce that, as far as infantry is concerned, I have personally done all sorts of checking rates of ascent and descent—to see the writer rushing up and down various hills with a stop watch clutched in has hand was quite something.

Anyway, since we determined in Part XXVIII—a euphemism for my forcing my preference upon the reader—to proceed in the belief that the 'contour boards' described therein were the best means of reproducing hills on the table, we shall carry on in accordingly. If we consider our contour board in terms of a map, we shall find that on most British maps—the Ordnance Survey type—the contours represent an increase in height of 50 feet, i.e. the difference between two contours represents an increase in altitude of 50 feet. Let us say that our contour board has the same effect—one will then indicate a hill 50 feet in height, and two blocks, one on the other, will be a hill of 100 feet. To get the whole picture, this has to be considered together with the gradient of the hill and the effect it will have on movement. Perhaps the diagram —No. 1—will show what is meant. In our case the summit can be seen to be higher than 50 feet (it is not a plateau) but the edge of the contour can be taken as a very suitable spot where we can operate the delay resulting from the reduction in speed through climbing. The experiments (?) with a stopwatch I have mentioned show that a gradient of about 1 in 10 is a most suitable one for our purposes as it takes approximately twice as long to climb such a slope as it does to get over the same distance on level ground. This, I say again, comes from my own personal and fatiguing observations, but they are substantially accurate.

During a war game, then, if infantrymen are climbing such a slope—the one we have decided to take as a 'standard'—their speed will be halved, so that, instead of the normal infantry move of 3 in., it will, in fact be 1½ in. We have to express this in terms of our particular type of terrain, and the most suitable way of doing this is to say that, on the move during which a contour is crossed—in an upward direction, needless to say—the move is reduced by half. For example, when a body of infantry on foot arrive at the end of a move at a point 1 inch from a contour, then, on the next move, when they actually cross the edge of the block, their move is only 1½ inches. This means that, in this example, the infantrymen—1 inch from the edge, would be placed on the move half an inch in from the edge, making the whole move the required 1½ inches. Once over the edge, then progress on the contour is as normal. This curtailment of the move applies to all vehicles as well as the chap on foot. Take the case of a tank with a cross-country move of 8 inches. When crossing the contour—on the way up—the move would be reduced to 4 in. Naturally, if a road crosses the hill, then it would be the 'road move' which would be cut by fifty-per-cent. Downward movement is not affected by our gradient.

The second tactical consideration applicable to hills is its effect on visibility, it being obvious that 'what is on the other side of the hill' cannot be seen by troops at ground level. Again may I refer to Diagram One, which shows the assumed shape of our hill, which, although it is in fact a species of plateau, is for our purposes a rounded eminence with the peak roughly in the centre. If we put one of our 20 mm. figures close up to the contour on ground level, it is plain that anything *on* the contour and as close as a couple of inches would not be seen by the chap on the lower level. We ignore this, however, as our board is taken to have the shape as shown, with a clear field of view from the bottom to the top—up the slope, of course. It is when what is being observed goes *over* the summit that it disappears from view of someone at ground level, and being on 'the reverse slope' or in 'dead ground' it is quite out of sight.

We must decide what constitutes this 'reverse slope' in terms of our contours. As in Diagram Two a second and smaller contour may be placed on the first, but even without this, there is no problem. The actual peak of the hill or its summit can be marked simply, with a spot of paint, or maybe with some additional feature, such as a tree, a bush or what have you. Anything on the hill further from an observer at ground level—beyond the 'summit', that is,—is invisible, and militarily, the chap at ground level will be the worse for it.

It will frequently be the case, of course, that hills will not be round, but will be irregular or elongated into ridges. If this be the case, the ridge can be shown by drawing a line on the contour, and behind this, troops in numbers may be concealed.

A note concerning reverse slopes. They afford complete cover for any troops or vehicles, and these cannot be fired at by troops advancing up the 'forward' slope. The same applies to artillery—unless of course an observer is in such a position that he has the reverse

slope of the hill in sight and can direct his guns accordingly. Shells could be fired onto the reverse slope without direction, of course, in the hope that something might be hit, but this is pretty much a waste, and I feel that it is best if we lay it down that such firing cannot take place, and that, unless they show themselves at the summit, troops on the reverse slope cannot be fired at by rifle or gun. If, of course, the defender moves forward to the crest of the hill then he becomes visible and will have to take what's coming to him.

So much for hills, then, and we get on to the next terrain factor, to wit, woods. These we shall treat in the same way as we did the hill, by adopting a standard, and specifying that our wood is an area of trees spaced fairly densely. This is no copse we are thinking of but something which, taking trees, brushwood and undergrowth together, forms a pretty tangible obstacle to progress, particularly by any sort of vehicle.

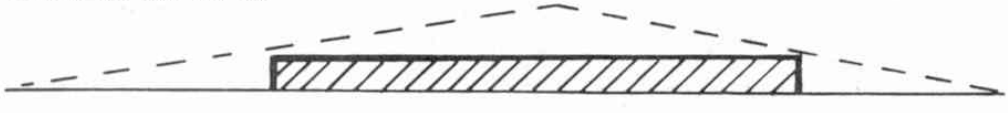
First, we rule in fact that any wheeled or tracked vehicle cannot operate in woods unless by way of some specific trail or road which may be indicated. Infantry may do so, but only under certain conditions. Due to the difficulty of making their way through the trees, etc, their rate of advance must be cut, and from 3 in., their move becomes 2 in. Further, to allow for their having to be very well spread out to negotiate this difficult terrain, they must be the same distance apart —2 inches. So much for the move, what about their fire? Again, this must be limited by the trees and so on—visibility is naturally less and so is the field of fire. The rule then is that rifle range is halved, from 9 in. to 4½ in. and at any point within that range a ' 6 ' must be thrown for a hit to be made. Sub-machine guns—ideal for close fighting—are not affected, but heavy machine guns also have their range reduced by half—to 9 in. Within this range—one can take half the orthodox ' machine gun cone of fire ' as described under ' Infantry Weapons ' in Part XII and use this in woods—a 5 or 6 dice throw will produce a casualty within this curtailed cone.

Should it happen, and it is possible, that opposing troops clash in hand-to-hand combat in a wood, ordinary rules apply—players throw dice, higher is the winner.

A final practical point on woods can be resolved by the way they are made. This is the question of just what area is " wooded ", and the answer is best provided by the trees—the commercial type—shown in the photograph in Part XVIII. The card base can be taken as the exact area of woodland—anything on the base is considered as being subject to the penalties for moving or firing in woods. Simple?

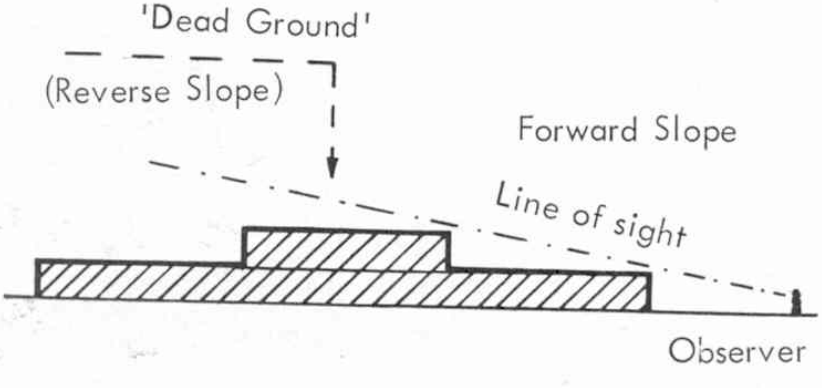
Rivers can be dealt with briefly. We are not at the present interested in pontoons or bridge-building engineers—all this will come later—but with the troops plunging into a river and getting across where no bridge exists. This requires some planning if the game is a spontaneous one with no campaign background, the simplest thing being to have two classes—one being the ' river ', which can be crossed only at fords—they must be identifiable—or by bridges, and the second being the ' stream ', fordable at all points by all troops, infantry or vehicles. If the encounter is part of a campaign than there is no problem, one reproduces on the table the details of river or stream, and the fords if any. Otherwise, the crossing can be effected where the players decide, and the time element is the important one as it will take up quite a bit of time. Experience shows that it is laid down that infantry—on foot—take two complete moves to cross a stream, this is about right. Artillery, and all sorts of vehicles must take longer, and four complete moves has been found to be appropriate. Of course, different types would take slightly different times, but this again is an average. The wargamer seeking refinements can readily allocate a different number of crossing moves to different vehicles.

