defences was small, potentially we had the means of keeping the situation in hand if the scale of attack had risen.

242. On the broader issue of the extent to which the Germans were right, in the military sense, to develop their two long-range weapons and put them into operation, a number of questions naturally arise. Would several thousand fighters have been worth more to the enemy than the 20,000 flying bombs and 3,000 rockets, or thereabouts, which he aimed at England and Continental cities? Put thus, the issue is misleadingly simple; the fighters would have been no use without pilots, ground crews, bases, and supplies of aviation spirit greater than the Germans could command. If this effort had been put into the production of bombers instead, the Germans would still have been no better off: the crews and the aviation spirit would not have been forthcoming. And indeed, since by the time the most important decisions were taken the Luftwaffe had lost much of its striking power, the devotion of so much skill and manpower to the flying bomb and the A-4 is at least understandable. The former was an ingenious weapon, which we might not have overcome if we had been less well prepared; the latter a notable advance on anything that had gone before, and a source of problems with which the nations are still grappling. The sponsors of these engines of destruction may be pardoned for a certain lack of judgment if they fancied themselves on the brink of changes comparable to those which followed the rifled barrel and the machine-gun.

243. Whatever the pros and cons of the German policy which lay behind the operation of the flying bomb and the A-4 rocket, it is probable that, as the end approached, the German measures to stave off general defeat became less well co-ordinated and more involuntary. I have tried to show why I think it more than doubtful whether Hitler could have developed a decisive attack with the flying bomb and the rocket in 1944, whatever targets had been chosen. I have suggested that in fact he was confronted with the peremptory need of a sign which would show his followers that England was being attacked, and so mitigate to some degree the terror that was coming upon them. Where action is taken under forces of overwhelming compulsion there can hardly be a question of fastidious strategic judgment. None the less, in the complex and often tangled web of German strategy one important thread was missing. Though hidden at first by reason of the great number of aircraft deployed to lead off the German land campaigns, its absence became more obvious as operations went on. I refer to the German failure to think consistently in terms of air power. The Luftwaffe was allowed to run down, and no big enough measures were set in train for its continuous replenishment, especially in respect of competent bomber crews. The result of this neglect was a progressive loss of air superiority, at first over the occupied territories and finally over the " living space " of Germany.

244. If, as Koller had said, the flying bomb and the A-4 rocket were to be regarded as a substitute for the strategic bomber force, the cardinal mistake was to suppose that these novel weapons could be used effectively in the absence of air superiority, which alone could have provided reasonable immunity from air attack. Only air superiority could ensure that the places where the missiles were stored, serviced, and fired, the crews who fired them, and the vehicles which carried them by road and rail would not be subject to systematic interference.

245. By the time the flying bomb and rocket campaigns were got under way, the Allies had gained a high degree of air superiority over all the areas from which the weapons could be fired. Hence we were in a position to conduct a counter-offensive at will, and without serious hindrance from enemy aircraft, wherever targets might present themselves and whenever the scale of attack by the Germans was sufficient to warrant the diversion of Allied bombers from their main task. Sometimes—as with the rail interdiction programme of the tactical air forces—operations conceived with the main task in view served a dual purpose, and no diversion was involved.

246. Moreover, this vital condition of air superiority, for which we had fought without respite since the Battle of Britain, enabled us constantly to improve the system of air defence whose application to new threats I have endeavoured to describe. Because we had air superiority we found ourselves free to adapt the system to novel circumstances and keep it in action day and night, with scarcely a rap from the German bombers not an hour's flying away.

247. The problems of air defence which have been described will not remain static. They may recur in new forms in the future. The scientific advances which the Germans used so spectacularly, if unsuccessfully, gave us a foretaste of hazards against which it is our business to provide. As science goes forward, and fresh discoveries lead to changes in the apparatus and methods of air defence, fertility in research and skill in engineering will provide better tools and weapons; but these are only raw materials of progress. What we need to do, above all, is to give rein to the qualities of mind and imagination which can take the growing mass of technical knowledge and mould what it brings forth to fit the shape of things to come.

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