

ENTER THE DRAG



Above: Though lacking the supersonic performance of most fourth-generation fighters, the L-159E's Grifo-L radar makes it a credible adversary. It can present a modern radar threat for the types of beyond-visual-range engagements the F-22 and F-35 communities train for. José M. Ramos

Left: 'Youthful exuberance is no match for age and treachery,' says Mike 'Smitty' Smith, a former US Navy F-14 and Air National Guard F-16 pilot. One of Draken's first pilots as a carryover from the Black Diamond Jet Team, Smith taxis out for a CAS mission at MCAS Yuma. Joe Copalman

ON

One of the leading names in the rise of contract Red Air support is Draken International. Joe Copalman examines the company's work.

ONE OF the highest-profile victims of the 2014 US budget cuts was the air force's 65th Aggressor Squadron (AGRS). Equipped with 19 F-15C/D Eagles, the 65th had, for almost a decade, flown high-end threat presentations for US and allied flying units during exercises such as Red Flag. When the US military was saddled with a limited budget because of political squabbling beyond its control, the 65th AGRS, at Nellis Air Force Base, Nevada, became a luxury the USAF could no longer afford. The squadron's stand-down left a large gap in the Department of Defense's (DoD's) ability to provide combat-realistic threat replication, particularly fourth-generation radar threats.

Formed in 2012, Draken International is one of several contract air services helping the US military bridge that gap. Scott Poteet, one of the company's vice-presidents of business development (also a former Thunderbird and previous commanding officer of the 64th AGRS), explained how it fitted into this role. "First and foremost, with the F-35 demands increasing, the air force is going to need more capacity. And right now, based on what the 64th Aggressors can provide, it's just not enough," he said.

For all the Red Air training needs across the USAF - whether it is basic intercept and fighter manoeuvring within Air Education and Training Command (AETC), advanced tactical training at the Fighter Weapons School (FWS), or large-force exercises like Red Flag, it is simply

The business model is based around three 'Cs' - capability, capacity, and cost-effectiveness. The company's goal is to be able to offer customers aircraft and pilots with capabilities to support fourth- and fifth-generation fighters, in numbers that meet the rising demand for combat-realistic threats, and at a price well below what it costs the military to field an organic aggressor force. Its fleet currently numbers around 80 aircraft consisting of a mix of types, all of which bring different capabilities to the various missions that are supported.

Punishing mistakes

A mix of third-generation fighters, attack jets, and trainers provide ground attack, electronic attack (EA) and - most importantly - air-to-air threat replication with fourth-generation radars. Having aircraft equipped with pulse-Doppler radar gives Draken an advantage over its competitors, as it allows its pilots to provide a credible beyond-visual-range (BVR) threat to the Blue Air players it supports. Mike 'Smitty' Smith, a former US Navy F-14 and Air National Guard F-16 pilot, explained: "Everything they're going to get typically is BVR anyway. If a Raptor or an F-35 gets within visual range, they have fouled something up. And that's



not cost-effective for the service to generate its own adversaries. Describing the company's advantages, Poteet told *AFM*: "When we compare similar dollars, Draken is a fifth of what it costs to operate an F-16 on an hourly rate. And that's the cheapest, the F-16. If you're talking about an F-15, F-22, F-35, it's just exponentially more expensive. We're a fraction of the cost, and we can put up anywhere from four to ten aircraft an hour, depending on what you're flying, at a similar rate."

going to be in their debrief - 'why did we get this close to a Raptor? We should have treated all of these targets way back on the timeline'.

That's what we're there for, to prosecute. They'll tell you up front in their briefs, 'Punish me on my mistakes'. That's one of their biggest training objectives, they want to get hammered for it."

Kahu Skyhawks

The current mainstay of the firm's contracts is the A-4 Skyhawk, with a mix of six ex-Israeli A-4Ns and seven ex-Royal New Zealand Air Force (RNZAF) A-4Ks. The A-4Ks, in particular, ▶

Dragonkeepers

James 'Jug' Wilkerson, a retired USAF Chief Master Sergeant with 30 years of aircraft maintenance experience, is Draken's Deputy Director of Maintenance and Logistics for West Coast Operations. Like Wilkerson, most maintainers are veterans with extensive experience on fighter aircraft. "The requirement we put out there when recruiting is a fighter aircraft background," Wilkerson told *AFM*. "So fighter aircraft is kind of what we target, but the skillset and the intelligence and intellect of the person also has a huge factor in how we hire folks."