DIAGRAM ONE



Shaded area - the contour block
Broken line - assumed shape of the hill

DIAGRAM TWO



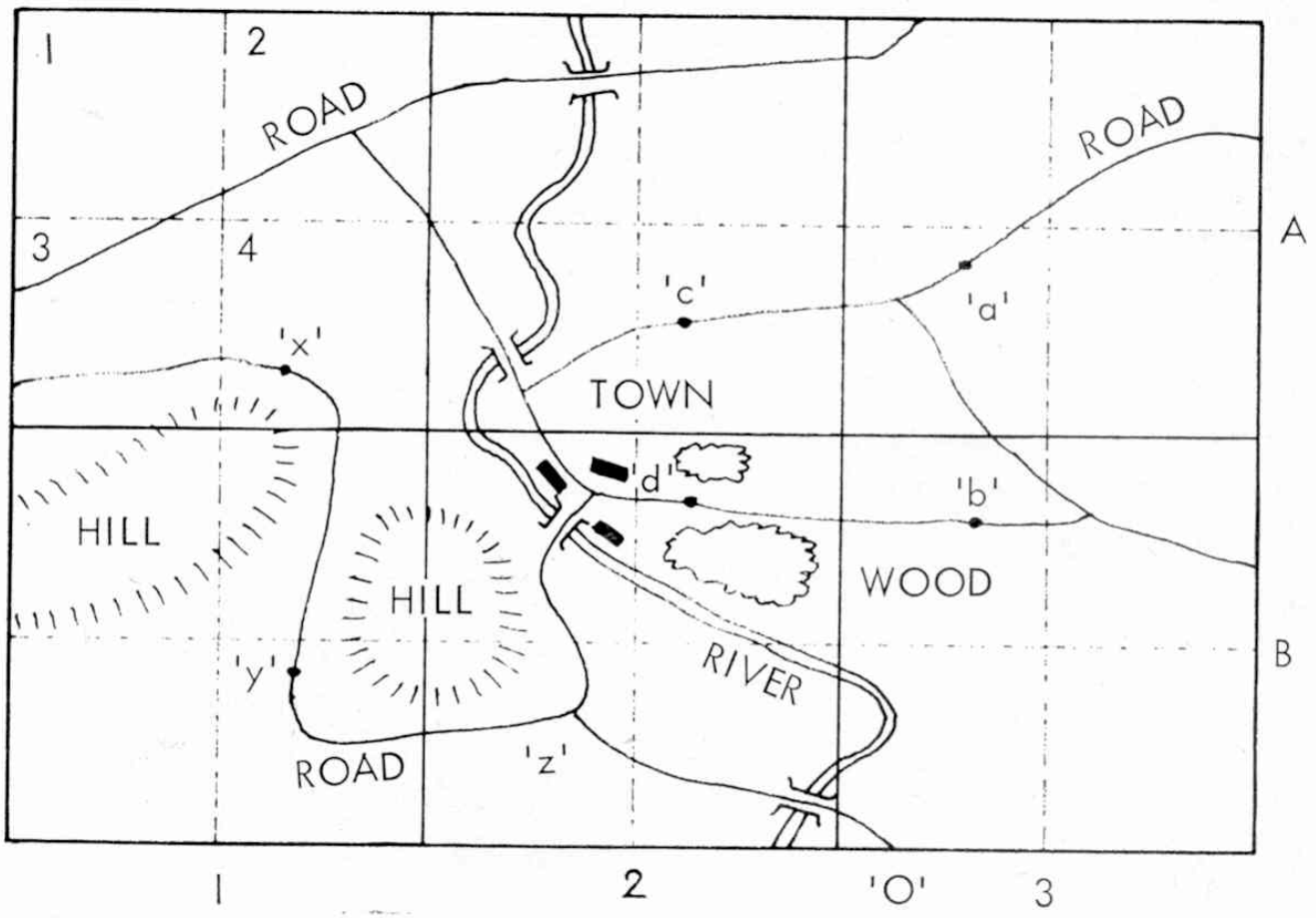
# BATTLE

## by Charles Grant

## Part XXX—A beginning with maps

IT IS LOGICAL, I SUPPOSE, to proceed from terrain to topography, and it is with the use of maps in the wargame—or at least the elements of the 'art'—that I propose to deal now. So far, we have been concerned only with the action taking place on the wargame table, the purely tactical side of the business, and nothing has been said as to how the troops arrived there and, indeed, why they did so! The traditional set-piece engagement, in which the players array their troops on opposite sides of the table prior to setting about each other, has its limitations and sooner or later the time arrives when the player asks himself whether there should not be a little more to things than a straightforward coming to grips with what he sees opposite him. He realises that his overall view of the scene of operations (even allowing for the varying visibility factor) is neither a true nor a realistic one, and furthermore, it might occur to him that it would be a good thing were he able to divert a portion of his force on some wide flanking movement beyond the confines of the table and thereafter smite his opponent on flank or rear right lustily, with results devastating to the recipient of the operation.

All this is perfectly possible, as will be demonstrated, although inevitably some little preparation is required if one is to indulge in the strategical sort of wargame rather than the purely tactical one we have dealt with in the past. The first and obvious requirement, needless to say, is a map, or rather two identical maps, as it is much easier for each player to have his own, enabling him to mark out positions, movements and what not, without his opponent seeing his dispositions and penetrating his designs. It is possible to obtain commercially produced maps, some however being unsuitable in that they contain far too much detail for our purpose, or alternatively, too little, although if we are pushed, the latter is more preferable. It must be remembered that sooner or later a part of the map will have to be reproduced on the wargame table, and if a great deal of topographical detail has to be included the resulting clutter and confusion may well spoil the game. What we really want is simply something to



show the main terrain features—hills, rivers, woods and so on, and at the outset the less built-up area the better.

The problem, indeed, may be quickly solved by drawing up one's own map—not such a tremendous task as might be imagined—thus giving an opportunity to create some totally imaginary piece of countryside, but this is something we will take up a little later when discussing the broader aspects of the strategical type of game. In the meantime let's concentrate on the simple mechanics of operating what we call a 'map game'. It is quite an elementary business, really, and adds quite remarkably to the realism of the game and to one's enjoyment of it.

Let us start with a map then, and for the moment let us take the small section of one reproduced. Only the barest of essentials are shown, just enough to indicate how the process of moving troops is carried out. As will be seen, the map—admittedly a pretty barren piece of country—is 'gridded', the larger squares, those contained within the continuous lines, being easily identified by the grid references, for example, the top left square is A.1. Each of the large squares is divided again into four by the broken lines, they are numbered as shown in every case, and are again readily identifiable. The extreme top left small square will be referred to as A1.1, its neighbour on its right being A.1.2, the one directly below A.1.1 being A.1.3 and so on. The reason for the second grid will be apparent at once.

Now we shall consider the movements of two 'generals', whose troops are coming on to the map from opposite sides, one from the LEFT, the other from the RIGHT. As has been said previously, I find —certainly when fighting is taking place on the table— that simultaneous moving is desirable; on maps the reverse is the case, alternate moves by the players ensuring that no anomalous situations arise with people passing under each other's noses without realising that this is happening. Our first proposition therefore is that players move alternately. It will be found that, in the case of map moving, no undue advantage can accrue to any player by reason of his moving first or second—or at least very little can do so, and this sorts itself out as play proceeds.

A quick word about the distance of the moves as made on the map. I don't have to point out, I'm sure, that—just as on the wargame table itself—different types of vehicles have different moves, as do men on foot of course. All, however, whatever distance they are moved on the map—and this is a matter of convenience relating to the scale of the said map—are in exactly the same proportion to each other as are the table moves. For instance, a vehicle whose table move is 12 in., that is, four times the infantryman's move of 3 in., will have, on the map, a move four times that of infantrymen dismounted. At the moment this does not greatly matter, for we shall take, for the purpose of demonstration, opposing forces of exactly the same type with accordingly the same move. Getting on with it, we assume that player LEFT has first move, and that he has a couple of armoured cars, their task being to 'recce' as far forward as possible until they contact the enemy, RIGHT. So, having quite arbitrarily given the cars a move—on the map—of 1½ in., we see that LEFT has moved his armoured cars along the southernmost of the two roads in A.1, and as each sub-square is one inch square, the vehicles at the end of the move are at position 'x', and LEFT announces to RIGHT that he is in Square A.1. The latter has a little information at his disposal now—such as he might get from aerial observation—and is aware that the enemy is in a certain area, but he is without detailed knowledge of his strength and intention. So off he goes, *his* two armoured cars entering the map separately, one on the north road (in A.3.2) and one on the southern one (B.3.2). Both make the appropriate move—1½ in.—and *they* end up in positions 'a' and 'b' respectively. RIGHT then announces to his opponent that he is in A.3 and B.3, thus 'foxing' LEFT pretty considerably.

Now it is the turn of LEFT again, and his cars race ahead, reaching, at the end of the second move, position 'y', ths being announced by LEFT as 'B.1'. Things are becoming a little clearer from RIGHT's point of view. Previously he was in a bit of a quandary, not being certain whether his enemy was on the north road, heading for the river crossing at A.2.1, or on the south road, with a different objective. So he sends his cars forward on their respective roads until they reach the end of their second move, positions 'c' and 'd' and announces to LEFT his presence in A.2 and B.2. (Generally we refer to these announcements as 'contacts', although contact is not necessarily always made —it's just a phrase). Things are hotting up somewhat and discovery is imminent, and probably a confrontation as well.

LEFT's armoured cars proceed from 'y' and at the end of the move they reach the junction, position 'z', in the large square B.2. Now, since, for the first time, opposing forces have entered the same large square, to wit B.2, the moving player has to particularise rather more. As RIGHT had already indicated his presence in the square in question, LEFT must be more explicit, and has to announce both square and sub-square, which is in fact, B.2.3. RIGHT shakes his head and replies 'No contact'. Now, both 'generals' have a fair idea of what is going on (although neither will have any idea of his enemy's strength). LEFT, having reached 'z', knows that RIGHT is in the northern part of B.2, for, had he come in from the south, by 'O', he would certainly have reached 'z' by the second move. RIGHT realises that *his* enemy must be in B.2.3, as he could not have got further in the time, but he cannot say what the enemy destination will be.

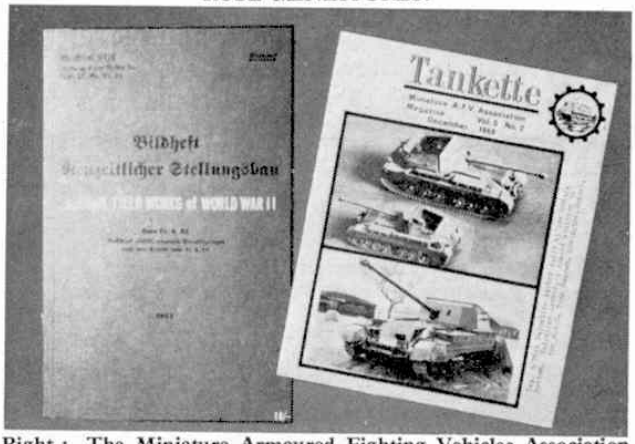
The crucial move is the third, LEFT dividing his force and sending one of his cars to the bridge at B.2.4 (to secure the crossing) and the other into the town at B.2.1 to await the enemy. In so doing he states his presence in the exact sub-squares—B.2.1 and B.2.4—RIGHT, as we already know, being in B.2.2. The ball is now in RIGHT's court, and forward go his cars, one from 'c' to secure the bridge in A.2.3, and the second—with some caution it must be said— from 'd' towards the town, his intention being that the second car should, if possible, pass through the town and head southwards into B.2.3. Given a free passage he would probably get as far as 'z'. He therefore announces 'A.2.3' and 'B.2.1'. Were there no reaction to the latter call, he would follow it up with B.2.3, but a sharp cry of 'contact!' brings him up with a jolt. (Naturally, one has to follow, in announcing positions, a logical sequence showing the progress of troops. If he had simply given the destination, B.2.3, there would have been no reply, as LEFT had already moved out of this sub-square, and the whole thing would have been rendered null and void).

