

ARCTIC CHALLENGE

'NORDIC AIR MEET ON STEROIDS'

'13

The 'Arctic Challenge' Exercise (ACE) is a development of existing concepts such as the Nordic Air Meet and the regular Cross-Border Training initiatives. The latest edition included a sizeable USAFE presence.

report and photos: **Marco Dijkshoorn**

SEPTEMBER 16, a crisp Monday morning in Norway. There is frantic activity at the Norwegian Armed Forces National Joint Headquarters in Reitan and at Main Air Station Bodø, where Col Fredrik Bergman is preparing for the first missions of the day. After weeks of planning and logistics, the approved UN mandate enables the missions they are about to direct: deep strike in foreign territory within a multi-national conglomeration of air assets. Assisted by his two deputies, the wing commanders from Bodø in Norway and Rovaniemi in Finland, and his Swedish Director of Operations, Bergman is planning some of the largest combined air operations (COMAO) missions northern Europe has seen for a long time, flown out of four air bases dispersed over three countries. With over 2,000 personnel and more than 75 aircraft involved, these are the scenes at 'Arctic Challenge 2013', or ACE13.

The exercise results from co-operation between Sweden, Norway and Finland. It was developed and executed within the framework of the Cross-Border Training (CBT; see *Combat Aircraft* November 2010) that these countries perform on a regular basis. ACE13 aimed to provide cost-effective, diversified and realistic combined operations training for pilots and ground personnel from different NATO countries. To introduce an expeditionary element for the Nordic participants, some aircraft were flying out of other host nations' air bases. The countries involved had the opportunity to train tactics and procedures with different types of aircraft in a multi-national scenario, specifically an international peacekeeping crisis management effort with a UN mandate.

Foreign participation

'Invitations to participate were sent to several countries, as was the custom in the Nordic Air Meet exercises', says exercise director Col Bergman. 'Unfortunately, only the UK and the US Air Forces in Europe were able to participate this year, but the exercise was open for other countries too'.

USAFE was by far the largest participant and the exercise triggered one of the most significant movements of Lakenheath-based 48th Fighter Wing F-15E Strike Eagles and F-15C/D Eagles since Operation 'Allied Force' in the late 1990s. Apart from the large contingent of Eagles, USAFE also provided two Mildenhall-based 100th Air Refueling Wing KC-135R Stratotankers. The Eagles and Strike Eagles operated out of Bodø, while the tankers flew from Ørland, Norway.

The Royal Air Force was operating further north, from Luleå-Kallax in Sweden. Eight Typhoon FGR4s from RAF Leuchars deployed to the Swedish base approximately 100 miles from the Arctic Circle. No 6 Squadron was hosted by F 21 Norrbottens Flygflottilj and flew alongside the locally-stationed JAS 39C/D Gripens. Besides the Typhoon deployment, the RAF provided a

COL FREDRIK BERGMAN

The commander of the Norrbotten Wing at Luleå-Kallax was the Exercise Director for ACE13. Bearing the call sign 'Hooter', Col Bergman is a veteran fighter pilot with more than 2,000 flying hours in the JA 37 Viggen and JAS 39 Gripen, as well as the Saab 105 and other trainers, under his belt. Before being appointed as wing commander at Kallax in August 2008, Bergman twice held other wing commander positions. He spent five years in the Swedish Air Force HQ in the late 1990s and early 2000s, improving training and tactics. With several hundred hours on the Gripen, Col Bergman is still an active fighter pilot within his wing, the F 21 Norrbottens Flygflottilj.

Between July 1 and October 25, 2011, Col Bergman was commanding officer of FL02 Karakal, the second Swedish Air Force rotation in support of operations over Libya. The Swedish contingent operated out of Sigonella, Sicily. FL02 was focused on tactical reconnaissance and was part of NATO's Operation 'Unified Protector', for which it was decorated with the Non-Article 5 NATO Medal.

This photo: A 493rd FS 'Grim Reapers' F-15C tops up its tanks from a Mildenhall KC-135R during 'Arctic Challenge'.

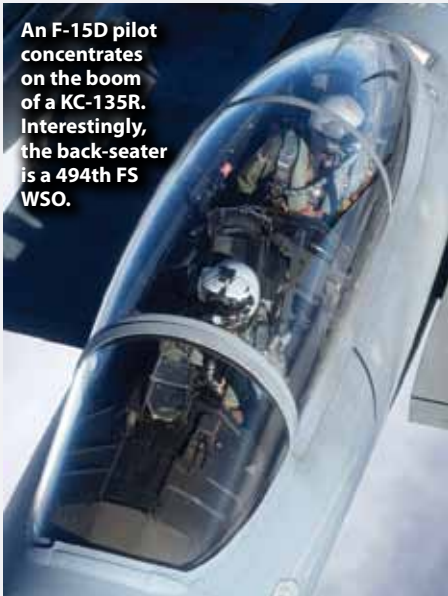
Below left to right: 'Arctic Challenge 2013' exercise director Col Fredrik Bergman.

