

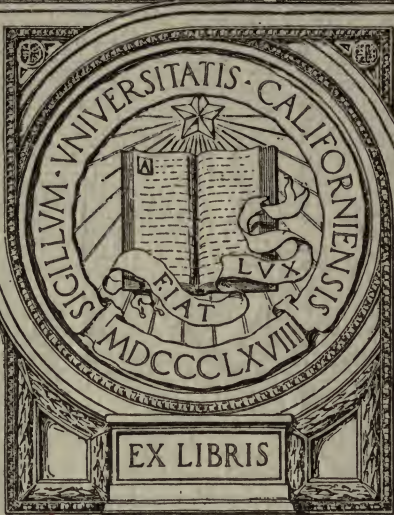
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# SOME NOTES ON THE SOLUTION OF TACTICAL PROBLEMS

DEPARTMENT OF MILITARY ART  
THE ARMY SERVICE SCHOOLS



Press of The Army Service Schools  
Fort Leavenworth, Kansas

1916



# SOME NOTES ON THE SOLUTION OF TACTICAL PROBLEMS

by Captain H. B. Fisher

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# Some Notes on the Solution of Tactical Problems

Lecture by Captain H. B. Fiske, 28th Infantry.

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**I**N the field, tactical problems of greater or lesser importance are continually being solved by officers of all ranks, from the supreme command down through the intermediate grades to that of captain, and even within the company by those in charge of its patrols, its pickets, and its other detachments. Every time the captain deploys his company, except at a merely mechanical drill, every time he stations his company as an outpost or as a support thereof, every time he is assigned a task on the general duty of security, or makes any new dispositions therein, he is compelled to arrive at a tactical decision, which can be reached only by the solution of a new problem. That problem may be solved without much conscious use of reason; but in any case, however simple the process, the process nevertheless is there. And as one goes up in the hierarchy of rank, the problems presented for solution are of constantly increasing importance, if not, of frequency.

Unless there has been extended training in the solution of problems, even the simplest one is liable to strike vacant the mind of the one who is suddenly confronted with the responsibility for its solution. Who has not seen the untrained officer, in the face of such a necessity, utterly unable to grasp any idea as to his proper action? And yet the solution may be tactically so simple as to be solved instantly by the trained mind and almost by intuition. Still, while

the situation may be simple and the answer axiomatic to the man who knows, yet, like most military operations, upon its correct solution depend perhaps many lives. The nation that sends its men into war under officers untrained in the solution of tactical problems is carrying a tremendous responsibility; and so likewise does the officer who neglects to acquire all possible previous training.

No amount of study of the theory alone of the art will, by itself, fit one to meet the emergencies of war with skill and certainty. To acquire such, not only must its principles be learned, but the habit, as well, of their application to concrete cases must be established. A man might read volumes on how to lay brick, but he could hardly attain skill thereat until he has long experience in the actual handling of his trowel. The military mind, like the mason's hand, requires practice in the use of its tactical tools to acquire dexterity.

We do not have to wait for war to present its vital problems in order to begin the training of our officers in applied tactics. But the teaching of tactics in time of peace by application to concrete situations requires no defense. To confound the critics of that system, one need but to point to the German Army, and to the map of Europe today.

The following extract on the value of tactical studies, is taken from the introduction to Buddecke's Tactical Decisions:

“However high may be the duties which come to an officer in the departments of education, instruction, administration and scientific investigation, he nevertheless enters upon the activity corresponding to the real character of his calling only when he exercises command of troops and when he exercises such command in the presence of the enemy. It must be the aim of every officer to become at some



time a commander, to become a responsible leader in action.

“For this purpose he needs, in addition to the development of peculiar personal characteristics and in addition to experience and service with troops, before all else, a thorough tactical education.

“The tactical instruction which an officer gains in military schools and with troops is not alone sufficient. Study on his own part must be added. The tactician has need, in his profession, of steady and uninterrupted training in order both to preserve and to develop his powers once he has discovered them. The commander receives his education not only in the saddle, but also at his desk. This is proved by illustrious examples of celebrated commanders.

“Military history offers inexhaustible material to the officer who wishes to pursue his education in tactics. It leads him directly to the conditions of war and, by showing the ever-changing relations between cause and effect, brings him to a realization of the conditions upon which success and failure depend.

“Military history, however, offers only what is finished and completed. The mental activity exercised in its study is a reproductive one and its value to the student depends directly upon the extent to which he is able to grasp and synthesize the real conditions and their relations and to enter into the thoughts of the leading personalities.

“The education of the tactician demands, in addition to this, a productive activity, in the exercise of which he is confronted by questions still unsolved, which he himself must solve. Therein lies the worth of tactical problems, which are the more valuable the nearer the conditions approach those of actual warfare and the more latitude they give for the exercise of judgment and decision. They must provide the student with the means of developing his tactical judgment and of gaining practice in the use of forms.

“The tactician needs a thorough knowledge of the fundamental principles to build on as well as the

faculty of rightly applying them. Through uncultivated genius alone, which pays no attention to form, he will never become equal to the difficult problems of a serious crisis. Still less will the mere theorist be able to fill the position if his powers be limited to the knowledge of formal tactics.

“That power of decision and action which is able to cope with all the situations of war is gained only by developing the ability to form a judgment in technical matters with certainty.

“Therefore tactics is an art to be learned. Like every other art, it demands a measure of talent, and the highest stage of perfection can be reached only by those highly gifted at the start. In spite of this, however, the less gifted can, through practice, gain a considerable degree of facility, and many a tactician has only begun to find out his powers as he advanced in the knowledge of his profession. Here also, one may say: ‘industry is genius.’

“It should therefore be the aim of every officer to progress through the individual study of tactics and thus prepare himself for the highest duties of his calling.”

The following is from the introduction to Gizycki's problems:

“It would be impossible to over-estimate the value of the services rendered by General von Verdy in securing a general adoption of the applicatory method of instruction for the training of our officers in strategy and tactics.

