

**While maintaining its neutrality, Sweden is growing its air force and pursuing greater interoperability with the US.**



# NORTHERN EXPOSURE

**By John A. Tirpak, Editorial Director**

**A Saab Gripen takes off during an exercise.**

Swedish Armed Forces photo by Louise Levin

**A**fter the Cold War ended, neutral Sweden relaxed its military posture, reduced its defense spending, conducted fewer exercises, and focused on domestic issues, anticipating a period of security calm. But as Russia flexes its military muscles—having annexed Crimea, invaded Georgia and Ukraine, and taken a highly aggressive posture toward its other European neighbors—Sweden is moving quickly to heighten its readiness and ability to deter a war—or fight one.

Its principal military instrument is its air force.

This is “the new operational environment,” said Col. Lars Helmrich, Skaraborg wing commander for the Flygvapnet (Swedish air force) in an interview at F7 air base last year. Helmrich, who was designated to speak on behalf of the Swedish air force to *Air Force Magazine*, is a 26-year Flygvapnet veteran. He has held an array of operational, staff, materiel, and policy jobs and attended the US Air Force Air War College and participated in a Red Flag exercise. He said Sweden believes Russia will make good on its plan “to have 70 percent of their [military] materiel modernized” by 2020.

Stockholm has watched with growing concern as Russia made aggressive moves and cyber attacks on Baltic nations in recent years. A March 2013 incident galvanized public opinion to strengthen the military when Russian Tu-23M3 Backfire bombers and Su-27 Flanker fighters staged an unannounced mock nuclear attack toward Stockholm and other presumed targets in southern Sweden.

Russia’s recent buzzing of US and NATO ships is mirrored by similarly dangerous incidents with the Swedish military, where surveillance and signals intelligence aircraft have been intercepted over international waters by Russian jets that sometimes fly just a few feet away. Russian military aircraft frequently fly over the Baltic Sea without transponders that identify them and demonstrate other “provocative behaviors,” Helmrich said.

Moreover, “even though they have economic problems,” Helmrich said of Russia, “they still prioritize their military buildup.”

Such tensions, coupled with new competition in the Arctic for resources and sea routes, has put Sweden in the thick of things, he said. “The strategic importance of our area of interest—our neighborhood—is increasing.”

Along with the European refugee crisis—hitting Sweden with a wave of unexpected immigrants—and terrorist bombings around Europe, the time was ripe for Sweden to step up its security posture. In 2015, a parliamentary white paper called for an increase in operational capability of the Swedish military, Helmrich said.

## NEW CANDOR

“I can hardly remember when it was so ... clearly stated” by the Swedish government that the country’s military should boost its readiness, Helmrich said. According to him, the paper stated that while Sweden is neutral, “the new security policy doctrine is that we don’t believe that we will fight alone; we will fight together with others.” While the “national” focus of the new policy is pre-eminent, the “interoperability aspect is still as important,” he said.

Since the end of the Cold War, he said, national defense was not prioritized, and that had consequences. “Everything from the base system to the personnel system—everything needs to be re-focused now,” Helmrich said.

The white paper—called the “Swedish Defense Bill, 2016-2020”—set a plan to “successively increase the defense spending over the next five years with an 11 percent increase,” or 2.2 percent per year, a government website stated. The bill was described as being based on “broad political agreement” between Sweden’s five main political parties and was developed “in light of the developments in Russia and specifically the Russian aggression towards Ukraine.”

Summed up, the bill called for less theoretical planning and more specific planning for real-world scenarios; renewed investment in infrastructure and basic equipment (such as trucks); the creation of a new mechanized battalion; re-establishment of a military presence on Sweden’s Baltic Sea island of Gotland; more armored vehicles, bridging gear, self-propelled artillery, and anti-tank weapons; two new corvettes; expansion

of air defense capabilities; more anti-submarine warfare capacity; increased investment in recruiting and sustaining troops; and a modernized civil defense and “active” cyber defense.

The bill approved further investment in the JAS-39 Gripen indigenous family of fighters and equipping it with the multinational Meteor beyond-visual-range radar guided missile.

The bill specifically ruled out making a judgment about whether Sweden’s neutrality continues to make sense, but called for an independent report gauging the value of Sweden’s military relationships with other countries, organizations, and alliances, such as the European Union, NATO, and “the transatlantic link” with the US.

Swedish press outlets in September said the resulting report found that while NATO membership would add to Sweden’s deterrence, so would strengthened ties with Finland, another nonaligned country. Though she would not comment on the report directly, Sweden’s foreign minister, Margot E. Wallström, told journalists, “The answer is not Swedish NATO membership. Freedom from military alliances serves us well and contributes to stability and security in Northern Europe.” She also said Sweden’s security policy should be “long-term, stable, and protected from sharp fluctuations.”

NATO Secretary General Jens Stoltenberg said at the alliance’s meeting in Warsaw, Poland, last summer that he knows better than to encourage Sweden to join the group, saying it would not be taken kindly and that Sweden must make its choice internally.

