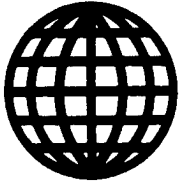


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# China

JPRS-CAR-88-034

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## LABOR

### Labor Market Deployment Pattern Studied

HK2306002188 Beijing JINGJI YANJIU in Chinese  
No 4, 20 Mar 88 pp 19-27

[Article by Lu Zhongyuan (4151 0022 0626) of the Party Central School, written in March 1988: "Pattern of Market Deployment of Main Factors of labor Force"]

[Text] In a planned commodity economy, the essence of opening up the labor market is the conscious utilization on a society-wide scale of market mechanism to rationally deploy the main factors of the labor force. Our country's socialist labor market has begun to develop in the course of the reform. In order that it may further grow and be perfected, certain new conditions still have to be created. This article will attempt to probe the ways and means of perfecting the pattern of market deployment of the main factors of the labor force in our country.

#### I. Fully Developing Competition in Employment and Improving the Efficiency in Deploying the Main Factors of the Labor Force

Competition in employment is the central mechanism for deploying the main factors of the labor force by means of the market and provides the basic road to solving the supply-demand contradictions in the labor force at the microeconomic layers. Acting on the basis of equality in the two sides of the supply and demand of labor force and of voluntary and mutual selection, employment competition first plays a stimulating role on the supply of labor force and forces the workers to continuously improve their own quality to increase their own chances of being selected. Following this, the enterprises, for the sake of obtaining labor in appropriate quality and in the necessary quantity and strengthening their capability in market competition, will also need, under the precondition of maximizing profit, to improve the labor conditions and the remuneration and welfare benefits in their own enterprises so as to absorb the needed laborers or to weed out the extraneous ones. Using employment competition to solve the supply-demand contradictions in the microeconomic layers, in comparison with the individual distribution or allocation of labor of an administrative nature, calls for a relatively lower cost in management and helps in making the deployment of labor fall in line with the enterprises' demand of maximizing profits.

Between labor forces of different qualities, the possibility of replacement is very small. Hence in such cases employment competition is incomplete competition or monopolistic competition. This is all the more so with regard to skilled labor of a high technological level and managers of a high management ability. Regarding the labor force possessing the same quality and hence a strong possibility of mutual replacement, the possibility of complete competition is not ruled out.

Promotion of the system of labor contracts, development of the lateral combination of enterprises and the opening up of urban labor markets have gradually formed a definite degree of employment competition in labor allocation. In the course of renting, leasing and contracting, employment competition at the entrepreneur level has also begun. It is true that the microeconomic contradictions in supply and demand of labor have achieved a new regulatory measure through selection by the two sides of supply and demand and that this has played an active role in improving the allocation efficiency rate of the main factors of labor force in our country, but at present employment competition is still not full or complete and the various kinds of restrictions impeding the circulation and movement of labor have not been basically touched. be it in a region of labor surplus or labor shortage, employment competition basically does not exist in urban employment and in the state-run enterprises superfluous personnel still have the protection of the permanent occupation system. Even in the case of employment competition in the portion of additional employment, it is frequently encroached upon by the conversion of the contractual system to the permanent occupation system. In addition, the administrative control over salaries and wages and the enterprises' heavy burden of social protection have still rendered it difficult for employment competition to fully develop while the double-track selection existing in workers' recruiting has not developed to the double-track in selection in which the enterprises retracts from the stage, and so on.

It seems that in hoping to truly improve the allocation efficiency of the main labor factors, it is necessary to further strengthen employment competition and to resolutely change track to the pattern of market deployment. Paying regard to the special features of different industries and enterprises, different departments and different types of labor, we should definitely set up the corresponding structural conditions and form a labor market competition structure which is integrated and orderly and which possesses regulatory functions by groups. By so doing, it will help the conversion of the double-track selection of the enterprise and workers into a labor market operational mechanism which possesses real significance.

First we should put employment competition into the storage or existing volume of employment in the cities and towns. This requires opening up three circulation channels. One is enlarging the circulation opportunities inside the enterprise. Those unequal to their jobs should lose them while those who have done good work should obtain new positions. If there is only a choice of being employed or not but without the prospects of promotion or demotion internally in the enterprise, this will make it difficult for the workers to generate the "sense of belonging," and is not favorable to the workers and the enterprise becoming adapted to each other. Large Japanese enterprises which adopt the life-long employment system are able to maintain their vitality mainly because their

staff members and workers enjoy full circulation opportunities inside the enterprises. The second is that the "plant within a plant" self-organized by the enterprises for the sake of the well-off surplus staff members and workers should turn their face toward society and form stock-holding relations with the original enterprises, become independent legal entities, and be autonomously managed according to market needs. As for the "plant within a plant" self-organized by a state-run enterprise, it is a variation of an enterprise going into social work; using the share-participating form not have the "plant within a plant" detached and separated outward will convert the enterprise's internal non-market relations into market relations, thus, on the one hand, revitalizing original enterprise and, on the other hand, allowing the laborers to obtain new opportunities of choice. The third is the establishment of an enterprise for the intermediate transfer of labor so that society can expand its capability of absorbing the unemployed of a structural character. This category of enterprises should possess the functions of giving the unemployed training for transfer of employment and ultimately placing them in employment. They should coordinate with the industrial policy to enforce re-employment training with a specified objective and should not simply serve as relief organs to find jobs for the unemployed. They should allow people greater freedom to be admitted into them or to withdraw from them and the salaries and wages they give should be more attractive than the usual unemployment relief funds. This will provide the laborers with the opportunity of learning to select employment anew and also accord them an economic stimulant.

Second, in localities with different labor supply and demand conditions, we should adopt different policies in encouraging employment competition. Localities which are short of labor should adopt a relatively flexible circulation policy and an open-door policy, encouraging the rural labor force to go into the cities to supplement the labor shortage, but to prevent overpopulation in the cities, it is necessary by means of labor contracts to ensure economic compensation to the peasants upon their going back to the rural villages. Localities with surplus labor should stress the structural readjustment of the existing volume of urban employment and should not allow the large influx of rural labor, thus preventing an increase in employment pressure and also to avoid adding to the difficulties in effecting structural readjustment.

Third, in respect of different categories or types of labor it is also necessary to adopt policies which differ from each other in leniency and in strictness, so as to form an orderly employment competition which conforms with the different character of the labor force. In our country, the complex labor force is a manpower resource which is especially scanty. It can hardly be replaced, the social demand for it is strong, the production cost in garnering the chances for coordinating its key elements is high and it would be extremely extravagant not to allow its circulation in full. As for the ordinary labor force, it is

relatively in surplus, can easily be replaced, the production cost of organizing the chances for coordinating its essential factors is relatively low, and though its circulation scope is small, it is still possible to improve the efficiency rate in coordinating. Hence, it is absolutely essential to adopt the policy of employment competition which encourages the full circulation of complex labor, particularly encouraging its interflow between the urban and rural areas. The employment competition among the ordinary labor force should not be let free, but should be confined to the scope of a stated area, otherwise its over-extensive and too frequent movements will make the production cost of coordinating its essential factors higher than the benefits. The production cost includes loss of work time, increase in unemployment relief expenses, instability in commodity prices resulting from fluctuations in salaries and wages, and so on, and may even lead to incurring other costs to be paid by society.

In the course of the full development of employment competition, the mutual selection on a basis of equality and self-volition between the supply and demand sides necessarily produces different employment patterns. To prevent losses caused by the outflow of complex labor force the enterprise may adopt the life-long or permanent employment system. Workers wishing to join enterprises under this permanent employment system, should strive hard to improve their own quality. As for whether to choose the life-long employment system or a flexible system allowing freedom in joining and resigning, it is a matter to be decided by the enterprise concerned in conjunction with market competition needs. This is totally different from the method of rigid deployment by administrative means, but is necessarily the product of market competition. Naturally, in regulating the circulation of a large quantity of labor which is centralized in one circulation direction and in regulating the supply and demand contradictions in labor with a bearing on the macroeconomic structure, employment competition may possibly yield certain defects. This will require resorting to such measures as macroeconomic intervention, planned regulation, guidance in employment and the necessary administrative deployment.

## **II. Establishing a Consultative Wages System; Building a Labor Market on a Deep Layer Structure**

Like other key market elements, the labor market requires the key element price formed in the market, that is, wages, to regulate the circulation and reorganization of labor. The so-called wages formed in the market refers to the supply and demand sides participating in the labor market consulting with each other on the wages and reaching a certain form of wage contract acceptable to both sides and not wholly subjected to the fluctuations in supply and demand in the labor market. In reality, there are very few cases in which the wages of a country are entirely and freely determined by market strength. Seen from the disparities in the quality of the key elements of labor force, it is not possible for the existence of market wages formed unilaterally by competition. In a labor

market, the wages of a portion of the ordinary labor force possessing the feature of being wholly competitive may be regulated to a larger extent by changes in market supply and demand; so far as a portion of the complex labor force is concerned which possesses a rather strong monopolistic character or whose are not suited to being determined by market strength, the government should specify its wages standard. For example, in the case of the senior grade management personnel who represent the state in managing the state-owned enterprises, their remuneration should not be allowed to fluctuate with the fluctuations of the enterprises' income so as to prevent them from standing on the side of the labor union against the government. In short, even though the determination of wages is subjected to regulation by supply and demand relations in the market, this does not imply that the opening up of the labor market will inevitably lead to entirely uncontrollable fluctuations in wages.

The increase of the market determination of the price of labor lies in allowing both the enterprise and the laborers to fully exercise their power of selection on a basis of autonomy and equality, thus making wages become an effective lever in promoting employment competition. Only the two sides participating in the supply and demand in the labor market are most concerned with whether or not wages correctly reflect the enterprise's demand and production efficiency and whether or not correctly reflect the labor contributions of the laborers. And only through the two parties concerned in supply and demand conducting negotiations on a basis of equality is it possible to enable the determination of wages to approach a certain balanced level satisfactory to both sides. In particular, the relative wages between different varieties of work and different posts, like the relations of comparative prices in commodities, cannot be fixed in detail by any center of administrative control. In fact to date there does not seem to be any good method whereby society can directly compute and regulate comparative wages which are entirely rational and which are extremely advantageous to improving labor deployment efficiency. Like the administratively unified disposition of wages, the unilateral regulation of wages by an enterprise is a sort of anti-market behavior, because this would be leaving it up to the side demanding labor to solely determine its price and leaving the laborers as the supply side powerless to influence the determination of wages. This obviously would be in violation of the market's relations of exchange at equal value, refuting the laborer's status as the market's main body.

In China, up to now wages are still the signal and tactic of administrative regulation and if wages cannot become the signal of the market, then the market deployment of the essential elements of labor will have no way to be truly formed. At present, all the efforts devoted to developing the labor business market consist mostly of providing "exchange" sites in concrete form, expanding the chances for the supply and demand sides of labor to meet directly and so on, that is, remaining still at the surface and organizational form of the market; in regard

to the construction side of the market's deep-layer structure (principally being the market-wide reform of wages determination and the creation of a corresponding system), there has been no concrete development. Hence, the labor business market instituted in the cities and towns basically belongs to the revised and improved administrative regulation type and is not truly a labor market. On the other hand, the market deployment of the essential factors of labor must form a market relationship of exchange at equal value, that is, with the parties to the market transaction negotiating on an equal basis and jointly deciding on the price of labor.

The main points of the negotiated wages system are as follows:

1. The basic principles determining wages are efficiency and stability and should not be interposed with considerations of so-called "justice" or "injustice." Efficiency implies that wages must become a stimulant-measure to raise the enthusiasm for labor and to increase the labor results; stability implies that determination of wages should be beneficial to reducing losses caused by the frequent circulation or movement of skilled labor force. So-called "justice or injustice" (equality in income) is a matter of the re-distribution of national income. The supply side of labor cannot take the principle of justice as the guideline in the negotiations, thus avoiding damage to wages' role as an efficiency-stimulant.
2. The two parties to the negotiations must be on a basis of equality. In particular, they must take up the negotiations in an organized form, that is, through the labor union and should not wrangle over prices in an unorganized and haphazard manner. The negotiations must also be carried out according to rules, that is, based on the relevant laws and policies of the state and should not either lower or raise wages at will.
3. Raising the wages or not should follow the longterm interests of the enterprise. If the labor union's demand to increase the wages should damage the enterprise's target of maximizing profits, the enterprise has the right to reject it. Compensation for the essential elements of labor depends in the last analysis on effective labor, that is labor that has won society's recognition (through realization in market transaction) and under the role of market mechanism it is manifested as wage payment according to a fixed standard (for example a certain wage rate).
4. The wage negotiation procedure should be one which has been correspondingly readjusted in accordance with the demand and supply relations and changes in the results of the enterprise's operations. Whether or not disposition of the labor of different categories and of different industries and trades is balanced and rational must in the end be reflected by the movements of labor and be duly readjusted. Solution of the supply and demand contradictions in labor necessarily requires reflection of the changes in supply and demand in the

negotiation procedure on wages to enable wages to play the role of an economic lever. Basic wages for different varieties of work must be determined by the supply and demand relations and the minimum wage standard, on the one hand to ensuring maintainance of the basic needs of labor reproduction and on the other hand regulation of the supply and demand contradictions in labor. As for how to fix the ratio of compensation for labor in the benefits of the enterprise, it may be decided by negotiations held autonomously by representatives of different interests internally in the enterprise, the profit rate, loan interest rate and shareholder's interest rate as the governing or restrictive preconditions.

5. The negotiated wages system embraces not only negotiations between the enterprise and the labor union, but also between the enterprise and the government department in charge of labor wages and also between the department in charge of labor wages with the labor union. The negotiation levels and the negotiation contents are corresponding and the negotiations between the department in charge and the labor union and the negotiations between the enterprise and the department in charge belong to higher-level negotiations and take the form of making regulations and regulating contradictions of a general nature; the negotiations between the enterprise and the labor union are mainly based on the relevant regulations to settle concrete problems of conflicts in interest.

Establishing the negotiated wages system does not attempt to replace any meaningful reform of the wages distribution system, but seen as a whole it will produce an effective coordinating role in promoting the labor contract system and is also comparatively more suited to industries and trades in difficulties and departments of a non-monopolistic character. Seen from the angle of the coexistence of diversified forms of enterprise structure and the trend to common development, the negotiated wages system possesses a rather strong adaptability; for example, laterally-combined enterprises or enterprise groups, enterprises of the share-holding system, cooperative enterprises, collective enterprises and so forth are all the more suited to trying out the negotiated wages system.

### **III. Conflicting Interests in the Labor Market and their Regulation: Position and Role of the Triumvirate of enterprise, Labor Union and Government**

The labor market in a socialist economy under the public ownership system is mainly composed of the three large main interest bodies of the enterprise, laborers, and government. Generally speaking, the enterprise and laborers are the main bodies directly participating in the market, the enterprise serving as the demand side of labor whereas the laborers serve as the supply side. The disparity in the interests of the two parties can obviously and easily be seen. Government has a dual status. On the one hand, it is the representative of social interests and

carries the responsibility of regulating the interest conflicts between the enterprise and the laborers and must keep aloof from the partial interests of the participants in the market; on the other hand, its subordinate public departments have the status of the demand side of labor while the laborers employed in the government departments have their independent interests and must similarly take an organized form to manifest the demands of these interests. Hence, government cannot entirely stand outside the labor market. Its second status makes it one of the main bodies of the market. But its first status strongly reflects its second status and makes the employees in government departments and their labor unions unable to entirely be at the disposition of the market laws and economic factors but frequently have to abide by the political factors or the regulation of non-market rules.

Although in the last analysis the interest conflicts between the three main interest bodies of the labor market must follow the big precondition of the unanimity of basic interests on the basis of the public ownership system, yet the determination of the social interests and the general body interests are not the results of logical evolution, but can only be summarized subsequent to the regulation of the conflicts between the various interests (this has actually been overlooked for a long time). In the normal operations of the labor market, aside from the enterprise and outside laborers generating market exchange relations, there is also the procedure of regulating interest conflicts by means of negotiations, consultations and so forth internally in the enterprises and it is precisely based on the continuous regulation of the independent character and disparity of interests that unanimity in interests in a certain sense can be formed. The extent of regulating interest conflicts determines the extent of the orderly operation of the labor market. Generally speaking, the process of regulating the conflicts between different interest bodies is: following the rules and corresponding procedures of different levels and different scopes, based on the different targets formed by the independent interests and by means of the stages of negotiation, consultation, complaint and mediation, to reach an agreement that is satisfactory to both sides. In the regulation process it is necessary to firmly insist on two principles, one being the equality status of the two parties' powers and the other being the impartial status of the power of the arbitrator, otherwise this will lead to incoordination in the distribution of interests and imbalance in the labor force market.

