

The Enemy Objective Unit

Waging Economic Warfare From London

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This article is based on an essay presented on 11 July 1991 at an OSS symposium held at the National Archives. The essay draws upon the author's unpublished history of the Enemy Objectives Unit (EOU), "Economic Outpost with Economic Warfare Division," Vol. 5, War Diary of the OSS London: The Enemy Objectives Unit To April 30, 1945, located in the National Archives in Washington, as well as on his Pre-Invasion Bombing Strategy: General Eisenhower's Decision of March 25, 1944, published in 1981 by the University of Texas Press.

These recollections are confined narrowly to the EOU, which was formally part of the Economic Warfare Division of the American Embassy and housed in 40 Berkeley Square. But its door was barred to all but the American Ambassador and a few designated Air Force officers. Of the 15 professionals who served in EOU at one time or another over its 32 months of active life, all were from OSS, except two who came from the Board of Economic Warfare.

EOU was the child of Air Corps Col. Richard D'Oyly Hughes. He originally was a British Army officer who followed the love of his life from India's North-West Frontier to St. Louis, where he became an American citizen in the early 1930s. Dick Hughes was one of those selfless men of high intelligence, integrity, and dedication who play important roles in great enterprises but, operating at a middle level of authority, leave little trace in the formal records. Chief planner for the American Air Forces in Europe, his unpressed uniform bedecked with distinguished British decorations, he became a major figure in the Allied effort.

In 1942, Hughes found himself in London, wholly dependent on British sources of intelligence, without an independent staff capable of evaluating the flow

of material on which planning had to be based. He thought this was wrong. He induced Ambassador Winant and General Eisenhower to request that appropriately trained civilians be sent to London to work for him, but formally within the Embassy. The first contingent—Chandler Morse, the unit's chief; Roselene Honerkamp, its secretary; and myself—arrived in London on 13 September 1942. We had made a languid Sikorsky flying-boat journey from New York to Bottwood Bay to Shannon, and then on to London in a plywood de Havilland.

The previous experience of those who served EOU and its outposts converged in a quite particular way with Hughes's intellectual biases. As a professional product of Wellington and Sandhurst, he had long been trained in the principles of concentration of effort at the enemy's most vulnerable point and of prompt and maximum followthrough when a breakthrough was achieved. The members of EOU were, mainly, trained as economists, reflecting the assumption that the broad objective of the strategic bombing offensive was to weaken the German war economy. Our task was to develop and apply criteria for the selection of one target system versus another, one target within a system versus another, and, if the target were large enough and bombing precise enough, one aiming point versus another. When EOU arrived in London, the intellectual level of development of these criteria was quite primitive. To put no fine point upon it, the US had committed itself to a massive daylight precision-bombing program without developing the doctrine and techniques of target selection or the intelligence required to underpin the exercise or without perceiving initially what it would require to conduct precision-bombing operations against the opposition of the German single-engined fighter force.

A Doctrine Emerges

Hughes took a little time to size up the small but over-active young crew he had evoked from Washington at long distance—a bit like a colonel in the field trying to figure out a batch of lieutenants sent from headquarters. He initially put EOU to work on a narrowly focussed and painstaking task: aiming-point reports. These were analyses of particular German industrial plants or installations designed to establish the most vulnerable point of attack. The aiming-point reports were an invaluable education requiring, among other things, visits to the nearest equivalent plants in Britain. They also required exploitation of virtually all the intelligence London could provide about the plant itself, the economic sector of which it was a part, and the role of that sector in the German war effort.

Near the end of 1942, after producing some 285 aiming-point reports, Hughes unleashed EOU on the principles and practice of target selection. In the doctrine we evolved, we sought target systems where the destruction of the minimum number of targets would have the greatest, most prompt, and most long-lasting direct military effect on the battlefield. Each of the modifiers carried weight. One had to ask, in assessing the results of an attack, how large its effect would be within its own sector of the economy or military system; how quickly would the effect be felt in frontline strength; how long the effect would last; and what its direct military, as opposed to economic, consequences would be. The application of these criteria was serious, rigorous intellectual business. In part, it required taking fully into account the extent to which the military effect of an attack could be cushioned by the Germans by diverting civilian output or services to military purposes or buying time for repair by drawing down stocks of finished products in the pipeline. In all this, our knowledge as economists of the structure of production, buttressed by what we had learned from the aiming-point reports, converged with the classic military principles Hughes and his best senior colleagues brought to the task.

