Yesterday's Weapons Tomorrow

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The importance of anachronistic intelligence to supplement that on advanced weapon systems.

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The great emphasis that U.S. intelligence publications place on advanced weapons, in accordance with their strategic significance, may leave the casual reader with the impression that the Soviet military machine is made up of ICBM and ABM forces backed by a ponderous but ineffective mishmash of traditional components armed with elderly weapons. His familiarity with Soviet military sites may include Tyuratam and Sary Shagan but probably little else. He knows the Soviets still have some tube artillery, bombs, and torpedoes but believes these will soon be in museums alongside crossbow exhibits.

Such impressions can result from rigid application of the reporting priority accorded developments involving missiles and from a general assumption that the importance of a weapon is in direct ratio to its complexity. Thus superficial indications that some missile may be propelled by solid fuels would make the intelligence front pages, while good evidence that the Soviets were reequipping ground forces with a new and better rifle would be lucky to get in at all.

Certainly Soviet silo digging must be carefully watched so that we can adjust our own strategic stance accordingly, and the Soviets' success or lack of success with antimissiles could have as great an impact on our

defense budget as on theirs. But preoccupation with these unquestionably important matters may have become so great as to skew our appreciation of over-all Soviet capabilities. Factors operating to degrade the theoretical capabilities of modern weapons have been ignored, and important capabilities of older weapon systems have been overlooked or forgotten.

Weaknesses in Complication

The very complexity of advanced weapons is their major drawback. They depend on highly trained personnel for maintenance and operation. They must have back-up stocks of precisely manufactured and inspected parts. They are almost useless if countermeasures interfere with the functioning of any of their many components. In many instances they can operate only under carefully controlled temperature and humidity conditions, and they must have exactly regulated power supplies available at all times.

Often the refire function of sophisticated systems is limited, complicated, and slow, rendering them vulnerable to saturation tactics. Equally often sensor capabilities lag far behind the capabilities of other elements and so lower the effectiveness of the entire system. These can also be adversely affected by physical phenomena: an auroral display can blank out a radar, and a school of fish can blind a sonar.

Elaborate check-out systems to check out the check-out equipment, all of which must function perfectly, have added to the bulkiness of many of the newer weapons. This may be of no great importance with ICBMs, but in mobile combat units it can be critical. A costly antiaircraft missile had to be abandoned recently when the system was found to be so bulky it could be carried only by ships of cruiser size.

Bombers have frequently been relegated to the strategic intelligence boneyard on the assumption that modern air defense has done them in despite the development of stand-off missiles, electronic countermeasures, and low-altitude flight profiles. Even if this assumption were correct with respect to conditions in non-nuclear general war, it has no validity for nuclear war. The electromagnetic effects of thermonuclear and fission weapons, the clouds of radioactive

debris, and the resultant ionization of the atmosphere would hamper the air defense's command and control communications and greatly reduce radar effectiveness. The defensive forces might have to rely heavily on the human eye for warning and fire control. The bomber, then, should have a reasonable life span.

Need for Versatility

Complexity is not the only drawback of newer weapons. In some instances the weaponry they replace is better suited for certain types of missions. The high speeds and limited loiter time of jet aircraft have led to a new appreciation of propeller planes in a variety of attack and reconnaissance roles. The elderly bolt-action Springfield, long after it had been phased out of production, continued to perform as a sharpshooter's rifle because it was superior to its successors for this purpose.

History is replete with examples of weapons abandoned too soon or with too little consideration. The bow, phased out by the Greeks in Homeric times, was winning battles centuries after the city-states had been destroyed as political entities. Spanish commanders of the early 16th century armed their tercios with the long-abandoned armor and short swords of the Roman legions and did quite well against their progressive arquebus - and pike - armed opponents. In the Korean war carefully organized and coordinated U.N. amphibious operations were hamstrung by the North Korean expedient of dropping obsolete contact mines in coastal waters from junks and sampans. The carrier-oriented U.S. Navy had to activate World War II minesweepers and crews to cope with this obstacle. Most recently a whole array of obsolescent weapons have been dusted off and adapted to the needs of the unconventional fighting in Vietnam.

