

else: transports, airborne early warning, seaplanes, trainers, and even the Concorde (Concorde SST equivalent) are covered. Unfortunately, as he says, these are “far less interesting” to many readers than the armed aircraft, “but [they] are just as crucial” to any airpower application. There are no concluding chapters that do any analysis or summarization.

Overall, this book is an excellent survey of Soviet Air Force and Naval Aviation equipment during the Cold War. But, it is just that—a survey. The photo coverage is very good. Many of the types are shown at the great Air Force Museum at Monino, the home of the last types of many of these aircraft. There are no three-view drawings of the aircraft, or performance tables, or other sources of detailed information.

For someone not all that familiar with Soviet aviation during the Cold War, this is really a great place to start. A reader gets the overall picture and then can delve into the *Wikipedia* articles on the individual aircraft types or any of dozens of books that go into more detail about the overall Soviet Air Force or the specific planes.

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**His Majesty’s Airship: The Life and Tragic Death of the World’s Largest Flying Machine.** By S.C. Gwynne. New York: Scribner, 2023. Maps. Tables. Diagrams. Illustrations. Photographs. Notes. Bibliography. Index. Pp. x, 299. \$32.00. ISBN: 978-1-9821-6827-8

In 1924 Britain elected its first Labour government. In a remarkable decision, it undertook construction of two massive lighter-than-air airships to be named the R100 and R101. They were distinctly different vehicles. R100 was to be built by a private contractor and was more conservative in design, based mainly on German Zeppelin structures used in World War I. R101, built by a government consortium, was to be the more advanced and was (or should have been) considered more of a research vehicle. The downfall of the R101 and the entire British airship program came when personal and political pressures overcame known engineering, materials, manufacturing, and performance limitations—and nobody dared to say “Stop.”

A key factor was the personality of Lord Thomson, Secretary of State for Air and overseer of the airship program. An ambitious man and close friend of the prime minister, he saw the airship as the key to maintaining timely connections with Britain’s vast empire—especially India. And Lord Thomson made little secret of his personal ambition to be the next Viceroy of India!

Both vehicles had known major handling problems. The tradeoffs to maximize available lift (i.e., payload) while achieving intercontinental range were certainly beyond the

level of knowledge 100 years ago. The materials to create a strong, safe, yet light structure 755 feet long did not exist. The massive gas bags, holding five million cubic feet of explosive hydrogen, were made of animal intestines. (Helium, on which America had a monopoly, was not the cure-all, as was seen in the losses of US Navy airships *Shenandoah*, *Akron*, and *Macon*.)

Test flights of both vehicles were hurried, abbreviated, and not reported in detail. “Bad news” stopped well short of the Cabinet level. Massive repairs to the acres of external fabric were often carried out in flight. But the greatest shortfall of the R101 was its weight. It was 26% overweight when that figure was finally assessed. That extra weight came at the cost of payload. So, an extra 500,000-cu-ft gas bag was hurriedly inserted into the completed airframe.

The tragic end of the R101 took place in October 1930. Lord Thomson had advocated a high-visibility round trip to India and, despite clear advice to the contrary, insisted it take place. Bad weather dogged the flight from its beginning. R101, already 2-1/2 hours behind schedule, crashed into a hill 60 miles north of Paris. A massive hydrogen explosion occurred. Lord Thomson and 47 other men died at the scene. There were only six survivors.

Gwynne clearly states his case that the program was a massive mistake (Chapter 2 is entitled “Brief History of a Bad Idea”). He introduces some familiar personages of the era (Winston Churchill, R100 designer Barnes Wallace, Lord Trenchard of the RAF, and Air Vice-Marshal and future Battle of Britain hero Hugh Dowding). There is technical detail aplenty along with insightful looks at Britain’s society as it settled into the Depression.

This book certainly holds the world’s airship programs up to a glaring light and finds them all lacking. Even more important to current readers is that it points out the perils of an organization lead by a zealot, and the terrible costs of an acquisition program conducted without an honest evaluation process.

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**Cuban MiGs: The Defenders of Castro’s Air Force.** By Helio Higuchi and Paulo Roberto Bastos Junior. Vienna, Austria: Harpia Publishing, 2022. Photographs. Maps. Bibliography. Illustrations. Tables. Appendix. Index. Pp. 137. \$41.95 paperback. ISBN: 978-1-950394-09-8

Higuchi has contributed numerous articles on Latin American military affairs to Brazilian publications. He translated this book’s original Portuguese manuscript to English. Co-author Bastos also writes about military topics, particularly mechanized forces. He edits the Brazilian journal *Tecnologia e Defesa*,

This effort is essentially a history of the Cuban air

force. The writers proceed in chronological fashion. The first two chapters focus on Cuban military aviation during the Fulgencio Bautista regime and the early years of Fidel Castro's emergence as the nation's leader. Numerous incursions by counter-revolutionaries from the second half of 1959 into early 1961 prompted Castro to upgrade his air force, which then consisted primarily of aging American and British aircraft. The second chapter also summarizes Cuba's success in thwarting the April 1961 invasion at Playa Giron, known in English as the Bay of Pigs.