The EOU view was, then, a doctrine of warfare, not of economics or politics.

Once EOU developed its doctrine and as D-Day approached, a good proportion of its personnel was shifted to what was known as Operation Octopus to assist (or, as some thought, subvert) the 21st and 12th Army Groups, the Allied Expeditionary Air Force, G-2 SHAEF, and the British Air Ministry. Aside from its umbilical ties to the 8th and 15th Air Forces, EOU probably had its greatest operational impact through Operation Octopus. Its mode of operation violated every textbook rule of administration. Located for almost two years in British air intelligence, for example, I was simultaneously in the chains of command of General Donovan, General Spaatz, Air-Vice Marshal Inglis, and Ambassador Winant. It made good sense at the time, however, and it worked quite well.

Three Bureaucratic Battles

The doctrine which emerged from the interplay of EOU, Hughes, and the top US Air Corps command was not unchallenged; war is not exactly a theoretical debate in a learned journal. There were three critical intervals of head-on, high-level policy conflict involving, as always in public life, clashes of personality, vested interest, and unforeseen events, as well as doctrine. EOU played a role in all three bureaucratic battles, which, quite literally, determined the shape of the air war in Europe.

The first came in the second half of 1943. With great courage, Gen. Frederick L. Anderson, chief of Bomber Command of the 8th Air Force, took the bold initiative of attacking aircraft production, then concentrated in central Germany, before long-range fighters were available to protect the bombers. The unexpected attacks began in July. Under forced draft, German single-engined fighter production at well-known plants—expanding before our eyes in reconnaissance photos—had risen from 381 in January to 1,050 in July; and first-line fighter strength rose in proportion.¹ Allied air supremacy on D-Day was clearly endangered if the German expansion plan was permitted to come to fruition. The American attacks forced the Germans to disperse their production, and by December production was only 560. But US bomber losses in the summer and autumn were heavy and generated much criticism in Washington and London.

British supporters of area bombings of cities thought the time was thus ripe for a full-court press. They argued that a decisive Wagnerian crisis in German morale could be brought about if the US bombers would abandon daylight bombing and join the RAF in night attacks. Those holding this view often argued that it was the break in German morale that caused capitulation in November 1918.

With a large flow of long-range fighters in sight, the American military establishment was not about to abandon its deeply rooted commitment to daylight precision operations. EOU played its part in the defense of American doctrine by asserting that the German acceptance of defeat in 1918 was based on the situation in the field. In a widely circulated memorandum I sent from the British Air Ministry on 14 November 1943 to an influential advocate of area bombing, I argued that

collapse will come this time also from the top, and as a result of the military and military supply situation literally defined. I see no evidence or reason to believe that area bombing, whatever its great virtues as a generalized drain on the structure of Germany and its military potential, is capable of precipitating a decisive crisis.

The issue was settled, as often in public policy, by an event, not an argument. In the week of 20 February 1944, the entire US bomber force, conforming to a long-laid plan, was dispatched to attack German aircraft production from one end of Europe to the other. It was estimated that about 100 US bombers and crews would be lost (the number lost was only 22). The weather miraculously held clear until the 25th. General Anderson, pursuing basic military doctrine, and despite the exhaustion of the crews and protests from the bomb division commanders, exploited the breakthrough relentlessly until the winter weather closed in. The German single-engined fighter force never recovered from its unlikely defeat by the American long-range bombers. This was the week that, in effect, a mature US Air Force emerged.

From the perspective of those immediately engaged, the big week in February 1944 was Murphy's Law in reverse or intervention by higher authority. But not atypically, success led directly to more trouble: the second and third great conflicts over bombing policy.

Both related to the appropriate use of airpower before D-Day and in the wake of the Allied landings. Both involved intense debate in which, at the bureaucratic level, General Spaatz was squared off against Eisenhower's deputy, Air Chief Marshal Tedder and part of the RAF. At the intellectual level, EOU was squared off against Tedder's one-man brain trust, Solly Zuckerman, a scholar of the sexual and social life of apes; under the curious but not untypical imperatives of war, he became an expert on the physical effects of bombing which he applied in the Mediterranean, and then he became a bombing strategist. There are Americans (and some British) who to the end of their days regarded (or will regard) the last year of the struggle in Europe as a war against Solly Zuckerman rather than Adolf Hitler.

