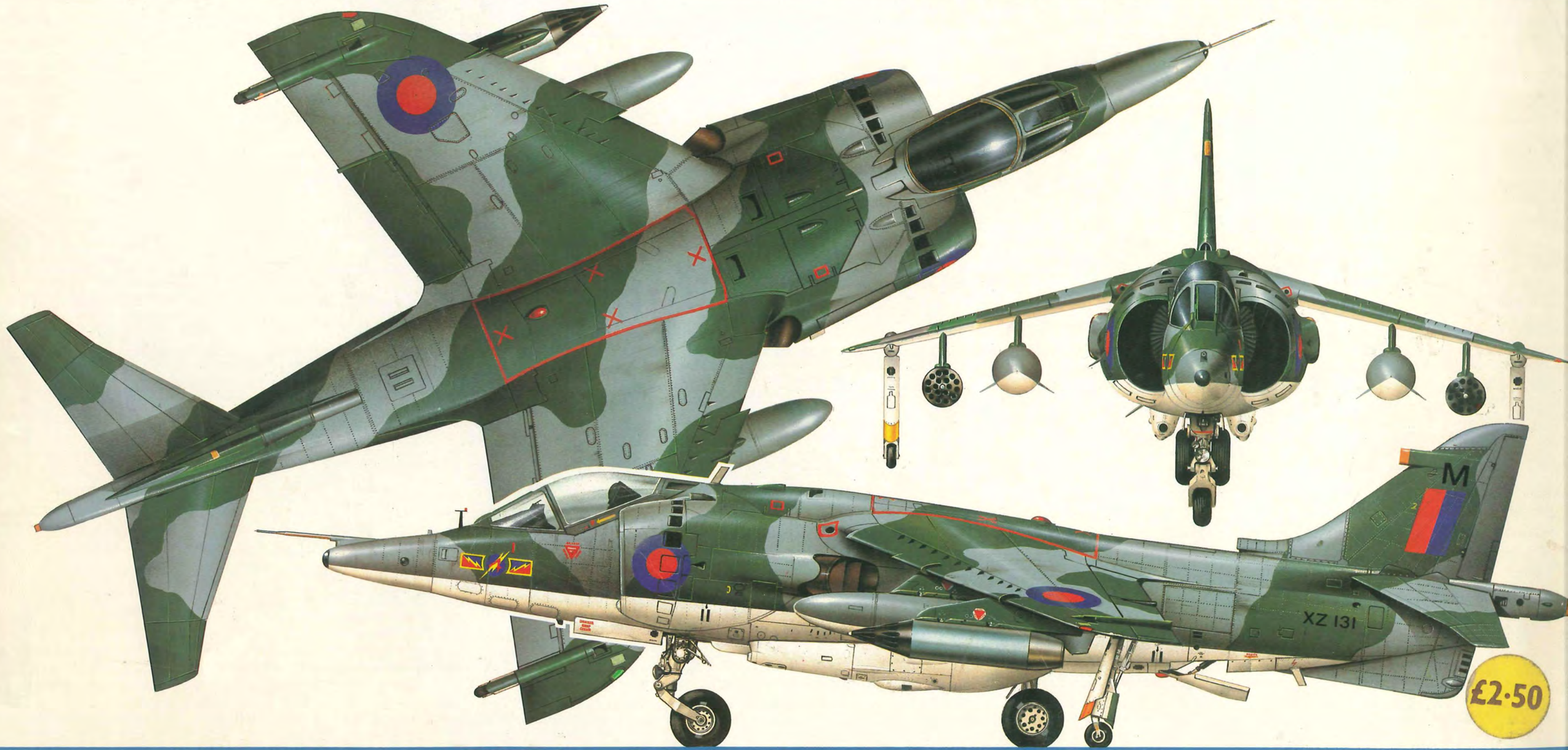
St Michael

MODERN COMBAT AIRCRAFT



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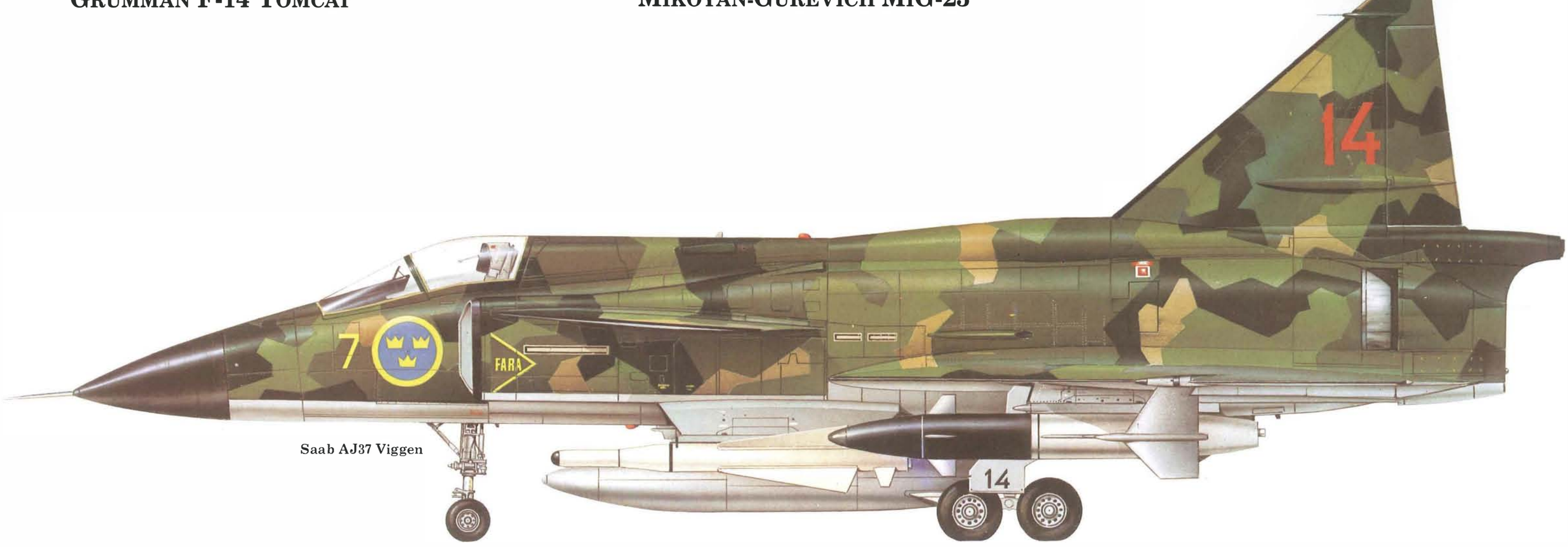

Saab AJ37 Viggen

INTRODUCTION

Since the aircraft was first used in an offensive role in 1911, it has evolved rapidly from the 'string and matchwood' creations of the early pioneers to the highly advanced, computerized machinery of today. Along the way there have been many important developments to both aircraft and the weapons they carry, and these technological leaps occur with ever-increasing regularity. The scientific advance of military aviation is also mirrored by the manufacturers of anti-aircraft weapons, and when these products match or even outpace the aircraft, the aviation world is faced with having to make yet more advances. The political polarity between East and West has raised the technology war to fever pitch, and the competition between the United States and the Soviet Union is as fierce as ever. Where all these advances are most felt is in the modern combat aircraft.

Today's strategists have on the whole dispensed with large bombers (although the Rockwell B-1 and its Soviet counterpart 'Blackjack' are notable exceptions), and now look to small multi-role fighters to perform both strike and air-to-air missions. Many of the aircraft illustrated in this book have either been designed or adapted to carry out many roles, and several can carry air-to-air missiles and air-to-ground weapons on the same sortie. Typical of the new multi-role fighters is the General Dynamics F-16 Fighting Falcon, able to lift up to 7,800kg (17,200lb) of stores, capable of delivering laser-guided weapons and blessed with astonishing agility. After the quest in the late 1950s and early 1960s for fighters with high straight-line speed, exemplified by the Mikoyan-Gurevich MiG-25, aircraft designers have returned to giving priority to manoeuvrability, and the next generation of fighters will feature canard wings, short-span wings, twin fins and even forward-swept wings to extract the maximum manoeuvrability from their aircraft.

