



# Upping its Game

Cameroon's small air force has had to galvanise a diverse range of capabilities to good effect in the war against terrorism, as **Erwan de Cherisey** finds out.

Above: This Alphajet MS2, seen flying over northern Cameroon, is one of eight delivered to the CAF since 1984. Five remain in service today. *Pascal Schwarz*  
Right insert: Badge of the Cameroon Air Force.





**A** FORMER GERMAN colony placed under the administration of France and Great Britain after World War One, Cameroon became independent from France on January 1, 1960; the British-administered part joined the newly independent portion of the country in 1961.

An Escadrille Nationale (National Flight) was established at Yaoundé on January 1, 1961 with three Max Holste MH.1521 Broussard light utility aircraft. In 1966 it formed the nucleus of Armée de l'Air du Cameroun (Cameroonian Air Force, CAF).

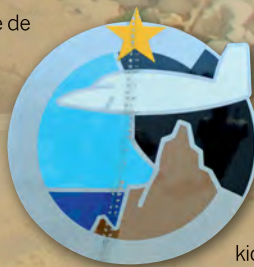
Command of the air force officially passed in 1973 from a French officer on loan to a Cameroonian captain. Ten years later the Air Force General Staff was created. Nowadays the CAF is commanded by the Chef

d'État-Major de l'Armée de l'Air (Air Force Chief of Staff), Général Jean Calvin Momha, who answers to the Chef d'État-Major des Armées (Chief of General Staff), Général René Claude Meka.

The CAF has six air bases, of which five house aviation squadrons. These are divided into three of four Régions Militaires Interarmées (RMIA; Joint Forces Regions), each under the command of a general, which centralise army, navy, air force and gendarmerie units and resources under single authorities.

### War against Boko Haram

An Islamist insurgency led by the Boko Haram terrorist sect in



neighbouring Nigeria began spilling into Cameroon in early 2013 when a French family holidaying in the Far North region of the country was kidnapped. There were more kidnappings throughout

the year and on March 2, 2014 the jihadists stepped up their action when they targeted a Cameroonian army patrol.

The Cameroonian Defence Forces (CDF) then mobilised the troops it already had in the area. With the situation worsening, a decision was taken in May 2014 to launch a full-blown deployment to meet the threat. A major airbridge effort enabled thousands of additional soldiers and hundreds of tons of equipment to be moved in.

Armoured vehicles and artillery pieces were also dispatched and Opération Emergence 4 began, co-ordinating the fight against the terrorists under the newly created RMIA 4. In August 2014, the Bataillon d'Intervention Rapide (BIR; Rapid Intervention Battalion) an elite high readiness component of the Cameroonian military launched Opération Alpha as a separate, yet integrated component of Opération Emergence 4.

During the year a succession of high-intensity gun battles broke out between the terrorists and CDF, the former relying heavily on frontal attacks and superior numbers in their attempts to overwhelm the Cameroonian forces.

In battles, including that at Amchidé in October ▶



## BIR Aviation

CREATED IN 2001, the BIR was established to neutralise the many armed bandit groups crossing from neighbouring Chad and the Central African Republic into Cameroon's Far North region. Unlike the rest of the CDF, the BIR has its own dedicated budget, allowing for a much more rapid equipment procurement process. Through the 2000s, BIR troop numbers swelled and its capabilities expanded to include maritime anti-terrorism, coastal interdiction and the protection of Cameroon's oil exploitation platforms at sea. A strong coastal and riverine operations unit, BIR Delta, was set up in the Bakassi peninsula.

A pair of Bell 412EPs were delivered in February 2010 and inducted into a new unit, the Groupement d'Intervention Rapide Aéro-mobilité (GIRAM; Rapid Intervention Airmobile Group) based at Man O'War Bay near Limbe. One of the new helicopters, TJ-XSA, crashed on November 22, 2010 with the loss of all on board, including a high-ranking Israeli military adviser. It was replaced, and the two Bells conduct routine air support flights for BIR Delta and other BIR coastal units. Last summer, the need to centralise the BIR's air surveillance capabilities led to the creation of the Groupement d'Observation Aérienne (GOA; Air Observation Group), based at Maroua airport. The unit operates an Orbiter UAV for surveillance role, while a single FLIR-equipped Cessna 208EX Grand Caravan special mission aircraft, delivered in the summer, supplements the UAVs.