Stated with reasonable objectivity, the first controversy was about bombing policy before D-Day. Even before the big week in February had ended, Hughes and EOU were at work on a plan to exploit air supremacy over Germany. A plan to bomb German oil production was drawn up, approved by Spaatz as early as 5 March, and went forward to Eisenhower and Tedder. The judgment underlying the plan was that the use of strategic bombing to reduce oil supplies radically was the optimum way to lower the fighting capability of the German ground and air forces. Meanwhile, Zuckerman, basing his judgment on his highly debatable view of lessons of the air war in the Mediterranean, persuaded Tedder to support concentrated attacks on marshalling yards, postponing the whole question of oil until after D-Day.

Spaatz took the view that attacks on marshalling yards would have diffuse, generalized effects but would not interdict military supplies because the minimum essential lines could be repaired overnight and because the Germans would not engage their beleaguered fighter force to defend marshalling yards. Thus, his primary and overriding responsibility of Allied air supremacy on D-Day would be at risk.

The battle was promptly joined between Spaatz and Tedder and between their passionate intellectual spear carriers. The crisis and what proved to be interim resolution came at a historic meeting on 25 March 1944, chaired by Air Chief Marshal Portal, representing the combined Chiefs of Staff. But the

decisive voice was Eisenhower's. He decided in favor of Tedder and marshalling yards on the grounds that the latter would provide some immediate help in the landings and their aftermath, whereas the military effects of the oil attacks might be delayed.

But that was not the end of the matter. On 5 April, the 15th Air Force successfully attacked Ploesti, exploiting a comic mistake by SHAEF Headquarters. To block oil attacks in the Mediterranean theater as well as Western Europe, SHAEF confined the Mediterranean air forces to marshalling-yard targets, although the connection with the Normandy landings of the marshalling yards of Southern Europe was a bit obscure. But SHAEF failed to omit Ploesti, which was on the standard marshalling-yard list because there were small marshalling yards outside each refinery. The error was noted and exploited. The attack—in effect, on the refineries—was successful, and significant immediate effects on the German oil supply could be detected.

On 12 May, the American bombers in Britain attacked a substantial group of oil targets in central Germany, including the most important at Leuna. Eisenhower had given Spaatz two pre-D-Day good-weather days on oil when the latter threatened to resign. The Germans were not defending the marshalling yards, and their fighter force was expanding again. Spaatz felt he might not be able to fulfill his overriding D-Day responsibility of assuring air supremacy. Ultraintelligence promptly and unambiguously provided evidence of the Germans' panic as they elevated the defense of their oil production to top priority, even ranking above factories producing single-engined fighters. The evidence was sufficient to convince Tedder that the oil attacks should be immediately pursued. (What Tedder actually said in response to the Ultra reports was: "I guess we'll have to give the customer what he wants.")

Almost two valuable months were lost in reversing Eisenhower's March decision. When German aircraft production began to rise in dispersed factories later in 1944, however, there was insufficient aircraft fuel to train the pilots and to fly the planes. From a peak of 180,000-metric-tons production in March 1944, before the insubordinate attack on Ploesti, aircraft-fuel production was down to an incredible 10,000 tons by September. Overall, oil supplies were reduced from 981,000 to 281,000 tons.²

The third battle was over the optimum tactical targets in support of D-Day. Tedder and Zuckerman argued that, again, marshalling yards would suffice. EOU argued for isolating the Normandy battlefield by taking out three rings of bridges, above all the Seine-Loire complex. The weight of the American Air Force and, ultimately, Bradley's and Montgomery's ground force headquarters was thrown behind the bridge concept. The technical argument hinged on how many tons of bombs were required to render a bridge unusable for, say, three weeks. Zuckerman said 1,200 tons per bridge (600 to 1,200 sorties). On the basis of Mediterranean experience, EOU thought less than one-third that tonnage would suffice. Again, the issue was settled by a somewhat adventitious event.