So we have finally arrived at a confrontation—the enemies are in presence—and in the next Part we shall see how each is discovered to the other and how this can be most realistically done.

Going right down the scale—in size, that is—it was with undisguised delight that I viewed for the first time some of the 20 mm. metal figures produced by LES HIGGINS MINIATURES (78 Northampton Road, Wellingborough, Northants.) They really are accurate 20 mm. figures, not the 25 mm. which is common nowadays and in this size they are quite the best I have seen. The firm does two lines—20 mm. and 30 mm.—and it's the former I'd like to deal with for the moment. At present there are twenty or so different figures in this line, all of the 1700-1720 period—the " Marlborough " series—the age of Blenheim, Ramillies and so on, and the figures simply cannot be faulted in any way. I was quite honestly tremendously impressed by them. The detail of casting —not a vestige of ' flash ' anywhere—would do credit to figures many times their size. In mass, and painted only reasonably well, they would provide a wargame army to be proud of, and they could well stand on their own on the display shelf. Have a look at the mounted officer, for example—a real beauty, is he not ? And the grenadier about to heave his missile—another splendid figure and no mistake. Prices are normal for this size—the foot figure is 1/6 each, and a shilling each if more than 12 are purchased together. The separate horse comes at 1/6, so that cavalry, if a dozen or more are bought, are half a crown each, I suppose. For a period not too well known but worthy of much attention—wargame-wise, that is—Les Higgins Miniatures are the answer. I'm sorry if I sound overenthusiastic but they really did take my fancy. (I hope to have a note on the 30 mm. figures ere long).

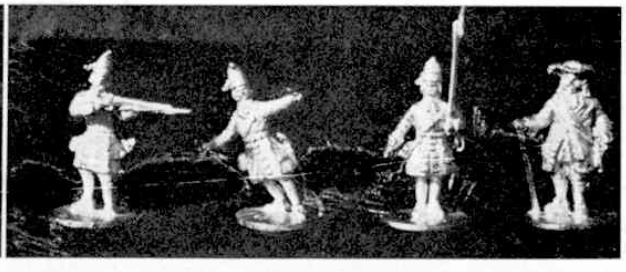
A very useful " Bibliography of Military and Naval History " has been produced by Tony Bath, Vice President and founder of the Society of Ancients (11 King Edward Avenue, Millbrook, Southampton). This provides a convenient reference to books covering all periods of military and naval history from the earliest times to the present day. It is in loose leaf form and doubtless could be added to—good value at 10/- post free.

A fine selection of Indian and British Colonial pre-1914 types, together with some splendid Persian ' Immortals ', all by ROSE MINIATURES.




Right : The Miniature Armoured Fighting Vehicles Association magazine, ' Tankette ' is full of good stuff to interest the modern period wargamer.
Left : A most useful publication from BELLONA—everything one could wish to know about German field works of World War II.

A selection of the new LES HIGGINS MINIATURES. Scale is 20 mm. and detailing is very impressive.



# BATTLE

## by Charles Grant

## Part XXXI—More About Maps

HAVING ARRIVED AT THE POINT where two opposing forces—the strength of each of which is unknown to the other—are confronted, we now have to set up the situation on the wargame table and proceed from there. Now, a glance at the section of map shown in Part XXX demonstrates that the confrontation took place in the vicinity of the village located in sub-square B.2.1, and this will be the point round which the remainder of the drama unfolds itself.

Before anything else can be done, however, the point concerning the relationship—scale-wise, that is—between map and table must be decided. That is to say, we have to decide just what the actual playing area represents on the map, and how much of the latter will have to be set up on the table. It seems more than likely that some sort of scale will already have been decided upon, and to make the thing as simple as possible, let us say that 1 inch on the map—this being the side of a sub-square, of course, represents a distance of 8 ft. on the table. By a strange coincidence, we find that the table in use is square, each side being 8 ft. in length, so it does not require much thought to see that the area of a single sub-square represents the exact size of the table we have in use. Now, if the contact took place in the exact centre of some particular sub-square, it would be apparent that all we should have to do is to set up on the table the terrain of that sub-square. The event, however, is not always so simple, and, as actually happened in our example, the centre point of the contact was well to the east side of the sub-square in question, so that it would make the action a trifle lop-sided were we to reproduce only that sub-square. What we want, to be fair to all concerned, is to reproduce part of one sub-square, B.2.1, and part of B.2.2. The procedure for carrying this out is not difficult and consists of using a small square of transparent acetate sheet or perspex, cut to the size of the table—that is, 1 inch square—and superimposing this on the map, by the elementary device of sticking a pin through its centre and then on to the point of contact on the map.

So far, so good—when the contact is made, and both players agree, then one sets up on the table the appropriate terrain, hills, woods, rivers, and so on, but with this done, one important thing remains. Here I am deliberately bringing in as many complicating factors as I can—and this one is the question of visibility. One need not at the outset deploy one's hardware on the table for the edification of one's opponent. A 'sighting' certainly has been made but the only troops involved are the advanced parties of either side, and if further forces are in attendance, the two 'generals' might well wish to keep this fact to themselves. The best way to cope with this situation, having determined visibility is by way of a second map, quickly drawn, to represent the area of contact, to wit, the area already laid out on the table. The handiest way of doing this is to have a board of the required size, already 'gridded' in ink or biro, and on this one draws in the details—taken from the table—in pencil (once used, these can be rubbed out and the 'gridded' square used again). Ideally, the grid lines should be ½ in. apart, this representing a 6 in. table grid, although in the illustration, the lines shown are those of a 12 in. grid—the idea being to save the extra lines and make the thing a little less complex.

Once the map is drawn on the gridded board, all that remains is for the players to get cracking. Each notes his map position *before* the move on which contact was made, and again the moves are made alternately, but this time, although the moves are again 'blind', in a manner of speaking, they are actually taking place on the wargame table, and consequently actual table moves—scaled down, naturally—are used. Since we were speaking of reconnaissance groups using armoured cars, then the move would have to be the equivalent of the armoured car road move which, as we know, was 24 in. On what we might call the 'close contact' map this, in the map/table scale of 1 in. = 24 in., would be 2 in. Right, so having decided visibility by the normal throw of the dice, and having determined that it is 30 in., we know that on the 'close contact' map this is in effect 2½ in. So on we go.

Giving LEFT first move, as in the preliminaries, his armoured car moves up from 'x' and reaches a point 2 in. ahead, arriving in square C.7 at a point indicated as 'y'. RIGHT now moves from 'a', his armoured car reaching 'b' at the extreme western edge of G.3. Both references are given by the players as they make the moves, but neither can as yet see the other (the distance for visibility is taken from square to square and if there is any doubt, from centre to centre of the two squares involved).

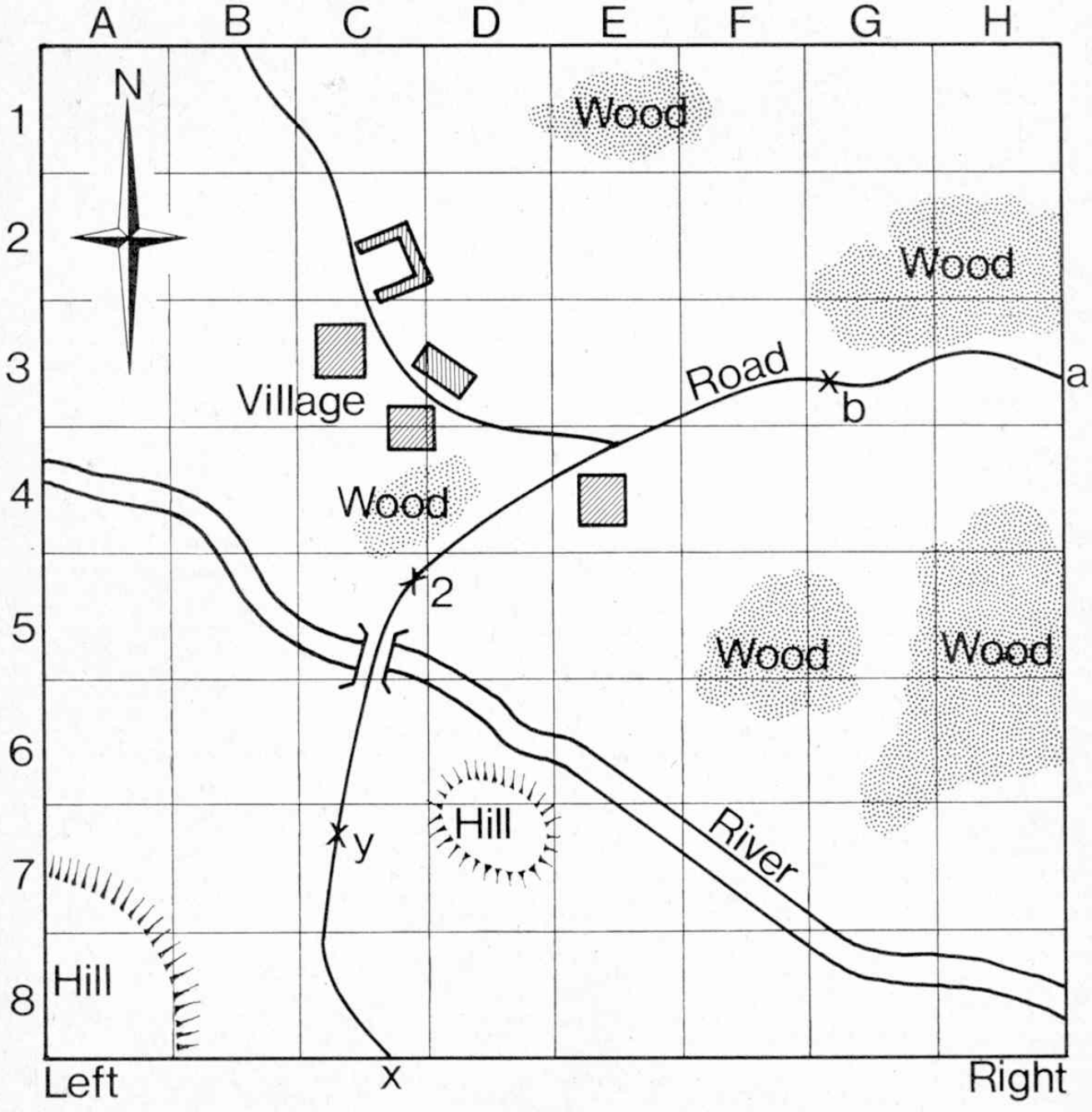
LEFT moves again, another 2 in., this putting him in square C.5, his position being shown as 'z'. Now, from centre of C.5 to the centre of G.3 is less than 2½ in., so obviously they have sighted each other and a declaration of position and strength has to be made by each player. Accordingly, on to the table would go two armoured cars, LEFT's being at 'z' and RIGHT's at position 'a'. From this point the battle may be joined and they can blaze away at each other to their heart's content.