During Taiwan Strait air operations in 1958, Nationalist F-86 aircraft battled Communist MIGs with overwhelming success despite the fact that the MIGs were faster and could climb more briskly. A few of the Nationalist aircraft were armed with Sidewinder air-to-air missiles, and the actions were studied to determine the effectiveness of this missile. But the post mortems showed that all but a few of the Communist

losses resulted from the Nationalist pilots' gunfire. Subsequently some USAF officers, noting the difficulty of maintaining the missile in ready condition and the limited refire capabilities of aircraft fitted with it, recommended that missile-carrying fighter aircraft be reequipped with automatic cannon for at least part of their armament.

Defensive systems are particularly vulnerable to saturation effects. In antisubmarine warfare teams of aircraft, surface ships, and submarines, backed with shore-based sound surveillance systems, can present formidable opposition to one or two conventional submarines; but a large number of submarines scattered along a few hundred miles of coastline would currently pose an extremely difficult problem. Field and shipboard air defense missile systems can in general attack very few targets at a time. Their major limitation lies in the guidance radars which direct the missiles during their flights. An installation with two guidance radars can attack only two targets over a period of several minutes. During this time other enemy aircraft or cruise missiles can carry out their missions without hindrance.

The inflexibility of many advanced weapons, particularly those of mass destruction, is clear. Essentially, they can apply force on one scale only, and as a rule only to certain pre-selected targets. A 105-mm howitzer can fire one round near a target to draw attention or to press compliance with a demand. If necessary, a second round can be fired into the target to indicate that the demand will be enforced; and this can be followed, again if necessary, by twenty rounds to put enemy personnel in the face-saving position of having offered token resistance. Finally the target can be reduced by using 100 rounds, or whatever number is needed.

Nuclear weapons, on the other hand, offer only one option, obliteration of the target. U.S. preparations for action during the Cuban crisis were slowed by having to weld conventional bomb racks on aircraft which could otherwise have delivered only nuclear weapons. The presence of Minuteman and Polaris missiles of course greatly affects the basic rules under which engagements such as that in South Vietnam are carried out. Nevertheless they cannot play any active role in them.

A Range of Wars

Present mutual deterrent policies of the United States and the Soviet Union are unlikely to be affected by less than extreme changes in the relative numbers or capabilities of ICBMs or other major weapons. This being the case, it may be more important to learn how quickly and in what numbers the Soviets can send heavy infantry weapons to the Congo than to know the vernier characteristics of the SS-8 propulsion system. It may even be more important to know Soviet capabilities for low-altitude conventional bombing than the precise yield of certain Soviet fission weapons.

Finally, it may be more useful to know the quantities and types of equipment that have been stockpiled or mothballed than to know every detail about the first-line hardware. The scrapping of the battleship fleet and near elimination of eight-inch guns on cruisers had led to a serious decline in U.S. capabilities for giving fire support to amphibious operations. Recently, however, the Navy pulled rocket-equipped LST's of World War II vintage out of moth balls to rectify this deficiency. Knowing whether the Soviets could similarly remedy certain weaknesses on short notice may prove critical in our assessments of Bloc courses of action in Africa and Asia.

In sum, the whole gamut of wars that may occur, from a jungle insurrection to a prolonged broken-back nuclear struggle, demands a variety of military hardware, much of which may be primitive in design. National military capabilities can therefore not be measured just by counting mass destruction weapons or assessing the complexity of weapon systems. Weaponry must be evaluated according to its probable performance under fire, in the face of countermeasures, under conditions of limited logistic and maintenance support. It must be evaluated in terms of the environment and kind of war in which it may be used, and the attention it is to get in intelligence reporting should be determined accordingly. At the present time intelligence should be devoting more effort to the evaluation of Soviet and Chinese Communist capabilities with respect to support for the kind of fighting being done, for example, in Vietnam.

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