Aircraft regeneration and deep maintenance are performed at Lakeland, Florida. In addition to what can be done in-house, some work is contracted to companies with more expertise in certain areas. Draken's USMC contract manager Jeff Scott explained: "We don't do engine or radar overhauls or the high-end avionics, we have different places send those out to."

"Our engines are maintained by SafeAir New Zealand, which a private factory-authorized service centre, the same one the Kiwis used. I think they have 20 engines of ours, spare motors that they keep there for us in New Zealand."

The company had to set up an ordnance shop meeting DoD's standards before it could start dropping bombs in support of USMC JTAC training. Jeff Scott said: "We stood up our ordnance program by taking an Air Force Reserve ordnance chief out of Homestead AFB, Florida and he stood up our entire ordnance programme and has

trained a few other guys. We maintain our own ordnance programme that has been checked and inspected and meets the navy's standards and the air force's."

Draken recently adopted a designated crew chief (DCC) framework for its A-4 fleet. DCCs are assigned to a specific airframe and responsible for ensuring it is mission-ready when needed. Wilkerson said: "I'm seeing

a big, big plus in having a DCC programme. The big thing for us is that it creates a manager for an aircraft, giving that aircraft a voice every day as far as how we put it in the priority matrix to fix aircraft. And these guys, at the bottom end of every day, they're the ones who have the pride of ownership of an aircraft. I think it's a great thing. We plan to do the same thing with our L-159s as well."



Above: Along with ramp space, Draken also has a hangar at Nellis for routine maintenance. Joe Copalman





are what separate Draken from other contract air services. The company's Director of USMC Operations Jeff Scott said: "The A-4K was the RNZAF 'Kahu' variant. It was their primary air defence aircraft, which they upgraded to earlier-model F-16-type avionics. It has an APG-66 radar, HUD [head-up display], multi-function displays, HOTAS [hands on throttle and stick controls], and a digital databus. So it's got a lot more than the standard A-4s used to have back in the day."

Of critical importance to the Red Air mission is the Skyhawk's radar. Jeff Scott explained: "There are Red Air platforms that go out there with no radar, but it's hard to punish the Blue mistakes in those aircraft. Really, at the end of the day, we're targets, and if they do everything right, we shouldn't be able to shoot them. But if they do something wrong and they don't get shot, that is reinforcing a bad habit. So if they do something wrong and they get shot, then they take it back to the debrief and then go fix it and not do it again."

Lacking the A-4K's radar and ability to drop ordnance, the A-4N is nonetheless a vital addition to the company stable, typically simulating infrared air-to-air threats or providing EA with service-provided ALQ-188 jamming pods.

Mighty 'Macchis'

Along with the Kiwi A-4s, Draken bought the RNZAF's fleet of AerMacchi MB339s. Though not a part of its current contracts with the USAF or US Marine Corps, the MB339s have been used for smaller jobs, such as supporting recent tests of the Japanese Ground Self-Defense Force's new Chu-SAM Kai air defence missile system at New Mexico's White Sands Missile Range. Should the company pick up more work for Joint Terminal Attack Controller (JTAC) training, the MB339 would prove a good fit for the mission. "It's a great airplane, very capable. There's no air-to-air radar capability, so it's all air-to-ground. It'd be great for that for sure," explained 'Smitty' Smith, Draken's head MB339 and L-159 pilot.

Though none have yet been regenerated for a contract, the MiG-21s comprise the largest percentage of the company's fleet. With 28 MiG-21bis obtained from former Polish Air Force stocks, Draken foresees several ways the type can support its clients.

Jeff Scott told *AFM*: "You're talking about a Mach 2 airplane. If you want a very fast flier, the MiG-21 is good for that. Also, with the numbers, we can provide an extreme targeting challenge. If you look at Cope India, India was able to put some high-end jammers on their MiG-21s and cause some problems with an old airplane. It's like a Mach 2 John Deere [tractor]."

L-159 ALCA

The most recent addition to the fleet is the Aero Vodochody L-159E Advanced Light Combat Aircraft (ALCA). Based on the popular and proven L-39 Albatros, the L-159 packs an impressive punch in a small and, importantly, affordable package. Designed ◀

Above: The A-4K is widely acknowledged as the most capable and technologically advanced variant of the Skyhawk. Joe Copalman

Left: Outfitted with an AIM-9 acquisition round on the starboard pylon and a P5 AIS pod on the port pylon, an A-4K leaves Draken's ramp at Nellis to tussle with some Weapons School students over the Nellis ranges. Joe Copalman

Below: 'Flash' Gordon pre-flights an L-159E on the ramp at Nellis prior to a check-out flight in the type. Flash is one of several Draken pilots with previous experience flying for the 64th Aggressor Squadron at Nellis. This has assisted company integration with the 64th. Joe Copalman





at a time when Boeing owned 35% of the Czech firm, the L-159 benefits from Western digital avionics and an intuitive cockpit layout. Smith said: "It's a great airplane, very user-friendly. You can tell it was designed with the pilot in mind, the way the controls are laid out, especially the HOTAS functionality of it."

