will be aided by the vast distances involved. Note some sample approximate figures en route from Kansas City via the North Pole to Sverdlovsk, in the heart of the Urals industrial region: to the Arctic Circle, 2000 miles; to the Pole, 1500 more; another 1500 to the Russian coast; and almost another 1000 to Sverdlovsk. En route there are possible sites for fighter bases on the big island, Novaya Zemlya — 1500 miles from Sverdlovsk — and on Franz Josef Land (islands), 2000 miles from that city. Further west, it is 600 miles from Archangel to Moscow and 600 from Murmansk to Leningrad; this being only the northern strip of Russia, which extends southward for further vast distances.

For the slowpoke B-36 these distances represent *hours upon hours* of the threat of momentary destruction. Its average long-range mission speed is about 250 miles per hour, the jet boosters permitting only a few very short bursts of about 400 miles per hour — not half the speed of the supersonic jet fighters. This danger exists when the plane goes in to target — then, if it is miraculously spared, when it comes away. Our B-36s, now totaling about 60 and to be increased to no more than 200 or so, would be disastrously outnumbered — perhaps 25 to one, or even 100 to one. Contributing to disaster would be the huge size of the Russian defender-force, the ease with which high-speed fighters (to intercept the bombers) can be assembled from distant bases at a desired point, and the fact that our few bombers would have to be sent in small mission-groups of a dozen or less, in order to avoid putting too many eggs into one basket. The fighters will have ample time to take attack-position long before the bombers even reach the Russian coast.

The fallacy, or falsity, formerly propagated by the Big Bomber Bombast Boys (Air Force leaders and others), that fighters can not operate effectively at bombers' high altitude, was exploded in the 1949 Hearings. Air Force Generals Spaatz, Kenney and LeMay admitted that this was a phony argument in behalf of the B-36.

Russian interceptor-fighters are of the finest. Besides their own first-class skill and facilities, the Russians have now been aided for years by German technical and operating personnel and the equipment captured from German factories. They are perhaps far ahead of us. Even our much-touted supersonic plane, the Bell X-1, was "nothing but a 'beefed-up' copy" of a captured German wartime plane brought to this country in 1945 in an Army C-54 cargo plane, as admitted by our Air Force leaders in 1948 according to reliable press reports. In 1947 General LeMay, now head of our Strategic Air Force, admitted: "We are more than ten years behind Russia in aeronautic research and developments." He had earlier admitted that the Germans were fifteen years ahead of us in fundamental research in 1945.

It is absurd to assume that the Soviet fighters can not take and maintain the attack position regardless of the bombers' altitude or any other factor. Our Air Force's own wartime experience proves that, under these conditions, the unescorted bombers are doomed during the *hours upon hours* of fighter-attack, going in to the target alone — doubly so coming out. A 1945 report of the Air Force Evaluation Board,[1] for example, concluded that once fighters closed in on a bomber it was as good as gone unless they missed or broke off the attack. The danger to the bomber, it found, was measured primarily by whether fighters would intercept. Once interception was made, the bomber losses were almost directly proportional to the period of sustained fighter attack.

In the engagements on which this report was based, the fighters were equipped merely with guns, whereas the Russian fighters will have rockets far outranging the guns of the bombers, leaving the latter utterly helpless. Even the crude rockets first used by German fighters in 1943 against our unescorted bombers on daylight missions over Germany were deadly. The bomber losses rose until, in one October raid, they were about 20 per cent. This disastrous development forced the complete abandonment of unescorted daylight missions, as admitted by the official history of the Air Force.[2]

Vastly improved rockets are now available. In 1949 General J. T. McNarney, then head of the Air Force Matériel Command, announced that there were then available for bomber interception, to be launched from fighter planes,

> . . . air-to-air missiles [rockets] which could be launched under their own rocket power at supersonic speeds to targets several miles away. By means of a radar homing device within the missiles they will track down the enemy [bombers], even in evasive action, and, by means of proximity fuses, they will be detonated when within lethal range of the enemy [bombers].

Fired from just beyond a bomber's gun range, rockets even without these devices will be fatal; with these devices they will do their deadly work even when fired from miles away. There are types of "homing" device other than the radar type — for example, the thermal variety which seeks heat and heads for the bombers' engines. No effective defense is now available against air-to-air rockets so equipped; and it is believed that none is likely in the foreseeable future.

There is every reason to assume that Russia is ready to use such rockets. The Russians and Germans have been far ahead of us in the rocket field; witness the V-2. Bombers can not use rockets effectively, moreover, because when fired cross-wind (any way except straight forward or rearward) they "weathercock" — turn into the wind made by the bombers' high speed. Fighters will always attack so as not to be exposed in such front or rear position if bombers are ever armed with rockets. Even the Russian patrol planes could, however, use such rockets effectively against the bombers.

Under these conditions the doom of the bombers is double-sealed by the wall of fire they will encounter in key target areas, where shells and rockets — equipped with homing devices and proximity fuses — will be used by ground defenses. Some U. S. military authorities have conceded that if Germany had had the proximity fuse alone, she could probably have denied the German skies to our bombers in World War II. The Russians have it; just as they have our super-secret self-aiming anti-aircraft gun — a sample having been shipped to Russia by the U. S. Army in 1944, according to a reliable report.