On a predicted bad-weather day in Germany with good weather predicted in France, the Americans proposed a test with some 3,000 aircraft broken into flights of 60. With that force, we could have attacked virtually every bridge on our three-tier list. On getting word of the proposed enterprise, the marshalling-yard advocates went ballistic, as current jargon has it, and the massive test was called off. By way of compromise, and after some extraordinary shenanigans involving 10 Downing Street, (where Churchill and Lord Cherwell maintained a strong dislike of the marshalling-yard strategy), experimental attacks were permitted on 7 May 1944 on six Seine bridges by a total of fewer than 50 P-47 fighter-bombers each carrying two 1,000-pound bombs. There was nothing in prior experience to indicate they would do the bridges any harm. As it was, three bridges were badly damaged and a fourth (at Vernon) was dropped into the Seine by six P-47s with accuracy not to be seen again until the Persian Gulf war. The extraordinary success of the experiment was a matter of luck, except that the fighter-bomber group chosen for the experiment had been practicing low-level attacks on bridges in Texas, a fact not widely circulated before the event.

The postattack photograph of the submerged Vernon bridge was on every general officer's desk the next morning. Tedder capitulated in the face of hard but not quite statistically reputable evidence, and the Seine-Loire bridge attacks were approved. By D-Day, the interdiction of the Seine was complete,

and the Germans' reinforcement of their armies in Normandy from the Calais area and elsewhere was significantly impeded. After being ferried across the Seine, German forces were fed into the battle piecemeal and brutally harassed by virtually unimpeded Allied fighters and fighter-bombers.

Thus, between 7 and 12 May, the American air forces won back a good deal of what they had lost from Vernon to Leuna by Eisenhower's decision of 25 February.

EOU in Perspective

Even on this authentically nostalgic occasion, I would underline with all the emphasis I can muster that the role of EOU should not be overemphasized. We contributed a useful piece to an enormous mosaic of Allied effort.

Looking back, I can see again the faces of Hughes, Anderson, and Spaatz, as well as the key figures in British intelligence, on whom the American effort was based—as able, imaginative, and dedicated a group of men and women as was ever assembled. They backed the precision-bombing effort not only as good allies but also because the intelligence requirements were more exacting and challenging than those for the area bombing of cities or marshalling yards, where all that was really required was an automobile road map. Moreover, there was Portal's bombing-policy staff led by Air Commodore Sidney Bufton, all young men with one or more tours of operations, who supported the American precision-bombing effort unswervingly against strong, nationalistic appeals.

In addition, there was Thomas Hitchcock, a polo-playing American air attache in London, who made a critical contribution to the improbable conversion of the Mustang into a long-range fighter, which won virtually total air supremacy over Germany, thereby validating the American commitment to precision bombing. That validation and the air supremacy it provided was essential to the Normandy landings, to the consolidation of the bridgehead, and to the attacks on oil which virtually grounded the German Air Force and radically reduced the mobility of German ground forces on the Western and Eastern Fronts in the last year of the war.

Gen. Adolf Galland, Chief of the German fighter force, summed up an extended analysis:

The raids of the Allied air fleets on the German petrol supply installations were the most important of the combined factors which brought about the collapse of Germany.

Air Chief Marshal Sir Arthur Harris, Commander of the RAF bomber force, opposed the oil offensive and referred to its advocates, including EOU, as "the oily boys." Against his will, the RAF was forced into the oil offensive and played an effective role. Harris's final word is a bit grudging, but on the whole it was a gracious capitulation:

. . . I still do not think it was reasonable at that time, to expect that the (oil) campaign would succeed: what the Allied strategists did was to bet on an outsider, and it happened to win the race.

But, above all, there were the aircrews who flew up from the peaceful British countryside, assembled, and, in a matter of minutes, found themselves for much of the air war plunged into an inferno of antiaircraft fire and lethal air combat—some dying or going into captivity; others limping home with dead or wounded aboard; all undergoing traumatic strain carried gracefully or otherwise for the rest of their lives.

The following is from the commanding colonel's austere after-battle report on the attack on the bridge at Vernon, the photograph of which settled an important bureaucratic battle:

While the force orbited at 10,000 feet above the break in the overcast, the first man initiated the attack on the target. He dove for the deck south of Vernon, leveled out over the town, and drove straight for north abutment at deck level and full throttle. His flight path was about 25 degrees off axis of bridge and point of aim was intersecting of bridge and foundation supporting north end of the steel span. The bombs were released at pointblank range, and he pulled up over the bridge, breaking left with evasive maneuvers on the deck. During the attack, the bombers were the target of the most intense light flak they have yet encountered.