Now, in the example we have just gone through—not too laboriously, it is hoped—there were no follow-up forces, but had there been any on either side, the squares containing them would have to be announced, of course, although naturally not what their composition was, at least, as long as they were out of visibility. So, if, for example, LEFT had a heavy tank or two following up a couple of squares or so behind the armoured car, RIGHT, although getting the grid reference for them, would not know what was in the particular square until they had moved up and been placed on the table, doubtless is gun range of the enemy armoured car.

Now I'm quite sure that the alert reader and student of the military art will have seen the possibilities now open to exploitation, for this use of the table/map is one of the means by which we can achieve tactical surprise on the wargame table. Let us, for example, suppose that the armoured car pushed forward by RIGHT was followed, at a discreet distance, by a tank which, instead of moving forward, took up a hidden position in the edge of the wood in H.3. Following upon the initial confrontation, let us suppose that RIGHT withdraws his armoured car, apparently signifying that discretion is the better part of valour. LEFT, elated at the retreat of his enemy,

follows up, pushing *his* armoured car forward, right into range of RIGHT's tank, which immediately looses off a shot at point blank range, with any luck writing off LEFT's car as a total loss. This naturally gives away the tank's whereabouts, and it has to be placed in position forthwith. All sorts of ploys are readily seen. If RIGHT had arrived at the village first, with infantry, shall we say, he could have filled the houses with riflemen, machine guns, bazookas, and so forth, and generally laid on quite a reception for his opponent. A player needs declare the composition of concealed troops—although he has previously given a map reference for them—only when an actual reconnaissance has been pushed right up to contact, or when the hidden guns or whatever come into action, thus revealing their presence. This applies when they are within visibility, this usually being the case, unless the hidden chap is an artillery F.O.O., when the action would be taken by guns possibly off the table.

All the foregoing has been concerned more or less with the formal procedure as it takes place, with both parties unwilling to concede anything and, for one reason or another, insist on the actually plotting of the moves on the small board. Many times, however, it will be found in practice that it is not necessary to go to such lengths when, for instance, the players are content to have simply a verbal statement of what is taking place. LEFT might say—"Well, I've an armoured car moving along towards the village, what have you got about?" RIGHT might reply to the effect that he, also, has an armoured car near the village, looking around to see what is afoot, but that he does not necessarily propose to do anything violent, for the moment, at least.



The Sherman in action, with infantry support, and ' John Wayne ' on board to give encouragement.

# BATTLE by Charles Grant

## PART XXXII—Something different

THE OBJECT of this particular exercise was really a twofold one—to take advantage of a little unaccustomed sunshine and to prove that wargaming need not necessarily be carried out within the confines of four walls and on a comparatively small wargames table. Of course, it must be conceded that the whole thing was carried out in a fairly light-hearted manner, and it certainly took some time before the eyebrows of neighbours—elevated as high as they could be at the sight of sundry individuals crawling about on a lawn—returned to their normal position. Still, it was all good fun and thoroughly enjoyed by the participants —indeed their cheers and loud vocal encouragement of their respective troops might have been heard many hundreds of yards away.

Naturally, when considering a move into the outside world, certain considerations had to be looked at with some little care. Obviously, to begin with, the normal 20 mm figures used heretofore were of no use at all. However many times the mower was pushed across the lawn, the grass, short though it might have been, was as an impenetrable jungle to the men of the 20 mm units we have been using all along. The rules, too, necessitated examination, for—playing on a stretch of grass some 40 feet by 15—instead of the normal nine by seven feet table—the game, if the normal move rules had been adhered to (infantry move 3 inch and so on), would have given the contenders hours of labour before the opposing troops even came in sight of each other. In this predicament, it seemed that only larger troops, and correspondingly larger vehicles, would do the trick, and we were fortunate enough to be in receipt of some very generous latter-day " lease-lend " from the well known firm of Richard Kohnstam (' RIKO '), who most magnanimously supplied the requisite larger scale vehicles and troops for us to carry out our little experiment, the former being of Tamiya manufacture, and the troops the large scale Airfix ones. The fact that the vehicles were 1/35 scale and the troops 1/32 did not really matter very much, the scales being close enough not to make the men look over-large.

One of the German half-tracks in a spot of bother—the inmate not too happy, either !

It was decided that the game should be as basic as possible and to this end only simple forces were used, the infantry group described already in " Battle ", but carried in two instead of three half-tracks, while each force was supported by one tank of the appropriate nationality. In the case of the German force it was the inevitable Panther, while the Americans were provided with a Sherman. Somewhere along the line the U.S. force added an armoured car to their array (I never did find out just how this occurred!). There was strong temptation about to allocate names and identities to each of the troops involved, and indeed the ' American ' player was, from time to time, heard to mutter instructions and encouragement to " John Wayne " and " Henry Fonda " while, the Germans being uniformed as Waffen S.S., *their* general seemed to regard their officer as " Obersturmbannfuhrer Lutzig " or some such.

Then there was the question of moves and ranges

of the various weapons. This involved but a simple calculation, the multiplication by 3 of each required move and range. Thus, the infantry move became one of 9 inch—the dismounted move, that is—while those for the tanks became 24 inch and 18 inch for the Panther and Sherman respectively. (We assumed that there were no roads and all moves were therefore considered to be ' cross country ' ones). Ranges were increased in the same proportion, rifle range becoming 27 inch, the bazooka's becoming 24 inch, for instance, while the tank gun ranges shot up to something like an incredible twelve feet! Everything else, the deflection stick and so on, were as used for the ordinary table game, and although no specific cones of fire were constructed for the outdoor ranges for Machine gun and sub-machine gun, the effect of these weapons was quite successfully estimated. When dispute arose, an independent umpire was called in to arbitrate.

And so we began, the ' American ' player advancing from the south end of the lawn (i.e. the battlefield), and the ' German ' from the north end. It was at once decided—in order not to complicate things too much —that there should be no restriction on visibility, wargame-wise, and the players therefore had an uninterrupted view of many ' miles ' of territory. The first ' sightings ' did not take long in coming, and both opposing tanks opened fire simultaneously. Forthwith, there was an immediate halt to the proceedings when the dice were thrown and one promptly disappeared from sight in the grass. It was discovered after a prolonged ' cordon and search ' operation, and to avoid further mishaps of this nature, a small table was procured and set up nearby for dice-throwing purposes. The game then proceeded, both infantry groups coming up as fast as they could in support of their armour, and deploying—I daresay somewhat to their surprise—in the lush undergrowth. The comment was heard that ' a course at the Jungle Fighting School would do them a power of good '.

However, to the deep chagrin of the ' American ', his Sherman soon became a victim of the formidable Panther, and the latter went charging on dealing out mayhem and destruction in all directions, the American armoured car being its next victim. The bazooka team was lurking about in a small copse (for this read ' tuft of long grass ') and let fly a round at the triumphant Panther. As ill-luck would have it, this was a clean miss and before another round could be fired, the bazooka men were under fire from the S.S. riflemen, which did them no good at all. Putting paid to them meant the end of the fight for the Americans, their ' general ' being led away quietly, protesting about his ' rotten dice luck ', and that it was the last time he'd fight in the garden. That remains to be seen.

**Waffen S.S. in action—pretty hard going in such a jungle !**

Anyway, although it was lots of fun—one character dug little pits near the tanks, filled them with paraffin-soaked rags and set light to them, providing a realistic simulation of a tank ' brewing-up '—it could be seen that there were indeed quite considerable possibilities in this outdoor game. The room for manoeuvre, the extended moves, and so on were surprising, and with some more serious preparation, such as the construction of a few houses (or merely ruins) in the proper scale, the presence of a few trees (old wallflower plants are just the job), then a really intriguing and realistic game could be had.

Why not try it next summer ?

**American assembly point—the Sherman about to move away from the other vehicles.**

# TABLE TOP BATTLES

1

**This is the first of a series of articles which will deal with the building of scale model military vehicles and equipment to form a Wargames Army. Wargaming, apart from being a fascinating hobby in its own right, enables military models to be used rather than stand around gathering dust. Detailed information on military vehicles is not always easy to obtain, but this is no drawback, as Wargames models can be as simple or as detailed as you wish. After all, a real-life general is not too worried about the look of his forces, so long as they win the fight!**

THE Second World War is the one that will be dealt with mainly, as it represents the period when the greatest strides in the military vehicle field were made. The 00 scale (1/76) is, of course, the most suitable on which to base any collection. A complete range of vehicles and men is modelled by Airfix at very reasonable prices and this scale has the added advantage that, should you wish to incorporate trains, most model railways are also to this scale. Aircraft (at 1/72 scale) are reasonably close enough in size to be utilised as well. Wargaming rules can, like the models, be as basic or as complex as you wish. Later in the series we will be giving you a few ideas on which you can base your own rules. First however, let us have a look at the approximate type of formation that we will need to develop for the sort of game where the tank is the most important feature. We must at the outset, adopt a somewhat false unit, based on the establishment of a division but, of course, with considerably fewer men than a *real* division. Though, naturally you are free to adopt any size you wish, it has been found that a model division with six to eight tanks and fifty men is adequate. If you examine most of the currently available 00 scale models, you will notice that they are all vehicles that fought in Europe after the D-day invasion of 1944. It is interesting to note the actual size and make-up of the British, United States and German divisions at that time, so that you will see the type of vehicles required, and decide for yourself what size your own divisions will be.