The origins of the modern combat aircraft can be traced right back to the earliest days of aviation, but the story really began during the Korean war, when aircraft designers had the benefits of the first jet-versus-jet combat. From this experience stemmed several aircraft which had a profound effect on the combat aircraft, and some of these still fly on today in relatively large numbers. The Mikoyan-Gurevich MiG-19 and Lockheed F-104 Starfighter both grew directly out of Korean experience and set a precedent for many subsequent types. Following the Korean generation there was a period of general improvement and consolidation of design, resulting in such types as those old battle-weary warhorses the Mikoyan-Gurevich MiG-21, Dassault Mirage III and McDonnell-Douglas F-4 Phantom II. Throughout the late 1960s and early 1970s these aircraft fought frequent battles, often against each other, in the skies over the Middle East and South East Asia. These wars enabled all the developments of the relatively peaceful preceding period to be tested out and honed to perfection; the two main developments introduced into battle were the air-to-air missile and electronics. Although air-to-air missiles had been in service for many years, it was not until Vietnam that they were used in any numbers. The missile had virtually replaced the cannon the United States Air Force service, and the initial interceptors in Vietnam soon found the missile was too dangerous to use at close range, often failing to track its target when used at low altitudes or facing the sun. Consequently, aircraft started appearing with cannon again, and this practice continues to this day. However, the advantages of the missile should not be overlooked, and it was in Vietnamese skies that the basic lessons of how to make missiles work for their masters were learned.