“The varying nature of the terrain and the diversity of the problems which war presents, render impossible the adoption of any one theory to cover all the possible conditions of war. Even were it possible to set up such a system, it could never be applied in any particular instance; since, being derived by a process of abstraction from a multiplicity of cases, it could only contain that which was common to all such cases and hence would never fit exactly any concrete case; and in war it is with concrete cases alone that we have to deal. For this reason, the very best of theories can only serve as a

sort of general guide. Each special case has to be thought out and analyzed in all its parts. Out of our critical examination of the situation should grow our *decision*, which we should never attempt to deduce from preconceived abstract principles.

“He who seeks to become a leader of troops should therefore develop the following qualifications:

“1. The ability to reach a clear and intelligent decision.

“2. The ability to communicate this decision clearly and unmistakably to others.

“3. The necessary knowledge to enable him to lead the troops so as to carry out his intentions.

“Clausewitz has clearly delineated, in his unexcelled work ‘On War’, the special traits of character which are requisite for the forming of resolute decisions, as well as for their execution (courage, enterprise, confidence). General von Verdy makes the following suggestion as to the best method for the development of these three mental qualities:

“ ‘By constant practice in the solving of particular problems bring out the infinite variety of possible situations; by means of these bring out the nature of war and thus, by inciting the student to formulate a large number of definite decisions and orders, seek to develop the above mentioned qualifications.’

“This method of instruction in strategy and tactics is beyond question the wisest to adopt, but is undeniably slow and toilsome; for in concrete cases of this character, whether the problems are set by the solver himself, given him by another, or taken from military history, it is not sufficient for him simply to arrive at a decision which conforms merely to the general outlines of the situation; by that alone little would be gained. The thorough student must throw himself heart and soul into the situation which confronts the commander, with the inner eye transform the map into actual ground, rouse his imagination to a vivid realization of the situation with all its unavoidable frictions which are inseparable from war, and then—reckon correctly as regards space and time.

“By a thorough course of this sort, the student will acquire in time so great a facility in estimating a war situation that he will be able to form a correct judgment with great rapidity; in fact, almost instinctively. The immeasurable advantage thereby obtained becomes apparent when we consider that seldom, in war, is there time for long deliberation, and that the decision must in most cases be quickly made and as quickly executed.”

We cannot, in time of peace, simulate or present anything adequate to take the place of the tremendous strain under which, in war, all commanders reach their decisions; whether on the firing line under a decimating hostile fire, or miles to the rear in some splendidly equipped great general headquarters—a strain which confuses and deadens the ordinary mind and character, but which with those few minds of the very highest order, seems simply to clarify and stimulate their workings. Notwithstanding this wartime stimulation, the military genius has always, in peace, been a great student and critic of his predecessors; and while perhaps in many cases he has not laid himself hypothetical problems for solution, he has nevertheless persistently studied and solved the actual problems which history tells him were presented to former commanders. How very much more does the ordinary mind, which is crushed and stupified by the appalling circumstances of war, need all the guides, landmarks, and resources of applied, and long continued peace training, along lines and through incidents which, at least, are similar to those it is then encountering.

Moltke, in “Reflections on Strategy and Tactics.” says:

“It is in the midst of privations and sufferings of all kinds, when the body is subjected to violent fatigue and the mind to exceptional excitement, that

one must make decisions the most pregnant with consequences, and communicate them in a clear and complete manner. A thorough knowledge of theory will, however, help lighten the practical working out under the difficult circumstances of actual conditions in the field."

As with the strain, so it is in other respects with much of the realism of war; it cannot be very closely simulated. Actual work on the ground with troops in maneuver furnishes us the nearest approach thereto. Next in realism, come those exercises in the form of tactical rides or terrain exercises where the actual ground is used, but the troops are imaginary. But in tactical rides and terrain exercises of all sorts, much time is lost by the necessity for moving from point to point. In actual maneuvers, time is again lost, and the labor performed by the troops is, in the aggregate, very great. Much of the work, moreover, particularly of the higher commanders in the solution of their problems, is in no wise affected by the presence or absence of troops, or even by being in the neighborhood of the terrain where the problem is laid. In all large movements, movements in which more than a division is concerned, the problem frequently is solved at a comfortable headquarters and on the map. And many of the problems of much smaller bodies will, even in war, be solved on the map without reference to the terrain, other than as there shown. Consequently, when from the map and in peace time we state a situation and arrive at a decision upon the questions involved, the departure from the actualities of war is not so great as to detract too much from the value of the training so acquired.

Moreover, by first solving problems on the map during the portion of the year when maneuvering

is difficult, proceeding then to exercises on the ground in which only officers take part, we finally arrive at the maneuver ground with the corps of officers already pretty well trained; and with the necessity only of completing their education by correcting the probable inconsistencies that have crept in through the mistakes of the imagination, and of the many unexpected difficulties developed by actual handling of human beings instead of the iron war-game soldier of the map room. In this way we obtain a maximum of training with a minimum of effort, at least so far as the private soldier is concerned; for to maneuver throughout the year, and get all of the training of our officers by field work alone is impracticable. Field work to be of value must imitate the characteristics of war, which call upon the individual for the most extraordinary physical and mental exertions. Such periods in time of peace cannot be long continued if well done, and if not well done they do more actual harm than good.

The tactical problems with which we are most concerned at this School are not solved with troops. Formerly, towards the end of the Line Class course, numerous maneuvers were held in which the members of the class commanded troops, and were for some years graded upon this work therewith. But with the departure of about all the troops from the post, such maneuvers necessarily ceased to be part of the course. Our problems are now presented to the student as map problems, as incidents of the war game or map maneuver, and on the ground, as terrain exercises or as tactical rides.