Facing diplomatic challenges in acquiring aircraft from the West, Castro turned to the Soviet Union, which began delivering MiG-15s just a month after the invasion attempt. In November, Cuba received MiG-19s; but Cuban pilots encountered difficulties adapting to the newer model. Of the 12 flown by the Cubans, four were lost in crashes through 1965.

After devoting a chapter to the October 1962 Cuban Missile Crisis, the authors move on to the MiG-21. In September 1963, the Cubans officially gained control of MiG-21s supplied by the Soviet Union. With the MiG-15s rapidly aging, the Soviets replaced them with MiG-17s. To enhance the MiG-17's capability against US aircraft, Cuban technicians—independent of the Soviets—armed it with air-to-air missiles. Over the coming years, Cuba would receive assorted MiG-21 models.

With the most potent air force in Latin America in the 1970s, the Cubans used the MiG-21 to intimidate neighboring island nations who, they believed, had acted improperly in seizing Cuban fishing boats.

In the 1980s, before the collapse of the Soviet Union, the Cubans also received MiG-23s and MiG-29s, but never in the quantities approaching that of the MiG-21.

Cuba's aircraft are best known for participating in the civil war in Angola (1975-1991) following that country's independence from Portugal. The authors also mention several other nations Cuba supported: North Vietnam (1967-1975), Guinea and Portuguese Guinea, Syria (1973-1974), South Yemen (1973-1976), Ethiopia (1977-78), and Nicaragua (1979).

Drawing on numerous Cuban sources, the authors offer an insight into what, in the second half the 20th century, was one of the most capable air forces in the Western Hemisphere. The appendix features color illustrations of the various MiGs that should be of interest to modelers. This book is highly recommended for anyone with an interest in Soviet-built aircraft, "small-country" air forces, or both.

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**Bf 109 *Jabo* Units in The West.** By Malcolm V. Lowe. Oxford UK: Osprey, 2023. Photographs. Drawings. Appendices. Bibliography. Pp. 96. \$25.95 paperback. ISBN: 978-1-47285445-2

In the current age of multi-mission aircraft, we tend to forget that, not so long ago, fighters were fighters and bombers were bombers, and never the twain should meet. But in the earliest stages of the conflict that would become World War II, air forces came to realize that the fighter characteristics of speed and maneuverability would serve a bomber well. Lessons learned by the Luftwaffe's Condor Legion in Spain resulted in the creation of fighter-bomber, or *jagdbomber* (*jabo*), units in the earliest phases of the war in Europe.

Using the advanced Bf 109 E as a basis, modifications were made to permit carriage of bombs to augment the already improved weapons suite. My initial thought was the Bf 109 was a poor platform to turn into a bomber. It was a small airframe with a small fuel capacity (meaning either short range or reduced weapon load); the cockpit was equally small; and the pilot had poor ground visibility. There was no bombsight as such. Lines drawn on the cockpit window provided a ground reference, and the Revi gunsights served as a makeshift bombsight. Luftwaffe tacticians, led by Hauptman Franz Liesendahl, developed the unique *Liesendahl Verfahren* (Liesendahl Method) attack profile, "a very fast initial low-level approach at wave-top height at a speed of 450km/hr. When 1800m from the target, a rapid climb to 500m and level off. Dive to the target at 3 degrees with speed increasing to 550km/hr. Using the Revi gunsight, pull up and release the weapon, lobbing the 250kg bomb toward the target."

Keep in mind, one of the advantages the *jabo* offered was pinpoint surgical strikes on small, high-value targets. Lobbing a bomb doesn't seem very precise. The tactic sounds like the LABS maneuver used by SAC B-47 aircrews, but those crews used city-busting nuclear weapons targeting large urban areas. In the early stages of the Battle of France, Battle of Britain, and attacks on shipping in the Channel, the Liesendahl Method was surprisingly effective, and the RAF had a very difficult time defending against the *jabos*.

But, not for the first or last time, the Luftwaffe proved to be its own worst enemy. Many fighter units did not embrace the *jabo* mission and avoided assigning aircraft and pilots to it whenever possible. As German interests turned east, units were moved from the west to support Russian and Mediterranean operations, and the number of aircraft available in the west quickly shrank. But while the Luftwaffe seemed to lose interest, the RAF and USAAF embraced the fighter-bomber mission and fielded the Tempest, Typhoon, and P-47 (perhaps the ultimate World War II *jabo*).

Lowe finishes his book with a detailed description of Operation *Bodenplatte* in January 1945, perhaps the Luftwaffe's last gasp in the west and the ultimate *jabo* operation. While the Luftwaffe enjoyed some success, the cost in losses of planes and pilots was catastrophic.

As with most Osprey books, this is a quality product. The small font size annoys older readers, but the quality