The British and American troops were generally better equipped with transport, but suffered from the fact that the German tanks were superior to the American Sherman. Airpower was the deciding factor on the Allied side. *A British Armoured Division* comprised three tank regiments with a total of 190 Sherman tanks; three infantry regiments of about 800 men in each, all transported in halftracks (M-3 halftrack kit); carriers (bren carrier) and 15 cwt. trucks. Two regiments of artillery had a total of forty-eight 25 pdrs. which were either towed by the Quad Tractor or were self-propelled ('Sexton' will appear in a later article). One anti-tank regiment had forty-eight 6 pounders. Finally the division had detachments of Engineers, Signals troops, Reconnaissance, Transport and Medical services.

The *Infantry division* was formed from nine regiments of men, totalling about 7,200. These were transported by similar vehicles as described for the armoured division. When it was required that they should all be moved at once, extra transport had to be provided. The divisional artillery consisted of three regiments of towed 25 pounders having a total of seventy-two guns. Otherwise it was similar to the armoured division.

Commanded directly by the Army commander were *Independent Tank Brigades* of 190 Churchill tanks; these were used to support the infantry in

3

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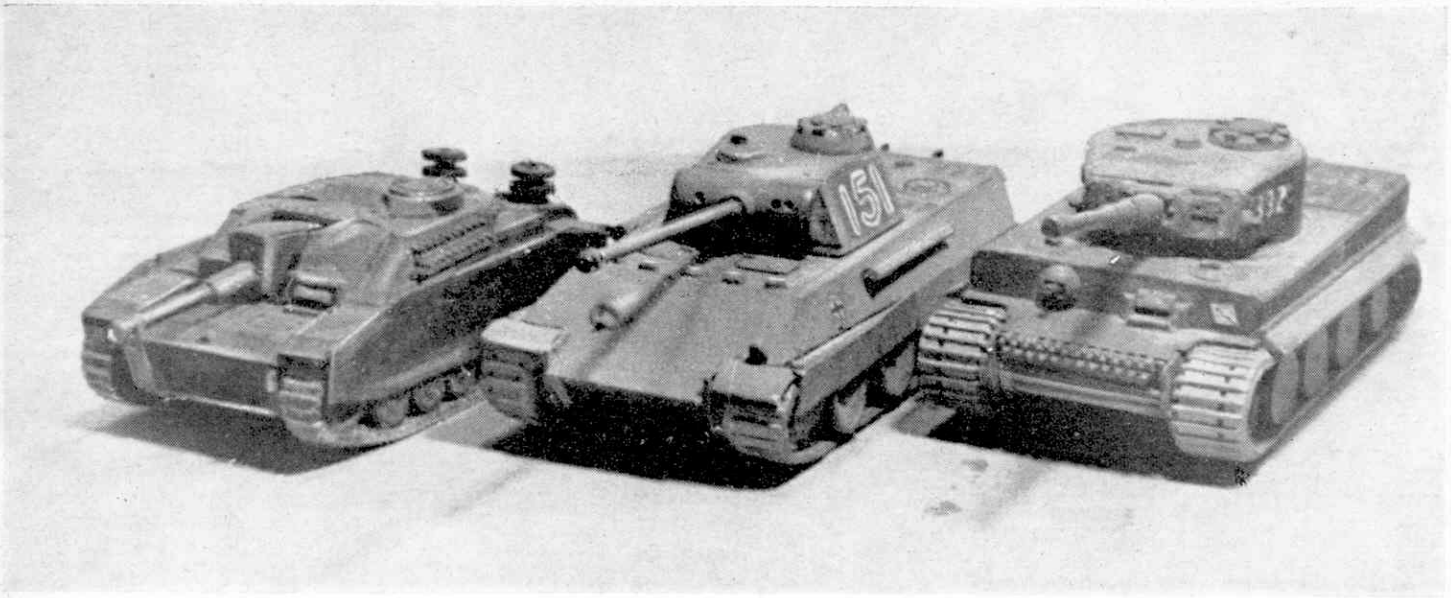

2

**1.** A typical action scene from North Europe 1944. American infantry await the order to advance. They are using captured German half-tracks to supplement their own jeeps, Eager Beaver lorries and armoured cars. **2.** German Panzers; the 'Tiger', 'Panther', and assault gun 'Sturmgescheutz III'. **3.** An American GMC truck, an M3 half-track and a Dublo Dinky Austin lorry. The latter is in German hands. **4.** The British Quad and 25 pounder, Churchill tank, and Bren carrier towing 6 pounder anti-tank gun. **5.** A selection of the beautiful little Austrian made H.O. scale (1/90th) Minitanks. The plastic mouldings incorporate incredibly fine detail which just cries out for some hand paint work, and since most of the parts of these models simply clip together, they can easily be taken apart for painting. The tyres in particular are greatly improved by a coat of matt grey/brown paint. Just about everything (except the tracks) seems to work on these models—even the tiny machine gun on the tank turret rotates and elevates! Big surprise is the low price particularly for an imported line of such high quality. The Bridge Layer (top) with completely operating bridge, costs only 4s. 9d. The Chieftain tank 2s. 6d. The impressive tank transporter costs 5s. 3d. and the La Crosse Missile truck 3s. All come packed in attractive transparent moulded display cases, and an illustrated catalogue is available from the U.K. distributors, Model Hobby Products, Mebro Works, Cuckoo Hall Lane, London, N.9. Price 3d. in addition to which you *must* send a *stamped*, self-addressed foolscap envelope. **6.** The American Sherman tank was the main allied battle tank. It is accompanied here by the Roco model of the M-40 S.P. 155 mm. gun

attacks. *Medium Artillery Regiments* were also under Army command and were equipped with sixteen 5·5 inch howitzers towed by Matadors. The troops for the model division can be obtained by putting the heads of the 8th Army set onto the combat group or simply by using these figures without alteration, despite uniform difference for the European front.

*American Armoured Divisions* were formed with three Tank Battalions of Shermans, a total of about 186 tanks; three infantry battalions which had about 1000 men each, and were all transported by the M-3 halftracks or Jeeps; three artillery battalions were each equipped with twelve 'Priests' (which we will deal with in a later article). The division had all the usual other divisional troops. Their *Infantry Divisions* consisted of nine battalions of infantry which were transported in the same way as the armoured division, but in addition used the 3 ton GMC 'Eager Beaver' truck (we can use the under-scale ROCO-Peetzy model of this vehicle) and had eighteen 'Priests' and a similar number of 57 mm. anti-tank guns attached. They were exactly the same as the armoured divisions from here on but often their artillery battalions used towed 105 mm. howitzers instead of the self-propelled 'Priests'. The troops for the Wargames can be the 'U.S. Marine Corps set.'

While the German name for an armoured division will be familiar to all, a brief description of the *Panzer Division* will be appropriate. The main units were the two Panzer Battalions of 150 tanks, usually 'Panthers' or the 'Pz Kw IV'. These had four infantry battalions of about 1000 men each all transported in the armoured halftrack Sd Kfz 251. Unfortunately, we have no ready-made suitable models to represent these, so use 'captured' M-3's and the Dinky Dublo Austin Lorry (although obsolete, many of these Dinkys are still around). Forty self-propelled howitzers made up the three artillery battalions; while the one Panzer Jaeger battalion (anti-tank) was equipped with twenty-four assault guns and twelve towed or self-propelled 7·5 cm. anti-tank guns. (The German Armoured Car Sd Kfz 234 will represent the S.P. 7·5 cm. gun). The division then had all the other usual units similar to the British and American divisions.

The German mechanized infantry were known as *Panzer Grenadier Divisions* and were identical to the Panzer Division except that they had only one Panzer Battalion of assault guns instead of tanks. The infantry divisions were very poorly off, by comparison to their Allied counterparts, having to rely mainly upon horse-drawn transport to carry their six battalions. They also included an artillery battalion of twenty-four horse-drawn 15 cm. (6 inch) howitzers; but their anti-tank battalion used motor tractors to tow the thirty-one 7·5 cm. guns. Directly under Army control were *Independent Battalions* of 'Tiger' tanks and the heavy Tank-destroyer 'Jagdpanther'. These units had forty-five tanks in each, and were generally manned by the Waffen-SS, who were Nazi party members (unlike most of the ordinary German Wehrmacht soldiers.)

We will be covering all the equipment mentioned later in the series, but for those of you who wish to commence your study of armoured vehicles immediately, here are the names of some publications that will help you. The Royal Armoured Corps Tank Museum, which we will deal with later, produces the 'Illustrated Record of the Development of AFV's' an excellent series of booklets. The Curator will be pleased to send you a complete list of publications if you write to him. The address is Bovington Camp, Wareham, Dorset. 'German Tanks' by B. T. White published by Ian Allen Ltd. is a fine book available at your local bookshop. Finally Merberlen Ltd. of Hawthorn Hill, Bracknell, Berks, publish the Bellona Military Vehicle Prints. These are exceptionally useful as they are accurate drawings of tanks to OO scale. In addition to the drawings a complete technical specification and history are given, and the more recent issues include photographs of the actual vehicles. Other useful accessories are supplied by this firm, and a stamped addressed envelope to them will get you a complete list. Please remember when you are enquiring about books and information, to mention the Meccano Magazine. H.L.D.