Speaking from the demand side of labor force, there being a sharp difference between the enterprise and the public departments of government in their targets and operation mechanism, the regulations they follow are naturally quite different. The enterprise is a microeconomic structure using the market mechanism in coordinating the essential elements in production. When the enterprise and the laborers discuss the matters of wages, conditions of work and welfare treatment, they are ultimately subjected to the disposition of the market benefit rate. The enterprise can resort to such economic

measures as lowering the wages, terminating employment, soliciting cheaper labor or using machines to replace manpower, and so forth, to counter the demands for excessively high wages and fringe benefits. At the same time, it can raise wages, promote workers and increase fringe benefits to absorb the labor force needed. In the case of government departments they can adopt the measure of making employment stable, enforce fixed grades of salaries and wages and provide better fringe benefits to reduce interest conflicts for the sake of maintaining the continuity of their policies and the working staff's loyalty to the government. They may even ban strikes so as to keep the government functioning normally. Speaking from the supply side of labor, the labor unions in enterprises may principally resort to economic activities to achieve the targets of maximum income corresponding to the enterprises' market operation results while in government departments the labor unions may frequently resort to political activities to influence financial outlay so as to achieve the objective of increases in salaries and wages and in fringe benefits.

With regard to the interests and objectives of the enterprise's management department and labor union, internally they also have disparities and conflicts in their common interests. Differences in the labor union's constituent members may affect the selection of the Union's objectives in the negotiations. If the major points of concern of the managers of an enterprise's different departments differ from one another, this may affect the determination of the negotiation objectives of those in control. Thus, internally in an enterprise there exists a regulation process covering three levels of interests: internally in the labor union, internally in the management sector and only then between the two sides of the labor union and the enterprise management. Be it the labor union or the management, both sides ultimately are subject to the restrictions of market competition. The interest regulation process with market competition as the basis does not permit the unlimited rise in wages.

In the different operational levels of the labor market, the corresponding operational rules must each have their own stress or preference to facilitate the easing and ultimate regulating and smoothing out of the interest conflicts.

The first level consists of the spot operational rules specially applicable to the disposition of the essential elements of the enterprise's first-grade labor force and principally embraces rules on compensation for work, rules on the internal readjustment of the labor force and the regulation procedure for interest conflicts. The payment for compensation is determined by the technological level of different industries and trades, the degree of competition and the laborers' contributions and in addition includes the basic fringe benefits fixed by the state and the supplementary fringe benefits determined by the enterprise's business conditions. Fixing of wages, aside from being confined by supply and demand relations,

should not be affected by the individual's likes or dislikes. Wage grades fixed according to the system of work assessment constitute a necessary measure in coordinating the internal readjustment of the labor force. For certain ordinary work, the compensation may be fixed on the basis of what the enterprise pays for a hireling from the outside but in the case of certain specialized kinds of work resort must be made to the use of graded salaries to help enforce the promotion, transfer, or elimination of labor internally in the enterprise. In the case of industries and trades in which the mobility nature of the labor force is weak, the qualifications and records of service of work are one of the basic elements in readjusting the disposition of labor but in industries and trades in which the labor force exhibits a strong nature of mobility then they can hardly be put to extensive use. Qualifications and records of service of work are a sort of objective yardstick to set aside individual favor and preference and even in the West in the negotiations between labor and capital they constitute rather weighty factors acceptable to both sides, because they reflect the investment benefits of in-post training and the capability of handling accidental affairs. During the period in which the labor agreement is still in effect, the interest conflicts shown in the disputes should be solved through the regulation process of lodging complaints and settlement by arbitration. The linking up by this means of information between the two sides of supply and demand will strengthen their mutual adaptability, reduce errors in handling work, and help in making the labor union and the enterprise's management department cooperate with each other.

The second level consists of the rules governing the conversation or dialogues of the groups. They are applicable to the consultative dialogue between the various interest groups in the labor force market and principally touch upon interest regulation of the scale of departments, industries, and trades and regions. In our country, interest groups in labor markets have not yet developed to a definite organizational form although the beginnings of interest groups may be seen in certain organizations or structures currently existing. One of them is the labor union. It represents the workers' interests and should enjoy the important powers of negotiations on wages, welfare, labor conditions and matters reflecting the rights and privileges of the workers. Unfortunately at present many of the labor unions at the grassroots level can only function as recreational clubs, match-making bureaus and so forth and are quite unequal to the tasks that should be borne by representative organs of the workers' interests. Even the labor associations of industries and trades still cannot truly reflect their independent interests and the strength of influencing policy-making. In training the labor market, it is necessary to let labor unions grow into interest groups carrying great weight and particularly to let the labor unions of industries and trades or labor union combines develop into influential forces with a bearing on policy-making in wages, in employment and in social security and protection. The second is the federation of

individual laborers whose status and role in our country's labor market are being increasingly apparent. Individual workers are more affected than others by market fluctuations and are the active elements in labor markets. How to ensure their interests and how to coordinate their interests with the taxation laws and policies of the state are the new tasks confronting the federations of individual laborers. The third is the association of entrepreneurs. It represents the interests of the enterprises and should become an interest group of equal status in conversations and dialogues with the labor unions in jointly discussing group agreements related to wages, labor conditions, and systems of fringe benefits, and in participating in the compilation of, and advising on, the relevant policies. The fourth is social public organs such as social security sinking fund organizations or other public affairs bodies. They do not represent the interests of any part and their aim is to promote the coordination of social interests and bear the burden of providing information and advice on the government's socio-economic policies. The fifth are the departments in charge of the labor market, such as the labor personnel departments at various levels or the labor arbitration committees. They represent the state's interests in regulating the labor market, and in general smooth out the interest conflicts of various sides and principally formulate plans, promulgate policies, and organize and promote the various interest groups to smoothly conduct conversations and dialogues on cooperation. In the latter case, they should maintain strict neutrality and in general should not mediate by force or compromise with a certain party.

The regulations of the third level are the state's regulations for regulating the labor market. There are many ways by which the state can influence the labor market, including macroeconomic policies, employment training system, educational training plans, unemployment insurance systems, other social protection systems, taxation, and so forth, but in respect of the operations of the labor market the key and most directly influential way is related to the government regulations on market regulations (including legislative and administrative rules) and employment policies.

Government laws and regulations constitute the basic regulations of the labor market and form the high-level basis for the regulations covering the enterprises' first-grade on-the-spot operations and the regulations on the group's dialogues. Training up the labor market particularly requires the existence of complete laws and regulations to enable the on-the-spot operational levels and the group dialogue levels to proceed according to rules, and in an orderly manner. There must be corresponding rules governing labor entering the market and taking part in the operations to its retiring from the market. For example, at the stage of entering the market, the legislative and administrative rules require the stipulation of the laborer's rights and privileges and oppose any discrimination between the sexes and so forth but as for

those who have been dismissed because of their own fault but who now seek re-entry into the market they must correspond to the necessary rules governing re-entries.

In participating in the stage of market operations, laws and regulations on salaries and wages, working time, hygiene and safety in occupation and so forth are needed and on retiring from this stage legislation and rules governing such phases of social protection as unemployment relief and retirement insurance are likewise needed. As for the form of interest regulation in conversations and dialogues between groups, there must be laws and regulations which recognize the legal status of the interest groups and/or their representatives and which specify their respective rights and privileges, obligations and responsibilities and of the ways and means of adjusting any conflicts between the groups' interests and the social interests.

As for the reasons why the state's employment policy possesses influences of a key nature on the labor market, aside from the fact that a realistic labor market is far from an ideal state of completion, there is a fundamental reason and this is that what cause unemployment is not the labor market itself but such factors in the macroeconomy as changes in general supply and demand, evolutions in economic structure, technological progress and the temporary interruptions in employment in the movements of the labor force. The macroeconomic contradictions between the supply and demand of labor caused by these factors can hardly achieve an automatic balance through pure reliance on market relations. Therefore, the state has the need to employ planned regulatory measures as well as employment policies to perfect the labor market to enable the pattern of market deployment of the labor force to attain a suitable operational environment. Countering the conditions in our country of the surplus in the gross supply of labor, the serious state of being "out of a job though in employment," and the outstanding structural contradiction of overemployment on the one hand and actual shortage of hands on the other, it seems that the major points of the government's employment policy should lie in facilitating the readjustment of the existing employment volume (the in-employment portion), encouraging the development of labor-intensive types of industries, and so forth. If attention is paid only to solving the pressure for employment or the problem of invigoration through increased employment, then the low effects in the disposition of the major elements of labor force in our country still cannot achieve any real improvement in appearance.

#### **IV. Establishment of a New-type Social Protection System**

Against the conscious employment on a society-wide scale of the market mechanism in the deployment of the essential elements of the labor force, two factors, these

being out country's enormous population and the enterprises' excessive burden of welfare protection, offer serious impediment. To overcome these two large impediments and make the labor force market truly open up and go into normal operation, it is necessary to cautiously and wisely select a road of reform which relies on the whole society's strength to institute social protection enterprises. Social protection has the purpose of helping society's constituent members to liberate themselves from the impoverished, solitary and helpless state; the objects of social protection include not only those people or families which have become impoverished through the loss of labor power but also those persons (and families) which have temporarily lost their labor opportunities and fallen into impoverishment. The key to establishing a successful social protection system lies in the setting up of the detailed items, fixing of the payment standard and raising of the necessary funds being rationalized. As for whether or not rationalization can be achieved, balancing and coordinating the following four objectives will determine: 1) Easing the current degree of impoverishment and reducing the risks of people falling into the pite of poverty; 2) stimulating and encouraging people with the capacity to work to find jobs to avoid becoming impoverished and preventing the growth and spread of the phenomenon of "lazy people living on welfare benefits"; 3) maximum reductio of the state's budgetary expenditures and administrative and management expenses and lowering the operation cost of social protection; and 4) preventing the insertion or installation of unsuitable projects and preventing the breeding of any unjust phenomenon in the paying out of benefit funds between the beneficiaries of social protection.

It is difficult to achieve to the same extent the above-mentioned four objectives and in the course of balancing, a certain degree of compromise at times has to be made. The nucleus of the problem is not to treat the social protection measures passively as "fire extinguishers," but to make them into "regulatory machines" which can maintain social stability and also reduce or soften the stringent character of the welfare benefits. Hence, in establishing the social protection projects and in fixing the payment standard and payment methods, the following relations should be handled well:

First, it is necessary to take into consideration their role in developing the social productive forces. The social protection projects and standard of welfare treatment cannot be unlimitedly expanded or raised at will, thus avoiding disrupting, because of strengthening the stringent character of the welfare benefits, the order of priority of the economic and social development targets.

Second, we must consider the level of the national income, the management results of the enterprises, and the basic needs for protection of the living standard. The relative stability of the basic protection projects provided by state finance and of their standards should be maintained. This can be done by means of the index

method and at the same time, to reduce the potential pressure from currency inflation, we may consider linking the basic protection projects to the price indices of certain commodities whose prices rise relatively slowly. The collective welfare projects and standard of treatment provided by the enterprises should possess a fairly large degree of flexibility. The enterprises should be freed from the existing burden imposed by social protection and should, based on surplus power of their own self-development and the needs in market competition independently institute those collective welfare schemes that can augment their own attractive power. Such schemes should be supplementary to the basic protection projects and not replace them. Many welfare payments not belonging to the scope of basic protection (such as commodity price and housing subsidies) should be partitioned out from the existing benefit expenditures and be changed into wages income thus gradually rectifying the existing state of the mixing up the basic protection projects with ordinary living and welfare projects.

Third, we must prevent contradictions arising between and among the welfare benefits and the protection projects, particularly preventing them from breeding any counter-regulation functions. For example, if the pension role on staff members and workers currently in employment, and besides, it may bring about the situation of the "boat riding high with a rise in the water level." Also, for example, excessively high unemployment relief benefits not only may reduce the enthusiasm for work but also may lead to the benefits losing their original protective character. Therefore, it is best that the new type of social protection system have the functions of the treating comprehensively and linking initiatively, thus avoiding falling into the passive situation of appearing to be rational at first sight but revealing many loopholes on accumulation.

Fourth, there must be such strong points as being simple, easy to carry out and advantageous to standardized management. A social protection system which carries too many projects and goes into minute details necessarily calls for rather high administrative and management capability as well as the installation of a complex set-up of management organs which, in turn, unduly raises the management expenses. One way out is to combine the taxation system and insurance system with the social protection enterprise and make the basic projects of social protection and the payment methods gradually assume the forms of taxation and of applying for insurance and receiving insurance protection. Viewed from the taxation system, the idea of negative income tax is highly enlightening. It has obvious strong points in its roles of comprehensively treating poverty, strengthening the stimulation of employment, and facilitating the standardization of management methods and is worthwhile for us to study. The so-called negative income tax system calls for payment of grade-differential (or progressively decreasing) subsidies based on the appropriate poverty line reached, stopping the subsidies when and as the income has reached a designated level and finally reverting to collection of the income tax.

Another two supporting pillars of the new-type social protection system are the multi-level fund raising channels and the funds receipts and disbursement pattern which stresses efficiency. In our country, to enable social protection to possess ample funds and use them at will, it is necessary to open up five levels of funds-raising channels, these being the state, units, social bodies, individuals and families. The state's public insurance fund is the main channel. To the beneficiaries of social protection it offers the ultimate and most basic assurance of benefits. The social protection funds collected from the various units and the collective welfare funds provided by them also constitute an important source of income. Contributions from social bodies and the voluntary reserve funds for self-help of the populace likewise form sources worthwhile fully tapping. At the same time, we should not overlook the role of the portion of insurance premiums paid by the individuals as a supplementary source of funds for social protection.

The funds receipt and disbursement pattern which stresses efficiency aims at the display of the usage benefits of social protection funds. A program available for selection is the combination of the system of spot receipt and spot payment with the system of advanced accumulations of a funding nature, laying the stress on the pattern of raising funds by means of the advanced retention of savings and encouraging units and individuals to take part in the protection scheme. The disbursement of funds should be principally confined to the pattern of payment by transfer and avoid as much as possible the method of making full subsidies.

The system of spot receipt and spot disbursement is to make use of by far the largest portion of the social protection receipts of a stated period on paying out and keep only a small portion to serve as emergency reserve funds. Advanced countries mostly adopt this method. The system of advanced accumulations of a funding nature calls for fixing the current scale of fund-raising on the basis of coming disbursement needs and comparatively speaking pays attention to the accumulation function of the social protection funds. On account of their economic backwardness and the lack of development of their capital market, developing countries mostly adopt this method. So far as China is concerned, and in consideration of the current needs of certain of the assureds (for example a relatively large number of people have retired in recent years) and the future needs of the potential assureds (future retired people and those possibly becoming unemployed), it is quite acceptable to combine the system of spot receipt and spot disbursement with the system of making advanced accumulations, but, in such a case, the former system should gradually be relegated to a secondary position to tally with the current condition of the relative weakness in our economy.

The advanced accumulation system of a funding nature is divided into the two types of full funding and partial funding. The special features of the former are that the

rate of the collection fee remains unchanged for a prolonged period, that in the initial period of the enforcement of the social protection plan a large amount of reserve funds may be generated and that at the time when the demand for disbursement arises payment in one lump sum is made. The features of the latter are that it is governed by the precondition of satisfying the demands of a stated period, that a definite amount of reserves is retained, and that readjustment is made of the collection fee in separate stages, the rate being relatively low at the initial period, being gradually raised though still maintaining a relative stability. The latter pattern is of a more flexible nature, enables the social protection funds to carry a balanced burden at different periods, avoid posing too great a pressure on economic development and appears to be more suitable to our country. Naturally, whether to concretely adopt the full funding type or the partial funding type will differ in accordance with the different projects under the social protection plan, but in short, the advanced accumulation system of a funding nature can produce a relatively large amount of surplus in social protection fund, and this surplus portion can become an important source for the government's investments. In turn, the investment income (the investment projects must have the guarantee of producing benefits) can enlarge the surplus of the protection funds. This helps in enhancing the efficiency rate in using the funds and international experiences have justified this point. But here we should not one-sidedly emphasize the safety character of the surplus of the protection funds and overlook or even negate its profit-yielding possibilities. In reality, be it in developed countries or in the developing countries, the social protection funds constitute an extremely active portion of the money market, except that there are some differences in the direction of investments.