The map problems are solved in the map room from 8 to 12, or 1 to 5. One of the first criticisms usually made is of the allowance of 4 hours for the solution of the problem which in the field perhaps

would necessitate a decision within as many minutes. Of course, a partial answer is that in the field the trained commander is constantly thinking of his situation and of its possibilities, so that when some change comes therein, it is usually not entirely unexpected; and while immediate decision must be made, the action taken is the result not simply of 3 or 4 minutes of thought, or even of 3 or 4 hours, but, perhaps of as many days. In the field one is not presented suddenly with a situation new in every particular; there is at least some knowledge of the previous events of the war. But in the map room, on the other hand, an hour or more of the time allotted may be required to get the situation thoroughly in mind. Then, again, in the field, time is not expended in reducing one's reasons and arguments to writing. An exception to this rule of course exists in the case of a chief of staff, who frequently will be required to submit to his chief a written estimate or appreciation of the situation.

Our map problems are of two kinds, according to their purpose. In the first, and by far the most numerous class, the problem ordinarily consists of a single situation with requirements which call for an estimate of the situation and for the necessary orders. The situation presented is one in which the commander is on a mission more or less detached, and where therefore the decision must largely be an independent one. The great purpose of such problems is the cultivation of sureness and certainty in the application of tactical principles to concrete cases, and the acquirement of independence in tactical judgment and in character. In such problems, but strictly subordinate to the main purpose, the acquirement of technical skill in the writing of suitable orders to carry a decision into effect is the

aim. In the second class, called troop leading, the cultivation of independence in judgment is subordinated to the acquisition of technical skill in writing orders. When troops are handled in masses, the initiative and independence of subordinates, while of course still constantly cultivated, are nevertheless necessarily restricted within rather narrow limits. The subordinate commander's chief duty, therefore, then becomes not the making of decisions of considerable tactical importance, but, while making his circumscribed and minor decisions based upon the orders of his superiors, the carrying out of the whole into effect, with excellent technique for the production of a high average of teamwork.

Even minor decisions, are not easily reached until there has been a considerable development of decision and character by the solution of a number of purely independent tactical problems. For that reason, the early part of the course is devoted chiefly to problems in which an independent decision is required, while the purely troop leading problems, in which technique is emphasized, are reserved for the later portions of the indoor season.

The war game, with its constantly changing situations, each demanding decision upon the questions involved, is largely relied upon for the cultivation of troop leading ability. In addition thereto, in most terrain exercises and tactical rides, the troop leading feature is predominant; and then we find certain troop leading problems when the course is well under way. This year there has also been added for the Special Class, a series of exercises in the issuing of verbal and dictated orders.

In terrain exercises and tactical rides the ground replaces the map. At this school, the term "terrain exercise" has come to mean simply an exer-



cise on the ground in which the students write the answers and are graded thereon.

In the solution of any problem, in the arrival at any tactical decision and prior to the issue of any tactical orders, there must be an *estimate of the situation*, unless the reason is not to enter at all into the action taken. This estimate of the situation may be exceedingly brief, and the result of only a few conscious thoughts; or it may be lengthy, involved, and in every way an elaborate discussion of a wide range of factors. The first will be the action of some subordinate commander, a captain for example, in a rather routine obedience on the spot to the order of an immediate superior. The latter will be found in the memorandum submitted to the supreme command by some chief of a great general staff. Except in the extremely simple case, the estimate of the situation will almost invariably contain some consideration of the commander's *mission*, of his *enemy*, of his own *troops* and the friendly troops about him, of possible *plans of action*, and will conclude with a *decision* to govern his action. Therefore, in the Service Schools, while great latitude is allowed within this framework, yet it is expected that the headings given will not be departed from except for cause, the burden of proof for the logic of the departure resting upon the solver.

Much importance is given to a definite statement of the mission because, unless one knows exactly what his job is, can make a definite statement thereof, and keeps this prime duty constantly in mind, he is not likely to go far towards a correct solution. Sometimes, while your original mission was clearly defined by orders, for example, of higher authority, information received later indicates a radically different situation from that upon which your instruc-

tions had been based. Until you have carefully reviewed all of the circumstances, it may be impossible to tell what your mission has now become. If a written estimate is required, and you are in doubt, state your original mission at the head of your paper, and the fact that further consideration must follow before you can determine whether or not there has been any change in that mission. But somewhere, at the logical point where the new mission has been ascertained, make a definite, concise statement of what you now consider it to be.

In logical consideration of the governing factors, a statement of the mission must usually be followed by a more or less detailed study of the enemy's circumstances. The information concerning him, where real problems in the field have to be solved, comes in from a great number of sources. Such reports are frequently in conflict with each other. Digesting this mass, rejecting the improbable, and deducing from the whole a certain hostile situation as the most likely, is, in every headquarters from a division up, assigned to a section of the general staff therewith, and constitutes a very nice and very difficult portion of the general estimate of a situation. Such a digest of the information, and opinion as to the enemy's strength, position, and intentions will usually be presented by this section of the general staff to the chief of staff, with brief reasons for the deductions thereof; and upon the situation so taken as the most probable the plan of action will be based. It is something like this digest of enemy information which is ordinarily presented to a student in the map room; for it is evident that to place in the statement of a situation the mass of reports upon which the action of large bodies is customarily based, is prohibited by the time available

for the solution. In the statement of problems expressions like, "It is reliably reported," or "General A learns," the information so conveyed can be assumed to be correct. To quote Moltke again:

"It is necessary to examine attentively the contents as well as the form of each message to distinguish clearly that which is certain from that which is probable or merely possible. Apprehension and personal illustrations should be allowed no influence on the estimate of the situation; a trained critical sense is needed to distinguish the essential from the non-essential. It can scarcely appear of consequence to the subordinate to report that his post has been undisturbed during a certain period, yet this circumstance may be of greatest importance to the commander of the whole. At the conclusion of a battle it is usually of the highest importance for the higher commander to know as soon as possible what organizations of the enemy, what regiments and corps have been engaged and what is the enemy's present condition."