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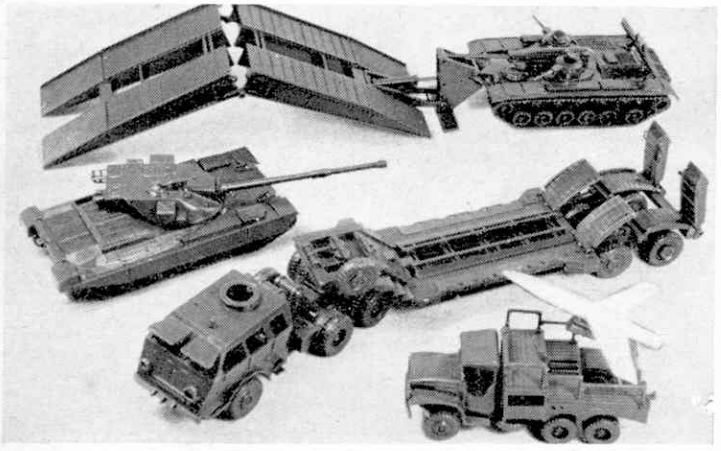

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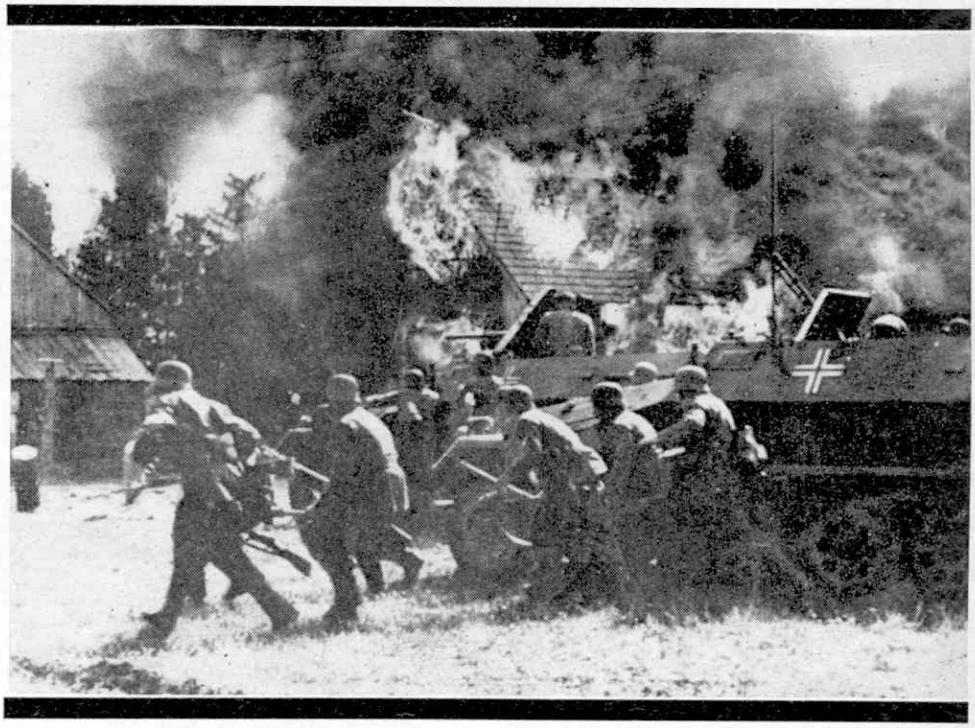
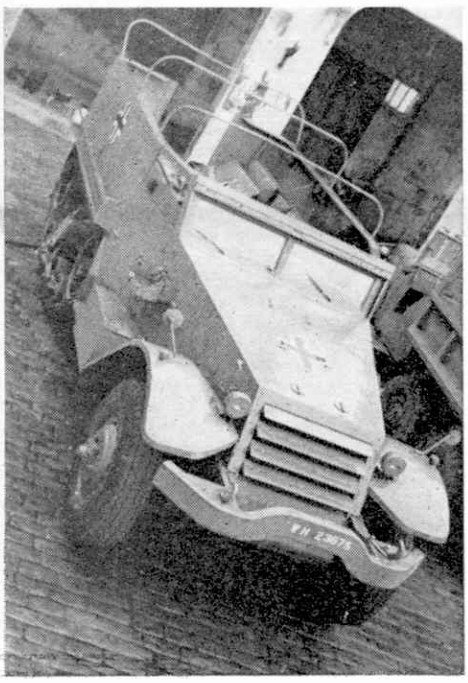
# TABLE TOP BATTLES

## the rules of the game by H.L.D.



LAST month we gave you some ideas on the types of heavy equipment and formations used during World War 2. By scaling down these formations you can use them for battle-games, and in doing so we hope you will find the hobby of modelling military equipment a most rewarding and worthwhile pastime. Meccano Magazine will help you by describing the actual construction and painting of such models and next month we start off by showing how you can equip your American forces with essential artillery support. Now, here are a few basic battle-game rules. We must emphasise that these are only examples intended to help you form your own set of rules to suit your particular circumstances. Further ideas can be gained by reading 'Little Wars' by H. G. Wells—the book that started this type of game, and Donald Featherstone's books on War-gaming.



## Movement

In addition to your models and troops, you need a ruler and a pair of dice, moves being made when it's your turn to throw the two dice. The maximum distance travelled is determined by the dice. For instance one inch can equal every ten miles per hour of the vehicle's speed. This, in effect, represents all the chance factors that exist in any journey. For every point on the dice a vehicle moves a distance depending upon its maximum speed (i.e. 25 m.p.h. equals 2½ inches, thus a dice thrown ten points equals twenty-five inches).

The average road speed of those vehicles we have already mentioned can be grouped as follows:

10 m.p.h. Churchill VII.
20 m.p.h. Tiger 1. Assault gun, Sherman, Matador and 5.5 inch howitzer.
25 m.p.h. Panther, Carrier Quads with 25 pdrs.
30 m.p.h. M-3 halftrack, Sd Kfz 234 Armoured car, most lorries.
35 m.p.h. Jeeps.

Tracked or semitracked (i.e. halftrack) vehicles usually are the only ones that can successfully travel off the roads. Wheeled vehicles can sometimes where the terrain is suitable. However, in all cases travel cross country is at half speed. A division can move as a unit but its overall speed is reduced to half that of the slowest vehicle. This allows for any traffic congestion that may be caused by a large unit on the move.

## The Battle

For the actual fighting: any gun can take three shots but only at one target. A tank with its fully rotating turret can engage a second target but can only have one shot at each. Before firing you must indicate your target. Again the dice decides whether or not it is a hit or miss. Above six being a hit, below a miss. Once you have taken your firing move you must wait until the opponent returns fire or moves away. Camouflaged anti-tank guns, or even dug-in tanks cannot be fired upon until they have given away their position by firing. They can, however, be overrun by advancing infantry. To prevent capture you can blow up equipment but each demolition is equivalent to one shot. Once equipment has been captured, the troops must be given time to familiarize with it before using it.

## Armour

The armour of real tanks is thickest in front where they are most likely to be hit. In exceptional circumstances it may be possible to attack them from the rear and this will result in the destruction of even the heaviest tank. However, the actual chance of this happening is small (and in battle-games it can lead to arguments). So let's assume a uniform armour thickness all round. Here is a table that sets out armour thickness of tanks for practical purposes, so that direction of attack does not matter.

Sd Kfz 234 armoured car : 20 mm.
Sherman : 30 mm.
Assault Gun (StuG 111) : 60 mm.
Panther : 80 mm.
Tiger 1, Churchill VII : 90 mm.

The M-3 halftracks and the carriers are proof only against machine gun fire and high explosive blast, and the 'soft skinned' vehicles (lorries) can be destroyed even by machine guns. The following table shows the distance at which various calibre guns can penetrate armour and destroy the tanks.

| Armour Thickness. Up to | 20mm | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100mm |
|---|---|---|---|---|---|---|---|---|---|
| 6pdr./57mm Antitank guns; | 12 | 12 | 12 | 12 | 12 | 12 | 9 | 6 | 2 in. |
| 75mm Sherman, Churchill; | 12 | 12 | 12 | 12 | 9 | 6 | 2 | | in. |
| 75mm Assault gun, Sd Kfz 234; | 12 | 12 | 12 | 12 | 12 | 11 | 9 | 6 | 2 in. |
| 75mm Panther; | 14 | 14 | 14 | 14 | 13 | 13 | 12 | 12 | 12 in. |
| 88mm Tiger.1. | 14 | 14 | 14 | 13 | 13 | 12 | 12 | 9 | 6 in. |

In last month's caption to the photograph of the Roco Minitanks models, the impression may have been given that since the tracks do not move, the vehicles are therefore immobile. This is not the case, since beneath the tracked vehicles there are concealed four wheels which hold the tracks just clear of the ground and enable the model to be rolled. The wheels are designed so that they can be quickly unclipped when their removal is required. An enlarged Roco Minitanks catalogue is now available and costs 6d., plus a stamped and addressed envelope, from Model Hobby Products, Mebro Works, Cuckoo Hall Lane, London, N.9.

Photographs
Above: German Panzer Grenadiers charge into action from their armoured halftracks
Left: a rare photograph of an M-3 American halftrack in German markings (Warpics Photo)

# TABLE TOP BATTLES

**Battlegaming Models**
**By H.L.D.**

IN February, the layout of the different Armies' divisions was given. From this we saw that the only readily available items of equipment with which the Battlegamer can equip his American forces were the Airfix models of the Sherman tank, Jeep, and M.3 half-track. Now, however, the ROCO Minitanks range is becoming increasingly available, and we can turn to their catalogue to see what is suitable to use in the 00 (1/76) scale for the World War II period. Luckily for the 'American Army', here we find all the artillery pieces we could wish for.

First, we find the 155 mm. Self-propelled Gun M.40 (ROCO No. 104). Before dealing with the model itself, here is a brief historical note. The M.40 was developed from an earlier 155 mm. SP Howitzer M.12 'King Kong' that had appeared in 1942. The M.12 chassis was that of the Sherman tank then in production, thus it had the original vertical volute suspension similar to that on the Airfix model of the Sherman. When the famous 155 mm. M.2 Gun 'Long Tom' became available it was decided to increase its mobility by mounting it on a suitable mobile carriage, and the latest Sherman chassis was adapted. This featured the horizontal volute suspension and wider tracks which account for the different appearance.

The M.40 entered service with the American artillery batteries attached to Central Command, in 1944. It served on all fronts and was again in action in Korea from 1950 to 1952. It was finally replaced in 1955 by the M.53 which is also represented in the ROCO range (No. 157). Some M.40's were used by the Royal Artillery, and one example is on display at their very interesting artillery museum at the Woolwich Arsenal Depot in South London.