The raising and use of social protection funds through the means of applying for protection and being accepted for protection have obvious advantages. First it is beneficial to promoting the circulation of the labor force since by so doing the laborers will not be confined for life to a single unit. Second, it is advantageous to augmenting the sense of independence and sense of responsibility of the staff members and workers and encouraging the individual to be responsible for his own fortune and not to wholly depend on the state. For example, adoption of the method of paying the fees first and subsequently receiving benefits can make the receiving of the pension fund become a right corresponding to a sort of obligation and both the recipient and the staff members and workers in employment will not have the feeling of shouldering a heavy burden. Third, it can reduce direct appropriations from state finance and reduce the need for taking or transferring funds from the units employing people as well as the administrative expenses that may be incurred thereby. Finally, social protection funds of the advanced accumulation type help in opening up the channel of converting consumption funds into accumulation funds, thus making up the insufficiency in the money market.

In comparison with making extensive subsidies, using disbursement of a transfer nature as the principal method in the pay-out of social protection has the special features of the centralization of the payment objects, limited contents, clear-cut targets and noticeable results. Beneficiaries of disbursement of a transfer nature are congregated in the portion of constituent members of society who tally with the social protection conditions, the contents being limited to pension funds, unemployment relief funds, wages for sick leave, wages for maternity leave and subsidies for special distresses and the objective being to relieve the assured of their distress. By so doing, it is possible to make use of a relatively low disbursement to attain noticeable results in the re-distribution of income. Correct use of the disbursement measure of a transfer nature can first help in augmenting the functions of stimulating efficiency of such economic levers as prices and wages because it can reduce the high subsidies concealed in the wages and prices and thereby cause the restoration of the original functions of the economic levers. Second, it helps in reducing financial expenditures and in clarification of financial plans, since under the conditions of the reduction in various kinds of subsidies and thereby making the various economic parameters of prices and wages become clear-cut, following increases in the financial revenues of the government, the expenditures on social policies in the whole financial budget can be clearly seen and planned. third, it is beneficial to maintaining social justice under the precondition of efficiency first. Disbursements of a transfer nature are based on the pre-determined conditions of the various kinds of market signals normally regulating the effective deployment of the economic resources. Under this precondition, they principally offer financial aid to those distressed in livelihood after market competition has widened the gaps in income. They do not accord equal treatment to levels with different income. This avoids the possibility of a universal subsidizing scheme aggravating the passive consequences of injustice.

[Editor's Note:] The following comrades took part in the researches on this article: Han Kang [7281 1660], Zhou Weimin [0719 3634 3046], Mo fumin [5459 2105 3046], Sheng Bin [4141 2430], Han Xiuyun [7281 4423 0061], Zu Zhenliang [1776 2182 5328] and Hu Ankang [5170 1344 6921] [End Editor's Note]

## TRANSPORTATION

### Anhui Illegal Road Tolls Exposed

HK1606060688 Beijing CHINA DAILY in English  
16 Jun 88 p 4

[Text] In Fuyang Prefecture, Anhui Province, roads have been a major hurdle for farmers. There were all kind of checkpoints imposing excessive tolls and tough penalties on farmers' vehicles. This has hindered the development of the commodity economy, ECONOMIC INFORMATION reported.

According to a survey by the prefectural Party Committee, the Fuyang Prefecture once had more than 200 checkpoints set up by 13 organizations and units.

There were four just on the roads passing through Mengcheng County town not including the mobile ones.

The excuses for the tough penalties imposed included unsatisfactory licences, incomplete vehicle spare parts and overloading, the paper said.

Some unemployed young people and rural labourers with red armbands stopped drivers for taxes and penalties. They were called, ironically, "penalty guerrillas."

If farmers drivers refused to pay the baffling taxes and tried to give an explanation, forfeits imposed on them would double because of their bad attitude.

The paper said some drivers and inspectors made private deals which benefitted both of them. The drivers could pay less if they gave up the receipts for taxes and penalties. Then the inspectors could pocket the money.

Some farmers stopped driving due to high taxes and tough penalties. But then they had to pay fees because their trucks stayed at home.

The situation resulted in many traffic accidents and waste of gasoline and diesel oil as some drivers took roundabout routes to avoid checkpoints on the vital communication lines.

The poor management of markets in the Fuyang Prefecture was another problem and also involved taxes and penalties, the paper said.

According to the paper, 12 units collected taxes and fees from more than 800 markets in the prefecture. These included 23 varieties of taxes and 18 kinds of penalties.

Most units kept what they had collected. A county industrial and commercial bureau took in management fees of 470,000 yuan in 1986, 170,000 yuan of which was spent on establishing office buildings and living quarters for its staff, 130,000 yuan on buying cars and 30,000 yuan for staff medical treatment.

The road and market situation in Fuyang Prefecture concerned the local government. It began to consolidate the management of traffic and markets in July last year, removing more than 200 checkpoints and establishing 15 traffic inspection stations directly under the security departments, the paper said.

The stations check drivers' licences, collect taxes according to regulations and enforce the traffic regulations.

Furthermore, the local government has reduced taxes on markets in the prefecture from 23 to 10. The administrative departments of industry and commerce are

responsible for the management of markets and collecting taxes. At least 80 per cent of these taxes should be spent on improving the markets.

The consolidation of traffic and markets has benefitted the local governments and stopped excessive and tough penalties, the paper said.

Baozhou city in the prefecture collected taxes and fees of more than 60,000 yuan between November and January, an increase of 10 per cent over the same period before the adjustment of checkpoints.

The reform in the Fuyang Prefecture has also resulted in lightening the heavy tax and penalty burden on farmers and helped develop the commodity economy in the prefecture.

## AGRICULTURE

### **Reform of Land Management Practices** *40060264 Beijing JINGJI RIBAO in Chinese* *19 Apr 88 p 3*

[Article by Mao Liben [3029 4539 2609]: "Major Reform of China's Land System; Implementing an Agrarian System Using Compensation and Transfer of Land Possession"

[Text] Implementing a system of compensatory use and transfer of land possession is extremely important for the equitable distribution and utilization of China's limited land resources. This is a major reform concerning the problems of land ownership, land use, etc.

Land is one of the most important and indispensable factors in production and is an extremely limited resource in China. In China the area of land per person is only one third that of the world average. With the expanding population and a rising standard of living, people are requiring larger residences, more parks, more roads and other such public facilities. Along with the developing economy there will be a rapid increase in land used by factories, workshops, business facilities, and infrastructure. Since a country's land mass doesn't change, the problem in supply and demand for land will continually intensify. We must find equitable measures for the allocation and use of land.

The major faults of China's system of non-compensatory use and transfer of land implemented for the past several decades have been the waste of land resources and the irrational use of land. In developing usable land more is preferable to less; some land has been idle and not allowed to be transferred. Areas where commerce is flourishing have very valuable land occupied by residences and government offices and, in large cities, industries that take up land and create pollution emerge. These situations intensify China's problems of supply

and demand of land, especially in cities. These problems are harmful to the rational distribution of production and city development and hinder economic development.

Just as the state as owner cannot operate every state-run enterprise and control its production, supply and marketing of products, the state as owner of land also does not need to and cannot possibly manage each parcel of land and deal with application matters concerning each parcel of land. The state must select from the great number of applicants, users that will achieve the greatest economic and social benefits. Therefore, the state should separate land ownership and its management. While maintaining ownership rights, the state sells use rights on the market, permits the legal transfer of use rights, allows the market to set prices, select users that will achieve the greatest economic benefits, and realize the best distribution and utilization of land in order to bring greater economic benefits to all of society.

The state's land ownership basically entails its right to profits, use rights, and the management of the land. Profits from the sale of land use rights return to the state, and the state also has the right to determine specifically how the land will be utilized, such as industry, business or residential areas. The renters of the land cannot change its use without approval. The state has the right to take back land that is not being used according to use regulations and if necessary can, according to law, take back sold land with compensation being made to the owners. In this way the state retains its rights to profits and management of the land, the rights of the users is conditional and under a time limit. After the time period of the sale, the use rights of the land revert back to the state but, with the approval of the state, the original renters of the land can continue to rent that land. Implementing compensation and transfer of land doesn't change China's socialist system of public ownership of land but actually makes improvements on it.

Achieving these reforms would benefit the rational distribution and utilization of land, the realization of the national land plan, and could also open up financial resources and increase income. The state could use this income, business taxes, and other taxes from sold land to improve infrastructure and to better exploit land resources. It is necessary and beneficial for us to carry out these reforms.

Land use fees should be applied according to the differential rent principle as well as the nature, industry, and management of the land use. Fees should be based on a different standard for varying geography and environments. There should be different fees for public facilities, commercial enterprises, industry and profit vs. non-profit uses as well as differences in basic operation (such as food, entertainment, and sales). The use of these different standards will promote the rational use of land and carry out the plan for construction and national land use.

Purchasing the use of land from the government for a specific length of time essentially changes the paying of yearly use fees to paying fees one time for the use of the land (this figure is not necessarily based on the sum of each year's use fee). This attains the rights to strive for profits in the use and transfer of the land. The government is the sole seller of land, the market for selling land use rights (known as level 1 commodity markets) should be conducted on the monopoly principle. As for profits made in using land, the government should control the amount of land sold and maintain a fairly high price. Prior to the selling of land a notice detailing the parcel of land, its environment and designated use should be published so buyers can compete for it.

Sales on secondary transference, or level two markets, have many buyers and sellers and should be based on the free competition principle and prevention of monopolies. Land resources should be distributed through the market to realize the highest economic benefit. Only by means of markets and competitive prices can land prices be evaluated and the most suitable users of land be selected.

In order to manage the land trade market well and overcome defects in the market system, regulations dealing with land transactions, prices and arbitration of disputes need to be stipulated. Also an appropriate organization should be found to administer these regulations.

The selling of land use rights, depending on the situation, can be by agreements, bids, or public auctions. Public auctions should be used to sell land normally used for profit. Land that is especially valuable or must be explored and developed by its users should have bids submitted with detailed plans for the land development and use so the government can sell to the best buyer. Land for non-profit organizations such as the government, the military, culture, education, health organizations, etc. should be sold with agreements, at a reduced price, and without compensation.

Shifting from a land use system without compensation to one using compensation can be done by following the steps outlined below.

1. Issue land use certificates and set land use fees. While affirming a unit's original right to use land it occupies, fees must also be set according to the land's value, nature of use, business, and management.
2. Land use rights must be sold in a planned manner. Sources of land sales are: State owned wastelands, vacant lands, newly taken over collectivized lands, land given up by units, and land

taken back by the state. To encourage units to give up excess land, allowing them to keep a small portion of the transfer fee can be considered. Units that have not received compensation for land use rights must not be allowed to secretly transfer or sell land use rights. Only the government has the right to transfer land use rights. Only after compensation for land use rights have been made can land be transferred, and it can only be transferred on the land trade market.

3. Establish a land trade market and set rules and regulations for governing land trades, management, appraisal and arbitrations. An organization to administer these rules and regulations must also be established.

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#### **Jiangsu Farm Loans**

40060315d Nanjing XINHUA RIBAO in Chinese  
14 May 88 p 1

[Excerpt] From January to the end of April, agricultural banks and credit cooperatives in Jiangsu Province provided 1.365 billion yuan in farm loans, a 19 percent increase over the same period in 1987.

#### **Jiangxi Peasant Income**

40060335a Nanchang JIANGXI RIBAO in Chinese  
6 May 88 p 1

[Excerpts] In the first quarter of 1988, peasant per cash income in Jiangxi Province was 101.36 yuan, a 28.9 percent increase over the same period 1987. Income earned from sales of farm products was 55.10 yuan, a 26.6 percent increase over the same period in 1987. Cash income earned by peasants engaged in rural enterprises was 14.15 yuan, a 41.1 percent increase over the same period in 1987.

#### **Dairy Cows in Liaoning**

40060315f Shenyang LIAONING RIBAO in Chinese  
24 May 88 p 2

[Excerpt] In 1987 dairy cows in Liaoning Province numbered 48,000, an increase of 6,000 over 1986. Milk output was 109,000 tons, an increase of 6,000 tons over 1986.

#### **Liaoning Oil Crop Area**

40060315e Shenyang LIAONING RIBAO in Chinese  
13 May 88 p 2

[Excerpt] According to a survey of 7,440 rural households, the area sown to oil crops in Liaoning Province this year has decreased 48 percent from 1986, and output will be less than 190,000 tons.

**Strategic Warfare, U.S. SIOP Discussed**  
40050230a Beijing JIEFANGJUN RIBAO in Chinese  
22 Apr 88 p 3

[Article by Fan Hao [2868 8504]: "Reflections on 'Strategic Warfare'; Thoughts on Reading the U.S. 'War Strategy'"]

[Text] In their discussions of modern nuclear warfare, the U.S. military produced the doctrine of strategic warfare. The term "strategic warfare" is a derivative of the strategic bombing of World War II. The objective of strategic bombing was not to strike directly at military strength (troops), but at sources of the enemy's basic strength. It was carried out by striking at the enemy's economy (such as industrial districts) so that the enemy forces would lose their sources of supplies and ammunition. If it could not achieve that, it could achieve confusion and chaos among the people. Modern strategic warfare does not only mean striking at the sources of the enemy's strength, but also, due to the emergence of modern means of delivering rockets, striking from long distances, usually firing intercontinental missiles from one's own country to hit vital objectives in another country. Strategic warfare can forcefully attack across oceans and continents all the resources of another country's strength to wage war. It differs from conventional warfare, in that it, first, uses nonconventional weapons, and, second, in that there is no thought of direct physical contact with the enemy, and also in that there is no desire, nor possibility, to occupy the opponent's territory at the conclusion of the war.

It is general knowledge that during World War II, Great Britain's strategic bombing of Germany was not successful, because it is extremely difficult to destroy an enemy's industry from the air. Today, now that weapons have huge destructive power and modernized means of delivery are available, one can achieve the war objectives which eluded strategic bombing in the past. This has certain people more eager to try them out.

At present, best in a position to engage in strategic warfare are of course the two superpowers. However, strategic warfare need not necessarily break out first between the United States and the Soviet Union, but may be fought between other countries to whom the United States and the Soviet Union have supplied nuclear weapons, and could also occur as a reprisal by a superpower against a certain country. These would possibly all be local wars, but that does not preclude the possibility that they could of course escalate into world wars. Judging by the way the United States has selected objectives for its strategic nuclear missiles, it is difficult to say in what corner of the world the future strategic war will start. The "SIOP" war plan [single integrated operational plan] of the United States, drawn up by Thomas Gates in 1960, had targeted nuclear strikes on every large city of the Soviet Union, Eastern Europe, and China, as well as on several military and industrial objectives, the so-called "optimal mixed targets." In

1974, this was again changed to "limited" and "selective" targets, a selection of 25,000 targets for nuclear warheads. Nominally, this was done to respond to Soviet action, but Soviet cities with populations of over 25,000, Soviet missile launching pads, factories, military camps, submarine bases, trunk railway lines, and radio stations, are altogether only 3,500 more or less. It is a mystery where the remaining 21,500 targets are, and this is of course reason for vigilance in all the other countries of the world.

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**Spratly Islands Situation Discussed**

**History, Evaluation**

Beijing JIANCHUAN ZHISHI [NAVAL & MERCHANT SHIPS] in Chinese No 2, 8 Feb 88 pp 4-5

[Article by Shen Changjing [3947 7022 2417] and Xiao Jun [2556 6511]: "What We Have Learned From the Spratly Islands"]

**[Text] Chronology**

On 2 December 1987 a spokesman for the Government of China reiterated that China has indisputable sovereignty over the Spratly Islands and surrounding waters.

In 1970 the Philippine Government sent troops to occupy several of the Spratly Islands. The Philippines unilaterally proclaimed coastal areas and territorial seas and published a map calling the Spratly Islands the "Kalayan [0595 2139 1693] Islands."

In 1975 the Vietnamese Government sent troops to occupy several of the Spratly Islands. Vietnam unilaterally proclaimed coastal areas and territorial seas and published a map calling the Islands the "Changsha [7022 3097] Islands."

During 1976 the Philippine Government announced that a "joint oil drilling consortium from Sweden and the Philippines had started oil drilling operations in the area of the Kalayan Islands." Malaysia occupied several of the Spratly Islands during 1977.

In 1980 both Indonesia and Brunei proclaimed sovereignty over the Spratly Islands.

The USSR and Vietnam signed an agreement in 1980 to cooperate in the exploration and drilling of oil and natural gas off the continental shelf south of Vietnam.