A Royal Norwegian Air Force F-16AM launches from Bodø in the course of ACE13. Trond Høyvik





An F-15D pilot concentrates on the boom of a KC-135R. Interestingly, the back-seater is a 494th FS WSO.



unit of forward air controllers (FACs) that delivered the necessary guidance during close air support (CAS) missions in Norway.

Why ACE?

'We tried to create an interesting, cost-effective and realistic exercise between the Nordic countries', says Col Bergman. 'The Cross-Border Training concept is so good — it is an easy way to train together, and by inviting other countries it lifts the level of the exercise. This concept was the basis of ACE13. Our unique exercise area in Sweden, Norway and Finland allows fighter pilots to plan, execute and evaluate large force employments in a multi-national air operation.'

Daily mission planning was the same throughout the ACE13 fortnight. Two waves with very distinct characters and mission goals provided an opportunity for participants to train different scenarios. The morning mission focused on syllabus work to improve specific skills and on dissimilar air combat training (DACT) against aircraft from other nations. The afternoon wave majored on the planning and execution of large force employment with COMAOs over a vast training area in northern Sweden, stretching from Lycksele in the south to Kiruna in the north: a zone of approximately 450km by 300km.

According to Col Bergman, 'It was a great exercise; the set-up was to have one wave in

the morning and one wave in the afternoon. The morning sorties were flown from the different bases that were involved in the exercise. The guys trained by themselves. In the afternoon wave we had a big COMAO mission. From Monday to Friday in the first week and from Monday to Thursday in the second week this schedule was followed. The overall impression of the participants was that this was a great set-up because they had different objectives during the two waves. The morning wave gave the opportunity to train for specific mission types. During the large force employment COMAO wave in the afternoon we flew fighters from four different bases: Ørland, Bodø, Rovaniemi and Kallax. They would meet over Swedish airspace and up to 70 aircraft were involved on some days. It was great training for both rookie pilots and experienced ones. A couple of new mission commanders from different countries were also checked out.'

USAFE participation

Capt Ryan Mobley, Weapons Support Officer of the 494th FS flying the F-15E, also participated: 'The exercise involved a variety of different missions. Basically, the typical fighter assets have fulfilled all that you would expect from each aircraft, whether it is defensive counter-air, offensive counter-air or any of the air-to-ground missions. The nice thing is that a lot of planning had been involved in advance and the scenarios have been pretty good training for everybody'. Missions flown by the fast air assets comprised air-to-ground, air-to-air, offensive counter-air (OCA), defensive counter-air (DCA), air interdiction, close air support, reconnaissance and dynamic targeting.

The primary goal of the 48th Fighter Wing was to operate together with multiple nations, to strengthen partnerships and improve interoperability. 'These goals have absolutely been achieved', says Capt Mobley. 'As NATO allies and regional partners we have been able to evaluate our aircraft, personnel and weapons capabilities in the environment that we are in and we have definitely strengthened our military relationships. The biggest challenge is that missions are flown from different bases. Not being together creates a challenge for planning any kind of exercise.'

The 100th ARW provided two KC-135Rs, stationed alongside the NATO E-3A AWACS

at Ørland. Two Stratotanker versions were deployed, one with only the boom and receptacle installed, the other including the probe and drogue system. This enabled the 100th to refuel all types of aircraft involved in ACE13. 'These exercises provide the US and NATO forces [with] an opportunity to integrate their operations at both the tactical and strategic levels with a high degree of fidelity that could not otherwise be achieved without live-fly exercises', said Capt Timothy Gerne, 100th Operations Support Squadron chief of wing weapons and tactics, and director of operations for the 100th ARW. 'Similar to a 'Red Flag' exercise in mission sets, large force numbers and multi-national integration, the benefits of hosting locally allow us and our allies to focus resources toward operations. For Mildenhall, the exercise provided an opportunity to train in a crowded airspace. The fairly small chunk of sky filled with more than 50 airplanes required us to ensure that the airspace we were using was de-conflicted by time, distance and altitude.'

ACE13 can be considered as a very safe exercise. 'We flew over 1,200 sorties and more than 2,000 hours without [any] flight safety incidents whatsoever during the whole exercise. The participants were also very satisfied', said Col Bergman.

Ground forces

Running in parallel to ACE13 was the Swedish Army exercise 'Höstlöv', making it possible for joint exercises with ground forces to be conducted at certain times. British FACs established their Forward Operating Base up at Banak, the northernmost military airfield in Norway, while Swedish FACs took care of the targeting in Swedish airspace.

