

## Switzerland

A pair of Swiss Air Force-operated F/A-18Cs pop flares during a demonstration at Switzerland's Axalp target range. While these exercises and displays are stunning to watch, they contribute a lot of stress to the fighter's airframe, adding to the fleet's fatigue issues. All images: Peter Gunti

# Alpine rejuvenation

The Swiss Air Force currently operates 30 F/A-18C/D Hornets (see *Inventory* table). Having been operational since 1996, this fleet is nearing its foreseen fatigue life limit now. More than once, the entire fleet has been grounded because maintenance checks revealed cracks in unexpected places. The necessity for a prolonged service

life was foreseen from the outset. During production, reinforcements were introduced to give the airframes a prolonged life of 5,000 flight hours.

This number does not seem extravagant at all, but during routine training operations in this small country, these fighters hardly log any transit time. Training areas can be reached in minutes and the

bulk of the platform's flying hours are used for actual manoeuvring.

Since the three squadrons that operate the type (see *Order of battle* table) specialise exclusively in the air defence role, dogfights are standard practice. The Swiss Air Force estimates that the actual flight hours must be multiplied by a factor of 1.5 to compare the fatigue with NATO countries. With the increased use of the F/A-18C/D in recent years, these fatigue limits are steadily approaching. The loss of four Hornets since 1996 has also slightly increased the demand on the fleet's surviving airframes.

In 2017, the Swiss parliament approved a life extension programme – worth CHF450m (£374m) – that aimed to increase F/A-18C/D flight hours to 6,000.

This requires the fleet to be recertified, ensuring its safety for another five years of prolonged operations. Some 140 checks per aircraft will be necessary to

guarantee that fatigue is detected in time and parts can be replaced before failure.

Half of Switzerland's remaining F/A-18C/Ds have completed this programme, with the final airframe scheduled to complete the process by 2025. An allocated 200 flight hours per year will keep the Swiss Hornets active until they are withdrawn from service, which is set to occur by 2030.

As other operators phase out their legacy Hornet fleets, international logistic support chains will be wound down, so more spare parts will have to be stored or manufactured. All partner air arms will stop operating their F/A-18C/D fleets by 2026 and Switzerland is looking to Canada for data on how precisely these legacy Hornets age. Systematic surveillance has shown metal fatigue has not equally progressed on each aircraft.

Air show demonstration flights and gunnery exercises at the

### Order of battle

Fliegergeschwader 11 (Air Wing 11)	Payerne AB
Fliegerstaffel 6	F-5E/F
Fliegerstaffel 17 'Falken'	F/A-18C/D
Fliegergeschwader 13	Meiringen AB
Fliegerstaffel 11 'Tigers'	F/A-18C/D
Fliegergeschwader 14	Emmen AB
Fliegerstaffel 19	F-5E/F
Patrouille Suisse	F-5E
Fliegergeschwader 14 (continued)	Payerne AB
Fliegerstaffel 18	F/A-18C/D

Notes: Fliegergeschwader 14 has units based at both Payerne AB and Emmen AB, as listed above. As Emmen, Payerne and Meiringen are each expected to host an F-35A unit, it is likely that one of the Payerne-based legacy Hornet squadrons will relocate to Emmen during the transition process

Source: *AirForces Intelligence*

famous Axalp range have fatigued these fighters more than other mission sets. To even out the wear-and-tear, each training flight is now assigned to a specific aircraft in accordance with the expected G-forces. This procedure should ensure an even fatigue record across the fleet.

After the US Marine Corps and US Navy retired their F/A-18C/Ds, the routine exchange of squadron pilots with the US was terminated. A similar arrangement with the French Air and Space Force was put on hold, pending Switzerland's selection of the Hornet's successor.

In the last three years, the Swiss Air Force has started reactivating some of its former alpine air bases for tactical decentralisation exercises. Fighters have deployed to St Stephan, Mollis and Alpnach for exercises. This practice will continue, with each squadron now planning logistics for several dispersal bases in case of war.

Some 25 F-5E/F Tiger IIs are still in Swiss service. However, these aircraft no longer possess offensive capabilities, as the AIM-9P Sidewinder air-to-air missile was decommissioned a decade ago and the type fired its last cannon round in 2018. The F-5E/Fs remain solely in the aggressor role, but the fleet's retirement is planned for 2025. Discussions are ongoing as to whether a small number of Tiger IIs could be retained for use by Switzerland's national aerobatic team, Patrouille Suisse.

