

## The Comet Affair

Why the cold war forced the British government to choose between keeping a friend and arming an enemy.

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ON MAY 3, 1952, THE COOL QUIET OF AN ENGLISH MORNING WAS BROKEN BY FOUR JET ENGINES screaming to life. A brand-new airliner was about to make history, inaugurating the world's first commercial jet service. sleek, fast, and wholly without peer, the comet, owned by british overseas airways corporation, held 36 business executives, luxury travelers, and distinguished guests of the airline and the airplane manufacturer, de havilland aircraft. the comet's malden voyage: a multi-stop journey from england to south africa.

It was a flight that signaled a new age of travel. The Comet's four Rolls-Royce Ghost jet engines, each of which provided 5,000 pounds of thrust, nearly halved the time needed to fly from one end of the British Empire to the other, reducing travel time from London to Johannesburg from 36 hours to 23. With speeds like that, BOAC's chairman, Sir Thomas Miles, boasted, "New Yorkers will be able to take a swim in Bermuda and dry themselves at home."

Unprecedented speed was only half the Comet's allure. The aircraft's engines, advanced aerodynamic design, and the relatively new technology of cabin pressurization enabled it to climb high above inclement weather—nearly twice as high as most airliners of the day—and cruise through skies of unprecedented calm. When the first group of voyagers stepped onto Johannesburg's Palmieterfontein Field—surrounded by 20,000 spectators lined up to witness the arrival—one young woman questioned by reporters paid the airplane the ultimate compliment: During the flight, she had fallen asleep.

The following year, BOAC began to equip a second generation of Comets with Avon engines. Unlike the Ghosts, which used centrifugal flow, the Rolls-Royce Avon employed an axial-flow design, which shot air directly through the engine, a more efficient arrangement. Airlines from around the world lined up to purchase the Avon-powered craft.

British policymakers were hopeful that Comet sales would help give the nation the economic boost it needed in the years following World War II. Duncan Sandy, the United Kingdom's supply minister, wrote to Prime Minister Winston Churchill: "On whether we grasp this opportunity [for extensive Comet sales] and so establish firmly an industry of the utmost strategic and economic importance, our future as a great nation may to no small extent depend."

That goal would not prove easily achieved. The United States objected to the sales, citing concerns that lax airline security in foreign nations offered innumerable opportunities for Communist agents to steal the technological secrets of the Avon. And with Avon-like engines

affixed to their wings, Soviet airplanes might gain the range and the payload capacity to launch, for the first time, atomic strikes against the United States.

Theoretically, propeller-driven Soviet bombers operating from secret airfields far above the Arctic Circle could already hit most major U.S. targets (at least during the six months of the year the airfields were not iced in). But those lumbering airplanes would be pushed to the limit of their one-way range; they didn't pose nearly as big a threat as long-range jet bombers capable of outflying U.S. defenses and returning safely home.

The United States had another reason to fear British technology ending up in Soviet aircraft. It had happened before.

### **"How Mad We Are!"**

Pressed with mounting debts at the end of World War II, Prime Minister Clement Attlee's government had offered to sell any Royal Air Force airplane to any nation with the cash.

The British Air Ministry had reassured Attlee that it "did not worry about selling its best warplanes abroad." The technical prowess of British manufacturers was so great that RAF warplanes would surely always outpace Soviet Bloc designs, and indeed, Rolls-Royce was already working on engines far more powerful than the Nene and Derwent. According to the British Air Ministry, "Rolls-Royce are confident that they will be able to keep several steps ahead of any country" to whom they sold an engine. From both military and commercial perspectives, Britain felt secure.

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Then the Soviets came calling.

It was a proposition no one expected. In the spring of 1946, without even so much as an informal inquiry beforehand, Moscow sent an order for 20 Nene and Derwent engines. The order came accompanied by a threat: Failure to sell could further harm deteriorating East-West relations, and dash any hope of the British purchasing much-needed Soviet timber. Furthermore, the Russians had a long memory for slights.

Attlee's foreign secretary, Ernest Bevin, warned Attlee that the Soviets might be producing copies of the British engines in as little as three to five years; at one meeting he burst out: "How mad we are!" for even considering the sale.

He had a point: The Soviets had already proved themselves skilled and swift reverse-engineers. In 1944, the Soviets had taken three U.S. B-29s that had been "interned" in Siberia after the pilots had made emergency landings there in World War II's final months (see "Made in the U.S.S.R.," Feb./Mar. 2001); in three years the Soviets had broken the bombers apart piece by piece and produced copies of them, right down to the extra ashtrays and chewing gum containers U.S. pilots had rigged up in the cockpit.

Despite all the misgivings, Attlee felt he had to approve the Nene sales. By the summer of 1947, more than 50 engines had arrived in Soviet ports.