**What Does the Rest of the 20th Century Hold in Store?**

The Spratly Island archipelago consists of over 230 islands. There are 32 major reefs or shoals in this archipelago of which 31 have been occupied by the Philippines, Vietnam or Malaysia, with just 1 being in

the hands of the Taiwan Nationalists. So far the Philippines, Vietnam, and Malaysia, in conjunction with oil companies form the USSR, United States, Great Britain and Japan have already extracted oil from the area and have drilled hundreds of gas wells.

Oceanographers believe that the Spratly archipelago holds one of the three largest oil reserves off the Asian continental shelf.

Seismologists believe that the basin of the Zengmu Reef in the Spratly Islands covers a large area, has thick deposits, and has multistrata deposits and oil producing layers.

UNESCO predicts that by the year 2000 the worlds population will reach 6 billion. With the natural resources currently available on land it will be difficult to supply an adequate amount of food, water, and raw materials for a population of such size.

#### Past and Present

Over 2,000 years ago, during the Wudi period of the Han Dynasty, the Chinese discovered a group of limestone coral reefs in the South China Sea. These reefs they discovered are the present day Spratly Islands. In the 5th year of Zhenyuan (789 AD) of the Tang Dynasty these islands were officially placed under the jurisdiction of the Qiongzhou State.

France occupied the Spratly archipelago in 1933. After WW II erupted, Japan occupied the archipelago in order to protect shipping through that part of the sea. When Japan was defeated in 1945 the control of the archipelago reverted back to China. In 1946 the Nationalist Party sent warships to take over the islands and stationed troops on the island of Taiping to show its sovereignty over the archipelago. The names of the islands and reefs were officially set in 1947 and placed under the jurisdiction of Guangdong Province. After the PRC was founded the Chinese government reaffirmed its sovereignty over these islands many times with the approval of many countries throughout the world.

The oil crisis occurred in 1973. About this time China discovered large deposits of oil and natural resources in its South Sea. The Spratly Islands are generally considered to be likely to contain oil deposits.

During the 1980's over 270 ships pass through these islands each day. The majority of these transport ships are from the United States and Japan transporting petroleum and other strategic materials.

People should not forget that these are the two countries that possessed the greatest naval forces during WW II.

The Spratly Islands are the hub for guarding transportation in the Pacific and Indian Oceans. The United States has its largest naval base outside its mainland to the

Northeast at Subic Bay in the Philippines. The USSR has one of its largest bases to the Southeast at Vietnam's Cam Ranh Bay. Everyone knows that these are the two political and military powers that hold sway with their naval power.

As for the area around the Spratly Islands, the Philippines are in an unstable situation and there is continued fighting concerning Vietnam's invasion of Kampuchea. The U.S. Navy recently announced 16 strategic passages for wartime with 2 of these being in the area of the Spratly Islands (Malacca Strait and Yita Strait).

The Spratly Islands have been engulfed by political, military and economic factors. This has brought the attention of the world on this area.

To forfeit the Spratly Islands now would mean we are not able to adopt measures to control the expansion of hegemonism and maintain peace in the Asian-Pacific area. To lose these islands would also mean our offshore defenses would have shrunk to 100 nautical miles and that our economic and military activities would be subject to the influence of others.

#### The Ocean Concept

This concept is how people view the oceans, the value, status and significance they put on the ocean and territorial seas. This also includes their view of the benefits the ocean has for the country and its people. This concept is a reflection of the combined politics, economics and cultural aspects of the country. This concept also influences and restricts the country's political, economic and national defense development.

The Spratly Islands are part of China's territory. The relationship between the concept of the ocean and these islands deserves sufficient attention from our country.

The Spratly Islands have been occupied, carved up and divided by a few countries, they have not only seized islands but also territorial waters and control a large area of ocean. The Philippines and Vietnam have said many times that they have sovereignty over these islands. These countries have published presidential orders, maritime laws and regulations, and searched out various "laws" to put the waters around the Spratly Islands under their control.

With the worlds economic center moving towards the East, the Pacific area has already become the world's most active economic region. China is in reform, the Second session of the Sixth National People's Congress proposed opening up 14 coastal cities to create a "gold coast" along China's Pacific coastal area. China is striving to become an emerging economic nation in the Asian-Pacific area. Therefore, the strategically and economically important Spratly Islands and surrounding waters have a bearing on the basic interest of the Chinese nation.

We should adopt a modern concept of the ocean in forming our perspective of these islands.

The Spratly archipelago currently has 25 islands above water, 128 submerged reefs and 77 hidden shoals. The ocean area these islands are located in covers 800,000 sq km, representing 38 percent of China's territorial waters in the South China Sea.

An area of 800,000 Sq km in today's world of ocean economics will mean a large amount of oil, natural gas, abundant aquatic resources, strategic rare mineral resources and resources necessary for the survival of mankind. The situation we are faced with today is that this area of territorial seas that is one-twelfth the size of China's landmass has all been occupied by other countries. This is a situation that a country with territorial sovereignty and a rising economy is confronted with.

The Spratly Islands—Ocean concept—800,000 sq km of territorial seas—feelings of urgency—sense of responsibility.

What do the Spratly Islands teach us?

#### The Chinese Navy and The Spratly Islands

The situation in the Spratly Islands has caused great danger to the safety of China's territorial waters in the South China Sea. The Zengmu Reef, the southern most part of the islands, is located 1,600 km from Hainan Island. This ocean defense in depth is very important to the safety of China. The situation requires that China's Navy must move toward modernization.

China's navy after more than 30 years of buildup is taking shape and now possesses a fair combat ability, but due to our not establishing a certain deterrent force in the Spratly Islands, it has allowed some countries without scruples to carve up and divide China's Spratly Islands.

The French News Agency, AFP, in an editorial about China and the Spratly Islands stated: "China's Navy lacks the technology and means to station personnel in these islands for long periods of time.

A foreign military expert has stated that there is a 70 percent chance of a crisis breaking out in the waters surrounding China.

The Spratly Islands are China's offshore territory but due to environmental characteristics of being a vast area, having deep waters, large swells, high waves and frequent typhoons, and especially because neighboring countries are striving for sovereignty over these islands, it has become inevitable that a conflict will occur in the area. Looking at this from the actual threat and challenge we are faced with, the geography of the area and the possibility of conflict, and the significance of controlling these

islands, it is clear that China must have a Navy that possesses a combat capability sufficient to deal with combat situations on the seas.

The reality of the Spratly Islands have already confronted the Chinese Navy with a stern and urgent challenge. What else will we hear from the Spratly Islands?

#### South China Sea Naval Exercise

40050223 Beijing JIANCHUAN ZHISHI [NAVAL & MERCHANT SHIPS] in Chinese No 2, 8 Feb 88 p 5

[Text] Beijing, December 4 (XINHUA SHE)—During the period from the middle of October to the end of November, the Chinese Navy's East Sea Fleet assembled a formation of warships that conducted a show of force exercise in the western Pacific and South China Sea. This shows that the Navy tentatively possesses a long range combined combat capability.

This combined formation of ships passed through the Xida Strait, traversed 20 degrees longitude and 26 degrees latitude, it reached the Zengmu Reef at its furthest point south.

12704/7310

#### Criteria for Evaluating Close-Range, In-Depth Targets

40050263 Beijing GUOFANG DAXUE XUEBAO [NATIONAL DEFENSE UNIVERSITY JOURNAL] in Chinese No 12, 1 Dec 87 pp 33-36

[Article by Zheng Shouzeng [6774 1343 1073], army chief of staff: "My Thoughts on the Selection of Campaign Targets"]

[Text] The term campaign objective is usually used to mean the main targets to be attacked and the places to be stormed and occupied during campaign combat, i.e., the central points at which power is employed. Accuracy in the selection of campaign targets holds important significance for winning victory in a campaign. With the espousal in recent years of "in-depth attack" theory, an intense controversy has taken place throughout the armed forces about the selection of campaign targets. Some people maintain that attacks on combat troops deployed in the front line (or close range targets, for short, by which is meant targets within the rear of the enemy's and our own tactical formations) should be paramount; others maintain that attacks on the command system, firepower system, electronic warfare system, and rear-area support system targets deep behind the enemy's troop deployments (or in-depth targets) should be paramount. This article analyzes several aspects of this issue below by way of explaining my own basic standpoint and views.

### **1. The Effect on The Overall Campaign Situation of Attacks Against In-depth Targets and Close-range Targets**

It is of utmost importance in selecting campaign targets that the selection help in the attainment of campaign objectives, meaning that in an offensive campaign the selection has to help wipe out enemy forces, and that in a defensive campaign it has to help frustrate an offensive by enemy forces. Inasmuch as contradictions within anything are never equal, so it is that targets to be attacked first also differ, and positions and roles in the attainment of campaign objectives also vary. Therefore, when campaign commanders draw up campaign plans, they should strive to make the main targets of attack in the campaign those targets that can have a decisive influence on the progress and outcome of the campaign.

During the course of campaign combat, from the standpoint of the attacking side, strikes should be made against close range targets to smash the enemy's front line resistance and to open breaches in the enemy's defensive deployments. This not only has a bearing on completion of the mission of the moment, but it will also decide, to a very great extent, the smoothness with which the entire campaign's in-depth offensive develops and attainment of the campaign's ultimate objectives. Foreign armies see an attacking military forces as a "surging flood," and they see the defending side's front line of resistance as a "dam" that blocks the flood. They believe that all that is necessary is to open a breach in the "dam," and the "flood" that is the attacking army can go through the breach and "roll on" "destroying everything." Reasons for stressing the position and role of close range combat in offensive campaigns are as follows: First, modern defense is in the nature of defensive rings at many locations and in many directions. As a result the attacker cannot outflank or drive through gaps at any time. Second, inasmuch as the defender also has powerful firepower and is able to inflict heavy casualties on the attacker, the attacker cannot use firepower in all directions to suppress the defenders and then begin an attack using mobile forces. Third, even if the attacker employs destructive weapons of tremendous power, he cannot expect to achieve victory easily. This is because the defender can use extensive mobile reserves as well as troops and weapons that have not yet come under attack and from secondary directions to wipe out quickly the results achieved by attacks. Therefore, one can say that at no time can attacking forces expect to pass through the opponent's defenses without being blocked. This means that in the future, in order to overcome a defending enemy's resistance, the attacker will have to deploy in combat formation for repeated attacks against the enemy's positions. For defenders, the significance of attacking close range targets first lies in the following: First is to delay and slow down the speed of the enemy offensive in order to gain time for completion of defense preparations. Second is to inflict large numbers of casualties on the enemy's effectives, to weaken the enemy's crack troops, and to change gradually the unfavorable

balance of strength, thereby turning the combat situation into a favorable direction. Third is both to smash enemy efforts to turn a tactical victory into a campaign victory, causing unevenness in the enemy's development of the offensive to adversely affect the enemy's offensive plans for the entire campaign, and to use the uneven development of the enemy's offensive to concentrate superior troops and weapons to attack and destroy routes of enemy attack in order to bring about a rapid change in the overall defensive situation after which, if circumstances warrant, the defenders can go on the offensive at the right time to defeat the enemy.

Despite the steady increase in the position and role of in-depth combat under modern conditions, attackers have not abandoned the principle of committing main forces to a frontal assault. In order to maintain an absolute superiority in the ratio of their first echelon troops against a defender, some foreign armies use powerful attacks to break through the hard "outer shell" of the opponent's front line defenses in one fell swoop, and in order to develop a high-speed offensive deep in the operational rear, troops in the first echelon of the campaign army group frequently numbering between one-half and two-thirds of total forces, while the number of troops used in in-depth combat number only 20 percent of the total. In the use of firepower, though the percentage of casualties inflicted from long-range firepower is on the rise, casualties continue to be concentrated in the tactical rear, and the time when firepower is being used for softening up is when greatest casualties are inflicted. It is recommended that before launching an assault, damage and injury to the enemy should reach between 30 and 40 percent, and damage and injury to enemy front line defense forces and equipment should reach between 50 and 60 percent. The goal of such "heaviness up front and lightness toward the rear" in campaign deployments and the use of firepower is to wipe out the opponent's defense system in the first attack. It reflects in a concentrated way the goal of making first strikes decisive in modern offensive campaigns. Obviously, the central focus of struggle between adversaries in future campaigns will be on close range targets, not on targets deep in the rear. The targets to be attacked and wiped out will be close range ones, not targets deep in the rear. Unless the problem of close range targets is solved, neither the side that is on the offensive nor the side that is on the defensive will likely be able to attain its campaign objectives.

### **2. Comparison of Strengths and Weaknesses of Close Range Targets and In-depth Targets**

Attacking weak points and avoiding strong ones is an important principle in the selection of campaign targets. Consequently, before deciding on campaign targets, a comparative analysis should be made of the strengths and weaknesses of targets. In terms of systems theory concepts, both in-depth targets and close range targets are integral parts of the enemy's campaign deployments, and are closely related to all campaign essential elements

and the battlefield environment. Therefore, when we compare the strengths and weaknesses of the two kinds of targets, we cannot separate them from other campaign essential elements and the battlefield environment. It is suggested that one very important basis for attacking either mostly in-depth targets or soft targets during battle in a campaign is as follows: When in-depth targets are more poorly protected than close-range targets, an attack on them will more easily succeed. Obviously, such a comparison of one target with another in isolation is lopsided and unscientific. If we make an overall analytical comparison of all campaign essential elements and the battlefield situation pertaining to both in-depth targets and close range targets, we might realize that those in-depth soft targets are not absolutely the best ones to attack nor can they be taken so easily.

Because of the importance to campaign movements of the command system, the firepower system, the electronic warfare system, and the rear support system, all the armies of the world devote serious attention to the defense of important targets deep in the rear. In order to insure uninterrupted command and support of campaign combat, they take a series of measures to protect major targets in the rear. These measures may be characterized as follows: 1) Strictness of defensive measures. First is dispersal of deployments. In order to reduce the amount of damage and casualties from enemy air raids, all the units that make up campaign army groups disperse their deployments at numerous points several kilometers or more from each other. Second is movements at the right times to shorten the time that command organizations remain at any given place. Third is the construction of fortifications, carefully camouflaging them, and doing all possible to reduce the possibility detection by the other side and their probability of being destroyed. 2) Emphasis on total protection. First is organization of troops to guard and protect important targets and communications lines and to provide protection against air attacks. All troops in the campaign rear can be readied to fight for the rear. Second is that the campaign's second echelon and reserves is to be responsible not only for assisting the first echelon's combat mission, but also is responsible for the mission of protecting important targets in the rear. The command system, the firepower system, the electronic warfare system, and the rear support system usually are based in the areas of deployment of the second echelon and the reserves. The guarding and protection of command posts is not only the responsibility of guard and reconnaissance detachments, but sometimes it is also necessary to get the participation of detachments from the second echelon and the reserves. Third, when in-depth targets face a threat, both artillery troops and airmen can provide effective firepower support, a combination of firepower mobility and troop mobility making decisive blows against the attacking enemy. 3) Strong adaptability. In order to support uninterrupted command, campaign army groups usually set up a basic command post, an auxiliary command post, a reserve command post, and a rear area command post, plus one or two observation posts, and deploy

echelons in depth as the combat situation requires. Echelon deployment command posts make it difficult for the enemy to determine the location of the command post and lower the possibility of enemy air attacks on it. In addition, they insure that command will continue to be exercised when campaign commanders must move from one command post to another.

The objective of attacks on in-depth targets is to disrupt the enemy army's timing and to smash its whole campaign performance. However, the foregoing analysis shows that it is more difficult to strike in-depth targets first than to strike the enemy's close range targets. A U.S. Army analysis holds that in past wars and in recent limited wars, when a division's casualties have amounted to 30 percent of the total number of troops, the number of casualties in each branch of service as a proportion of the number of troops in each branch of service was as follows: infantry, 30 percent; artillery, 12 percent; and others, 7 percent. The percentage of casualties in each branch of service happens to be inversely proportional to the distance from the battle line of their place of deployment. This analysis helps verify this point of view from another angle.

### **3. Advantageous and Disadvantageous Conditions For Attacking In-Depth Targets and Close-Range Targets**

Marxism holds that force is not purely an act of will; its success depends on the material means that the force employs. Consequently, when setting campaign targets, it is necessary to employ to the full all subjective activity and do everything possible to satisfy the needs of combat as a whole. At the same time, it is also necessary to proceed from realities, taking needs into account but taking capabilities even more into account, bringing into line both subjective command and objective realities.