I do not believe that the members of EOU, caught up in exciting headquarter's business, ever forgot for long those for whom we were ultimately working. After all, they were of our generation.

Some Final Observations

EOU will always be associated with the name of Charles Kindleberger as well as Richard Hughes. Kindleberger took over from Morse as chief of the unit in February 1943. He left in May 1944, ultimately to join General Bradley's staff. Like the rest of us engaged in Operation Octopus, he kept in close touch with 40 Berkeley Square. His character and style suffused the outfit to the end. His rule in exercising authority was: "tough upwards, soft downwards." Despite our modest military ranks, we spoke our minds to higher authority. We all learned that one could debate quite amicably with general officers if advocacy was interspersed with a sufficient number of "Sirs." But beneath the band-of-brothers spirit which marked EOU, and the texture of humor which suffused virtually all talk in the family, Charlie quietly exercised discretion and compassion on behalf of his subordinates, when required. Above all, he is, as I once wrote, a man of "fierce integrity," and he insisted on a self-critical integrity among us. This is perhaps best illustrated by his insistence in the autumn of 1944, after a sustained period of advocacy, that we pause, draw back, and reexamine skeptically our logic and the factual evidence for the policy positions we held.

What, finally, can one say of the longer run impact of EOU and of OSS? I would make here only three casual concluding observations.

First, it was an irreversible experience of public service that helped shape the subsequent lives of its members. As nearly as I can calculate, virtually all of us subsequently spent some time in government; in this, we are typical of our generation.

Second, a lesson was driven home which affected those of us who were economists, as most of us were. We learned that theories, no matter how elegant or attractive, had to be disciplined forcefully against the facts before a policy decision is reached.

I suspect this bias helped insulate us from the pathological obsession of post-1945 mainstream economics, where mathematical models, inadequately tested, are tossed about as if their internal consistency, under arbitrary assumptions, rendered them useful approximations of reality.

Finally, EOU contributed in a small way to rectifying in the long run the situation Franklin Roosevelt confronted as war approached in mid-1941, a situation which led him to evoke Bill Donovan as *deus ex machina*. The situation was that American military intelligence, especially G-2, was grossly inadequate; that the military services put overriding priority on operational virtuosity and consigned their least competent permanent officers to intelligence; and that there was no way the situation could be rapidly changed from the top. As on other occasions, Roosevelt brought into play the principle of competition—not Adam Smith's Hidden Hand but the not-so-Hidden Foot of Donovan and his merry men and women.³

After deciding OSS was irrepressible, the Army turned to the best east coast law offices to remake G-2. The Navy, already quite competent at assembling order-of-battle data, gradually drew on similar intellectual resources to build up its deficient analytic capabilities.

Even more important, the kind of able military men who rose to command under the pressure of a great and initially desperate war learned that they needed intellectuals and that physical and social scientists and all manner of bright, enterprising civilians could work well in a military setting where innovation in thought and hardware was essential for survival. Thus, the link was forged which yielded the CIA, RAND, the AEC, and all the other present-day institutionalized ties between intellectual life and national security.

It is for new generations of scholars, free of the memories we cherish, to study coolly the records, debate, and decide. It may be, however, that Bill Donovan's OSS will be viewed as part of the wide-ranging process that brought to the tasks of national security the linkages forged between American intellectual life and the economy by the land-grant colleges which grew out of the Morrill Act of 1862.

NOTES

1. The source for these official German figures is US Strategic Bombing Survey, Overall Economic Effects Division. "The Effects of Strategic Bombing on the German War Economy," 31 October 1945, p. 156. The German single-engined fighter production plan, which British intelligence acquired early in 1943, called for a levelling off at about 2,000 per month at the end of 1943.
2. US Strategic Bomb Survey, *ibid.*, table 41, p. 179, from official German sources.
3. I owe the concept of the Hidden Foot to fellow economist Burton Klein, *Prices, Wages, and Business Cycles: A Dynamic Theory*. (Elmsford, New York: Pergammon Press, 1984)