U.S. news media were quick to spread the startling news. "An outrage," one Washington newspaper exclaimed, while another editorialized that "few stories are of greater importance to the American public" than Britain's role in the deaths of American pilots. The news reports sent "all hell bucking loose on Capitol Hill," observed Under Secretary of State Robert Lovett. Air Force Secretary Stuart Symington brooded: "The British government has placed economic factors ahead of any present or future military implications which might be involved," a decision that "might have rather grave implications respecting the security of the United States." Lovett agreed. Selling advanced engines to the Soviets "was not only unwise but unnecessary," he roared at Lord Iverchapel, Britain's ambassador to the United States, but "also showed a surprising lack of cooperation" in the fight against global Communism. Any similar sale in the future "might have very far-reaching results in other matters affecting the relationship of our two governments." In other words: If Britain ever made such a move again, it might soon find itself dangerously alone.

Attlee's decision soon had deadly consequences. Just 18 months after receiving their first shipment of Nene engines, Soviet technicians had produced and installed exact copies into the first MiG-15s, thus producing the Soviets' first world-class jet fighter. Six months later, the Soviets were producing whole squadrons of MiG-15s, powered by Soviet copies of the Nene. By 1950, the year the Korean War began, the MiG-15 fleet numbered in the hundreds, and Soviet factories produced over 200 more each month.

The MiGs soon came to dominate Korean skies. "When MiGs break through our fighter screen," the New York Times military analyst Hanson Baldwin told readers, "a B-29 [is] shot down or damaged nearly every time." In the official Air Force history *The United States Air Force in Korea, 1950–1953*, author Robert Futrell dourly concluded, "the Soviet fighter's performance rendered obsolete every U.S. plane in the Far East. The Russian fighter outclassed the [U.S. Air Force's piston-driven] Mustang, whose pilots had no hope for survival when attacked by a MiG except to keep turning inside, to hit the deck, and to head for home as fast as possible." The MiG bested every other propeller-driven U.S. fighter brought to battle in the war's first months, and it went on to outpace America's first-generation jets, the F-80 and F-84, as well. In level flight the MiG was fully 100 mph faster than the F-80C; recalls Futrell: "It could climb away from the old Shooting Star as if it were anchored in the sky."

Part of the success was due to Soviet talent: The engine copies the Soviets had made were "a very marked improvement of the [Nene] jet engine that was sold to the Russians several years ago," U.S. Air Force General Hoyt Vandenberg admitted to a secret Senate hearing in 1951, adding that they were "superior to any jet engine we have today." Only the U.S. F-86 had any chance of matching the MiG in speed and maneuverability. Today, aviation historians continue to argue over which was better: the F-86 or the MiG-15. The former was faster in level flight, the latter better at high altitudes. The Soviet airplane employed a powerful

cannon; the U.S. craft, six rapid-fire machine guns. Most historians agree that the MiG lacked an adequate gunsight.

Even so, Sabre pilots were almost invariably outnumbered. "I personally counted more than 120 MiGs high above me on one flight," recalls Robinson Risner, who bagged eight MiGs during his combat tour. "This was while we had no more than 75 F-86s for the whole of Korea."

Not only were U.S. fliers outnumbered by MiGs, they were frequently outmatched as well, especially at high altitudes (see "To Snatch a Sabre," June/July 2003). The Soviet airplanes were designed for speed and for swooping down on enemy bomber formations from well above 40,000 feet. "We couldn't touch you if you wanted to get high enough, and you could outrun us," Risner told a Soviet ace nearly 30 years after the war. "But if we got you below 20,000 feet, we'd eat your lunch."

Comparisons are difficult to come to a conclusion about, as the two aircraft were designed for distinctly different purposes: the Soviet as a bomber-interceptor, the American as a dogfighter. "I could make ace in a day flying a MiG just by picking off stragglers trying to come and get me" at 50,000 feet, claims Colonel Stephen Bettinger, a Sabre pilot who did make ace during the war.

In the end, it may well have been better training and a stronger command that helped the U.S. pilots achieve a higher kill ratio.

One thing remains certain: The Soviet fighter would never have had a realistic chance of gaining air superiority over Korea had it not first gotten a British-built engine.

The Allure of the Avon

The speed with which the Soviets had copied the U.S. B-29s and the British Nenes naturally made the U.S. military worry: If Comets were now to be sold to other nations, the aircraft's Avon engines might eventually end up in Soviet hands too, and be duplicated.

Nonetheless, the possibility did little to temper Britain's enthusiasm for marketing the Comet. "Provided the aircraft are not sold to a Communist country, we are simply not concerned who the buyer is," the Foreign Office's Philip de Zulueta told a colleague. British jets had an enormous lead over their closest rival—the first U.S. jetliners were not expected to carry passengers until 1957 at the earliest. No one in Britain wanted to give up that advantage without a fight.

Charged by Churchill with finding a solution to this delicate problem, a Cabinet committee "weighed the security risk against the country's economic advantage and need" and "concluded that safeguards could be imposed which would reduce the security risk sufficiently to warrant the sales of these engines or aircraft, thus enabling us to reap the economic advantages of our technical lead." The safeguards included five major points:

- No airplane powered by, or carrying, a Comet engine could ever fly to, or over, Communist-held territory.
- All scheduled maintenance work, for the engine's first 18 months of service, must be carried out by British technicians, and on British territory.
- All engine maintenance staff employed overseas must be screened for security.
- All spare engines to be sent abroad must be shipped in British vessels.
- Any spare engines held outside the United Kingdom must be maintained in a British territory, and can be flown to foreign territory only when essential. When housed in a foreign country, the engine must be contained in a building owned and supervised by the British.

