week after D Day, coming German air operations against the United Kingdom were expected to consist of attacks by both orthodox bombers and "secret weapons". The two kinds of attack might be delivered either at different times or, more probably, together.

13. Numerically the capabilities of the German bomber force could be judged with a fair degree of accuracy from our knowledge of its strength and disposition. To foresee how this potential hitting power would be used in practice was more difficult. For planning purposes we assumed that orthodox opposition to the landings in France might take the form of minor daylight attacks along the south coast before D Day, and attacks on the beaches and anchorages thereafter. Night attacks on a scale of 50 long-range-bomber sorties a night for two or three nights a week, increasing to 150 sorties a night for very short periods, seemed likely to occur during the weeks preceding D Day. Ports, concentration areas, and concentrations of shipping would be the most probable targets. Slightly heavier attacks would be possible if the enemy should decide to punctuate nights of maximum activity by comparatively long intervals of quiet.

14. Whether the German bomber force would operate on a major scale in daylight on D Day or the succeeding days was problematical. If it did, the enemy would doubtless choose the most favourable tactical conditions by attacking targets on his own side of the Channel.

15. All this was theoretical. But our estimates were based on practical experience. While our plans were going forward, the enemy came to our assistance by disclosing part of his hand. Early in 1944 the German bomber force delivered the series of night attacks on London and other towns which has been called the "baby Blitz" Thanks to the watch which we were able to keep on its movements, these attacks did not take us by surprise. The defences were ready. Although the Germans used their fastest bombers, which stayed over England only for brief periods, we were able to inflict a higher rate of casualties than the German night defences could inflict on our bomber forces during their long flights over Europe. Moreover, the navigation, target-marking, and bombing of the Germans when faced by our defences proved to be very poor. Thus the attacks were extraordinarily ineffective. After this experience, I felt confident that we should be able to deal with any attempt by the German bomber force to interfere with the concentration of the Anglo-American land, sea, and air forces in preparation for the assault.

16. The threat from "secret weapons" was harder to assess and more disturbing. By the autumn of 1943 a mass of information collected over a long period was beginning to convince even the most sceptical that the Germans were preparing novel means of air attack. When I took up my appointment in the early winter, few men in responsible positions doubted that those means included both a long-range rocket of some kind and also some form of flying missile, or pilotless aircraft. Evidence received a few weeks later made us virtually sure that certain new constructions in northern France, which we called "ski sites"* were meant for the launching of missiles of the latter kind against this country.

PART II: THE FLYING BOMB CAMPAIGN.

(a) *Appreciation of the Threat up to "D" Day and Plans to meet it.*

17. Against a flying missile launched from the ground two methods of defence were possible. We might conduct a "defensive offensive" against the places where the missiles were made or stored, the constructions required for their launching, or the means of communication between those places. Some or all of these objectives might be attacked either separately or in combination, provided that we were able to locate them. Alternatively, or in addition, we might try to render the missiles harmless once they had been launched.

18. Early in December, 1943, the Chiefs of Staff decided to pursue the first method while exploring the possibilities of the second. Accordingly, on the 5th December the Second Tactical Air Force and the American Ninth Bomber Command began a series of bombing attacks on the "ski sites". The Strategic Air Forces, in the shape of our own Bomber Command and the American Eighth Bomber Command, also contributed their quota. By the end of the year, 3,216 tons of bombs had been dropped on the sites—about the weight that fell on London in an average fortnight during the night "Blitz" of 1940-41. So far as the Air Ministry could judge, the effect of these attacks was to "neutralize" twelve sites and seriously damage another nine. But since 88 "ski sites" had been located by this time, and the existence of another 50 was suspected, the neutralization of all the sites with the bombing resources that could be spared from other tasks seemed likely to prove a long-drawn business.

19. Meanwhile, early in December the Air Commander-in-Chief, at the instance of the Air Ministry, had instructed me to study the problem of defending the country against attack by pilotless aircraft and draw up plans accordingly. By way of assistance I was given an "appreciation" which embodied what was known at the time about the missiles that the Germans were getting ready to use against us. According to this document, these missiles flew at something between 250 and 420 m.p.h. and a height which might be anything from 500 to 7,000 feet. I was to assume that an attack by two missiles an hour from each of 100 sites might begin in February, 1944.

20. These estimates of speed and height were so broad as to make detailed planning difficult; but on 20th December, in reply to a questionnaire from my staff, the Air Ministry committed themselves, with reservations, to the opinion that the missiles would probably fly at an average speed of 400 m.p.h. and a height of 7,500 feet. Later these estimates were reduced to 350 m.p.h. and 7,000 feet, and still later to 330 m.p.h. and 6,000 feet. The views of the

* They were so called because on each site stood a number of buildings shaped like a ski laid on its side. The buildings seem to have been meant to provide blast-proof shelter for the missiles while they were being stored and serviced.