The strength of the enemy in opposition to the force dealt with, is frequently an important item for determination. Where the mission of the detachment is to hold an enemy body in check, if that hostile body is much inferior in strength, that mission might sometimes best be accomplished by an active offensive. If the hostile body is, on the other hand, greatly superior, such assumption of the offensive might be suicidal. This statement, however, should not be interpreted to mean that an attack will never be made against superior forces. For instance, if a brigade in the presence of an enemy corps learns that that corps is withdrawing, the brigade may be justified in vigorously attacking to hold it in place until other friendly troops come up. Or, a flanking detachment may find it necessary to attack a much superior force to draw that superior force upon

itself and prevent its engaging at some crucial moment in the main fight. The enemy's strength may also be a vitally important element of the estimate in other ways. For example, a force sent to capture some point believed to be lightly guarded, would ordinarily not be expected to attack if later information makes certain that the enemy has in position three or four times its numbers.

Like the enemy's probable strength, an idea of his mission and the manner in which he will go about carrying it out, must be obtained or deduced from the circumstances of the problem, in order to have a proper basis for our own plan of action. Try to get at the enemy's problem and solve it from his point of view. Usually, with no direct indication of the hostile intentions further than an idea of his mission, we assume that he will act with good judgment, and we therefore base our plans primarily upon the assumption that the enemy will take that action which will cause us the greatest difficulty in counteracting. In doing this, of course we do not simply neglect the possibility of other action upon his part, but must make such provision to learn of other action in time to take proper steps for meeting it. The unexpected is the rule in war, and our idea of good judgment is probably very different from that of the enemy. Moltke says:

“In reality no one conducts a fight without a definite purpose. Generally in doubtful cases and when the conditions are not clear, as so often happens in war, it is better to be enterprising and preserve the initiative than to wait for the lead of the enemy. The latter often sees as little into our situation and will often give up the game, although the real situation in no wise demands it.”

Our own forces and the probability of timely

aid by friendly troops or otherwise, may have a decisive effect upon the required action. If, for example again, we are to receive strong support from other troops within sufficient time, we may be justified in defending a position in the face of greatly superior strength, when otherwise we would have no choice but to run and to run hard.

Not only does the question of relative numbers require careful consideration but that of relative morale as well. If our enemy consists of militia, or his men are three-quarters recruits, or he has already been beaten by us, we may venture many things that would not under other circumstances be warranted.

The terrain usually, but not always, must be thought of. In an attack, and even more in a defense, the proper dispositions are very largely dependent upon local cover. In an outpost, the network of roads determines the framework. In a march, there are usually several routes among which a selection has to be made.

When one comes to the practicable plans of action, no time should be wasted on the unthinkable or unreasonable. For instance, I have seen solutions of an advance guard problem, where the commander had been ordered to march at a certain hour by a certain route, in which the student gravely and at length considered whether he should advance, retreat, take up a defensive position, or a position in readiness, or should attack. Naturally, under his definite orders for very circumscribed movements, the only plans of action for his consideration were as to the division and distribution of his forces. All of the rest not only constituted a waste of time but weakened his solution by its mechanical folly.

No help can be given by this talk towards the

selection of the proper plan of action. That must be arrived at by a nice weighing of the advantages and disadvantages of each possible course, as gathered from the teachings of history and epitomized in the Field Service Regulations and the other text books that are being studied. Whatever course is decided upon, it must be remembered that the keynote of all sane tactical procedure must always be *simplicity*. Nothing complicated, or in which action is built upon condition, has a reasonable prospect of accomplishment among all the uncertainties of war. The sane, reasonable procedure is the one that wins here in this School as it does in the real matters of war. This does not mean that risks must not be taken, or even at times the desperate chance; but the chance should be such as is logically required by the situation, and not simply interjected to make the unusual or brilliant solution. Contrary to the belief in many quarters, the Napoleonic solution is not manifested by its complexity, but in fact is manifested by its simplicity. The genius of the greatest tactical master of all time is found in his extraordinary ability to reduce the complex to the simple, and to find therein the basic idea that best promised success.

Map problems at this School are written to illustrate some one or two simple principles which have not only been previously studied in the text, but which the instructor has usually laid particular stress upon in conference. If the conference has been carefully followed, there should ordinarily be no great difficulty in recognizing the principles involved in the proper solution of the problem. If the instructor notes a lack of attention in conference, he is very liable to build a problem about the points he thinks have been missed, as the best means of

causing them to be remembered.

It must be remembered that frequently not the principle, but its exception, or opposite, will be illustrated. Some years ago, this department perhaps laid greater stress upon the evils of dispersion than it does even today. The writer, listening to its teachings, determined never to disperse. But he had overlooked the fact that dispersion is sometimes necessary and proper. A terrain exercise came along involving a delaying action by a rear guard. Remembering his determination never to disperse, the student tied his battalion up in a little knot on Reservoir Hill, on this reservation, passed which the enemy could quickly force his way. The answer, though, in this case was dispersion; but the student had made for himself and had acted upon an inflexible *rule*, with the result that when his mark for that exercise was published he was found leading the class in the reverse direction.

Particularly in troop leading problems and terrain exercises, the solution required is of the simplest character. And when extremely simple action seems called for, the student should not hesitate to take that and no more. I remember one situation in an old terrain exercise in which the commander of the whole, riding with his main body, suddenly hears heavy firing in the direction of the advance guard. His action was called for. The approved solution had him "join the advance guard;" but most students proceeded to put their divisions through complicated maneuvers. The writer again in one of his earlier terrain exercises suffered from a similar mistake. He received a situation which seemed to call for nothing except to run, and at once; but he said to himself: "An instructor has spent a whole lot of time getting up this beautiful situation and in bring-

ing out all these officers to solve it. If I simply say that my command faces to the rear and runs, it will not be showing proper respect for the Institution and for the author of the problem." So, the student proceeded to issue voluminous orders for a retreat, and to show his respect for the problem by scattering his troops all over the reservation. But the approved solution was: "Squads right about, March;" and once again the writer, when the marks were published, was crowding the leaders to the rear.