Officials initially considered mandating that spare engines held overseas be chain-locked to the floor, the key held only by a British embassy official, but they concluded that this requirement was excessive.

But the safeguards weren't enough for Washington policymakers, who balked at placing U.S. national security in the hands of a BOAC or Air France. Airlines, by their nature, cared more about profits than precautions. U.S. diplomats declared that Britain had a duty to protect U.S. security, especially after the Nene transaction. President Dwight Eisenhower's aides buttressed their arguments by citing an obscure 1949 British-U.S. accord that was called the Burns-Templer Agreement; according to its terms, because Avon technology had been developed partly through U.S. assistance and cooperation, the United States deserved a say in whether it should be sold.

"It is virtually certain that the U.S. would not agree to our planned exports of Comets to foreign countries," Sir Harold Alexander, the Ministry of Defence, warned Churchill. "Their agreement would be necessary before we could put these aircraft into service on our own British airlines!" Another diplomat railed: "To accept American ideas about security of advanced jet engines would cripple our aircraft industry."

The U.S. aircraft industry, on the other hand, could actually profit from the restrictions, providing firms such as Boeing and Douglas time to catch up to de Havilland. Neither U.S. company had yet even to fly a prototype jet airliner. In a brief moment of candor, John C. Elliott, a U.S. diplomat in charge of negotiating the Comet affair, chatting with the British ambassador, confided that his negotiators were "under pressure from their own aircraft industry" to restrict Britain's Comet sales.

The pressure wasn't enough. Churchill's cabinet unanimously rejected the idea of letting the United States restrict Comet sales. Anthony Eden, Britain's foreign secretary and future prime minister, explained: "Our economic needs differ from theirs [the Americans] and must be given full weight. We cannot afford to refrain from earning foreign currency, provided adequate security arrangements are made."

Still, the decision hadn't been easy. Britain worried that seeming uninterested in U.S. security could destroy Anglo-American cooperation, the bonds of language, kinship, and mutual security often termed the "Special Relationship" upon which Britain's foreign policy

rested. The United States and the United Kingdom had been the closest of allies through two world wars, and each expected much of the other.

The British decided to defend their decision by going on the counterattack. They had learned that the Pentagon was planning to sell advanced fighters—most likely F-86s—with axial-flow engines, similar to the Avon, to air forces throughout western Europe. London charged that these NATO militaries were rife with Communist sympathizers. Indeed, according to a series of British Treasury Office documents declassified in 1999, analysts believed that if France's military got these U.S. aircraft, there would be "a definite risk" of the Soviets' acquiring an engine, and that giving Avons to Italy or Denmark would "in our opinion lead almost inevitably to compromise of the engines to the Russians." One British analyst even said that it would be safer to land a British Comet in Moscow's Red Square than to give such engines to the Italian air force.

If Washington was willing to jeopardize its own security this way, the British declared, then surely it had no grounds for objecting to the British selling Comets to other nations.

In a nation dominated by the cold war and McCarthyism, such arguments failed to impress. The British were selling Comets merely for profit, the Americans retorted. The Pentagon was selling aircraft to protect the entire free world.

### **The Soviets' Big Surprise**

In 1954, London decided to proceed with its Comet export plans. The U.S. state department prepared the Congress for another round of startling revelations: Britain was once more about to sell airplanes that could eventually aid the enemy. U.S. officials were hard at work putting the finishing touches on their damning brief when, in an instant, the entire debate changed forever.

The report that filtered into London was brief but clear. On January 10, 1954, a BOAC Comet had exploded only minutes after departing from Rome. Of the 35 passengers and crew members on board, none had survived. No explanation was available. The same thing had happened to a Comet flight out of Calcutta the previous year: Though the airplane reported no difficulties beforehand, it suddenly burst into a fireball, and 43 lost their lives. Less than four months after the Rome accident, a third Comet exploded, again only minutes after takeoff. This time 21 died.

After the third explosion, London's Air Ministry immediately ordered Comets throughout the world grounded. Years of investigations (entailing raising one of the broken airplanes from the ocean floor) in time proved an unexpected culprit: metal fatigue, combined with problems in the new technology of cabin pressurization. Years of work would be needed to solve these complex, unforeseen problems—years that saw Britain's lead over its U.S. rivals disappear. So too did America's sense of security from aerial attack. In the midst of Moscow's annual military parade before thousands packed into Red Square on May Day 1954, a large and imposing shape appeared suddenly in the sky. Soon it was followed by four more, then another

flight. Then nearly a dozen of the new mammoth airplanes were circling high above, their four engines clearly visible to the eager crowd below. Concealed amid the masses were dozens of British and U.S. spies with hidden cameras.

Within days the film smuggled out of the Soviet Union revealed a chilling truth: Not only were the new aircraft's engines axial flow, they also appeared to be far more powerful than the Comet 2's Avon. Such engines could easily propel a bomb-laden airplane to the heartland of America. The Soviets had not needed British or U.S. engines to produce their own after all.