During combat in a future campaign, since the enemy's weaponry will be superior to our own, there are greater disadvantages and we face greater difficulties in attacking in-depth targets first rather than attacking close-range targets. First, our ability to conduct long-range reconnaissance is limited making it difficult to obtain accurate information promptly about the enemy's in-depth targets. Thus, it is not possible for us to select advantageous combat opportunities to make effective strikes against enemy in-depth targets, and this would bound to have a bad effect on results from in-depth attacks. Second, there is a very great gap between our aerial combat capabilities and ability to protect the ground from the air as compared with the enemy; the enemy will hold air superiority. Analysis of combat experiences in the protection of strategic points on the Korean and Vietnamese battlefields shows that a 24 percent or higher enemy aircraft destruction rate is necessary in order to protect troop units. Obviously, reliance solely on the anti-aircraft weapons organic to campaign army groups will hardly insure the smooth movement of units attacking in-depth. When mobile ground forces lacking reliable protection against air

attacks move over long distances toward the enemy's in-depth targets, they will certainly sustain serious casualties from enemy aerial firepower. Third, China has limited long-range warfare weapons making it difficult to provide effective firepower assistance to forces attacking enemy in-depth targets. When forces attacking in-depth enemy targets lose firepower support, their attacks will appear weak and ineffectual making it difficult to fight a quick battle that is quickly decided. Fourth, our mobility is poor, and this is bound to be disadvantageous for our seizing combat initiative. Initiative in combat against enemy in-depth targets depends on the surprise nature of movements and the ability to move rapidly to meet battlefield emergencies. Slow mobility inevitably means long maneuvering times. It is very difficult to avoid being spotted by the enemy if a long time is taken to make battlefield movements when the enemy is conducting close surveillance using technical reconnaissance devices. If the element of surprise is lost, success in in-depth attacks will be very difficult. In addition, when movement is slow, it is not possible to make a timely and effective response to battlefield situations. When the battlefield situation favors us, it is difficult to seize combat opportunities; when the battlefield situation does not favor us, it is difficult to get out of predicaments. Fifth, resupply is difficult in long-range in-depth attacks against enemy forces making it difficult to carry out protracted combat. Because of our ability to conduct in-depth attacks, and the problems faced, large-scale actions to attack and destroy in-depth enemy targets should not be taken in campaign combat.

By comparison with attacks on in-depth targets, because of the relatively confined scope of combat, attacks against close-range targets make it possible to gain the following advantages: First is an advantage in understanding the battlefield situation and command control over combat movement, thereby increasing the accuracy, speed and effectiveness of decisions by campaign commanders. Second is an advantage in concentrating superior forces to form an attacking fist that can deliver powerful blows against the enemy at key times and places. Third is an advantage in making the most of the close-range attack capabilities of our available technical weapons, carrying out multiple attacks against enemy close-range targets. Fourth is close-range movement for a relative shortening of the time required to move troops and equipment, thereby reducing enemy opportunities to inflict casualties on our forces using aerial and ground firepower. Fifth is an advantage in the stabilization of our rear area, particularly during a defensive campaign when close-range combat makes it possible to gain more help from geographical conditions than in-depth attacks on the enemy. Priority can go to the selection of defense positions, and natural obstacles and permanent defense works can be used to shelter our forces where they can wait at ease to meet an exhausted opponent. It has advantages in conserving our own forces while inflicting larger casualties and damage on the enemy. Defense has

the advantage of conserving troops, of using small numbers to attack large numbers, and of using weak forces to overcome strong ones to gain rather ideal combat results.

Comparison of the effects on the campaign as a whole and analysis of the strengths and weaknesses of the two kinds of targets arrived at through the above discussion of attacks on close range targets versus attacks on in-depth targets, as well as the analysis of advantages and disadvantages of close-range combat and in-depth attacks enables us to see without difficulty that attacks against close-range targets can have a decisive effect on the progress and the outcome of a campaign. Second, close-range attacks help make the most of advantages, and capitalize on strengths while playing down weaknesses to overcome the enemy and achieve victory. Therefore, close-range targets should be the main targets of attack in a campaign. Because of the special nature of combat situations, the selection of campaign targets is affected by numerous elements and limitations. For this reason, the selection of campaign targets cannot be formatted; it has to take into account each campaign's different circumstances such as different campaign backgrounds, different combat objectives, different combat opponents, and different battlefield conditions, the targets for attack being selected on the basis of the situation at a particular time and an a particular place.

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#### **Aviation, Aerospace Ministries Shift to Commodity Production**

*40050229b Beijing JINGJI RIBAO in Chinese  
10 Mar 88 p 4*

[By staff reporters Kou Chengmao [1379 2052 5399] and Li Yinsheng [2621 6892 3932]]

[Text] "The New Year brings invigoration and reform; in the spring of 1988, we strive for new developments." On 9 February, the Aviation and Aerospace Ministries held a symposium on the supply and demand situation for manufactured commodities for civilian use, and each of the ministries arrived at a new strategy.

For the period of the Seventh 5-Year Plan, the aviation industry introduced, with the support of the State Planning and Economic Commissions, a further two lots of 100 key items of technological reform on top of the first lot of key technology reform items. Up to 1990, output value of their manufactured commodities for civilian use will be double the value of such commodities in 1986, and is estimated will amount to over 80 percent of the gross output value. In the last 3 years of the Seventh 5-Year Plan, exports will create foreign exchange totaling more than U.S.\$400 million. Future production will comprise 10 large mainstay products, 10 large core products, 10 large developmental products, and 10 large enterprise groups will be formed.

This year the Aerospace Ministry will continue to enhance its "three networks and one system," which means, its sales network for civilian commodities, market information network, after-sale service network, and the civilian commodity allocation and transfer system. It will energetically promote the commodity economy, and work hard to implement in its policy a shift from "maintaining itself from army provisions" to obtaining its maintenance from "provisions earned in commodity production." The gross value of industrial output is to increase 7.8 percent compared with 1987, and among these products the value of commodities for civilian use is to increase by over 10 percent, while the quantity of the 10 large mainstay products is to increase by from 10 to 50 percent.

9808

### **Role of People's Armed Forces Departments**

*40050231a Beijing ZHONGGUO MINBING  
[CHINESE MILITIA] in Chinese  
No 3, 9 Mar 88 pp 8-9*

[Article by the Mobilization Department of the Nanjing Military Region Headquarters: "Lectures on the Service of Cadres in the People's Armed Forces Departments; First Lecture: Character and Responsibilities of the People's Armed Forces Departments"; first paragraph is source-supplied introduction]

[Text] The People's Armed Forces Departments [PAFDs] are presently faced with many new situations, which for a time may possibly be somewhat perplexing to comrades who are newly joining the ranks of the PAFDs, and also equally perplexing to comrades who have already been in the PAFDs for many years. For this reason, we shall publish the said lectures in our issues 3, 6, 9, and 12 of this year, and we have requested the mobilization departments of the various military regions to discuss these questions. We only hope it will be of benefit to the wide circle of our readers and to our eager friends—the cadres in the PAFDs.

Without bragging we may say that our PAFDs are an important and long-established part of county and township administrations, a part which has indeed had a flourishing history as early as the war years. At that time they had, of course, a different name. Since the founding of the PRC, county (city) PAFDs have changed names and "shop signs" many a time, and today are once again being changed by transplanting them into the local administrative system. This poses a new problem, namely by what name shall we now call this oldtimer?

### **Our Surname Is Still "Military"**

Transplanting the PAFDs from the military into the local administrative system is an important part of the structural reform of the military, as it is also a major structural transformation of the people's armed contingents. Dress and insignia of the county and city cadres of

the PAFDs have been determined in a very original way. Dressed completely in national-defense green, the same color as military personnel on active duty, insignia on caps, collar badges, and epaulets also adorned with a gear wheel, ear of wheat, five stars, guns, and the olive branch as a symbol of peace, the only difference is that they do not show the inscription "Ba Yi." We hear from relevant quarters, that full-time cadres in the PAFDs may also expect to be dressed this way in the near future. Judging by the uniforms and caps that we wear, it is very obvious what the PAFD surname should be.

The PAFD surname is "military." With their "transplantation," no change has occurred in their fundamental character, and that means, that the PAFDs are military units as before. They are organs of military leadership and command in their localities. This is so because:

First, in assessing whether a unit is of military character, one has to see whether it has a direct and innate connection with military functions. After military production was shifted to production for civilian uses, some military enterprises possibly lost their character as military units, because their work had no further connection with military affairs. But it is different with the PAFDs; before as well as after their "transplantation," their work is primarily concerned with the militia and the military reserves, and all their hard work and strenuous labor is directed toward national defense modernization. They have been and still are, therefore, units of a military character. Second, in assessing whether a unit is of military character, one must not merely look at outer appearances, but must pierce through outer appearances and get to the essential character. Precisely expressed, the PAFDs are military units of a local character, or local organizations of a military character. The local character that we speak of here merely refers to the fact that their organizational relationship and jurisdictional relationship is one of subordination to a local administrative entity. This is the special form in which the PAFDs appear after their "transplantation," and it is in particular their military nature that reflects the fundamental characteristic of the PAFDs. Third, in assessing whether a unit is of military character, we also have to observe the special workings of its day-to-day administration. Local party and government organs as well as enterprises and industrial units are administered and managed according to sets of rules and regulations which meet the needs of their particular operations. With military units the difference is that they have to meet particular needs that are different from the needs of the localities they are in. For instance, military units are administered according to "internal service regulations," "regulations of the military formation," and "disciplinary regulations," and it is a fundamental peculiarity of the day-to-day operation of military units that daily life has to conform to military regulations. How, then, is it with the administration in the PAFDs? Central Committee Document No 5 clearly spells it out: "Administration shall be carried out according to the military and general regulations of

the PLA." The reason for the Central Committee to set forth this demand is precisely to make it clear that "PAFDs are military units;" they are structurally different from local administrative units.

### **Military Service Is Still Our Line of Work**

What are the major tasks and responsibilities of the PAFDs? They are clearly stipulated in Central Committee Document No 8 of 1986 and consist mainly of 10 items, namely: responsibility for the buildup of a militia organization and the administration of its arms and equipment; responsibility for the military training and political education of the militia and military reserves; responsibility for organizing and directing the militia to attain combat and logistic preparedness; organizing and mobilizing the militia to contribute toward the two of civilizations; responsibility for registration and statistical work for militia and reserve personnel; to provide military training for students in cooperation with educational departments; responsibility for recruiting militiamen and enrolling student aviators; responsibility for formulating a wartime mobilization plan for their particular districts; effective peacetime preparations for wartime mobilization in cooperation with other relevant departments; responsibility for the administration of fulltime cadres in the PAFDs; placement of demobilized soldiers and special care for the families of killed servicemen, in cooperation with relevant departments; in wartime, responsibility for mobilizing military personnel and directing militia personnel to join up and join military action, to render support to the frontline, and to protect the rear.

Some people now compare the county (city) PAFDs with a young wife who has to serve two women of the older generation in her husband's family, a relationship that does not lend itself to an easy and satisfactory accomplishment. In the following we shall discuss several problems which this viewpoint raises:

First, can the PAFDs release some of their personnel to participate in local work, in the same way as party and government organs do? As we understand the situation, there are now indeed many members of the PAFDs released for work on family planning, fighting drought, digging irrigation canals, repairing roads, and members of the PAFDs are even dispatched to participate in such work as collecting grain and other taxes, thus converting the PAFDs into a special mobile contingent in the county, a kind of "Jack of all trades." The PAFDs have always suffered from a shortage of manpower, so that working them in this manner will make it even less possible for them to get on with their own work. Why is it that the PAFDs are made into a special mobile contingent? The reason is most likely the lack of a correct understanding of the functions of the PAFDs. In our opinion, considering that the main task of the PAFDs is to devote their energy to work in connection with the militia and the military reserves, its functions are different from those of the other party and government organs,

and it would, therefore, appear inappropriate to release personnel from PAFD duty to be sent to wherever there is a job to be done. If this practice would be allowed to continue in years to come, it will surely have an adverse effect on the PAFDs' own work, and would this not defeat the very purpose for which the PAFDs have been established? This is one thing, and secondly: Following the acceleration and deepening of local political structural reforms and the separation of party functions from government administrative functions, a division of labor and allocation of priorities was also effected in determining points of emphasis, methods, and demands in the work of the local entities, so that departments under the party committee may not take the place of departments with governmental administrative functions, and it would be even less permissible to make an exception in the case of the PAFDs. Third, economic construction is the core task of the party at the initial stage of socialism, and all units and departments must work hard in accordance with the strategy for economic development set forth at the 13th CPC National Congress. But to achieve this objective it is essential that party, government, the military, and the citizenry, each accomplish their own particular task. All sectors of the PAFDs must guarantee accomplishment to the fullest extent, in quantity and quality, of their tasks in connection with the militia and the military reserves, tasks which have been entrusted to them by the CPC Central Committee, the State Council, and the Central Military Commission as activities which most substantially contribute toward the overall task and objective of the party.

Second, when members of the PAFDs participate in the leadership of local party committee standing committees, should their major efforts be directed toward military affairs or toward the central tasks of the locality in question? The Central Committee has decreed that one major leading cadre of the PAFD shall participate in the local party committee standing committee at the same level. He would participate in his special capacity as an appointee of the PAFD, the purpose being, to enable the party to better exercise leadership over the work of the PAFD. But it is now a very common occurrence that the county (city) PAFD leading cadre who participates in the local party committee standing committee holds an excessively large number of concurrent posts in his locality, in the worst case a man held 9 concurrent posts, and his occupation with military affairs became his sparetime occupation. This phenomenon is closely linked with the system of nonseparation of party and government administration. An effective way to solve this problem is, therefore, undoubtedly to deepen the political structural reform, and to have government affairs taken care of by the government, and not to have party committees again set up party secretaries or standing committees, who, without holding government appointments, still handle administrative work of the government on the side. To have one major leading cadre participate in local party committee standing committees, as decreed by the Central Committee, will be beneficial to strengthening the party's leadership over

the people's military work, but holding too many concurrent posts will unavoidably lead to a nonseparation of party and government functions and will hamper development of the functions of the administrative departments. Furthermore, there is a limit to every person's energy, so that holding too many concurrent posts, participating in too many meetings and activities that are not relevant to people's military affairs, will make it impossible for that person to devote himself to military affairs.

Third, if cadres of the PAFDs are now transferred and will enjoy the treatment of cadres transferred from active military to other duties, will that change the tasks of the PAFDs? Some PAFD cadres say: since we are cadres transferred from active military to other duties, the PAFD as a whole is also transferred as a collective entity; if units and personnel are all transferred, how can one say that the tasks will not also undergo some change? This argument must be analyzed concretely. "Transfer" has here a particular implied meaning, it means a military cadre leaves active duty, leaves his post of military work and undertakes some other kind of work. If county (city) PAFD cadres are transferred to local organizations, they transfer from active duty to reserve, but their original posts and duties are not changed at all. They still work in their posts in the PAFDs, and still work with militia and military service affairs. If their transfer may in documents be described as "transfer from active military to other duties," actually it is not a transfer in the full sense of this term, but merely a term of reference to apply to their treatment. The fact of individual cadres of the PAFDs receiving treatment as cadres transferred from active military to other duties is a thing also quite different from a collective transfer of the PAFDs as a whole, because in consideration of the special implied meaning of the term "transfer" in this connection, there is even less reason to call the organizational reform of the PAFDs a collective transfer.

#### **Let Us Show Ourselves Worthy of Our Surname and Line of Work**

Since the PAFDs are still units with military character, and since the main task of the PAFDs is still to perform work in connection with the militia and military reserves, we must show ourselves worthy of our surname and of our line of work of long standing.

1. We must firmly uphold the principle of dual leadership. Because of the character and duties of the PAFDs, the PAFDs must consciously accept the dual leadership of the military and of the local party committee, and accept responsibility toward the local party committee, government, and higher ranking military authority. The problem we are now facing, and which is in urgent need of solution, is: The higher ranking military authority must be determined to exercise control, must capably control, and do its best to cooperate with the local authorities in an effective joint control of the PAFDs. They must not refuse to have anything to do with the

matter, while the PAFDs, on the other hand, must submit to control, and must not haggle over or short-change the leadership of the relevant higher military authority.