A ScanEagle UAV system ordered last September should be delivered by September this year. Meanwhile, the first of two Mi-24s on order was delivered in mid-February, after undergoing an extensive refurbishment and modification programme while the second will arrive later in the year. Both helicopters will operate under direct authority of Opération Alpha. ■

**The CAF's Alphajet MS2 fleet had a baptism of fire on December 28, 2014, when two jets flew a strike mission against Boko Haram terrorists who had overrun the Army garrison at Ashigashia.**



**Above:** An Alpha Jet in its hardened shelter at Garoua Air Base, with two of its main weapons on display: the Matra SNEB 68mm rocket launcher and BAP 100 bombs. All photos, Erwan de Cherisey unless stated  
**Below:** Personnel from the French company SOFEMA Aviation Services overhaul most of the CAF's aircraft at Garoua.

2014, Boko Haram even used captured armoured vehicles, but suffered a series of defeats. The well trained CDF effectively combined the capabilities of their elite units, armoured vehicles and artillery strikes.

Since then the situation has evolved further in the CDF's favour, with an increased commitment to more than 9,000 men in the Far North. Chad's involvement, as well as improving co-operation with Nigeria throughout 2015, has seen Boko Haram dealt a series of crushing blows. The group reacted by placing greater emphasis on improvised explosive devices (IEDs) and suicide attacks.

Separately, the long-delayed activation of the Multinational Joint Task Force (MNJTF), grouping forces from Cameroon, Nigeria, Chad, Niger and Benin under a joint command, is increasing pressure on the terrorists.

### Fighter town Cameroon

Built in 1982 to house the CAF's future combat aircraft, Garoua's Base Aérienne 301 (BA 301; Air Base 301) has been home



to the entire Cameroonian fighter fleet since the Atlas Impalas based at Yaoundé were withdrawn in the mid-2000s.

Five Dassault Alphajet MS2 light-attack aircraft, out of a total of eight delivered in 1984, 1987 and 2000, now serve 31ème Escadron (31 Squadron), following the loss of an aircraft on August 24, 1984, a second on September 15, 1997

and another damaged beyond repair on March 15, 2011.

The unit made its combat debut on December 28, 2014 when Boko Haram overran the army camp at Ashigashia in the Far North, on the border with Nigeria. The outnumbered garrison conducted a tactical withdrawal and immediately requested an air strike.

Following presidential approval, a pair of Alphajets took off from





Garoua, heading for the objective at full speed. Both flew two strikes with rockets and cannon, forcing the terrorists into a hasty retreat. The outpost was successfully reoccupied by Cameroonian land forces barely four hours after they had been obliged to vacate it. As a result of the sortie, the defence minister decorated BA 301's battle standard.

Cameroon's Alphajets are all MS2s, a version optimised for light attack, which was initially developed to meet an Egyptian Air Force requirement. They feature a Thomson CSF VE-110 head-up display (HUD), SAGEM ULISS 81 inertial navigation system (INS), Thomson CSF/CNI AHV-9 radar altimeter, SFIM CG90 back-up heading reference sensor and Thomson CSF TMV630 laser rangefinder. The latter is mounted in the tip of the aircraft's nose, while the avionics are co-ordinated via a digital multiplexed databus.

The aircraft are equipped with four underwing, and one underbelly, hardpoints. The former can be loaded with external fuel tanks, BAP 100 bombs or MATRA SNEB 155 F4 68mm rocket launchers. The latter mounts a single DEFA 553 30mm cannon pod.

A single Alphajet is kept mission-ready, on alert around the clock in one of Garoua's hardened aircraft shelters, which are built to sustain a direct hit from a 500lb bomb. Local crews conduct maintenance and servicing up to Level III, since the CAF has the workshops and equipment necessary to service the Martin-Baker ejection seats and SNECMA Larzac engines.

Depot maintenance and major inspections were initially done in France, but now take place at Garoua under the supervision of technical teams from French company SOFEMA. At the time of AFM's visit, one of the MS2s was undergoing overhaul. As explained by Colonel Tsilla, the base



**Above:** A fleet of eight Humbert Aviation Tétrás 912 ultralight aircraft serving the CAF are used for training and surveillance over the country's borders and national parks.