The estimate of the situation must close with a definite and concisely stated decision upon the important points involved. If the whole point to the problem is whether to attack or defend and the decision is to attack, it may be sufficiently expressed by the statement: "To attack, enveloping the hostile right." If in another problem the matter of attacking is not so much in question as the manner of doing it, then the decision must have more elaborate expression and contain the adopted disposition of troops. The decision should in general be as brief as possible and be an answer to the important questions raised by the statement of the problem.

The best estimate of the situation is one which proceeds to a logical consideration of the factors that go to determine decision, taking each in its proper turn and giving each the exact amount of consideration due its relative value. A good estimate does not have to be of great length; in fact, the more concisely expressed, providing nothing essential is omitted, the better. For the simple situation, the estimate may be very short indeed. In no case should there be deliberate padding to produce length; and yet such solutions are frequently submitted. Very often papers appear which contain page after page of quotation, from the Field Service Regulations for



instance, to the great waste of valuable time for both student and instructor, unless the latter saves himself by carefully skipping the passages containing such. The estimate should be a systematic search for a solution that promises success.

Admiral Fiske, writing in the January (1916) *NORTH AMERICAN REVIEW* upon the Naval Policy of the United States, gives the following very clear description of the Estimate of the Situation :

“In the ‘Estimate of the Situation’ method, on the other hand, the orator has no opportunity, because the procedure is simply an accurate process of reasoning. It is divided into four parts. The first part consists of a careful study of the ‘mission’, ending in a clear determination of what that ‘mission’ really is—that is: *what is the thing which it is desired to do?* The second part consists of a careful study, and eventually a clear comprehension of the difficulties in the way; the third part consists of a careful study, and eventually a clear comprehension, of what facilities are available with which to overcome the difficulties; the fourth part consists of a careful study of the mission, difficulties and facilities, in their mutual relations, and a ‘decision’ as to what should therefore be done.”

The actual procedure in solving any tactical problem, whether in the map room or in the field, is so entirely an individual matter and so absolutely dependent upon the characteristics, temperament, and equation of the one solving, that any word to assist is difficult to give. Each one must decide for himself how best to do his tactical work in the map room, in accordance with his own habits and manner of performance. But, while fitting his routine to his own equation, he can, nevertheless, learn something from what others have found advisable.

It is important to remember that the time allotted for the solution should consist of 4 hours’

downright, hard, concentrated and systematic work. There should be no periods of just sitting and hoping that a stroke of genius will arrive to make the proper answer evident. The only way to get that stroke is to dig for it. Moreover, I believe it is worth repeating that the digging must be systematic.

In the first place, the student must find out what the problem is. There must be a thorough realization not only of the bald outline furnished by the statement of the problem, but of all the attendant circumstances that can only be guessed at. The student's imagination must be stimulated to the extent that he can realize many hopes and fears that are tugging at the commander who has to make the actual decision in the field. He must become thoroughly imbued with the realities of the imaginary situation if he is to arrive at a suitable solution. To work himself so thoroughly into the situation takes time and concentration.

The statement of the problem should first be read over carefully, perhaps underlining in red those parts that refer to Reds; and in blue, those referring to the Blues; and the places mentioned should be staked out on the map or maps. Usually two or three maps are necessary to get the entire scene, probably the guide map, scale about 10 miles to the inch, for the general outlines; then possibly some outlying points are to be found on the one-inch map; and finally the tactical locations on the three-inch map, on which all but the division problems are habitually laid. Then the problem must be read again and again until certain that all points have been correctly located, and that the student has worked himself completely into the atmosphere of his drama. It would seem unnecessary to caution so carefully that one must know what his task is be-

fore he starts to perform it. But it is a fact, that student officers are constantly solving, in whole or in part, some other than the problem laid down. Dealing with one division, another which is only casually mentioned in the statement of the problem, is put into camp. Or, having the problem of the advance guard commander, the whole division is considered. Or, the scene being laid on one section of the map, similar numbers somewhere else are taken, and the given directions and distances from landmarks are overlooked. Such mistakes usually occur from an undue impatience to get to work; forgetting that a very reasonable allowance must be made to acquire a definite understanding of the problem, or risk wasting much work and time because of failure therein. Read the requirements with care. You may or may not be called upon for an estimate of the situation. Do not write one unless it is required.

As soon as the problem is thoroughly understood, the whole estimate of the situation, if one is required, should be blocked out. That is, a rough penciled framework should be constructed of the items for consideration, and a rough allotment of the time remaining should be made. For instance, where the staking out and careful reading of the problem has taken a half an hour, and the estimate promises to require considerable writing, but the orders on the other hand seem likely to be short, the time might be allotted as follows:  $2\frac{1}{2}$  hours to the estimate, one-half hour to the orders, and the remaining half hour to a checking up of the whole solution in order to see that no serious error has crept in. And when this schedule, which of course is different for each new problem, is made up, it should be adhered to. There are always some officers who are

surprised by the passage of time and do not finish their solutions. The failure is usually due to the lack of such a schedule. It is believed that almost anyone can profitably systematize his work in this manner.

Of course, while considering one idea others are flashing through the mind. If the general scheme of the estimate has been blocked out in the manner suggested, it is sufficient to note in that scheme the new idea where its importance seems to give it place, for due consideration later in its proper turn. The discussion of each proposition must be completed before turning to another, if progress is to be made and the finished solution is to have a logical arrangement.

The amount of time and space devoted to the discussion of any factor should be in accordance with its relative importance. Very detailed and lengthy consideration is frequently given some route, which, for obvious reasons, from the beginning had little chance of being selected; while the important matter upon which everything else depended, whether to fight or run, was settled in a few words, and so far as the solution indicated, by a mere guess. Keep matters in due proportion. If the decision of prime importance is whether to fight or to withdraw, as a rule, logically, that point should be settled before considering how to fight; if the next step in importance is whether to attack or defend, take that matter up and reach a decision thereupon, before considering the manner of attacking. Otherwise the estimate will contain much that is irrelevant or disproportionate, and therefore will not have two essential qualities of a good estimate: a logical arrangement of topics and a properly balanced discussion.