Most importantly, the ALCA is equipped with a Grifo-L pulse-Doppler multimode radar. Previously, the A-4Ks were the only game in town when it came to contract Red Air with credible radar capability. Acquiring 21 L-159s increases the company's radar-shooter capacity by 300%, which means it can provide more aircraft for 'overwhelm' training against fifth-generation fighters. Smith told *AFM*: "I really like the Grifo-L radar. It has everything that you would expect as a former 'Viper' guy as well – track while scan, range while scan – it's really nice. I think the L-159 is going to be a force to be reckoned with for our competition as far as the reliability of it, the price point of it, the things it can bring to the fight. And I think the end-user is really going to enjoy what they see on their radar warning gear from what the radar can do. I think they're going to enjoy what it can bring to the fight."

In addition to air-to-air capabilities, the L-159s can employ air-to-ground ordnance, making the company's investment in the type a comprehensive upgrade in terms of not just capacity, but capability as well.

The company also flies a handful of L-39s, which, having grown out of the Black Diamond Jet Team, were the company's first aircraft. Lacking radar or ordnance capabilities, these are primarily used for training, though some recently participated in the Japanese Chu-SAM Kai tests at Holloman AFB, New Mexico, providing additional targets for the missile crews during 'overwhelm' training.

Future fleet?

Draken's fleet provides the sought-after 90% solution of capability, capacity and cost-effectiveness. While other aircraft might provide more potent threat replication, higher operational costs and lower sortie rates work



against that advantage. Jeff Scott explained: "There are other airplanes out there, but not all of them are the right solution. We've looked at MiG-29s, but they're not very supportable on the engine side. It would be expensive. If we put money down on an airplane, we're going to purchase it because it's a good value."

Nevertheless, with some air arms wanting more credible fourth-generation adversaries to train against, the company is actively looking for solutions. Scott continued: "We understand there's a need and there's going to be a solution at some point, whether it's F-16s or whatever fourth-generation platform that's highly capable and fast out there. We're doing our research and we're going to have a solution, but that solution is yet to be determined."

Advancing capabilities

Regardless of any additional types it acquires in the future, current plans call for upgrading the existing fleet with enhanced capabilities. "We have big plans in the works right now on updating our entire fleet," Poteet told *AFM*. Plans call for "data link, helmets, high off-bore-sight missiles, better EA pods,IRST [infrared search and track] capability, and integrating all those to force-multiply our capabilities to provide an even more aggressive and dynamic threat that they can train against at the same price point." Though the fleet represents a significant

Above: Draken's support of JTAC training for the US Marine Corps involves A-4Ks dropping BDU-33 practice bombs under the control of JTAC students. Joe Copalman

Top: Lacking the radar of the APG-66-equipped A-4Ks, the A-4Ns are typically called on to provide electronic attack, infrared air-to-air threat simulation, and anti-ship threat simulation for fleet defence training. Joe Copalman

Below: Draken's priority on the L-159s is to clear them for air-to-air work with the USAF and Marine Corps. Draken's chief pilot, Dale 'Snort' Snodgrass sees much potential for the type in the sort of air-to-ground work the company has been doing for the Marines – "It'd be a great platform for that mission, absolutely." Joe Copalman



Draken history

Draken pilots refer to the company's founding as having followed a 'Field of Dreams' business model, referencing the popular baseball film in which a farmer is urged to build a baseball stadium by a disembodied voice with the ghostly admonition, "If you build it, they will come." The company emerged from the Black Diamond Jet Team, a popular American airshow act that flew a mix of L-39s, MiG-15, and a single CT-133 Shooting Star. In 2012, Black Diamond pilot Jared 'Rook' Isaacman, Draken's CEO, realised that the combined tactical airtime experience of several of his teammates (many with adversary backgrounds) made them ideal to help meet the needs of the US military in the form of Red Air training.