**Below:** The CAF's 32ème Escadron flies the PANVR's Tétrás 912 fleet as well as a pair of Joker J300 ultralights in surveillance and patrolling missions.



commander, the process grounds the aircraft for ten to 12 months.

Despite their limited numbers, excellent servicing ensures that Cameroon's Alphajets enjoy a high rate of availability and that a number of aircraft are always combat-ready. In the war against Boko Haram the nimble jets are a good insurance policy for the forces on ground, which know they can rely on their firepower when needed.

Cameroon's fighter pilots have been trained in France – at the École d'Aviation de Chasse (Fighter School) at Tours – on French Air Force Alphajets. While others have been trained on the type in ►



**Two PANVR Tétrás flying over Lake Lagdo. French and Cameroonian instructors train students from several African countries, some of whom are later sent to France for advanced training. Humbert Aviation**



**Above:** Two FK9ELA ultralights based at Garoua are flown in a surveillance role and can be fitted with underbelly panoramic video cameras.

## Cameroon Air Force (CAF) Order of Battle

Base	Unit	Type
BA 101 Yaoundé	11ème Escadron	2 Bell 206B-3
	12 ème Escadron	2 SA330
BA 102 Bertoua	13 ème Escadron	2 Mi-17-1V, 3 Mi-17V5
BA 201 Douala	21/22 ème Escadron	1 MA60, 1 CN235-300, 2 C-130H, 1 C-130H-30
BA 202 Bamenda	23 ème Escadron	3 Z9WE
BA 301 Garoua	31 ème Escadron	5 Alphajet MS2
	32 ème Escadron	8 Tétrás 912, 2 J300,
		2 FK9ELA





**Above:** A pair of C-130Hs and a single C-130H-30, fly from Douala Air Base. These aircraft have played a pivotal role in establishing and maintaining the logistical air bridge that supports the armed forces deployment in the Far North region against Boko Haram.

Cameroon after going through initial aviation training abroad. Older officers, including Tsilla, have experience on the Fouga CM.170 Magister and Atlas Impala.

## Ultralights

Garoua also houses 32ème Escadron, a surveillance unit equipped with ultralights. It operates over Cameroon's borders and national parks, helping prevent poaching which, as in many African countries, threatens biodiversity. Eight Humbert Tétrás 912 BSM/CSM aircraft are in service along with a pair of Aero Synergies Joker J300s.

The use of ultralights for surveillance is not uncommon in Africa – Mali, Niger and Madagascar operate the Tétrás in a similar role. They are not involved in the fight against Boko Haram because their slow speed and low operational altitude would make them easy targets. A pair of FK-Lightplanes FK9 ELA ultralights, under BA 301's command, supplements 32ème Escadron's aircraft in the surveillance role.

The Humber Tétrás is also employed by the Cameroonian

Pôle Aéronautique National à Vocation Régionale (PANVR, Regional Vocation National Aeronautics Pole) – an aviation school established with assistance from the French Military Co-operation Mission in Cameroon in 2000. It provides aviation training to military students from Cameroon and neighbouring countries, sometimes as a prelude to more advanced instruction abroad. Courses taught on the Tétrás train pilots, mechanics, observers and instructors.

## Transport fleet

All CAF transport assets are pooled together at BA 201 in the port city of Douala, Cameroon's economic capital. The air base is home to 21ème Escadron and 22ème Escadron, which share a pool of aircraft that comprises a pair of C-130H Hercules which were both taken up in 1977, a single C-130H-30 received in 1982, a Xian MA60 and CN.235-300. The latter two were pressed into service in 2012 and 2013.

