

ICBM Defence Russ A-Blasts Aim?

The one interesting piece of military information which came out of the 22nd Congress of the Communist Party of the Soviet Union, concluded in Moscow last month, was Marshal Malinovsky's announcement that the Soviets have developed an effective anti-ICBM missile. If this was true, it would be a sensational development and one which would upset in favor of the USSR the present balance of nuclear deterrence.

The Soviets are, of course, past masters of the art of putting the West on to false trails, to gain political and military advantages and make us waste money and effort on futile counter-moves. The Russians maintained for years that they considered manned bombers obsolete and were replacing them throughout with long-range missiles. On the strength of this — in my opinion, with much justification — the States cancelled the F-108 and Canada the Avro Arrow, while Great Britain decided to make the Lightning the RAF's last manned interceptor-fighter.

In the meantime, the Soviets went about quietly (but not too quietly so as to create suspicion and as a consequence of suspicion, confusion) developing new long-range bombers.

Marshal Malinovsky's announcement about a miraculous Soviet anti-missile missile may be a similar move on the psychological war chess-board. The answer to whether the Soviets have, or are close to having, anti-missile defence must perhaps be sought in conjunction with the reason why in the current nuclear test series they exploded devices which gave yields of between 30 and 60 megatons.

There has been much speculation about the reasons the Russians may have had for such tests. If one discounts purely political motives, one is hard-pressed to find plausible technical ones. To produce bangs of this magnitude is more or less a matter of cramming the appropriate quantity of fusion material into a weapon. The Americans reportedly have operational 24 megaton-bombs which can actually be carried on B-52s, yet their most powerful weapons test was the "Bravo" shot of about 15 megatons, back in 1954. They never thought it necessary to prove to themselves that bigger bombs would also go off.

According to Swedish reports, the Soviet weapon which yielded more than 50 megatons was a rather unwieldy device. Apparently it was cylindrical, about 16 feet long and 10 feet in diameter and weighed something like 15 tons. Much too big, too heavy and too awkward aerodynamically to serve as a ballistic missile warhead, it was apparently lifted to a height of 12,000 feet by a drone aircraft and exploded there. The question is what for?

It is at this point that the announced Soviet anti-missile defence system may become a factor.

It is not very likely that the defence complex would be what is called a "duelling" system; that is, one based on a single missile seeking out a single incoming warhead. It is true that the Americans are experimenting with this sort of defence. A Corporal tactical ballistic missile has been successfully intercepted by a Hawk surface-to-air missile. Next summer, in the Pacific, a real anti-missile missile, Nike-Zeus, is to be fired against an Atlas ICBM.

But the comparative (for everything costs a lot of money in this game) sparseness of funds allocated to the Nike-Zeus project shows that the Americans have doubts about the soundness of the very concept of "duelling" with ballistic missiles.

The principal obstacle is discrimination, that is distinguishing a warhead from decoys and carrier-rocket debris and distributing defense missiles between numbers of incoming warheads.

"Screening" techniques of anti-missile defense look more promising. In these, killing grounds would be created high above a target area in which all objects, missile warheads, aircraft, decoys, sundry debris, would be destroyed. Several methods of "screening" have been suggested. The one which at first sight seems the simplest envisages the creation of a pool of heat through a big nuclear explosion timed to the arrival of an enemy warhead or salvo of warheads. The idea is that the latter would be melted — their heat tolerance on re-entry into the atmosphere is marginal under any circumstance.

Naturally, the more powerful the defensive explosion, the bigger the fireball and the larger the protecting pool of heat. With a little amateurish extrapolation and judging from the height at which the Soviet device was apparently exploded, I have come to an estimated three miles as the diameter of the fireball created by a 50-megaton weapon and thus to a pool of flash heat sufficiently great to melt the warheads of ballistic missiles within 100 square miles, at the least.

Tactically, too, the system looks workable. In an all-out nuclear war, attack and counter-attack would almost certainly be single hammer blows. The two or three warheads destined for, say, Moscow would in that case arrive pretty well simultaneously. Old Tu-4s, each laden with a huge nuclear device, could be put into the air even before the Soviet surprise attack was launched, in the sure expectation of the inevitable counter-attack, and be kept cruising above the city. The available warning time, a few minutes at any rate, should be enough to determine the destination of the incoming ballistic missiles and to trigger the weapons on the Tu-4 drones.

There would be difficulties galore in such a scheme — but it is probably feasible. The Soviets may be trying to put it into practice.