Other grave handicaps will beset the bombers' attempt to make "effective delivery." For example, the underground installations of the Russians; effective camouflage (like the undetected German wartime factory with a small forest growing on its roof); and lack of photographically made air-maps of Russia giving precise locations of targets or even of key target areas, like cities. Such maps are essential to effective bombing; especially since the bombers — under deadly attack all the while and very limited in fuel supply — would have no time to cruise around looking for the target.

Bomber attacks in darkness — when and where darkness might exist — would not offer any substantial advantage of added secrecy because the Russian radar-warning net and radar-equipped planes can operate effectively at night, in all weather. In the 1949 Hearings, General Kenney stated incorrectly that there was not in existence anywhere a radar-equipped fighter plane capable of operating at night at bomber altitudes (over 40,000 feet). He based this erroneous assumption on the fact that the Air Force had, through gross negligence, failed to develop such a plane — of critical importance to national defense — although the Navy then had one in operation, as Navy officers later testified in the same Hearings. There is every reason to assume that the Russians, too, then had one, developed with the aid of the Germans who had effective radar-equipped night-fighters in the war; and it is conceded that the Russians now have such a plane.

This makes of controlling significance General Kenney's 1949 testimony that the necessarily unescorted B-36 was then fit only for night missions (ruling out entirely any trans-Arctic mission in the nightless summer months) and that "If they get a night fighter with a search radar that can operate at 40,000 feet, the B-36 will become a tanker." The Navy then had such a plane. The Air Force now has one, as admitted by Air Force Secretary Finletter on January 29, 1951. The Russians certainly have one now. The B-36 *is* just a tanker.

From the foregoing facts alone, it is obvious that the short-range bombing missions of World War II — for instance, between Britain and Germany — can not be soundly compared with vastly longer bombing missions in any Soviet-American war. Even during the last war, moreover, the Air Force saying, "Some bombers will always get through," was misleading. It was a half-truth at best because of the unbearably high loss-rate for unescorted bombers when the Germans' use of rockets forced abandonment of daylight bomber missions, as we have seen.

When General Vandenberg employed this fallacy ("Some bombers will always get through") in the 1949 Hearings, a committee member accused him of telling "only half the truth," and brought out the crucial fact of unbearable loss-rate, citing the Air Force's own official wartime history.[3] Yet General Vandenberg continues to deal in this misleading half-truth, and in other respects to falsify the picture regarding the vulnerability of our unescorted bombers — as in his article in the *Saturday Evening Post* of February 17, ironically entitled "The Truth About Our Air Power."

In this article he asserted that the B-36 has the "ability to deliver the bomb anywhere in the world," yet made no mention of the key factors which would prevent this. In discussing the B-36, he never so much as mentioned the fighters' air-to-air rockets — equipped with "homing" devices and proximity fuses — nor even those used by the Germans in 1943 and undoubtedly improved upon by the Russians.

The General also made the shocking admission that the Air Force does not even hope — despite maximum defenses — to be able to stop over 30 per cent of Russia's bombers; and that it would not be ready to achieve even this score now, in case of attack by Russia's one-way bombers (numbering hundreds, he said) which can attack U. S. targets at any time. In other words, our Air Force leaders appear resigned to seeing seven out of ten Soviet bombers get through to destroy seven out of ten Kremlin-selected cities, atomic bomb plants, B-36 bases, ports or other targets.

This figure of 30 per cent, the General said, assumed that Russia would send 100 bombers on a single mission. This Russia could do repeatedly because it has hundreds of bombers. Yet, by his own rule, our sixty B-36s today could *not* be as effective as a single Soviet mission, even if all of them went in one raid on Russia. He admitted, moreover, that a mission of only a few Soviet bombers — half a dozen or so — could be knocked down; which means, necessarily, that he knows the B-36s in small-group missions could not get through to Russian targets even if Russia's air-defenses were as inadequate as ours under his inadequate leadership. His figure of 100 bombers in a single mission pertains to the supposedly effective cross-fire of bombers' guns; but fighters equipped with rockets will make these guns useless.

These faults in General Vandenberg's article are matched by his exaggeration — to the point of gross misrepresentation — of the difficulties that impede our establishing an adequate radar-warning network for North America. He never mentioned the key role which can be played by airborne radar.

Vandenberg and his co-leaders of the Air Force have been trapped by their own web of fallacies and falsities into admitting their own incompetence and the bankruptcy of our air defense. Their default is General Bradley's by adoption because he has joined in propagating their fallacy that "Some bombers will get through," as he stated on January 22, 1951 in testifying before a Congressional committee.

America can and should — indeed, must — have an adequate air-defense system in North America, consisting of defense-in-depth arrangement of a radar-warning network (ground stations and air-patrols) and of operating fighter fields. America's defense set-up must at least match Russia's. This can be done by employing in Alaska and Canada (with Canada's cooperation) the radar and fighter facilities to be created in future, as well as those which the Air Force now has distributed all around the world — sheer waste as far as America's genuine defense is concerned. And the cost would not be as great as that of the present waste.

After the 1949 Hearings the Committee ignored the question of the B-36's capability. In its 1950 report, it merely stated that each of the Armed Services should decide on the merit of its own weapons. It said this despite the convincing factual case presented against the

[1] "Eighth Air Force Tactical Development," 1945; as commented on in an article by Col. Dale O. Smith in AF Air University *Quarterly Review* (reprinted in *Flying*, Feb. 1949).

[2] "The Army Air Force in World War II": 1949, V. 2, p. 704.

[3] Record of Hearings, House Armed Services Committee; Oct. 1949, p. 464.