Since May 2014, when the tempo of military operations

## CAF Inventory

Type	Identity	c/n	Unit	Base
Bell 206B-3	TJ-XCX	3951	11ème Escadron	BA 101 (Yaoundé)
Bell 206B-3	TJ-XCY	3952	11ème Escadron	BA 101 (Yaoundé)
SA330F	TJ-XCG	1181	12ème Escadron	BA 101 (Yaoundé)
SA330J	TJ-XCR	1119	12ème Escadron	BA 101 (Yaoundé)
Mi-17-1V	TJ-XDH	-	13ème Escadron	BA 102 (Bertoua)
Mi-17-1V	TJ-XDI	-	13ème Escadron	BA 102 (Bertoua)
Mi-17V-5	TJ-XDN	-	13ème Escadron	BA 102 (Bertoua)
Mi-17V-5	TJ-XDO	-	13ème Escadron	BA 102 (Bertoua)
Mi-17V-5	TJ-XDP	-	13ème Escadron	BA 102 (Bertoua)
MA60	TJ-XDE	-	21ème Escadron	BA 201 (Douala)
CN235-300	TJ-XDG	208	21ème Escadron	BA 201 (Douala)
C-130H	TJ-XCD	4752	22ème Escadron	BA 201 (Douala)
C-130H-30	TJ-XCE	4933	22ème Escadron	BA 201 (Douala)
C-130H	TJ-XCF	4747	22ème Escadron	BA 201 (Douala)
Z9WE	TJ-XDJ*	-	22ème Escadron	BA 202 (Bamenda)
Z9WE	TJ-XDK*	-	23ème Escadron	BA 202 (Bamenda)
Z9WE	TJ-XDL*	-	23ème Escadron	BA 202 (Bamenda)
Z9WE	TJ-XDM*	-	23ème Escadron	BA 202 (Bamenda)
Alphajet MS2	TJ-XBU**	CA1	31ème Escadron	BA 301 (Garoua)
Alphajet MS2	TJ-XBV **	CA2	31ème Escadron	BA 301 (Garoua)
Alphajet MS2	TJ-XBW **	CA3	31ème Escadron	BA 301 (Garoua)
Alphajet MS2	TJ-XBX**	CA4	31ème Escadron	BA 301 (Garoua)
Alphajet MS2	TJ-XCH**	CA7	31ème Escadron	BA 301 (Garoua)
Alphajet MS2	TJ-XCI**	CA8	31ème Escadron	BA 301 (Garoua)
J300 Joker	TJ-XCK	-	32ème Escadron	BA301 (Garoua)
J300 Joker	TJ-XCS	-	32ème Escadron	BA 301 (Garoua)
Tétrás 912 BSM	TJ-XCT	73	32ème Escadron	BA 301 (Garoua)
Tétrás 912 BSM	TJ-XCU	74	32ème Escadron	BA 301 (Garoua)
Tétrás 912 BSM	TJ-XCV	75	32ème Escadron	BA 301 (Garoua)
Tétrás 912 BSM	TJ-XCZ	83	32ème Escadron	BA 301 (Garoua)
Tétrás 912 BSM	TJ-XDA	88	32ème Escadron	BA 301 (Garoua)
Tétrás 912 BSM	TJ-XDB	115	32ème Escadron	BA 301 (Garoua)
Tétrás 912 CSM	TJ-XDC	174	32ème Escadron	BA 301 (Garoua)
Tétrás 912 CSM	TJ-XDD	187	32ème Escadron	BA 301 (Garoua)
FK9 ELA	TJ-XSB	-		BA 301 (Garoua)
FK9 ELA	TJ-XSC	-		BA 301 (Garoua)

\* One Z-9WE was damaged beyond repair on April 23, 2015; serial unknown

\*\* One Alpha Jet MS2 was damaged beyond repair on March 15, 2011; serial unknown

**Below:** Seen on its arrival at Maroua airport in the Far North region, this CAF C-130H is maintained by the Portuguese aviation services company, OGMA, along with the rest of the CAF's Hercules fleet.







**Above:** This Bell 206B-3 at Maroua is one of two examples in service with the CAF.

**Right:** Looking out over the savanna from an Mi-17V5 overflying the Far North region. The helicopter's hard points can take 57mm rocket launchers and 23mm cannon pods.

**Below:** This 13ème Escadron Mi-17V5 is one of three examples in service together with a pair of Mi-17-1Vs. It is seen in the Waza National Park in the Far North.



against Boko Haram dramatically increased, the air transport fleet has provided vital logistical support to deployed units. The better part of the reinforcements sent to the area of operations over the past 20 months have been deployed by air to the airport at Maroua, the primary logistics hub for Opération Emergence 4. With road infrastructure poorly developed in the region, air transport has proven the only practical method for rapidly bringing in troops and equipment.

The CAF's Hercules fleet provides a permanent link between southern Cameroon and the operational area, as AFM experienced on a flight from Yaoundé to Maroua in late September 2015. Aside from several dozen military and civilian passengers, the C-130H was loaded with 5 tonnes of supplies



for the troops (sleeping bags, fresh uniforms etc) involved in Opération Emergence 4.