This M.40 is one of the early models of the ROCO range, and is somewhat lacking in detail when compared to their recent issues. (Fortunately it is modelled to 1/80 scale, which is almost the same as 00 scale.) The main deficiencies are the missing buffers on the gun and the most important recoil spade. This spade prevented the running gear and suspension from being damaged by the recoil of the gun. The basic model costs 2s. 6d., but for an additional 2s. 6d. and the minimum of work, we can make it into a perfect replica of the prototype. Acquire one of the modern 155 mm. SP guns (No. 136), as it has a fully detailed spade and gun. From this the gun is removed and the circular platform and seats are cut away. Next carefully remove the rear 6 mm. of the gun mounting, which should leave the gun as shown in the photograph. A shield, for the gun layer, is made from a piece of Plastikard and cemented on the left-hand side of the gun mounting. The original gun can now be removed from the M.40 and the new one stuck in its place. I do not think it worth the trouble trying to reproduce the traverse in such a model, but if this is required, the gun section of the 'Long Tom' model (No. 120) can be substituted. This, however, does not represent the best solution as the gun is not quite the same as the one on the real M.40 and it still costs 2s. 6d., leaving you without the spade mechanism.

Carefully remove the spade, making sure not to break any of the brackets. Take the two angled stays and cut away the single end pivot. Cement them back onto the spade the opposite way, so that the straight members are closest together. Cut 4 mm. lengths from the thin portion of the hydraulic rams and cement these vertically in the attachment points, where the thick ends were attached. Now cement the unit on to the base of the tail platform, making sure that, when this is lowered, the spade rests upon the ground. When set, the model can be painted and markings applied, leaving us with a highly detailed reproduction.

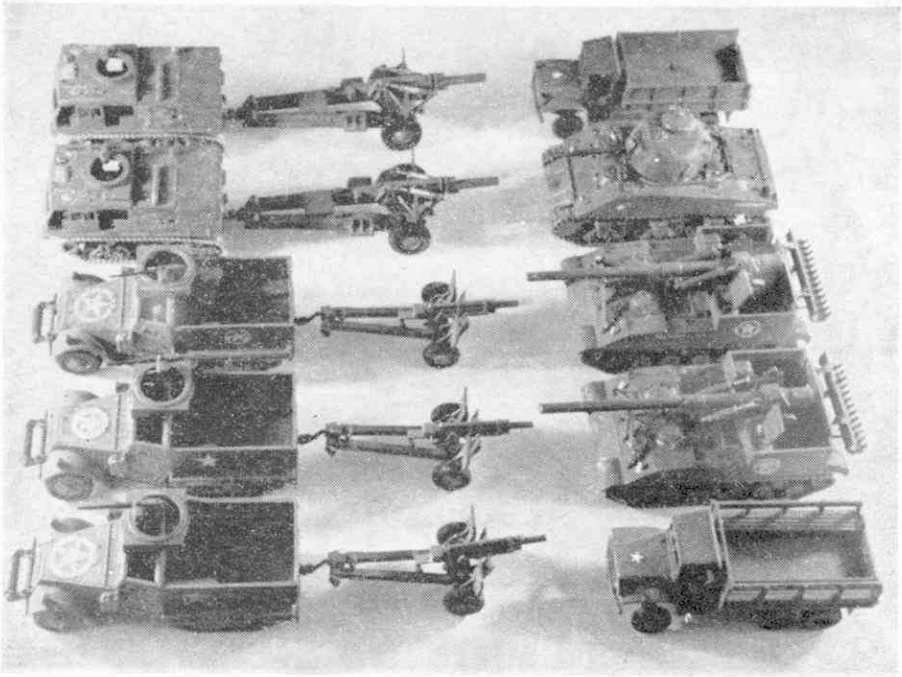
Every country has had its famous weapons, and when reproducing a model army it is necessary to include some of these more famous pieces, or the whole thing would seem wrong. Just as we could not have a British army without a 25 pounder gun, the Americans must have 105 mm. Howitzers. Luckily, we Battlegamers have been saved much work here as ROCO provide a wonderfully detailed model (No. 183) of this gun. It is fully operational, the trails split, the barrel elevates and traverses just as with the real thing. All that is needed is a coat of paint. This model scales about 1/80 so at 1s. 6d. is an excellent buy for an 00 scale army. The towing vehicle for these Howitzers is the M.3 half-track, as modelled by Airfix.

The M.2 105 mm. Howitzer was first introduced into service in 1935. It was the result of careful development of the model M.1 which appeared in 1928. The M.2 served throughout the War and later in Korea, without undergoing any major changes. It was capable of firing a high explosive shell weighing 33 lb. a distance of 12,500 yards. In 1942 the SP version, 'Priest' M.7, appeared on the 'Grant' tank chassis and these were used by Montgomery's force at the battle of El Alamein.

Another ROCO model which scales 1/80 is the American field Howitzer, 155 mm. M.1 (No. 187). Costing 2s. 6d. this highly detailed model is an excellent buy. Not only does the trail split, but the spades can be detached and carried on the side of the trails during travel. There is a travel steady that locks the barrel straight and a large jack that holds the wheels off the ground for more stable firing. The barrel traverses and elevates, with the buffers working most realistically. The M.1 was used by the Americans and their allies until the late fifties. Shell weight was 95 lb. and this could be fired a distance of 16,350 yards. For a towing vehicle ROCO M.4 tracked prime mover 'High Speed' 18 ton (No. 178) is based upon the chassis of the M.3/M.5 series of light tanks which entered production in 1942. They served in Europe from 1943, and usually towed the heavy 'Long Tom' and 203 mm. Howitzers. As can be seen from the photograph of the models prepared for this article, we have two 155 mm. M.1's, towed by M.4's to represent the heavy artillery battalion of the U.S. Infantry Division. The three 105 mm. M.2's towed by half-tracks represent the medium battalions, while the M.40's are attached to this particular division for special tasks such as the laying down of a barrage before an assault. The M.4 Sherman tank is an artillery observation post. Such OP tanks are essential as they must go forward near the front line to observe fire and report targets back to the batteries. Two ammunition supply trucks are also provided.

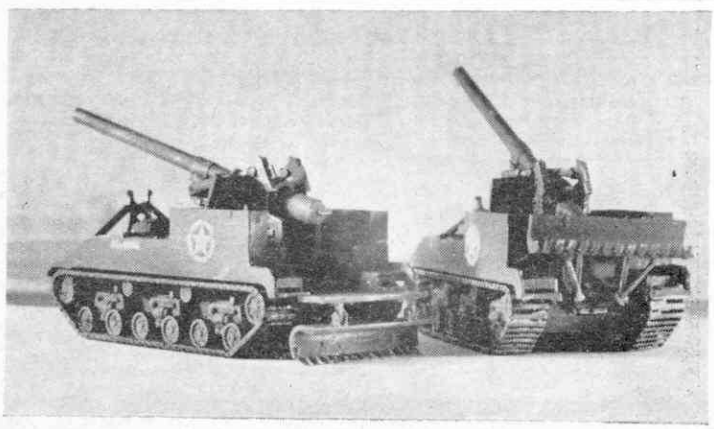
Many Battlegamers feel that artillery is too complicated and powerful, so they just don't use it. However, this limits them to using certain arms only. In the long run it inevitably reduces the realism, for every army is open to long range attack by artillery at some time. We can use artillery in Battlegames by making it just a bit more difficult to use, thereby decreasing its apparent power.

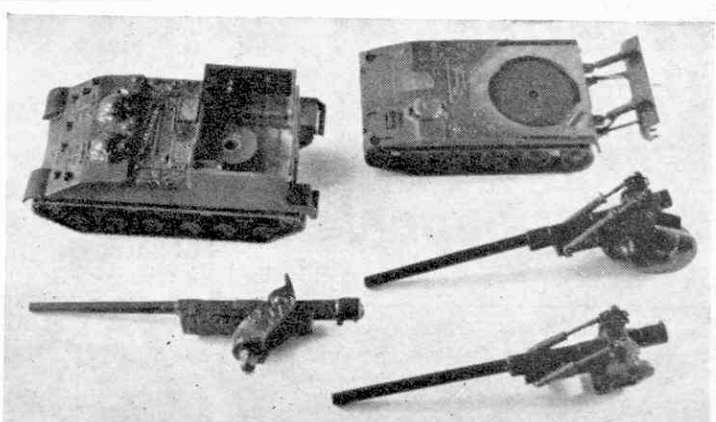
As shown last month no gun can fire more than fourteen inches. This is what we assume to be the maximum range of direct vision. To fire further, the gun must be layed with the help of information passed on by an Observation post not more than fourteen inches from the target. Again we assume each OP can signal only eighteen inches, but information can be passed on by different posts, thus increasing the range. An artillery piece is fired, as explained before as follows: indicate the target, and let the dice decide (one dice only); above four, a complete



hit; three, blast damage only, and below three, a miss. A one inch diameter circle is the area of damage caused by a 105 mm. or 25 pounder. Their ranges are from zero to twenty-one or twenty-three inches respectively. The 155 mm. M.1 and 5·5 inch Howitzers have a similar performance; a three inch damage circle and a range from six to twenty-five inches. The 155 mm. 'Long Tom' of the M.40 is the same but has a range from ten to thirty-four inches. The towed guns take one move to prepare for firing, as does the M.40 (a towed 'Long Tom' would take considerably longer). The medium field guns can fire once every move but the heavy ones only every alternate move.