2. We must ensure that the PAFD's main energy is concentrated on the effective performance of all work in connection with the militia and military service. A joint effort is needed by the military, the local authorities, and the PAFDs. In work allocations and the shifting of manpower, local party committees and governments must give full consideration to the major responsibilities of the PAFDs and their current tasks, and must as far as possible not, or as little as possible, transfer manpower away from the PAFDs. It would be particularly inappropriate to transfer people away at a time when the PAFDs concentrate their energy on accomplishing such tasks as organizational adjustments of the militia, military training, recruiting servicemen, or enlisting aviators. If transfers become unavoidable, restraint should be exercised as to numbers and as to the periods for which such transfers are to be carried out. The PAFDs must actively and of their own accord, regularly and without interruption, report to local party committees and governments the various stages of their work and the distribution of manpower, so that the local authorities will fully understand the conditions of the PAFDs and will give consideration and due regard to the specific realities of the PAFDs when transfers of personnel are to take place. If the higher military authority discovers that a transfer of personnel would be inappropriate because it would adversely affect accomplishment of the PAFD's own duties, it should promptly intervene and ask the local party committee and government to effect an adequate adjustment.

3. We must strengthen the regular buildup of the PAFDs. A military unit must have the proper appearance of a military unit; it must not show lax and undisciplined behavior. In a highly unified military entity like the army, one very important source of combat strength is the fact that control is exercised through strict military and general regulations. Although the PAFDs are not altogether the same as regular armed forces, they are after all military units and should also effectively pursue their regular buildup with special PAFD characteristics. What we mean by regular buildup with PAFD characteristics is that we must start out from the peculiarities and realities of the PAFDs and determine administrative norms which must be closely attuned to PAFD work, and must be helpful to improve effectiveness of PAFD work, also for the effective buildup of a reserve force, taking due note of the military and general regulations of the regular military. The key purpose of the regular buildup of the PAFDs is to raise its work effectiveness and its ability to effect quick mobilization. For this purpose, we must gradually build up and perfect a strict and concise strategic plan as well as an orderly system for training, work, and lifestyle that will conform to the realities of the PAFDs, and that will meet any future need in case of mobilization for war. We must achieve a state where:

outsiders who come in without looking at our "shop sign," will immediately realize, once they observe our internal order, our work order, our environmental conditions, our manner and bearing, and our spirit and outer appearance, that they have here a world all of its own, that it is, without question, the PAFD—a military organ.

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**Civil Defense Economic Successes Reported**

40050321b Shijiazhuang HEBEI RIBAO in Chinese  
5 Mar 88 p 4

[By staff reporters Gao Junfeng [2559 0193 1496] and Jia Qinghai [6328 3237 3189]]

[Text] Civil defense work in Hebei Province follows a course of action that combines peace and war work, and helps economic development. Up to last year, civil defense projects were developed that covered an area of over 400,000 square meters, yielding that year a harvest worth 45,650,000 yuan and turning over to the government 7,800,000 yuan in profits and taxes, which was close to what the government had invested that year in projects.

Subsequent to the change in strategic thinking on national defense, the civil defense departments at all levels throughout Hebei Province shifted from a pure emphasis on effectiveness of war preparations to placing equal emphasis on the effectiveness of war preparation as well as on social and economic effects, and utilized underground civil defense projects to initiate various economic undertakings. Civil defense departments at all levels adopted a policy of employing simultaneously methods of direct management, lease operations, and joint management. They firmly upheld the principle of simultaneous involvement of state, collectives, and individuals, stimulated the enthusiasm of all circles for the development and utilization of civil defense projects, and achieved an overall situation of multilevel, multi-channel, and structurally variegated development of civil defense projects. At present, civil defense projects in the various cities throughout Hebei Province have been engaged in planting, processing, warehousing, operating hotels, restaurants, hospitals, stores, as well as recreational facilities, manufacturing workshops, etc. This not only enabled fullest use of underground civil defense projects, which had been built by the state at huge expense, but also alleviated such problems as the critical traffic situation, the overcrowding of personnel, shortage of space for building, and noise pollution on the surface of our cities.

The civil defense system of Hebei Province makes use of its own specialized communications, chemical warfare defense, and rescue contingents to institute training in flood control, earthquake precaution, and precautions

against all kinds of catastrophic industrial accidents, thus gaining initial experiences in enhancing the protection capabilities of our cities.

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**Jiangsu MD Commander Discusses Reserve Building**

40050230c Nanjing XINHUA RIBAO in Chinese  
1 Feb 88 p 2

[Article by staff correspondent Ma Jie [7456 2638] and reporter Ma Jian [7456 0256]: "We Must Strive for Comprehensive Effectiveness in Our Reserve Forces; An Interview with Zhen Shen [3914 3947], commanding officer, Jiangsu Military District, and delegate to the Seventh NPC"]

[Text] "In short, we intend to effectively accomplish all work in connection with the 7 million members of our militia and reserve services, strive to raise a mighty army of 1 million for economic construction, and millions upon millions of crack troops for frontline service." With these confident words, Zhen Shen, Jiangsu delegate to the Seventh NPC and commanding officer of the Jiangsu Military District, concluded our interview.

We had interviewed commander Zhen Shen on questions of Jiangsu's coastal defense and reserve forces in this era of reform and opening up. As soon as we put a question to him, he eagerly answered. He said, the great developments in coastal defenses and the buildup of reserve forces in Jiangsu during the last few years have contributed to the consolidation of national defense and to the economic construction throughout the entire province. We have established a new type of defense system to protect and build up our coastal defense. We have instituted sentry posts for coastal defense manned by militia, and set up several thousand mobile militia emergency squads. Having the militia join army units of the provincial military district to train, work on construction, perform guard duty, and undergo education together has greatly enhanced the quality of the militia, and made the militia into a new vital force in military preparedness and production.

Reviewing the achievements of the last few years, commander Zhen reflected a while and then gave as his opinion that after the strategic shift in guiding ideology in matters of national defense, we cannot strengthen war preparedness and reserve forces without the guidance and support of the local party committees and governments at all levels, or without economic construction, which is our core undertaking. He said, the coastal defense sentry posts of the militia had been built in the 1950's and 1960's, but built at times and at other times allowed to go to ruin, the reason being that the posts were built purely as a preparation for war. In 1985, sentry posts were set up on a comprehensive scale, not only as a measure of war preparedness, but also to take on responsibility for public security, dike protection and

flood prevention, protection of natural resources along the coast, and to launch self-sufficiency through production, have sentry posts feed sentry posts. Because closely linked with the local economic construction, and heartily welcomed by all quarters, the longer the sentry posts were in operation, the more prosperous they became. They became not only an important force for coastal defense intelligence gathering, but were at the same time the source of many economic and social benefits. He continued, the militia emergency squads, that were started in the last few years, have become a main force for action in emergencies and crises, and to undertake certain dangerous tasks. Last year alone, they went into action over 130,000 man-times in rescue operations and to protect public security. They exercised an important role in economic construction and also carried out party building and military training.

Commander Zhen was extremely optimistic about future prospects of coastal defense and reserve force buildup in the new era. He said, if we only deepen reform, catch up with the speed of economic development, if we devote energy and make contributions toward serving and deferring to the economic developmental strategy, we certainly shall gain very substantial benefits. We asked him to talk about his plans, whereupon, after pondering a while, he said, first, there is the shift in guiding ideology where much work still has to be done. If one cannot make progress in self-building, there can be no talk of service to economic construction. Second, we must, as a priority, emphasize education of the entire people of Jiangsu in the proper concept of national defense, awaken the people's sense of responsibility for the reconstruction of the motherland and for the protection of the motherland, and have everyone consciously contribute his own strength for the prosperity and strength of the state. Commander Zhen emphasized that having the entire people imbued with the proper concept of national defense constitutes a powerful spiritual centripetal and cohesive force of the state, which, militarily, can be turned into combat strength and, economically, can be turned into productive force. Speaking of some concrete measures to enhance defense concepts among the people, he said, we must reform the training patterns of the party organization, for instance among middle school students launch specialized training in reporting and NBC defense, and have them qualified as national defense reserve force members by the time they leave school. In connection with young workers' training, we can also launch military training at the places where these workers work. We must reform the content of training, increase the ratio of political education, create a large contingent of a workers army, highly skilled, strictly disciplined, and with lofty ideals. We must reform training methods, linking them as far as possible with economic construction activities, effectively organize activities that help to feed the soldiers. We must broaden the sources of revenue to provide training expenses. Commander Zhen excitedly told us that last year more than 3,000 economic entities operated to feed the soldier had produced products valued at 450 million

yuan. In some counties, training expenditures are altogether no more a burden on the general public. The Jiangsu provincial military district aims to arrive by the year 1990 essentially at a stage when expenditure for militia training will not have to be borne by the general public. Not only that, endeavors are also being made to contribute to the foreign-oriented economy, for instance, having coastal sentry posts start land reclamation from the sea, develop export products through aquaculture farming, etc., all very promising activities.

9808

**Reserve Logistics Support System Development**  
40050229c Shenyang DONGBEI MINBING  
[NORTHEAST MILITIA] in Chinese  
No 2, 4 Feb 88 p 19

[Article by Shi Kunshan [4258 0981 1472], director, logistics department, Changchun reserve services artillery division: "Initial Discussion About Setting Up a Logistics Support System for the Military Reserve Service"]

[Text] Following the change in strategic thinking in China's military command, the military reserve force has been incorporated into the organizational system of our army, to strengthen national defense in peace time and to serve as an effective deterrent against war. In any future local conflict, it will be a combat reserve that is "ready to assemble at the first call and capable of fighting and winning." To conform to this new situation, and to strengthen the overall buildup of the military reserve force, in our opinion it is extremely necessary, from the perspective of a developmental strategy for the military reserve force, also starting out from the peculiarities of a military reserve force and of the needs of any future local war, to study and explore how to establish a reserve logistic support system.

It is our idea that we should establish a three-dimensional transcendental reserve logistics support system on the three fronts. This system, in simple general terms, will be a logistics support mechanism with an organizational setup, a crisscrossing network, in three-dimensional space-time unified form, as well as a logistic support system with mobility and flexibility, and a mutually supplementing transcending capacity.

A so-called one-dimensional orientation refers to a perpendicular supply line from top to bottom as a part of the supply system of the entire armed forces. Funds for the reserve force and all their equipment and material, though not amounting to as much as for the field army, would be essentially similar in the methods of supply, the kinds of supplies, the scope, and the degree to which supplies are assured. These supplies must, therefore, be made part of the overall plan for all army logistics, be subject to unified planning, be unifiedly applied for and received, and unifiedly allocated and transferred. Instituting a perpendicular supply channel, from the General

Logistics Department, large military regions, provincial military districts, down to the reserve division, would truly ensure regular supplies in peace and war.

A so-called two-dimensional orientation refers to a lateral supply system extending to all sides. That means incorporating the military supplies and materials of the reserve force into the overall wartime plans of localities at various levels, arriving at a socialized logistics supply system which combines peacetime and wartime conditions, where peacetime conditions are taken to be wartime conditions, which encompasses soldiers and civilians, and which takes a two-way development. In peacetime, all economic departments of the state shall establish wartime logistics support organizations, and shall institute in all trades and industries methods, rules and regulations for mobilization and requisitioning in wartime, so that reserve forces will in peacetime have stores and reserves of provisions and materials, which would be easily available and usable in wartime. In World War II, it was due to the fact that the Soviet Army had at the start of the war quickly set up a logistics support system, in which army, government, and people cooperated as one body, and that the Soviet Army had experienced cadres transferred from the economic departments of the state to the Red Army's logistics sections, that the smooth flow of all supplies was ensured during the war. That the U.S. military could within a short time requisition 2,438 ships for sea transport duty was possible because a plan for requisitioning had been prepared before the outbreak of war. During the more recent fighting at the Malvinas Islands, Great Britain requisitioned 358 civilian liners, included the "QE2," a passenger ship of 50,000 tons. On the average these ships were refitted and ready to sail within one week.

The so-called three front orientation refers to a method of ensuring supplies in a flexible, mutually supplementary way in the space-time domain. The suddenness of outbreaks of local wars and the changeableness of battlefields, makes it necessary that the logistics support of the reserve forces be highly adaptable, and be able to open up and link supply channels without delay. On the one hand, it is necessary to determine regional plans of logistics support before the outbreak of war, with regard to the different possible specific war zones, and on the other hand, supplies must be ensured with a flexibility that transcends war zones, in view of the possible changes of battlefields; thus the two plans should be combined into one mutually supplementary support network.

To have the above-mentioned three front oriented support organization suit the reality of the reserve force in the way it is composed, and have it develop toward a unity in assurance of supplies and wartime activity, also in order to meet the demand for a small force of highly trained personnel, for a solid, composite arrangement that combines peacetime and wartime plans, and a close cooperation of military and civilians working as one, we must establish a support system that "transcends," to

form a pluralist, multilevel logistics support system. The so-called "transcending" means to go beyond jurisdictional relations and regular supply channels to cope with the developmental changes of warfare, to transcend the restrictions of administrative levels, of time and territories, to implement a speedy, changeable, effective, flexible, on the spot and close to action, and at all times accurate assurance of supplies, forming an integration of the military and the civilian sectors, unified cooperation of top and bottom levels, lateral and organically integrated system of guaranteed supplies. This kind of system is obviously well suited to the peculiarities of the reserve forces. Whether training in peacetime, executing extremely difficult and perilous tasks, rushing to deal with an emergency caused by natural disaster, or whether fulfilling combat support tasks in wartime, only by instituting this kind of supply mechanism can we guarantee the vitality of the reserve force that will enable it to fulfill all its various duties.

9808

#### **Need To Improve PLA Combat Capability Stressed**

*40050230b Beijing JIEFANGJUN RIBAO in Chinese  
8 Apr 88 p 4*

[Article by staff correspondent Hong Heping [3163 0735 1627]: "The Important Thing Is To Improve Combat Capability; An Interview With Cao Shuangming, Delegate to the Seventh NPC"]

[Text] On this early spring morning—the weather had suddenly warmed up but turned cold again, making it very brisk in Beijing—I braved a somewhat chilly spring wind to go to interview Cao Shuangming [2580 7175 2494], staff officer, Shenyang Military District air force, and delegate to the Seventh NPC.

As a commander of the air force in a military district, Cao Shuangming was particularly concerned with the problem of reform in the military. Thus, once he opened his mouth, he never stopped talking about how to deepen the reform in the military.

"I hope the present Seventh NPC will bring about an acceleration of reform in the military." He loudly and clearly proclaimed: "In the 5 years since the Sixth NPC, our military has performed a series of reforms toward modernization and achieved great successes. They injected new vigor and vitality into our military establishment and enhanced the combat strength of our army."

Before coming to attend the congress in Beijing, Cao Shuangming, implementing the spirit of the 13th CPC National Congress, investigated and studied the question of deepening the reform in the military. He told this reporter, now our military cadres and servicemen are generally much concerned about accelerating the reform in the military and have a burning desire for reform.

However, there also some comrades who feel that since our equipment is rather outdated and funds for military expenditure also meager, not much can be done to deepen the reform. Other comrades are confused when it comes to dealing with the relation between productive operations and military training; they cannot make out any policy that would satisfactorily cover both endeavors. Even more importantly, there are units that have not yet firmly comprehended the concept that the ultimate objective in all work and reform is raising the combat strength of the troops. For instance, although some perform military training outwardly on a grand and spectacular scale, they actually perform only a contest of low-level techniques, which has military training merely turn in circles at a very low level. Deepening of the reform, to raise combat strength to the greatest extent with the present equipment, is, therefore, truly an important problem.

Cao Shuangming continued that funds for military expenditure are, of course, limited, and it would be very difficult to greatly improve weaponry and equipment in a short time. Under these circumstances, our military must defer to the overall situation of national economic construction and advocate a spirit of patience. However, we must not adopt a negative attitude, remain in a state of inertia, but must rather actively think of a way to raise combat strength through reform, in the words of a common saying: "Hold Rites in a tiny shell."

This reporter asked: "Can you tell us concrete methods?"

"I can." With the fervor and candor of an old aviator, Cao Shuangming said, first, we have to straighten out certain relationships. For instance, in the organizational system of our formation, there are some rather inconsistent relationships, inappropriate relationships, which inevitably reduce efficiency and adversely affect efforts at raising combat strength. Second, we must unswervingly go the road of training crack troops, using the limited funds for military expenditure where the funds are needed most. At present, many of the world's developed countries are doing just that. It means, on the one hand, we shall reduce the number of noncombatant personnel and reduce the command structure; on the other hand, it means we must enhance the quality of our core combat troops, ensure that these troops are well-equipped and well-trained. Third, we must accurately assess the effectiveness and potential of our present weaponry and equipment. Through strict training we must fully assert their effectiveness, and through technological renovation we must exploit their potential. Facts have already proven that only by effective training, using present weaponry and equipment, it is possible to raise combat strength to maximum limits. Of course, we must also make a success of the productive activities of our troops. We must not only act like the "clever housewife" who merely cooks meals, but also be the "clever housewife" that gets the rice. If the troops fail at effective production activities, it is "no play" in every respect. If

we want to raise combat strength, ensure smooth progress of reform, we must earn supplemental revenue from productive operations.