Cameroon's three C-130s and single CN235 also serve as jump platforms for the paratroopers of the Bataillon des Troupes Aéroportées (BTAP; Airborne

Troops Battalion) at Koutaba and the BIR, affording Cameroon an insertion capability few countries in the region possess.

Meanwhile BA 201's aircraft also transport for military families. They are permitted aboard scheduled resupply flights – AFM's

C-130 return flight carried 30 civilians, along with a group of several dozen gendarmes heading for R&R at Yaoundé.

Most CAF transport pilots have trained at the French École d'Aviation de Transport (Transport Aviation School) at Avord. Some have also been sent elsewhere for additional courses, including C-130 conversion in the US or C-130 flight simulator training in Belgium.

In recent months the CAF has relied on a contracted ex-Força Aérea Portuguesa (Portuguese Air Force) Hercules instructor. He works as a pilot, and flew AFM's C-130 from Yaoundé to Maroua, and as an instructor, he has the responsibility of qualifying a group of new CAF pilots as C-130H co-pilots.

C-130 maintenance is carried out locally up to Level II, while depot level maintenance, ▶



**Above:** The CAF still flies a pair of SA330 Pumas, both based at Yaoundé. This aircraft was photographed during the US-sponsored Central Accord 2013 exercise in Douala. US DoD





**Above:** The Mi-17 undertakes a wide range of duties in support of anti-terrorist operations, including MEDEVAC. They can also be used as gunships, although with the delivery of four Mi-24s to the CAF they are unlikely to perform this role very often. Etienne Fouté

overhauls and major servicing are performed abroad. Over the past four decades many companies have worked on the CAF's Hercules fleet, including Denel in South Africa and Sabena Technics, in France.

The past few years have, however, seen maintenance conducted by the Portuguese company OGMA, which also maintains the French C-130 fleet and has provided servicing to several other African Hercules operators, including Gabon and Chad.

## Helicopters and air mobility

The CAF's helicopter fleet comprises 12 aircraft of four different types.

Yaoundé's BA 101 houses two rotary-wing units. The first, 11ème Escadron, flies a pair of Bell 206B-3 JetRanger IIIs tasked primarily with liaison, observation and light utility duties, although they can also be called upon for medical evacuation (medevac). A Bell 206 was operating from Maroua when AFM visited late in September 2015, transporting military personnel around the operational area for briefings and inspections.

Two Aerospatiale SA330 Pumas serve 12ème Escadron for logistics and troop transport work. They have been involved in bilateral exercises with US forces in Cameroon over the past few years, but are not believed

to have deployed north. Both feature nose-mounted weather radar and retain their original Turbomeca Turmo IV engines.

Most of Cameroon's airmobile fleet consists of two Mi-17-1V and three Mi-17V-5 Hips, pooled in 13ème Escadron at BA 102 Bertoua, east of Yaoundé. The aircraft were delivered in two batches in 2013 and 2014.

Under Opération Emergence 4 they are frequently deployed in the extreme north, moving cargo and personnel throughout the area. The Mi-17s have also proved their worth as medevac platforms, extracting wounded soldiers from the field.

They can also be fitted with

external hardpoints for 23mm UPK-23 cannon pods and UB-32 launchers for 57mm rockets. A live-fire exercise last November qualified Cameroonian crews in weapon use and 13ème Escadron is now equipped for close air support and attack missions.

It's believed the Hips have not yet fired in anger, but ongoing operations against Boko Haram could easily see the situation change. Aircrew are trained locally, with assistance from contracted Ukrainian and Croatian instructors. Maintenance is conducted in country, up to Level II. More complex interventions will require aircraft to visit a certified maintenance centre abroad.



## BIR Aviation Order of Battle

Unit	Base	Type	Serial
GIRAM	Man O'War Bay	Bell 412EP	TJ-XEM (c/n 36524), TJ-XRI (?)
GOA	Maroua	Cessna 208EX, Orbiter UAV	unknown



**Above:** Four Harbin Z9WEs were delivered to Cameroon in 2014. One of the aircraft was lost in a crash and the remaining three are in service with 23 Squadron at Bamenda. Etienne Fouté

**Right:** These BIR soldiers are attached to Operation Alpha, itself part of Operation Emergence 4, which oversees the Cameroonian military deployment against Boko Haram in the Far North region. Currently, over 9,000 Cameroonian troops are mobilized in the fight against the jihadists.