**Opposite page: an M.40 SP 155 mm. ('Long Tom') in action in Korea, 1950.**
**Top: an M.40 on display at the American Armour Proving Ground, Aberdeen, Maryland (Warpics photo).**
**Left: the completed divisional artillery of an American Infantry division, as described in the text.**
**Below left: rear view of two improved M.40 models showing details of the spade fitting.**
**Below right: the basic ROCO model of the M.40 with its gun removed. On the right is the modern SP carriage from which we get a detailed gun and recoil spade. In the front right is the gun modified to fit the M.40.**





# Table Top Battles

## By H.L.D.

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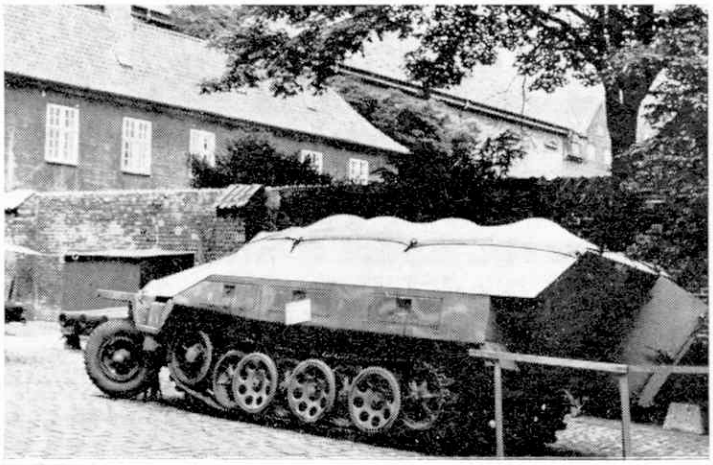

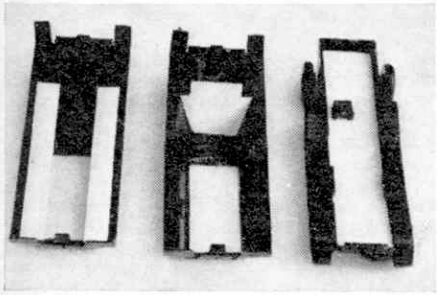

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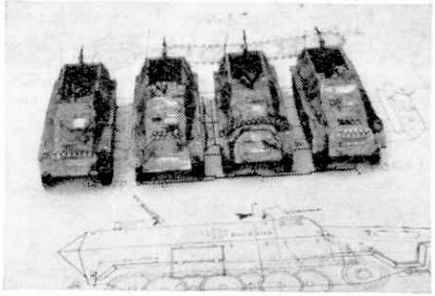

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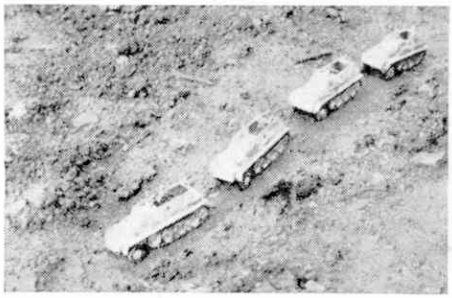

JUST before the invasion of Poland in 1939 the first of the 3 ton semitracks (Mittlerer Schutzen Panzerwagen, abbreviated m. SPW) medium armoured troop carrier, SD Kfz 25/1 entered service with the German Army. During the course of the War they were produced in ever increasing numbers. They were used, in addition to their design purpose, for virtually every light service required by troops in front line areas where there was danger from high explosive blast or small arms fire. By the end of the war there were twenty-two officially listed versions ranging from ambulances to Flakpanzerwagens (anti aircraft).

Any attempt to reproduce a realistic German Army in model form will be incomplete without a considerable number of these SPW's equipping the Panzer Grenadier battalions of both Panzer and Grenadier Divisions. No manufacturer has as yet marketed a kit of this vehicle. The serious modeller, only requiring a model for display can, however, tackle this, using the Bellona Print. Unfortunately it is rather impractical to build sufficient of these vehicles from scratch for use in Battlegames.

Roco Minitanks produce a range of models of the German S. W. S., a heavy 5 ton Military Tractor which appeared just before the end of the war. These are quite accurate, but unfortunately to 1:89 scale and are a bit small for use in their original form by an 00 scale enthusiast. Comparison of this model to a 1:76 scale SD Kfz 25/1 shows that it has the same general dimensions. The superficial appearance of one of the armoured versions is not that much different except for the rear plate, from the SD Kfz 25/1's built after 1943.

The Infra-red Searchlight vehicle (No. 129) costs only 1/6d. Thus if converted so as to be utilized by 00 scale Battlegamers as suggested in this article, the cost per unit is not high. If, at some later date, an accurate kit of the m. SPW is released one will not have wasted too much money or time.

Taking any of Roco Nos. 129, 130, or 131, disassemble and discard the swivelling equipment. Carefully cut away the central roof plates to give an open topped compartment. No driver's hatch is fitted, so file this down flush with the roof. The bulkhead can now be fitted to separate the engine compartment; strips of card 4 mm by 50 mm are cemented along the sides of the superstructure to cover the gap left, when this is fitted to the chassis. These can be made wider (6 mm) so as to extend further into the vehicle forming seats should these be desired.

A floor of card can be fitted in the chassis. A driver's seat, from an Airfix Kit, is fitted on the left, but the backrest is cut away. The major components are best painted before reassembly. The basic overall colour of the German AFV's from 1943 was Sand. The tracks are best painted black and later touched up with random dashes of silver.

When the model is in one piece, a shield for the forward machine-gun must be fitted over the driver's cab, 4 mm high and 10 mm wide; it is folded in the middle to form a V. The German machine guns MG 34 and 42 at this small scale are almost indistinguishable from large rifles, so pins etc. can be made to fill this role. Alternatively one could use the guns supplied in the Roco (No. 125) packet of Decals and accessories. A radio aerial of bristle can be fitted to the rear right hand side.

Camouflage of green and/or brown can now be mottled over the basic paint job, if desired. Detailed painting and fitting of markings as on the finished models is now completed. Wehrmacht number plates help, especially the front plate—the only source of these is from the Airfix Armoured Car Kit. General dressing can now be added to give the vehicles a used look. (Petrol cans, tow ropes and spare track—got by cutting a piece of Airfix Sherman track in half.) Finally, to give a weathered look, roughly dab matt earth around lower body and track-work; a dash of silver on odd corners of the superstructure heightens this effect.

For Battlegames, these vehicles are proof only against small arms and machine gun fire, and the blast and shrapnel caused by high explosive artillery fire. The road speed was approximately 30 m.p.h. The crew was five, and ten troops were carried in each vehicle.

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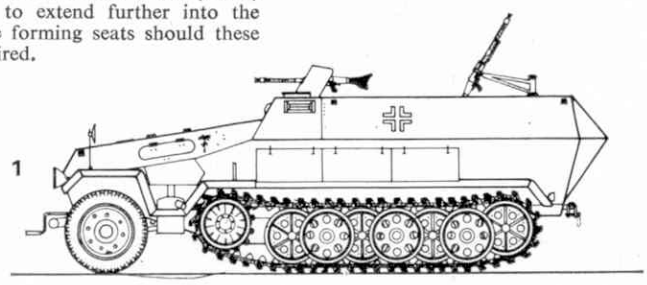

1 This model of the m.SPW SD Kfz 25/1 was built between 1939 and '41. Drawing is to 1:76 (00 scale) and is reproduced by courtesy of Merberlen Ltd

2 (Heading photo). A Panzer Grenadier column of m. SPW's pass through a Russian city—note stowage of spare track and tow rope.

3 A 1944/45 model of the m. SPW SD Kfz 25/1. with canvas tilt fitted. This vehicle is on display in Copenhagen, Denmark.

4 The additional parts required, from left to right; 4 × 50 mm strips of card cemented to the underside of the superstructure, the engine bulkhead, and finally the chassis with floor and driver's seat fitted.

5 Four completed and painted semitracks built from the Roco models.

6 Completed and painted semitracks built from the Roco models seen here travelling through rough ground.

# TABLE TOP BATTLES

## Semi-Tracked Carrier Conversion by H.L.D.

THE FIRST part of this feature appeared last May in the previous Meccano Magazine, and dealt with the basic vehicle of the Panzer Grenadier Units Sd Kfz, the 251/1 medium Semi-Tracked Carrier. The May issue also described a quick conversion of the ROCO Minitanks model of the Schwerer Wehrmacht Schlepper (S.W.S.) or in English, Heavy Military Carrier, ROCO Nos. 129, 130 or 131, to the German Sd Kfz 251/1. The Special vehicle number allotted by the Ordnance Department was 251/1 not 25/1 which, unfortunately, appeared in the last feature.

Twenty-two separate versions of this basic vehicle were constructed, and this month we are about to construct the very last model—the Sd Kfz 251/22, a Panzerjaeger (Antitank vehicle) mounting the 7.5cm PAK 40 Antitank gun. Another version described here is the Sd Kfz 251/9 which carried a short 7.5cm Cannon, and was one of the first German self-propelled guns. Both these vehicles were attached to Panzer Grenadier Companies during 1944, in a ratio of about one to every four standard Troop Carriers. The 251/9 served in a general support role and the 251/22 as the main Antitank defence vehicle of these companies.

### The Sd Kfz 251/22

The first thing we need is the complete gun and floor assembly from the Airfix Sd Kfz 234 Armoured Car Kit (Part Nos. 1 to 6). Assemble these as instructed for the Airfix Armoured car. The floor is then carefully trimmed away, leaving just a 12mm base for the gun mounting.

This is exactly the same as for the standard Sd Kfz 251/1 described in the May issue of Meccano Magazine. Just to recap for those who may have forgotten: we discard the swivelling equipment from the basic ROCO model and cut away the roof plates to give an open-top compartment. The remainder of the work required is to fill any gaps in the hull and detail the model. For the 251/22 we cut a further section from the roof of the driver's cab—this can be patterned from the part No. 17 of the Airfix Armoured car kit. This cut-out, seen in our photograph, was necessary on the original vehicle to allow slight traverse of the gun. Having completed the top plate removals, turn the superstructure assembly upside down. A piece of card, 12mm wide, is now cemented in place 20mm from the back, so forming a bridge on to which we cement the gun and its mounting. The superstructure is now refitted on the chassis and final detailing and painting carried out.

### The Sd Kfz 251/9

Again we prepare the basic vehicle as before. This time we look to the Airfix Assault Gun Kit, for the necessary additional parts. We use Part No. 55, the base of the gun and No. 56, the gun mounting. Carefully cut the pivot points from No. 56 and into these we clip No. 55 the gun. Now from the roof of the driver's cab on our semi-track, we cut a slot 7mm wide and 7mm deep. On either side of this slot we cement the pivot points of the gun. Front armour was extended upwards and we duplicate this with pieces of card 4mm high and 4mm wide, cemented on either side of the roof in front of the gun. This armour was tapered backwards on the sides.

Our prototype photograph shows a Sd Kfz 251/9 during action in Russia in the 1941 campaign. Our

**Above top, the finished product, our ROCO model converted to an Sd Kfz 251/9. Airfix figures are used, those in snow capes being converted from Arabs. Centre, our Sd Kfz 251/22 in action during the winter. At left, the basic conversion steps. From right to left, we have the unmodified ROCO model; the superstructure with top plates removed; the bulkhead filled behind the engine; new track covers/seats and finally a new floor fitted to the chassis.**