Now your idea of balance and due proportion in

this matter of an estimate, like any other question of judgment, may be very different from that of the instructor. But if, in your opinion, one possible course of action is of so little relative importance that it should be dismissed with a written line, yet you are inclined to write more because the instructor may possibly want an exhaustive treatment, I advise that you conform to the dictates of your own best judgment. In the long run, courage in the map room has its reward just as surely as it does anywhere else.

Many and many a solution is spoiled because the student does not review his own paper before turning it in. He may forget brigades in his order, or lose pages of his manuscript, or commit some other glaring error which would almost certainly be detected if he reserved time for re-reading.

Be extremely careful that the *order* agrees with the *decision*. If the decision is to attack, enveloping the hostile right, and then the order provides for an envelopment of the left, the assumption will probably be made in reviewing that no real decision had been reached, that the student has been guilty of indecision. And again, be sure that whatever you decide to do, is done with all available forces. If you are going to attack, take no half-hearted measures, but attack with vigor, and so long as there is a prospect of victory do not hesitate to put in all your reserves. Do not hedge. Indecision and half measures are most serious tactical errors, which in war or in the map room usually bring prompt retribution.

Quoting again from Buddecke:

### **The Psychological Process in Solving a Tactical Problem**

“After we have gained a correct insight into the details of the problem, we get to the main task,

which is, to think ourselves completely into the spirit of the problem and to arrive at an estimate and decision for our future course.

“By repeatedly and quietly reading the problem, paying due regard to the map in front of us, we gain, just as in focusing a telescope, a clearer and clearer conception of the situation. The more we succeed in placing ourselves mentally in the given situation and in recognizing all the details in their relation to the general problem, the more we succeed in thinking ourselves into the soul of the leader, in conceiving the magnitude of his task, and in sharing his responsibility, the more eager we shall become to take over his duties and play an active part in the operations.

The longer we “brood” over the map, the clearer will be our conception of the measures which the situation demands. And in this it is important to hold and consider carefully; that is, to follow out, to their furthest effects, all the thoughts and ideas which come to us, often passing like lightning through our brains and suggesting various lines of action. Often it is precisely these fleeting thoughts which lead us to the right path. But ideas which are not fully thought out and thoroughly weighed can not have a decisive influence on our judgment and decision. A head which has a hundred thoughts, but which can neither hold fast nor think out a single one, will always remain undecided and irresolute in tactics.

“Only by intensive reflection is found, in the confusion, the Ariadne thread which will lead us from the maze. However, although attention to details is to be recommended, yet the larger points of view which we have gained must not be lost in the consideration of minor details — a mistake often made and naturally often leading to false conclusions. It is rather our chief duty to find just these main points, and the attention to minor details is but a means to this end.

“Character and intuition unconsciously weave their thread into this labor of comprehension. To that which our brain devises is added, with good or

bad effect, that which our intuition presents; and from the combined activity of both come as a product judgment and decision.

“It is a delicate psychological process which takes place in the head and breast of the tactician, and without doubt this inner effort is one of the most stimulating and interesting of activities.

“A tactical question awakens all our spiritual and mental powers. It demands keenness and understanding, common sense and imagination, firmness and patience, caution and daring, sense of locality and memory, judgment and power of decision. The whole character, the whole disposition, the whole individuality of a man finds its expression here. Thus the solution of a tactical problem reflects the spirit of its author, since it is based on the peculiarities of his own individual character. A hesitating character will, in doubtful cases, prefer the defensive to the offensive. Kindred natures will follow similar trains of thought and in the majority of cases reach similar conclusions.

### **Marks of Sound Tactical Procedure**

“If the question arises, what are the marks of sound tactical procedure? the answer is, simplicity and firm adherence to a line of action adopted. Whoever succeeds in finding, among the many possibilities which often present themselves, the simplest and most natural way, and in following it out consistently, has gained the essentials of success. While artificiality is dangerous everywhere in the military profession, in tactics, it is deadly. Every tactical procedure ought to be simple, clear and easily understood, like a true work of art, which anyone might believe himself able to imitate. Here also the highest perfection lies in the greatest simplicity. One thing must be added, however, for the carrying out of tactical decisions; that is, firmness. The decision, once reached, must be unwaveringly carried out with our whole energy. This condition is of so great importance in tactical affairs that the best course of action, if carried out half-heartedly, will come to naught, while a mistake in the choice of

courses can often be entirely offset by decided and confident action."

The following is from Litzmann, formerly Director of the German War Academy, on the Solution of Tactical Problems:

"In considering problems especially intended to promote the study of the regulations and text books, the solver will have to exercise especially diligence and care; while in problems intended to cultivate the power of *decision*, he will need more the powers of the mind and intuition. At all times, however, he will need the power of imagination to help him 'bring the situation vividly before his eyes. The better he can do this, the more correctly will he act. \*

\* \* \*

"A practical solution can nearly always be found by him who has sufficient talent and experience to see the map plastically before him, and not only to comprehend mechanically the information in the problem concerning the strength of both forces, but actually to see the opposing parties with his mind's eye and, as it were, actually experience the events portrayed. \* \* \*

"The necessary basis for the solution of problems consists therefore in a correct comprehension of the map and of the opposing forces. The map lies before the solver; he only needs to be able to read it; this does not mean merely that he must be able to understand the meaning of all conventional signs and to reckon distances, but also that he must be able to comprehend all details so that they form themselves into a complete and harmonious whole; and this to such a degree that he actually feels the nature of the terrain in the map before him.

"Every soldier who is at all fitted for the duties of leadership can, by practice, gain this ability, though the time required may be long or short, according to the natural ability of the worker. The frequent comparison of the map with the actual terrain conditions is particularly helpful.