From the beginning, Draken had a strong relationship with the Skyhawk, obtaining two A-4Ls to put to work while seeking out and building a fleet of more potent types hoping the right mix of capable aircraft, competent pilots, and competitive pricing would attract military clients. Other contract air services had unsuccessfully attempted to acquire

New Zealand's mothballed A-4Ks as aggressors but Isaacman's meticulous paperwork secured the aircraft and their transfer to private hands in the United States. Jeff Scott explained: "You can't just show up at customs with a combat-capable A-4 and tell the agent 'I'd like to declare a warplane'. There's a long process that goes through the State Department in order to secure that approval, and our CEO was very careful about making sure this was approved."

In five years, Draken has grown from a half-dozen L-39s flown by a handful of highly experienced pilots and no contracts to having a fleet of 80-plus aircraft, a staff of 123, flying more than 5,000 hours a year in support of numerous contacts with multiple air arms around the world. The company's 'Field of Dreams' gamble certainly seems to be paying off.



Jonathan Derden

breadth of capabilities, it's the company's highly experienced pilots who bring those capabilities to bear for its clients. "About 30% of our pilots are either Weapons School, TOPGUN, or WTI [Weapons and Tactics Instructor course] graduates," said Terry 'Stretch' Scott, Draken's Director of Operations at Nellis AFB. "About 30% have aggressor experience, and about 40% have got fleet experience." The Defense Contract Management Agency stipulates that any pilots providing contract air service for the DoD have a minimum of 1,500 hours of tactical air experience. Most company pilots easily surpass this, with pilots such as Dale 'Snort' Snodgrass, its chief pilot, having upwards of 12,000 hours of tactical airtime.

The pilots also hold secret clearances, which allow them to be 'read-in' on certain tactics and capabilities for a given customer's desired threat simulations.

Most of the pilots were known quantities to those already flying with the company before being hired, and were recruited as much based on their reputations as their CVs. Jeff Scott explained: "We recruit people that we know, typically. If we know a guy is available and we knew he's good and would be a benefit to the company, then we'll bring him by, introduce him, get his resumé, and go through with the process. We pick our guys, only our guys are usually very, very senior."

This experience matters to the end user. As Mike Smith colourfully put it: "Youth and exuberance is no match for old age and treachery when it comes to this game." Though the crawl/walk/run progression of the Fighter Weapons School at Nellis typically has the aggressor pilots (Draken included) 'handcuffed' to specific tactics and threat

presentations, those restrictions ease up as the class progresses. Smith told *AFM*: "As they start to let you go with Western tactics and allow you to do those things that you know how to do, you can get an unobserved kill on these fifth-gen aircraft. Sometimes, not often. It happens, and usually it's because you've overwhelmed them with numbers. If you go 4-v-4 against them, you're all done, usually. But if it's four of them against 16 of you... that's what they're looking for - 'how can we go up against a superior-number' ▶





threat and still be able to win the war?"

For many Draken pilots, flying as a contract air service aggressor is a way to continue to serve after retirement. Asked what his favourite thing about flying for the company is, pilot Terry Scott replied: "I enjoy that I still get to contribute to the country and to our national defence. On a personal level, I love flying, and I love flying fighters. It's fun. I really enjoy that. But there's also more to it. After being in the military for 33 years, there's a lot to learn. And I still get to contribute and give back what I gained over those years."

Major contracts

Since June 2015, Draken has flown A-4Ks on a contract supporting JTAC training for the US Marine Corps. The Marines run roughly ten JTAC courses per year, split between two training groups: Expeditionary Warfare Training Group – Pacific (EWTGPAC) on the west coast, and EWTGLANT on the east coast. Before it could start flying on this contract, the company had to meet the navy's standards for air support. Jeff Scott, Director of USMC operations, said: "We completed a full maintenance and operations inspection from NAVAIR AIR 5.0 [test and evaluation] and PMA-226

[adversary and contract air program office] in May 2015 that led to our navy flight clearance that allowed us to fly on that contract and conduct live close air support."

The firm's role in this contract is to drop practice bombs under the guidance of student JTACs, who must complete a certain number of different types of controls to graduate. "Each course has a week-long live-fly portion; during this portion Draken flies 16 to 20 sorties that average two hours per sortie," said Scott. "We have supported 18 courses total since we started, and flown over 300 sorties in support." Since this contract started, its pilots have dropped more than 1,300 practice bombs, with a 100% release rate.

More recently, Draken began providing Red Air support to the USMC. Exercise Agile Lightning and Wing Fury was held at Marine Corps Air Station Miramar, California from January 26 to 31, and saw two A-4Ks and two L-159s providing support to Marine F-35Bs. The aircraft integrated with US Navy F/A-18Es and numerous surface-based air defence systems to create an anti-access/area denial problem for the F-35Bs to overcome.