Last June, US Defense Secretary Ashton B. Carter and Sweden’s Defense Minister Peter Hultqvist signed a non-binding statement of intent on military cooperation. It called for increased interoperability between the countries, more numerous joint training and exercises, more cooperation on armaments, research and development, and “meeting common challenges in multinational operations.”

Saab, maker of the Gripen, is partnered with Boeing to offer a candidate for the US Air Force’s T-X competition. Sweden, too, has a 50-year-old trainer—the Saab 105—and needs to replace it soon. The Erieye airborne warning



Swedish air force maintainers refuel and rearm a JAS-39 Gripen. The fighter is certified to carry many US munitions, and Sweden is seeking certification for more.

plane will also need replacement in the coming years.

There's already a good deal of partnership between the US and Sweden, particularly its air force. The Flygvapnet flies American C-130H transports, is a partner in the multinational C-17 Heavy Airlift Wing based in Hungary, and the Gripen uses a variant of the General Electric F404 engine flown on the American F/A-18 fighter. The Gripen is either certified or being certified to carry a wide array of US munitions, including air-to-air missiles, the Small Diameter Bomb, Joint Direct Attack Munition,

Joint Standoff Weapon (JSOW), Joint Air-to-Surface-Standoff Missile, Maverick air-to-surface missile, Miniature Air Launched Decoy, Paveway laser guided bombs, and both the Litening and Sniper targeting pods.

Sweden has been heavily involved with international military operations in the last two decades, participating in 12 over the last five years alone, Helmrich said. It participated in peacekeeping in Kosovo, has flown resupply missions in Afghanistan—both in Enduring Freedom and Resolute Support—rescue missions in Chad and Mali, maritime missions in the Gulf of Aden, participates in the NATO Response Force, and flew combat in the 2011 air campaign to oust Muammar Qaddafi from power in Libya. In that conflict, Sweden flew 580

defensive counterair or reconnaissance missions with the Gripen.

USAF Lt. Gen. Ralph J. Jodice II, who ran the air portion of the Libya operation for NATO, said at the time he was greatly impressed with the product from the Swedish recce pods. It is a capability USAF has long since ceded to remotely piloted aircraft. Helmrich said the capability Sweden deployed was not just the tools to collect imagery but included the experts needed to interpret it.

The Flygvapnet has adopted a new slogan in light of the 2015 defense bill, Helmrich said. "We want to be a reliable partner, ... a credible air force, and deliver security in the Baltic area."

Though NATO nations take turns performing Baltic air policing, Sweden performs the mission for its own national

Swedish soldiers gather their weapons and equipment on the flight line on Gotland, a Baltic Sea island, during an exercise in 2015. Sweden is re-establishing a military presence there.



purposes, and closer to Russia than the NATO jets fly.

“We are not provocative” with the patrols, Helmrich asserted. “The aim is to be a stabilizing force, not to provoke incidents.” Sweden flies around-the-clock surveillance and signals intelligence missions with its Erieye airborne warning and control system-type aircraft and a Gulfstream 4 equipped for reconnaissance. Helmrich said there’s been a 50 percent increase in the numbers of such flights since 2012.

“Since the last 15 to 17 years,” there has been a heavy push for interoperability with other air forces, Helmrich said. This goal was a big reason for the conversion from the Gripen JAS-39A to the JAS-39C. This included changes in communications—adding the Link 16 data link, for example—plus symbology and metrics in English, the international language of aviation.

“They were built mainly to be interoperable,” Helmrich said of the JAS-39C fleet.

“We talk English in the air. We started that in the early 2000s,” he said.

When he deployed with a Gripen force to Red Flag, “we were more interoperable than many NATO countries,” he asserted. Though Helmrich did not fly in Operation Unified Protector—the Libyan campaign—“everything I’ve heard is that it was seamless. ... We were in place 24 hours after the political decisions.”

Helmrich said some old defensive measures are being revived in Sweden. During the Cold War, Sweden routinely operated its fighters from hundreds of roads and highways that were built straight and wide enough to serve as runways, so that if its air bases were destroyed, the Flygvapnet could continue to operate. Roadside turnoffs mark areas where the jets were serviced, fueled, and rearmed. The air force stopped using its highways as alternate runways back in the 1990s, in the defense lull after the Cold War ended, but has begun reviving this practice, Helmrich said.

### A NEW CONCEPT

“All those skills” involved in field-turning fighters, he said, “have to be brought back again.” The air force is working with agencies that maintain the roads, as well as those owning the adjacent forests, to reinvigorate the practice.

“It’s not just materials and equipment, it’s how to perform command and control, turnaround times, and so on. So not back to an old concept but a new concept that uses some of the ingredients from the past.”

Under the new defense bill, he said, “we now have six fighter squadrons,” counting two former training-only squadrons. Air battalions have been reorganized as wings.

The Flygvapnet counts about 4,000 “permanently employed and 700 on a

contract basis.” The rough breakdown is 900 officers, 1,400 noncommissioned officers, and 900 airmen.