"In tactical problems the forces on both sides,



are, as a usual thing, no more clearly indicated than they would be in maneuvers or actual warfare. Of course, one has definite information concerning the troops under his own command; but this is not always the case concerning friendly sub-divisions, and the enemy's forces are almost always unknown. In this point lies the 'uncertainty of war conditions', a very necessary part of a good tactical problem. Sometimes only 'symptoms' are given from which conclusions are to be drawn, just as in the case of a doctor's diagnosis: for instance, the sound of firing from a direction where there is not supposed to be any enemy; the sound of battle, suddenly ceasing, although we believed that we still had at least an hour before our time for taking part; the conduct of the inhabitants from which the nearness of hostile forces can often be guessed, etc. Things of this sort are often easily overlooked in reading a problem, even though they be of supreme importance. Therefore, it is important to read most carefully.

"Often troops are seen at different times and at different places, or are reported by observers in different ways. Sometimes one may be in doubt whether, in a particular case, the same troops or different ones are meant. However, careful attention to conditions of distance and time as well as reference to the map and the use of dividers will make matters clear.

"The troops, both our own and the enemy's, must then be located in relation to the terrain. It is not enough to know that they are standing or marching at a certain place; much more depends upon their relation to the important features of the terrain.

"In order to further our observations, it is well to mark on the map the positions, march columns, etc., of both parties, with single strokes of the colored pencil. In the case of march columns the exact location of the main elements of the Red advance guard, main body, etc., will prove to be of importance.

"The information received in regard to the enemy and occasionally also in regard to friendly

subdivisions may, however, be several hours or even days old. Many changes may have taken place meanwhile. Especially as concerns the enemy are we likely to be groping in the dark. Our only solution is to take for granted that the enemy has meanwhile done that which would be the most correct course for him and therefore the most disadvantageous for us. If he has adopted a different course the advantage is so much the more on our side.

“Our next step is to ask what the leader, whose place in the problem we must assume, actually would, or should do. His intention or his mission must be kept in agreement with the view which we have gained of the forces on both sides and of the terrain, and must be scrutinized with a view to the adoption of the best means for reaching the previous goal, or to see whether the situation has changed and a new decision is necessary.

“An officer of sound tactical judgment, strengthened by frequent practice in all sorts of individual cases, will come to the correct decision.

“For those of less experience the following principles are set down.

“1. One must strive to exert a stronger will power than his opponent; i. e., must never allow himself to give up his own purpose or mission by reason of information received regarding the enemy, unless it becomes clearly evident that the premises, on which his intention or mission was founded, have become valueless. Furthermore one should, as a matter of principle, try to thwart the intentions of the opponent as soon as they become apparent.

“2. On the other hand one must never stick stubbornly to the execution of every detail of previously made plans, when difficulties become apparent; it is enough to accomplish the main purpose.

“3. One must always assume that the enemy will adopt the course of action most disadvantageous to ourselves, and take measures accordingly.

“4. If it becomes evident that the enemy either on account of faulty orders or unfavorable circumstances, has been placed at a disadvantage, we must naturally seek at once the best means of

turning this to our own advantage, and no time must be left the enemy to improve his situation.

“5. If our own situation impels us to employ forces in two different directions, we must bear in mind that a separation into two equal parts is nearly always a mistake.

“As strong forces as possible should be used in the main undertaking, the fewest numbers possible for minor purposes.

“6. We must never take half measures, but in all cases arrive at a full and definite decision and express it definitely. An indefinite manner of expression, with a loophole for escape in case of unfavorable outcome, is inadmissible.

“Whenever it is possible to solve the problem by attacking, this course should be followed, nor should we allow ourselves to be deterred by superior hostile forces or by the uncertainty of the situation. By taking every advantage of the terrain and by concentrating our forces at a decisive point even weaker forces may gain a decision. In threatening situations, an attack is often the only means to safety; such an attack crosses the intentions of the enemy, prevents him from closing in the net about us undisturbed, and gains for our side the advantage of morale.

“7. If the situation has actually changed we must endeavor to ascertain what kind of a new decision will best serve the advantage of the whole. This is always the main point, not the individual successes of the subordinate organizations. In fact, these latter must sometimes be sacrificed when demanded by the welfare of the larger organization.

“The decision of the commander is expressed, as far as the troops are concerned, by the order. In most cases, however, it would be premature and often quite wrong to tell in this order where and how we intend to fight. Conditions may have changed before we meet the enemy; the terrain may in actual fact be quite different from what it appears to be on the map. In such cases, measures already taken would have to be recalled and new ones substituted in the very face of the enemy—a very bad business

indeed! In most cases, therefore, no orders can be given, except to march against the enemy. All further plans belong in reality to the reasons for the order, and even here we should not reach too far into the future."

The following cautions were written for the Line Class. Some of them may perhaps be of assistance to the Special Class.

You will find two theories extant as to the best way to make high marks in the problems of this School. The followers of one decide very promptly after taking up the problem, by intuition largely I suppose, upon its solution, then write the order in accordance with that decision, and feeling themselves securely intrenched in time, start to spend the remainder of the morning on an elaborate argument, miscalled an estimate of the situation, in support of their action.

Usually along about 11-00 o'clock, when only an hour is left for the completion of the solution, its author suddenly realizes that his early decision was hopelessly wrong; that all his writing so far is wasted; and that he now has one hour instead of four in which to prepare his solution. The gain in this method is supposed to be that, in writing the order first, the student will not be surprised by the passage of time and obliged to turn in a paper at the close minus, perhaps its most important element, the order. The answer is, keep a watch before you and work on a schedule as previously recommended in these notes.

The other method is radically different. Those who choose it, make the estimate of the situation a process of reasoning. They endeavor to keep an open mind as to the proper plan of action until they have systematically considered all of the factors en-

tering into the problem, and the advantages and disadvantages of each practicable plan of action; then, when all this has been methodically written down, the whole is reviewed, advantages and disadvantages are weighed, and the plan selected which seems to promise most. Then, and then only, is the decision made.

The first method will usually give a much better argument, in which advantages of the course selected are emphasized and disadvantages minimized. But the latter will give a better estimate; that is, the conclusions and decisions are much more likely to be correct. And the decision is what counts both in the field and in the map room. I do not believe an instructor's views as to the proper decision are ever changed by some bit of ingenious special pleading in a student's estimate of the situation.