Efforts to evaluate potential successors for the F/A-18C/D Hornet began in 2017. This process was based on multiple factors: the platform's tactical capabilities (55%); offered level of co-operation from the country of origin – ie, training and testing (10%); logistical support



One of the remaining roles of Switzerland's ageing F-5E/F Tiger II fleet is to perform target towing tasks in support of air-to-air gunnery training missions. This example (serial J-3089) is seen departing Meiringen AB, equipped with a target winch on its centreline pylon. Note that this particular aircraft is also wearing the colours of the Patrouille Suisse aerobatic team

(25%) and the participation of Swiss industry (10%). The selection of the F-35A Lightning II was anticipated by many. Its advantages over the competition left many speechless. For instance, it received the best score in every competition (including price), bar the Swiss industry participation category.

However, the F-35A's selection immediately triggered several political activists into protest. They launched an 'initiative' to ban the procurement and distribute the allotted funds among other, non-defence-related purposes. In order to achieve this, the group will have 18 months to collect the signatures of 100,000 registered voters. If they succeed, the electorate will have to decide the issue once more.

This collection of signatures occurred long before Russia invaded Ukraine on February 24. While public opinion shifted in favour of increased defence spending, those against the F-35 continue in their endeavour as if nothing has happened – hoping to stop the order or delay it. There are still those in Switzerland who want to dissolve the armed forces and they possess the political instruments to at least try.

A parliamentary majority is now

in favour of accelerating the foreign military sales contract with the US, instead of waiting for the initiative to unwind. If all goes according to plan, the first of 36 F-35As will enter Swiss service in 2028, with the last following in 2030. These will mostly come from the Leonardo-run Final Assembly and Check Out (FACO) facility in Cameri, Italy – except for four airframes, which will be assembled in Emmen, Switzerland, for technology transfer purposes.

The Lightning IIs will re-equip the three legacy Hornet squadrons: Fliegerstaffel 11 (Air Squadron 11); Fliegerstaffel 17 and Fliegerstaffel 18, with aircraft being based at Payerne, Meiringen and Emmen. Maintenance will no longer be centralised at Emmen and will be provided at each home base, while pilot training will take place in the US. Increased use of simulators and the shifting of training activities abroad will reduce the number of operations over Switzerland in the future, therefore mitigating noise emissions over the country.

The sudden eruption of war in Eastern Europe has led both Finland and Sweden to apply to join NATO. For Switzerland, such a move would be deemed politically unrealistic as neutrality

is too deeply rooted in this country – which was last invaded in 1798 by Napoleon Bonaparte.

The current situation in Ukraine highlighted a need for Switzerland to enhance interoperability with its allies. It became clear that a deliberate attack on the nation could not be successfully opposed alone.

The US Congress has approved this F-35A sale, along with a small stock of sophisticated air-to-ground weapons. Switzerland did not replace its ground attack capabilities when the final Hawker Hunters were phased out of service in 1994. The tactical science of battlefield support and interdiction/strike will have to be remastered and adapted to accommodate modern advances.

In a related programme, Switzerland wants to introduce five Patriot air defence systems to re-establish the long-range surface-to-air missile capabilities once offered by the British-built, Cold War-era Bloodhound system. Surprisingly, this procurement is yet unopposed by the country's pacifist movements.

Together with the F-35A, the air defence of this neutral alpine republic might retain its credibility long into the 21st century.

**Peter Gunti**



## Inventory

Type	Delivered	Current
F-5E	98	22
F-5F	12	6
F/A-18C	26	25
F/A-18D	8	5

Notes: All the above types will be withdrawn from operational service by the end of this decade. The 30-strong legacy Hornet fleet will be replaced by 36 F-35A Lightning IIs, which are scheduled for delivery to the Swiss Air Force from 2028-2030. As per current plans, the F-5E/F Tiger II fleet will be retired in 2025

Source: AirForces Intelligence

Left: Switzerland will replace its legacy Hornet fleet with 36 F-35As, which will be delivered from 2028-2030. The shape of things to come was demonstrated to the Swiss press and public earlier this year, when two Italian F-35As visited Emmen AB