Helmrich boasted that “there’s about 20 personnel per platform.” Compared with other air forces, “we are very personnel-effective—very efficient.” Pilots typically get between 120 and 180 hours a year, up to 15 a month. While that may not sound like a lot, “the exercise area is here,” Helmrich said, so there’s no transit time to get to a training range. “When you’re gear up, you’re there. ... You can train anywhere you want. The airspace is just great.”

Sweden used to have a universal conscription program that brought in draftees for a two-year hitch (unless they volunteered to serve and enter a career path), but it was abandoned in 2010 in favor of an all-volunteer system. It’s been “a challenge for us” to compete with the private sector for the most qualified youth, Helmrich said.

Sweden regularly hosts other countries for exercises, particularly with Finland—also neutral, but flying US F/A-18s—and Norway, a NATO member. These Arctic Challenge exercises and lesser, squadron-to-squadron, meets happen several times a year. American F-15s from RAF Lakenheath in the UK sometimes come up to Sweden for training, Helmrich said.

The Gripen is the centerpiece of Swedish defense, much as the Viggen before it and the Draken before that. All

Saab photo by Jamie Hunter



In formation over Linköping, Sweden, are JAS-39s from: Sweden, the Czech Republic, and Thailand (top row, l-r), Hungary and the UK (second row), and South Africa (foreground).



Sweden's Saab 340 Erieye airborne early warning and control aircraft, outfitted with an active electronically scanned array radar system, will need replacing soon.

three aircraft were ahead of their time, and the Viggen and Draken, painted gray, would look right at home on a modern runway even though their designs date back to the '50s and '60s.

The Gripen is used for point defense, offensive and defensive counterair, anti-shiping, close air support, reconnaissance, and interdiction. It was designed to be nimble and quick, without heavy fuel tanks because it would operate so close to home, and to be easily maintained.

"Turnaround time is between 10 and 20 minutes, depending on what kind of mission you're doing, and it can be done with two technicians," Helmrich said. At Red Flag in 2008, the Gripen achieved a 95 percent rate of launching planned sorties, he said.

The Gripen concept calls for "continuous upgrades," with a major addition to capabilities every third year and smaller block upgrades to existing systems every calendar year.

"Some countries," Helmrich said, "you have a big upgrade and you live with it a number of years. We do this continuously."

The most recent upgrade added capability for the Meteor missile, Small Diameter Bomb, night capability for the recce pod, Link 16, and digital close air support, Helmrich said, along with improved maintenance requirements, to increase availability.

The Meteor is "a game changer," he claimed. The air-breathing missile offers "a bigger no-escape zone" and greater range than the AIM-120 Advanced Medium-Range Air-to-Air Missile, Gripen's

principal beyond-visual-range weapon. The motor allows the Meteor to retain propulsion all the way to the target, allowing it to "keep high speed until the very end. A traditional missile engine loses speed. So this is ... really great."

Helmrich said, "I can't see that there's any fighter that can compete with Gripen in the air-to-air role at this moment."

### SELLING THE GRIPEN

Sweden designed the Gripen not only for its own purposes but for export, to defray its own expense in fielding the jet. It touts the Gripen as an inexpensive alternative for nonaligned countries seeking an effective, easily maintained air defender. So far, the Gripen has logged sales to the Czech Republic, Hungary, South Africa, Thailand, the UK (where it is used in small numbers in the test pilot school), and recently to Brazil, which is buying the advanced JAS-39E and F model.

The newest model of the Gripen, the E version, is set for first flight this year. The JAS-39E concept was worked out over a period of several years, Helmrich said. During that time the Flygvapnet and Saab looked at options ranging from a modest upgrade of the C model up to a clean-sheet, stealth design. Planners determined that with new sensors, tweaks to the airframe, and a lot of new avionics, the existing Gripen could be affordably evolved into a world-class platform able to hold its own militarily and in the export market through 2040, he said.

The E model will have a more powerful version of the GE F414 engine as

well as new weapons like the Meteor and Small Diameter Bomb, additional underfuselage hardpoints, an infrared search-and-track system, new air-to-surface missiles, greater internal fuel capacity, new data links, an active electronically scanned array radar, and sensor fusion throughout, Helmrich said. The jet is being developed to reduce workload and offer increased availability and potentially faster turn time.

The first JAS-39Es will be delivered circa 2023 and notionally retire around 2042, he said. After that, it will be time for yet another ahead-of-its-time design.

Implementing the defense bill is all about "shifting the mind-set" of the Flygvapnet, Helmrich stated.

"We are now turning to a more practical focus ... on actions and skills," he said. "It's not what we are capable of, but what we can actually do. And that is really important to us. So we are once again on a war basis: We participate in more exercises. We train a lot more and ... show that we do more air operation and also practice a lot of individual military skills."

Helmrich said the new ethos is: "What we do, not what we can do." Through these efforts—particularly the steady practicing of interoperability with the US, NATO, and others—the Flygvapnet increases capability, "and by doing that we are a stabilizing force in this area."

Because of Russian provocations, Sweden is in a more dangerous neighborhood than most would have anticipated 20 or even 10 years ago, but it is seeking the partnerships and equipment needed to secure its defense. ★