Now the final summing up and deciding does not mean that there have not been partial decisions earlier in the estimate. For example, in the usual case, but not always, before it is profitable to consider how to attack or defend, one should decide which form of combat, offensive or defensive, to adopt.

Remember that all problems cannot be solved by one mechanical schedule. Except for the broad general divisions: namely, consideration of our mission, of the enemy, of our forces, and of possible plans, each problem should have a scheme for itself. What is logical in one case will not be entirely so in any other one.

Be sure that the action decided upon for your particular command fits into the general scheme. Do not, in order to secure a brilliant local success, run the risk of jeopardizing the success of the general engagement taking place somewhere else. In

other words, play with the team and not individually.

Remember also that a good solution well carried out, in the field or in the map room, is better than indecision or a fatal waste of time in hunting for the perfect solution. Many a fine solution has been utterly ruined because, with the four hours nearly gone, the student, seized by a panic, tried to reverse his whole decision and plan of action. Take ample time and thought at arriving at a decision, but when one is reached stick to it.

And then when you come to the order be sure that the latter will carry into effect the precise plan you have determined upon. Be sure that the decision and the order are in complete agreement, and remember that the finest tactical decision is of little value unless it is embodied in a clear distinct order that will convey to each subordinate a very definite idea of the part he is to play.

In your order, do not provide far into the future. If, for example, your enemy is a number of miles away and your decision is to march to attack him, simply issue a march order; not as is frequently done, a combination of march and attack order. By the time your forces have marched to the enemy's vicinity, you are likely to find a radically different situation from the one expected, and in fact find yourself confronted by an entirely new problem which requires its own solution. In the map room solve simply the problem that the instructor presents you. Do not build on top of the one he gives you another one for some time much further into the future, and then proceed to solve that too.

Let me urge again that you arrange your schedule of work for each problem so that it includes from fifteen minutes to half an hour, preferably the latter, for a careful review of your own so-

lution, not for a reversal of all your previous work, but for the detection of the errors that creep in, particularly into the order. And compel yourself to adhere to that schedule and to make this review. Be yourself the first critic of your own paper, and by the elimination of the little errors you find, gain many tenths in your marks.

Do not write an estimate of the situation unless one is called for. Estimates are usually required until the division and troop leading problems are reached, but not always. To write down an estimate when not called for usually means the problem cannot be completed in the allotted time. It also usually brings cuts for its own sake. Yet it is frequently done. Read the requirements of each problem carefully.

Do not waste time in criticizing the problem. No problem is perfect; the particular one may seem to you very asinine. Much information may be omitted that you think you ought to have. You may not be able to conceive how any command could find itself in such a fix. But do not waste time in such speculation and do not let the problem, because of its silliness, get you into a frame of mind that prevents good work. Take the problem as it is and make the best of it. Students frequently spend hours in fuming over the faults in the statement of the situation instead of working out its solution.

Do not "bone instructor." Solve the problem on its merits. You will probably have lots of advice to the contrary, but if you take mine, you will omit all thought of the particular instructor and of his idiosyncracies. By considering his peculiar ways of doing things you might occasionally pick up a tenth, but meantime you will have wasted time that put properly into legitimate work would have gained you units.

The mistake is frequently made of considering that your enemy is inactive. A message is received which says that the enemy at a certain time was passing a certain place. The student goes ahead and solves his problem upon the assumption that the enemy is still there, when if the hostile forces have continued to march, as a matter of fact, they may be many miles from the place where reported and so close at hand as to render impossible all of the measures determined upon by the student. Careful consideration of the elements of time and space, not only for your own troops, but for the enemy's as well, is a necessity in almost all problems. When you figure where your plan may take your troops up to a certain time, be sure that you also figure where the enemy's troops, if advancing in the direction to cause you the most trouble, will be at that same time.

Do not spoil your solution by simply careless mistakes in calculations of road spaces and distances. If you, as an advance guard commander, are ordered to precede the main body by a half a mile, do not figure your time of starting so that your order will make a gap of three miles.

Remember that neatness in your work is necessary to an understanding by the reader and a lack thereof may be commented upon. Particularly is neatness required in the sketches sometimes called for. Unless clear, they may be rejected at the student's expense.

For ease in rapidly noting relative heights on the maps, some officers prefer to line out the 100 or 50 foot contours in different inks, and sometimes this scheme is elaborated upon by coloring all areas between certain contours. It depends upon the individual whether these schemes are of value or not.



Read your "Instructions for Written Exercises" with care and conform thereto.

Now, before bringing this talk to an end, I would like to suggest that no one permit himself to become discouraged if at first he does not seem to be getting the best results in his map problem work. The year contains many problems and the race is by no means always to the man who makes the best start. Quite frequently, on the contrary, the winner is the one who learns from every error made, and by consistent plugging is going strongest at the finish. Do not think a good start is not of value; every one should get the best he can, but on the other hand, do not think that all is lost because at first the standing is not high. No man stands one in every series, and no man is likely to stand one in every problem of any series. Most men take their turn in striking the bottom.

The following outline does not require much distortion to make it applicable to the solution of most tactical problems. It is submitted, however, simply as an aid to one beginning such work. It should not be applied mechanically to each problem, but should be changed in accordance with the logical requirements of the particular situation. Yet, it will be found that the main parts, namely: The Mission, Enemy, Our Own Forces, Plans of Action, and Decision, will usually appear in a good estimate and, usually also, in the order stated.

I. THE ESTIMATE OF THE SITUATION:

a. THE MISSION: (Brief).



b. THE ENEMY:

1. Strength;
2. Position;
3. Movements;
4. Probable Intentions;

c. OUR OWN FORCES:

1. Strength;
2. Position;
3. Supporting Troops;

d. PLANS OF ACTION:

e. THE DECISION (Brief)

Influence of { Terrain;  
Weather;  
Climate;  
Soil;  
Morale, etc.

II. THE ORDERS.

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(NOTE: Quotations from the sayings of Moltke are from the German of L. Hauschild.)

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