Draken's most significant contract to date has been in support of the USAF Fighter

Weapons School at Nellis. Terry Scott, Draken's ops director at Nellis, told *AFM*: "It started in September 2015 when they announced that we had won the contract, and we started operating here on November 23. The initial period was three weeks where we flew a four-turn-four every day, and that was to support the weapons school integration phase. That was a trial period for the air force to see how we did, and they liked us, so they invited us back in February, and we've been here ever since."

The Nellis contract has Draken flying an average of 3,800 hours per year, primarily in support of the weapons school, but also providing Red Air services for other units. "Currently, any adversary air requirement here at Nellis, we support. That includes Red Flag, Green Flag, FWS support, and operational test and evaluation," he explained. "Any requirement the air force has, the scheduler says, 'here's the airplanes, here's who is available, and you're supporting.'" Draken is fully integrated with the 64th AGRS at Nellis, having offices and crew spaces in the 64th's building, briefing with the 64th's pilots, and flying with them as an integrated aggressor force. "We fly just like any other member



Above: Equipped with modern avionics and a potent Grifo-L pulse-Doppler multimode radar, the L-159 provides customers with a credible beyond-visual-range air-to-air threat at low cost. Joe Copalman
Left: Draken's flight line at Nellis comes to life as a four-ship of A-4s prepares for an air-to-air mission in support of the Fighter Weapons School. Joe Copalman

is no exception. Since taking it on, the company has supported AETC by providing radar threats for the F-35A-equipped 61st and 62nd Fighter Squadrons to train against. It will also be supporting the Hawaii Air National Guard with four L-159s and has provided aircraft for the USAF Test Pilot School at Edwards AFB, California to use for training new test pilots.

Global solutions


In addition to the USAF and USMC contracts in the United States, Draken gained its first foreign foothold in France, supporting the French Navy. As Jeff Scott explained: "In our typical overseas model we'll partner with a company wherever we're working, in this case Secapem. They provide French pilots, who we train, and then they go over there and fly the missions." Draken currently has two A-4Ns and two MB339s providing targets for air defence training for the French Navy's surface fleet. Scott added: "They also do some adversary work with the navy pilots, and target towing over there with the French Navy for their air-to-air gunnery training."

The contractor has also supported the Royal Netherlands Air Force detachment at Edwards AFB for F-35A test support, with further plans to assist the Dutch again in June at Leeuwarden Air Base in Holland where Fighter Weapons Instructor Training is based.

Two major contracts that Draken is bidding on are the Contracted Airborne Training Services (CATS) for the Canadian Forces and the UK's Air Support to Defence Operational Training (ASDOT). As with the

company's other foreign contracts, Draken has partnered with CAE in Canada on the CATS bid and Babcock in the UK for ASDOT. At the time of writing, a decision on the CATS contract is due in October 2017, while the ASDOT contract is still awaiting a final request-for-proposal. When asked what makes the company competitive for both contracts, Jeff Scott replied: "The airplanes. The pulse-Doppler radar is a huge part of what we offer as an adversary, the ability to drop weapons, and then electronic warfare, which we've flown quite a bit of. And we have the capacity. Our airplanes aren't 'paper' airplanes, and the ones we physically don't have are in the process of delivery."

The sky is the limit

The USAF has identified a significant Red Air deficit across nearly all commands with fighter aircraft assigned – Air Combat Command, AETC, and the Air National Guard. As a result, the service is planning to release a request for 40,000 hours' worth of annual adversary aircraft training in the near future. The magnitude of such a deal will likely demand that it be a multi-award, potentially giving most players in the contract air service industry at least some piece of that pie. With the experience being gained across a wide range of contracts, a growing fleet that includes what are arguably among the most capable for-hire Red Air aircraft available, and a cadre of highly skilled fighter pilots, Draken is well positioned to earn a large share of that contract. 

of the squadron," Scott told AFM. "One of the things that's important is that we built our standards around their standards. So when we communicate on the radio, we all sound the same." In this regard, the company has certainly helped the 64th regain some of the radar-shooter capacity that was lost when the 65th stood down.

Each contract Draken is awarded tends to open up new opportunities, and that at Nellis

Below: Along with its A-4Ks, Draken's MB339s were purchased from New Zealand. Without radar, but having six hardpoints for air-to-ground weapons including bombs, rocket pods, and gun pods, the MB339 is an ideal, low-cost close air support training solution for JTACs. Joe Copalman