**Left:** Each Z9WE is equipped with an optronic turret with laser designator and can be armed with HJ-9 anti-tank missiles. Etienne Fouté



The CAF's other helicopter unit is 23ème Escadron, flying Chinese-built Harbin Z9WE attack helicopters. Four were delivered in 2014 after a Chinese loan and three remain operational after one was severely damaged during a test flight on April 23 last year. The Z9s fill the void left by the retirement of the HOT-armed Gazelle in the early 2000s, and can be equipped with HJ-9 anti-tank missiles. In addition to combat sorties they also provide a useful reconnaissance capability, thanks to their nose-mounted forward-looking infrared (FLIR) turrets.

Aircrew were trained in China prior to the Z9s' delivery, but future pilots are likely to train in Cameroon. It's thought the helicopters have yet to see combat against Boko Haram.

## Crew training

There is no CAF training school apart from the PANVR, so most pilots and engineers are trained abroad. For years, France trained most of Cameroon's pilots at the Salon de Provence École de l'Air (Air Force Academy), where they undertook officer training and basic flying instruction before being sent to other schools, including those at Tours and Avord, for specialist training. Nowadays, many CAF officers are trained in different countries. Some still go to France, others are sent to Greece and a few are even trained at civilian aviation schools in Europe before subsequently going through officer training at the École Militaire Interarmées (EMIA, Joint Forces Military School) in Cameroon. Helicopter pilots go to either the Dax Army Aviation School or civilian company Hélicoptère.

Mechanics and engineers still train at the French École de Formation des Sous-officiers de l'Armée de l'Air (Non-commissioned Officers' Training School) at Rochefort, specialising in avionics, engines and other areas.

## Presidential aircraft

Presidential air mobility is the responsibility of a dedicated aviation unit, the Escadrille Présidentielle (Presidential Flight), which operates under orders from Cameroon's Presidency. Its personnel hail from the CAF, but are not under its chain of command.

The unit has flown a variety of types, including the C-47, HS.748, Arava, Alouette III, Bell 206B-III and SA330 Puma. It currently flies single examples of the AS332L1 Super Puma and SA365N Dauphin as well as a Gulfstream III.



**Above:** The BIR has its own aviation component which flies two Bell 412EP helicopters in maritime surveillance, anti-piracy and counter-terrorism missions from its home base at Man O' War Bay in southern Cameroon. Etienne Fouté

## Escadrille Présidentielle

Serial/C/n	Type	Base
TJ-1BC (c/n 2495)	AS332L1	Yaoundé
TJ-AAQ (c/n 6059)	AS365N	Yaoundé
TJ-AAW (c/n 486)	Gulfstream III	Yaoundé



## Future Airpower

THE CAMEROON authorities are acutely aware of the importance of airpower in the conflict against Boko Haram. Without BA 201's transport aircraft the rapid deployment of troop reinforcements to the Far North would have been impossible. So it's hardly surprising that renewed efforts are being made to further expand and modernise the CAF.

Indeed, 2016 should see the delivery of four Mi-24 Hinds, purchased second-hand from Russia. The helicopters are likely to go to the newly established BA 302 at Ngaoundéré, providing much needed firepower for anti-terrorist operations.

Also expected is a single CN.235-300 MPA maritime surveillance aircraft, which will fill the void left by the withdrawal of a pair of Dornier Do 128-6 MPAs in the late 1980s and provide Yaoundé with a boost in its capabilities against the growing piracy threat in the Gulf of Guinea. It's also likely that additional orders for transport aircraft and helicopters will be announced. The establishment of a dedicated air training school enabling Cameroon to become self-sufficient in pilot training is also on the agenda, albeit in the longer term.

Although Cameroon is believed to be looking at the EMB-314 Super Tucano as a potential candidate to strengthen its attack capabilities, it has not discarded the possibility of acquiring a supersonic jet. The origins of such a requirement date back to the 1980s, when there was an unsuccessful attempt to procure a batch of IAI Kfir C2s and, subsequently, a small fleet of Dassault Mirage F1s. The F1 is again a likely candidate for procurement and the CAF is reportedly looking for good quality second-hand aircraft. ■