The Vietnam and Middle East wars introduced electronics on a large scale to aerial warfare. Aircraft began to carry electronic countermeasures (ECM) to confuse enemy radar-guided missiles, and also began to operate under the control of airborne command posts, directing the fighters to intercept or avoid enemy aircraft spotted on the command post's airborne radar. Further electronic developments in weapons delivery systems, terrain-following radars and tactical 'jamming' means that today's aircraft are packed with a plethora of electronic boxes, connected to underwing pods, fin and wing-tip aerials, fuselage blisters and nose-cones, all computerized and duplicated. Even the flight controls are moving away from cables and hydraulic leads to printed circuits, chips and miles of wire. This wizardry has enabled the combat aircraft to free itself from the shackles of daylight and weather, and strikes and interceptions can now be carried out with devastating accuracy at tree-top height under any conditions.

Despite the computer take-over, the crew are still the most important element of the aircraft. Most of the aircraft depicted here have been built in two-seat trainer versions, for superior pilot training and tactics can be decisive in a real combat situation. This has been amply illustrated in recent years by Israel, whose superior pilots have held the upper hand over their Arab neighbours despite being heavily outnumbered. Another important facet of aerial warfare is reconnaissance and, along with the trainers, many of these aircraft have been adapted to carry cameras and infra-red linescan ('heat camera') for the role of tacticla reconnaissance over the battlefield, where their agility and speed at least put them on a par with the heavy defences they can expect behind enemy lines.

The United States and the Soviet Union have the capital to develop and build highly specialized aircraft, which most other countries cannot afford. Some of these are illustrated here, such as the Fairchild A-10 tank-buster, Lockheed's SR-71 and TR-1 dedicated reconnaissance platforms and the same company's S-3 anti-submarine aircraft, Grumman's F-14 Tomcat fleet-defence fighter and the Soviet Union's MiG-25, developed solely to intercept high-flying American bombers (although later adapted for strategic reconnaissance). These types represent the pinnacle of design, not being restrained by the compromises imposed on multi-role aircraft, and have a special niche in today's military aircraft spectrum.

Whilst the superpowers debate the use of satellites in a military role, the modern combat aircraft will continue in its prestigious position, inherited during World War II, as the eyes and spearhead of the military forces of the world.

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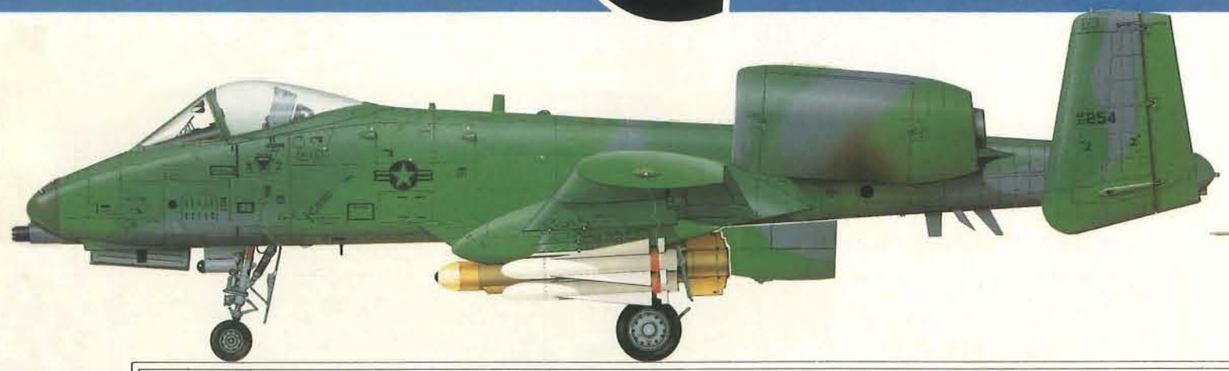

- Interceptors
- Ground Attack Types
- Carrier Aircraft
- Reconnaissance
- Multi-role Fighters

This book illustrates the world's finest combat aircraft in superb detail—warplanes that are maintained in readiness for action around the globe. Included are MiGs and Sukhois from the Soviet Union, the latest 'superplanes' from America—F15 Eagle, F16 Fighting Falcon, SR71 Blackbird—and a variety of brilliant, tough and highly capable machines from Britain and Europe, including the Harrier, Mirage, Viggen and Tornado. All are superb aircraft, the ultimate fighting machines.

Displaying a wide variety of air force colour schemes from around the world, these illustrations represent the work of years by leading aviation artist Keith Fretwell. His work has been greatly admired and collected by pilots, plane makers and aviation enthusiasts alike.

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