At this point of the conversation, Cao Shuangming stood up and made a gesture: "To sum up, it all depends on human effort, if we will only show ourselves capable of further liberating our minds, of courageously opening up, it is certainly possible to raise the combat strength of our army."

9808

**Submarine Fire Fighting Chemicals Surveyed**  
*40050256a Shanghai CHUANBO GONGCHENG*  
*[SHIP ENGINEERING] in Chinese*  
*No 2, 1 Apr 88 pp 19-23*

[Article by Yu Donggao [0151 2767 7559] and Yao Guojian [1202 0948 0256], No 2 Ship Design Institute, Wuhan: "Submarine Fire Fighting"]

[Text] Fires are the most common accidents aboard submarines with the exception of collisions, and they seriously threaten the safety of both the ship and its crew. This article makes an analytical exploration of the principal damage done by submarine fires and the several kinds of fire-extinguishing chemicals that may be used for submarine fire fighting.

#### Principal Harmful Elements in Submarine Fires

Submarines are an airtight environment in which the outbreak of a fire will not only damage the craft's electromechanical equipment, but will also cause major damage through the pollution of the air in compartments. Heat from the fire will also cause a sharp rise in compartment temperatures, thereby threatening the lives of the crew and the submarine's safety.

##### 1. Pollution of the Cabin Air

Burning is a complex oxidation reaction. After an oxidation reaction takes place between combustible material and oxygen, large amounts of combustion products are produced. Usually the combustible material does not burn completely. This is particularly so in an airtight chamber like a submarine where the amount of oxygen in the air decreases as a result of combustion, incomplete burning poses even more serious dangers. Complete combustion of hydrocarbons produces carbon dioxide and water, but incomplete combustion produces carbon monoxide, hydrogen, carbon (in the form of soot), and hydrocarbons. The main harmful gases produced by burning are carbon dioxide and carbon monoxide.

As combustion progresses, a shortage of oxygen develops in the submarine. Under normal atmospheric pressure, people normally breathe an oxygen concentration of between 17 and 25 percent. When the oxygen concentration is lower than 16 percent, people may feel short of

### Submarine Fire Fighting Systems

breath, their ability to think will be impaired, and their limbs will lack vitality. When the oxygen concentration is lower than 14 percent, all body activity becomes completely uncoordinated, or unconsciousness ensues.

When combustion is incomplete, the situation may become more serious. It is very difficult to determine to just what extent combustion will be incomplete in an airtight chamber. However, it is possible to say that incomplete combustion from a submarine fire will be at least 10 percent or more. If it is 20 percent, the carbon monoxide content of the air may reach 1.24 percent. When the air's carbon monoxide content is greater than 0.01 percent, it is toxic. When the carbon monoxide content reaches 0.12 percent, exposure for 30 minutes may produce heart palpitations and mental confusion. When carbon monoxide contamination of the air reaches 1.28 percent, two or three breaths will produce unconsciousness and death within 1 or 2 minutes. Thus, it may be concluded that the carbon monoxide produced by a submarine fire can be deadly.

In addition to carbon dioxide and carbon monoxide, the combustion of hydrocarbons also produces hydrogen, carbon (in the form of soot), and hydrocarbons. It may also produce nitrogen dioxide. The smog produced by the carbon, hydrocarbons, and nitrogen dioxide not only irritates the eyes, nose, and respiratory tract, but also makes the submarine chamber unbearably murky, interfering with vision.

#### 2. Effects of Combustion Heat

The effect of the heat produced by a submarine fire on the submarine and the crew was not completely understood heretofore. However, even a very small fire in an airtight chamber can cause a very high rise in the ambient temperature.

Take the hydrocarbon  $C_8H_{16}$  combustion unit volume, for example, at a constant volume adiabat and with no dissociation of the combustible material.

Calculations show that complete combustion would raise the chamber temperature to 1,474 degrees C, and pressure would reach  $6 \times 10^8 Pa$ . Even without complete combustion, the temperature inside the chamber would reach 1,119 degrees C. Naturally, if there is a loss of some combustion heat and if some of the combustible material is dissociated, actual temperatures will be somewhat lower; nevertheless, they will still reach several hundred degrees or even up to 1,000 degrees. It goes without saying that people would die at once in such high temperatures, and all equipment would also be destroyed. The heat would be transmitted through the bulkheads to incinerate all combustibles completely, the fire spreading throughout the submarine. Therefore, the damage from heat would be far greater than from air pollution.

#### 1. Air Foam Fire Extinguishing System

An air foam station is located in the forward and aft compartments of submarines. In these air foam stations, air foam liquid and water are mixed in different proportions to form a mixture of water and foam solution, after which a certain amount of compressed air is forced into it, which is mechanically mixed in to form a milky looking air foam filled with air bubbles. This milky solution goes via pipes throughout the submarine to fire extinguisher nozzles in every compartment. When the milky air foam solution squirts from the nozzles, the gas in the milky solution expands suddenly to form an air foam made up of tiny bubbles.

Figure 1 is a key diagram showing submarine air foam stations. The air foam solution is mixed in the proper proportion with water and stored in the tank at 1. Its contents are sufficient for 3 minutes operation of a foam nozzle. In addition, at each air foam station is located a quantity of material sufficient to make three more air foam charges. When this reserve is used, the fore and aft stations have to take turns operating their stations in order for supply of the liquid to remain continuous.

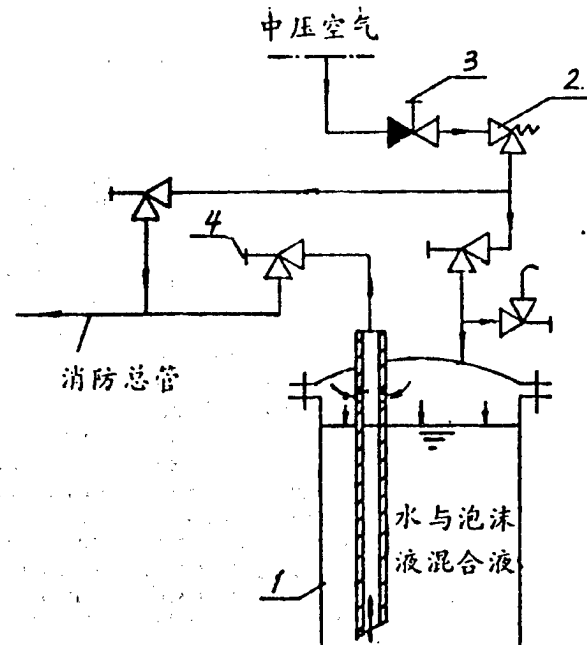


FIGURE 1 Air Foam Station Key Diagram

Key:

1. Storage tank
2. Cut-off check valve
3. Pressure reduction valve
4. Cut-off valve

Inside the submarine, proper pressure mixing equipment operates as a foam generator for the system. Figure 2 is a key diagram for an air foam station that uses proportional mixing equipment. Sixty liters of air foam liquid are stored in the proper pressure proportional mixing device. This equipment can continuously provide liquid for the operation of one to three nozzles. It can supply liquid to one nozzle for 55 minutes of operation.

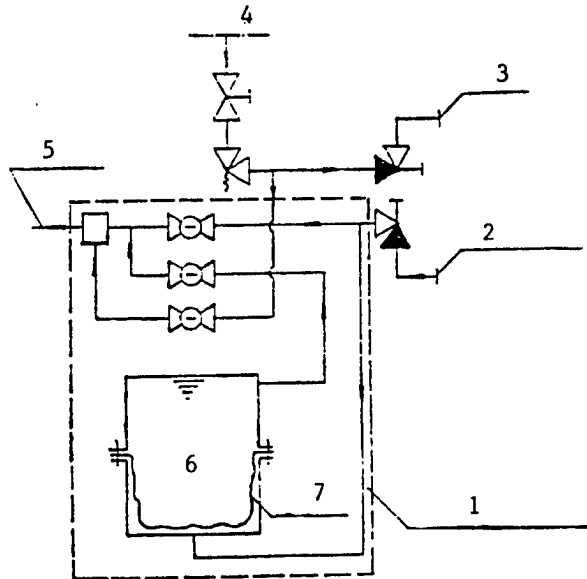


FIGURE 2 Submarine Air Foam Station Key Diagram

Key:

1. Pressure proportional mixing device
2. Fresh tap water
3. To water tank
4. Intermediate pressure
5. Fire control manager
6. Liquid foam
7. Rubber bag

The air foam liquid used in China's submarines is Chinese-produced Type YE-13A, or Type YE-12, or Type-14. The mixing ratio for air foam liquid and water for the Type YE-13A is 6 to 94. For the Type YE-12 and Type YE-14, the ratio is 3 to 97. In order to cut down on the quantity stored, the trend is now toward use of the YE-12 and YE-14 types. Air foam is used mostly to put out petroleum product fires, and it may be used at times to put out fires involving solid materials. Air foam is not suitable for extinguishing electrical fires, or fires involving combustible gases, steam, and vapor, or fires involving water soluble organic solutions.

## 2. Special Purpose Liquid Fire Extinguishing Systems

A special purpose liquid fire extinguisher system has been installed to put out liquid-fuel fires in missile launch tubes. Please see Figure 3 for a key diagram of the

system. Liquid fire extinguishing chemicals are composed of the following:

Carbon tetrachloride	94%
Dibromoethane	5%
Naphthelene	1%

The percentage of these fire extinguishing chemicals is 1.6; the boiling point is approximately 75 degrees C, and solidification temperature is from -28 degrees C to -35 degrees C.

The fire extinguisher system has a storage tank with a capacity of 66 liters of fire extinguishing chemicals that is charged with 50 liters of mixed liquid fire extinguishing chemicals that can be used four times consecutively, 12.5 liters being used each time, the amount of fire extinguishing chemical used in a missile tube being 360 grams per cubic meter. Additionally, there is an air bottle with an 8 liter capacity and an air pressure of  $147 \times 10^5 \text{Pa}$ , which is used to force out the fire extinguishing chemicals when the pressure in the high pressure air tank falls to  $9.8 \times 10^5 \text{Pa}$  to make sure that all the fire extinguishing chemical will be blown out of the nozzle in 15 seconds.

Submarines that carry liquid fuel missiles must be fully aware of the fire danger that the liquid fuel poses. In 1986, a Soviet guided missile nuclear submarine sank because of just such a fire. Therefore, installation of a special purpose fire extinguisher system is essential; however, liquid fire extinguishing chemicals consisting primarily of carbon tetrachloride are not very effective in putting out fires and are highly toxic. New highly effective low toxicity halide fire extinguishing chemicals should be substituted.

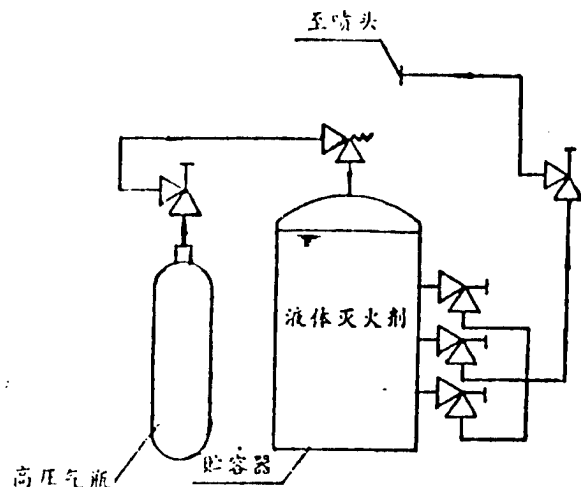


FIGURE 3 Liquid Fire Extinguisher System Key Diagram

Key:

1. Storage tank
2. High pressure air bottle

**Possibilities For Using Various Kinds of Fire Extinguishing Chemicals on Submarines**

The only way to avoid harm to personnel and the vessel from a fire is to extinguish submarine fires quickly. At the same time, it is necessary to avoid having personnel become directly involved at the scene of a fire. Results of studies done both in China and abroad show possibilities for trying out the following several kinds of fire extinguishing chemicals and materials on submarines.

**1. High-Power Foam Fire Extinguishing Chemicals and Equipment**

Use of high-power foam is a new technique for putting out large fires in confined areas such as mines, ships, and warehouses. It employs the spraying of a highly effective surface activator solution against a specially made foaming mesh, a mechanically created blast of air helping force the air through the mesh surface that has been wetted with a

surface activator foaming agent. In this way, every hole in the mesh becomes a continuously operating gas and liquid two phase machine for creating air foam. Since a certain amount of air is contained within the foam, the volume of the original liquid expands from several hundred to thousands of times. In this way, the foam is blown by the air pressure that has been created into fires that personnel would be unable to approach, inundating a confined space and displacing the heat, steam, and smoke. It is an effective technique for extinguishing fires.

High-power foam can put out all kinds of petroleum fires and most fires in solid combustibles and flammable gases; however, it is not suitable against fires involving water soluble solutions.

China currently has three different kinds of high-power fire extinguishing chemicals and four different foam generating machines, the main technical characteristics of which are shown in tables 1 and 2.

**Table 1. Technical Characteristics of Chinese-made High-Power Foaming Agents**

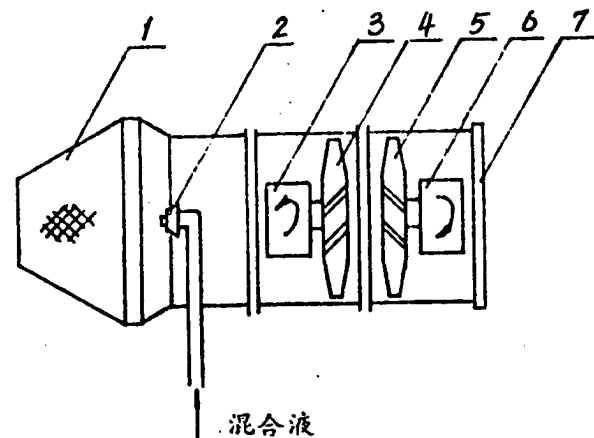
Foaming Agent	Concentration (%)	Water Removal Rate (%)	Multiplier		Low Temperature Tolerance (C)	Viscosity n (20 C)
			5'	15'		
TYP-1 (liquid)	6.3	0	0	877	-10	25
TYP-2 (liquid)	5.8	0	0	531	-11	17.5
TFP-1 (powder)	2.4	0	1.7	864		

**Major Technical Indices of Chinese-Produced Foam Generators**

Model	Power (kW)	Nozzle Diameter (mm)	Foam Generation (m <sup>3</sup> /min)	Liquid Output (L/min)	Foam Multiplier	Propulsion Method
BGP-200	8	650 x 650	200	300	700	Electric motor
SGP-180	6.3 - 8.4	φ 650	180	280	680	Hydraulic turbine
QGP-200	4.85	φ 630	200	270	700	Gasoline engine
GF-50			50		350	Water power

Table 4 is a key diagram showing components of the Model BGP-200 foam generator. This foam generator is a counter rotating axial flow blower powered by two flame-proof motors. A mixture of water and foaming liquid goes through a spiral nozzle and is evenly sprayed against a foaming mesh. At the same time, a large blast of air from the blower propels the mixture through the holes in the mesh to produce continuously air foam the volume of which is multiplied many times over.

Since high-power foam is able to extinguish fires fast, an entire submarine compartment measuring between 300 and 500 cubic meters can be completely filled with foam in between 1 and 2 minutes. When the fire has been extinguished, and the crew can leave the scene of the fire and control each compartment from a distance, avoiding fire injuries to personnel. After all fires have been extinguished, since water in the foam amounts to only one part per several hundred, clean up is easy, and there is no pollution. However, the need to install a foam generator in every compartment of a submarine seems ponderous and complex.



**FIGURE 4 Key Diagram Showing BGP-200 Foam Generator Construction**

Key: 1. Foam generator mesh 2. Nozzle 3. Flame-proof motor 4. Two stage Blower 5. One stage blower 6. Flame-proof motor 7. Flow regulator

## 2. Trifluorobromomethane (commonly termed 1301) Fire Extinguishing Chemical

1301 is one form of halide fire extinguishing chemical that has marked physical and chemical inhibiting effects on combustion reactions. It can produce biochemical reactions with flammables, transposing active free ions that maintain a combustion chain reaction, thereby intercepting the combustion reaction.

1301 is used to put out fires involving flammable gases and liquids, and most flammable solids; however, it is not suitable for use on chemical products that contain metal or oxygen.