The 252-square-kilometer Hålkivarré firing range, 25km north of Banak, was used too. The plan was to conduct deep strike missions, with forces from Sweden passing through Finnish airspace into Norwegian territory and then proceeding to the firing range to drop guided bombs and use cannon. This was planned for September 24, but unfortunately, due to weather conditions, the bombs were not dropped. Instead the mission was focused on firing the guns.

Mission control

The Mission Command Center was at Bodø. Both planning and debriefing were



The busy fighter ramp at Bodø during ACE13. Trond Høyvik

conducted using video teleconferencing (VTC). This involved analyzing the GPS data of the aircraft and crews involved in the COMAO missions. Ørland was the only base without a VTC system, and the Mission Command Center is hoping that one will be available next year. The debriefing phase of the COMAO wave took approximately two hours, during which the actual operations could be played on fast-forward. Based on the GPS data and log files, the whole scenario can be played at five-to-ten-times speed, making the process more efficient. No recording pods were carried, but GPS receivers were fitted to aircraft that could not share the GPS data with the debriefing systems. Prior to debriefing, the pilots were sometimes not completely aware of the outcome of their missions: the kill rate was then disclosed only as part of the evaluation.

Friend or foe?

The COMAO exercise involved a multi-national stabilization force (the Blue Force) that flew against the enemy (Red Force). Over the two weeks of ACE13 the Red and Blue assignments rotated, enabling all parties to be hunter as well as hunted. To illustrate this, one of the scenarios involved a Blue multi-national team that set out to destroy the enemy's supply lines, attack an air base and an army base, and simultaneously conduct CAS for ground units. The tasks were divided between the Blue squadrons and aided by the command and control centers, E-3A AWACS and FACs — the total sum of Blue aircraft could be as high as 40. Command and control assets included two NATO E-3As, while in the first week the Swedish Air Force provided a Saab S 100D/ASC 890. A ground-based Eagle Control Reporting Center (CRC) was stationed at Luleå-Kallax. It goes without saying that the careful planning and execution of missions in an environment of this complexity and changeability is key to success.

Meanwhile, the Red team's assignment was to counter-attack and to emulate the flying characteristics of typical Red forces aircraft. Intelligence cells on both sides fed the mission controllers with the necessary information, enabling them to plan and execute sorties. The mission commanders were also rotated between the Red and Blue forces. Each day there was one Red and one Blue mission commander, with the aim of enabling all participants to provide and train the mission commanders. Overall, the Blue teams knocked

ACE 13 — AIR ORDER OF BATTLE

Bodø, Norway

Norway	132 Luftving (331 Skv, 332 Skv)	8 x F-16A/B
USAFE	48th FW (492nd FS, 493rd FS, 494th FS)	30 x F-15C/D/E
Sweden	Various units	JAS 39*
Finland	OT&E	F-18C/D

Ørland, Norway

USAFE	351st ARS/100th ARW	2 x KC-135R
NATO	AEW&CF E-3A Component	2 x E-3A

Rovaniemi, Finland

Finland	HävLLv 11	8 x F-18C/D
Sweden	Various units	JAS 39*

Luleå-Kallax, Sweden

UK	No 6 Sqn	8 x Typhoon FGR4
Sweden	72 ASC Sqn	1 x S 100D/ASC 890, 1 x TP 100C
Sweden	Various units	JAS 39*

* 11 JAS 39C/Ds from F 21/Luleå-Kallax, 1st Division (211 Sqn) and six were from F 17/Ronneby, 1st and 2nd Divisions (171 and 172 Sqns).

out about 90 per cent of the assigned land targets and 'shot down' dozens of enemy aircraft against a handful of their own 'losses'.

The future of ACE

The two-week ACE13 came to an end on September 26, the units re-deploying to their home bases a day later. Col Bergman elaborated on the improvements that he expects to see for future ACE exercises. 'Personally, I would like to see more GBAD [ground-based air defenses] integrated in the exercise, enabling suppression of enemy air defenses, or SEAD, missions to be executed. Also, real-time kill assessment removal capabilities, because sometimes there was a delay, especially because of the huge number of aircraft involved.'

Regarding lessons learned from ACE13, Capt Mobley commented: 'The most important lessons learned were basically the strength of each of the nations and how to work together, [and] the interoperability of all the countries

coming together, which is kind of the intent of the exercise. I believe we have done a good job in meeting that intent by flying together on a daily basis. I will also really remember Norway for its scenery — it is a beautiful country. I never flew in such great landscapes. I'll remember that for a long time.'

Col Bergman can look back at a very fruitful experience. 'ACE13 was a very cost-effective, qualified exercise and the aircrews had the ability to train complex scenarios in a very realistic way'. It has also been decided to create a more highly-developed version of the exercise on a biennial basis, and ACE15 is currently in preparation. It promises to be the 'ACE of ACEs.' 🇺🇸

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Finnish Hornet crews from the air force's operational test squadron used the exercise to develop new air-to-ground capabilities added through the recent series of upgrades.