One way of judging the properties of a fire is to determine its flame retarding peak value (the lower the flame retarding peak value, the better the properties of the fire). The flame retarding peak value of 1301 against heptane is 6.1, its efficiency in extinguishing the fire being 4.7 times greater than carbon dioxide and 1.9 times greater than carbon tetrachloride.

At normal temperatures and pressure, 1301 fire extinguishing chemical is a gas (with a boiling point of -57 degrees C), and may be stored in a liquid state by subjecting it to pressure. Against most flammables, all that is needed is a concentration of approximately 5 percent of it. For these reasons, less of it needs to be stored at a lower pressure than other gases, making storage easy.

At the right concentration, 1301 can put out a fire in just a few minutes, thus effectively averting the damage caused by a fire. Since 1301 fills a compartment with a gas, it may be used to extinguish fires in gaseous, liquid, or solid materials. Such a complete fire extinguishing system used in conjunction with a warning system permits an automatic warning and fire extinguishing system. The complete absence of people putting out the fire can avoid loss of time in extinguishing fires resulting from failure to discover them promptly or delayed action.

1301 is a covalent compound, with no tendencies toward dissociation or electrical conductivity. Its insulation electrical resistance is close to that of mica, and it may be used with complete safety in putting out electrical fires. It is also virtually non-corrosive, and produces no reaction with metal or with organic substances such as rubber. It will not damage instruments and equipment. Cleaning up after 1301 has been used to extinguish a fire is also extremely easy. All that is necessary is to ventilate the places where the fire was located to get rid of it.

These advantages of 1301 suit it extremely well as a fire extinguishing chemical for use on submarines. It is somewhat toxic, however. Table 3 shows the approximate concentrations at which 1301 and its main decomposition products can cause death. It is evident from the table that the toxicity of 1301 itself is very slight.

Table 3. Concentrations at Which 1301 and Its Decomposition Products Contaminate Causing Death in Approximately 15 Minutes

Name	Approximate fatal concentration (ppm)
1301	832,000
HF	2,500
HBr	1,500

From the human physiological standpoint, however, it is not permissible for fire extinguishing chemicals to be even slightly toxic. However, when a fire breaks out on a submarine, extinguishing it quickly is the primary consideration. In fact, the toxicity of the smoke and gases such as carbon monoxide from a shipboard fire is vastly greater than the toxicity of 1301 fire extinguishing chemicals, and even though a fire extinguishing chemical may not be toxic, once the fire has been extinguished, one cannot count on the crew being able to live in a compartment filled with toxic smoke. Prompt ventilation is necessary. If the submarine cannot surface to ventilate, the crew will have to carry respiration devices.

In terms of its effectiveness in extinguishing fires, a concentration of only approximately 5 percent 1301 is needed, and the toxicity occasioned by a 5 percent concentration is very small. According to the United States Fire Prevention Society, at a 7 percent concentration, no limitations should be placed on the use of 1301 in places where people normally move about. In addition, an American article titled, "Use of Gaseous Fire Extinguishing Chemicals On Submarines" reported that humans can tolerate a 4 percent concentration of 1301, so even if a submarine cannot surface for ventilation, polluted compartment air can be sucked out by an air compressor while submerged, and fresh air may be released from a high pressure air bottle to dilute the 1301 contaminated air lowering the concentration to 4 percent or less.

The amount of hydrofluoric acid and hydrobromic acid produced as thermal decomposition products of 1301 depends on the length of time that 1301 is sprayed on a fire rather than the intensity of the fire. If the system is designed for 10-second or shorter periods of operation, decomposition of the 1301 can be effectively prevented. In addition, even when hydrofluoric acid and hydrobromic acid are produced, they may be managed easily. They may be washed away with water, absorbed by activated charcoal, or neutralized by an alkaline solution. Therefore, toxicity should not prevent 1301 from being used on submarines.

## 3. Nitrogen Fire Extinguishing Agent

Nitrogen is a stable and inert gas that operates in extinguishing fires by diluting the oxygen in the air, thereby smothering the fire. It is consequently not very effective in putting out fires, and it has to be used at a 42

percent concentration. Nevertheless, nitrogen is a non-toxic gas that produces no poisonous reaction in the human body. Therefore, if surfacing to ventilate is not possible once a submarine fire has been extinguished, toxicity from a nitrogen fire extinguisher need not be feared.

A 42 percent nitrogen concentration means it must be added at a rate of  $0.731 \times 10^5$  Pa resulting in total pressure in the compartment reaching  $1.741 \times 10^5$  Pa. People can tolerate such a pressure, and it will also not adversely affect the vessel. When the compartment pressure reaches  $1.741 \times 10^5$  Pa from the addition of nitrogen, the oxygen concentration of the air falls from 21 to 12 percent, insufficient to support combustion. Human respiration is still not affected, however, because the differential pressure of the oxygen remains at  $0.212 \times 10^5$  Pa. Because of the excessive pressure in compartments caused by the nitrogen, once the fire has been extinguished, an air compressor on board may be used to put it into air bottles. Usually the whole process from extinguishing the fire to recovering the nitrogen can be done without the submarine surfacing. This feature is extremely important during wartime and under extraordinary circumstances when the submarine cannot surface.

A compartment with a net volume of 350 cubic meters (a representative size compartment on a large submarine) has to have 253.4 cubic meters of nitrogen added to attain a nitrogen concentration of 42 percent. If the nitrogen is stored at a high pressure of  $196 \times 10^5$  in 410 liter bottles, approximately three bottles will be required. This will cause storage problems for the submarine. However, submarines currently carry a certain number of high pressure bottles containing air stored at a high pressure of  $196 \times 10^5$ , some of which are for emergency teams. Therefore, some of the emergency team's bottles can be filled with nitrogen (which is also used in emergencies), the nitrogen in these bottles being used to extinguish fires when necessary. Once the fire has been extinguished, the submarine can use an air compressor to fill the bottles while remaining submerged. This would not really reduce the storage of high pressure air. However, oxygen making equipment would be necessary to augment the oxygen in the air to reach the differential amount of oxygen required. Therefore, use of oxygen as an agent for extinguishing fires aboard submarines is entirely possible.

### Conclusions

Submarine fires are serious accidents. The air pollution and the high temperature produced by combustion seriously threatens the lives of the crew and the safety of the vessel. Therefore, research is needed to determine the fire extinguishing agents and equipment that are suitable for use on submarines.

Air foam is not an ideal fire extinguishing chemical for use on submarines. It is suitable only for petroleum fires on horizontal surfaces, and system operation is complex making automatic control difficult.

High-power foam is a fairly ideal fire extinguishing chemical for use on submarines since it extinguishes fire rapidly, can be remote controlled and can be done automatically. However, the equipment and the system is ponderous and complex, making it suitable only for some compartments.

1301 is highly efficient in extinguishing fires. It extinguishes fires rapidly, can put out all kinds of fires, its use can be easily automated, and it is easy to use, making it ideal for use on submarines. However, it is somewhat toxic, requiring that certain precautions be taken when it is used.

Though nitrogen is not very efficient in extinguishing fires and requires carrying a very great quantity on board, it is not toxic, and it is safe and dependable, making it extremely suitable for extinguishing fires aboard submarines.

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### Four Armored Vehicles Described

40050257 Beijing BINGQI ZHISHI [ORDNANCE KNOWLEDGE] in Chinese No 2, 15 Mar 88 pp 2-3

[Article by Yuan Gongwei [5913 0501 1550]: "Type-85 Family of Armored Vehicles"]

[Text] The type 85 family of armored vehicles is a new family of vehicles that was developed during the 1980's by the North China Industrial Company's North China Vehicle Plant mainly for mechanized units and tank units. They are used for transporting military personnel, for transporting weapons and ammunition, and for recovering the wounded. They have a fairly high traveling speed, and fine cross country performance. They can travel on water, and they have limited protection and self-defense capabilities.

### Type 85 Armored Personnel Carrier (YW531H)

The type 85 armored personnel carrier is the basic vehicle model in the type 85 family of armored vehicles. Total combat weight of the vehicle is 13.6 tons. It has a crew of two and carries 13 personnel. It has a 320 horsepower engine; its per unit power is 23.5 horsepower per ton; its maximum highway traveling speed is 65 kilometers per hour; its speed on water is 6 kilometers per hour; its average highway speed is 40-45 kilometers per hour; its average speed on unsurfaced roads is 35

kilometers per hour; its maximum range is 500 kilometers; it mounts one 12.7 mm dual purpose antiaircraft and flat trajectory machine gun on the top; and it is equipped with one two-way radio and one intercom device.

The vehicle's body is of completely sealed armored and trussed construction. The driver's compartment is at the front left of the vehicle; the engine is on the right front of the vehicle, and the vehicle commander and infantry squad leader are located behind the driving compartment. The passenger compartment is in the middle and the rear, and a machine gunner is in the middle. The power plant is an air-cooled diesel engine. The transmission consists of a transmission box, a dry multi-disc master clutch, a fixed-axle 5-gear synchronous transmission, a dry multi-disc steering clutch, a brake, and lateral drive. It employs mechanical controls and torsion bar independent suspension. The moving portion has a track and five load-bearing wheels. Barrel shape hydraulic shock absorbers are mounted on bearing wheels numbers one, two, and five, and the sprocket wheel is forward of these. The vehicle is equipped with an interior electrically powered water pump and an air heater. The driver has an infrared night sighting device.

This armored vehicle was developed out of a summarization of more than 20 years experience in the production of the same kind of vehicle, and parts found to have been reliable and advanced in previous vehicles have been used in it. Examples include the gear box and the steering clutch from the transmission of the type 63 APC, the five pairs of dual flanged load-bearing wheels and the three pairs of load bearing traction wheels used for movement; and the BF8L413F air cooled diesel engine, transmission, round firing ports and the two-way radio from the YW 531C personnel carrier. In addition, the vehicle also uses a substantial number of interchangeable parts, which makes for greater ease in using and keeping track of them, and which also helps logistical supply and maintenance. The overall performance of this vehicle has been substantially improved over that of all previous vehicles. This shows up in the following ways:

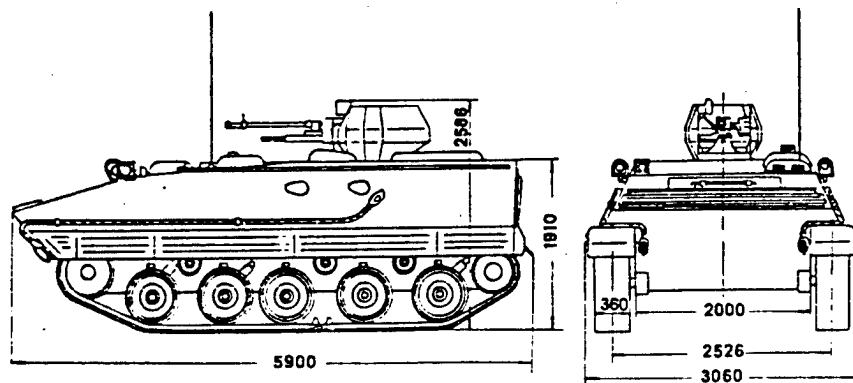
1. Use of the BF8L413F four-stroke compression V-8 air-cooled diesel engine suits it for use in deserts, high plateaus, and in frigid and torrid zones. The power of this vehicle's engine has been increased from the 260 horsepower of the Type 63 personnel carrier to 320 horsepower. Despite an increase in vehicle weight from 12.8 to 13.6 tons, per unit power has been increased from 20.3 to 23.5 horsepower per ton, and maximum speed has been increased from 60 to 65 kilometers per hour. Since air cooled diesel engines are shorter than water cooled ones, and since the body of the new vehicle is longer, the volume of the crew compartment has been increased from 2 x 1.93 x 1.3 cubic meters to 2.7 x 1.98 x 1.3 meters. This has made it possible to alter the design of the vehicle in order to use it for other purposes.

2. Moving parts: The travel distance of the load-bearing wheels has been increased from the 170 mm of the Type 63 personnel carrier to between 230 and 240 mm, and per unit pressure has been reduced from 0.574 kgs per cm to 0.546 kgs per cm, thereby improving cross country and traveling capabilities. Use of suspended rubber grouser shoes has reduced both noise and damage to the road service when traveling over highways.

3. Protection: The dip angle of the armor on the front of the vehicle has been increased, and the nose of the vehicle has been made sharper for an increase in ability to ward off shells. A protective turret has been installed in the top machine-gun enclosure to protect the machine gunner from bullets and shrapnel coming from the front and the sides while firing.

4. Combat Capabilities: The former two simple firing ports have been increased to seven circular firing ports (three on each side and one aft). Above each firing port is an observation scope to increase the combat capabilities of personnel being carried inside the vehicle.

To summarize, construction of the Type 85 APC is simple, solid, and dependable. Its performance is excellent, and it can be easily altered. In order to satisfy different battlefield needs, numerous models of this



basic vehicle have been developed, including the following, which have been put into production: the NVH 1 infantry fighting vehicle [IFV], the YW 309 IFV, the WZ 751 armored recovery vehicle, and the type 85 armored command vehicle. (Please see the three photographs on the magazine cover) [not reproduced].

#### NVH 1 IFV

This vehicle was developed jointly by China and the United Kingdom. Its overall fighting weight is 16 tons; it has a 3-man crew; and it carries eight passengers. A 2-man gun turret is equipped with an American Model M 242 25mm dual-feed chain gun, and is capable of being fitted with a 30mm Rarden gun, or a type KBB 25 mm machine cannon. In addition, it has one 7.62mm coaxial machine gun. Inside, the vehicle is equipped with several rather good sighting and aiming devices. (For details, please see the first quarter 1987 issue of this journal).

#### YW 309 IFV

Total weight of this vehicle is 14.7 tons. It carries a crew of three and eight passengers. Its principal feature is that one 73 mm low pressure smooth bore gun has been mounted on a type 85 APC chassis. The gun holds 40 rounds; muzzle velocity is 440 meters per second; firing speed is 7 or 8 rounds per minute; the traverse is 360 degrees; the elevation is from -3.5 to +3.5 degrees; and the effective range is from 800 to 1,000 meters. It can knock out tanks, fighting vehicles, and numerous kinds of firepower points. It is used primarily for fighting when transporting infantry troops in the company of tanks. Under favorable conditions, it can also fight independently. The vehicle's rear hatch is fairly large (1.1 meters high and 0.9 meters wide); it opens easily; and it permits troops to enter and leave easily and quickly.

#### WZ 751 Armored Ambulance

This vehicle is a reconfiguration of the type 85 APC and the YW 750 armored recovery vehicle. The infantry compartment has been made higher to become a recovery compartment. There are two seats for orderlies inside the compartment, one on each side, and four stretchers below that can carry four wounded in a prone position,

two in a prone and four in a sitting position, or eight in a sitting position. Medical equipment in the emergency room consists of a medicine and instruments kit, a splint case, and oxygen supply apparatus. Emergency treatment including cleansing, bandaging, fluid transfusion, and giving oxygen can be done on board the vehicle. The vehicle is equipped with air conditioning and heating equipment that can produce 6,000 kilocalories per hour of cold air, enabling control of the temperature inside the vehicle. The recovery compartment and the engine compartment are separated by a layer of heat insulation, and a combination shock absorber heat insulation board. This vehicle is assigned to tank regiment medical units and accompanies tank and mechanized units to evacuate wounded from the battlefield or to do on board first aid work.

This vehicle's recovery compartment is larger than the one on the YW 750 armored ambulance. It also rides more smoothly for greater comfort whether sitting or lying down. It travels fast and is not noisy.

#### Type 85 Armored Command Vehicle

The main feature of this vehicle is that the type 85 APC infantry compartment has been converted to a command room, and the former firing ports have been turned into vision blocks fitted with bullet proof glass. In the middle of the room is a work table. The vehicle is equipped with a ventilating fan and a heater. It also has a gasoline generator unit, which is used as an auxiliary power source for operating the two-way radios and for charging the storage batteries. It is equipped with one 12.7 mm machine gun for self protection.

This vehicle is assigned to tank and armored divisions and regiments for the use of commanders in directing battlefield combat and for communications. The vehicle is equipped with two 889 two-way radios or VRC 83 two-way radios, one 892 two-way radio or VRC 84 radio, and one 702 B receiver or SR 119 receiver.

Other vehicle models in the type 85 armored vehicle family currently under development include the type D30 122 mm self-propelled howitzer, a technical maintenance vehicle, an engineering repair vehicle, and an 82 mm and a 120 mm self-propelled mortar.

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