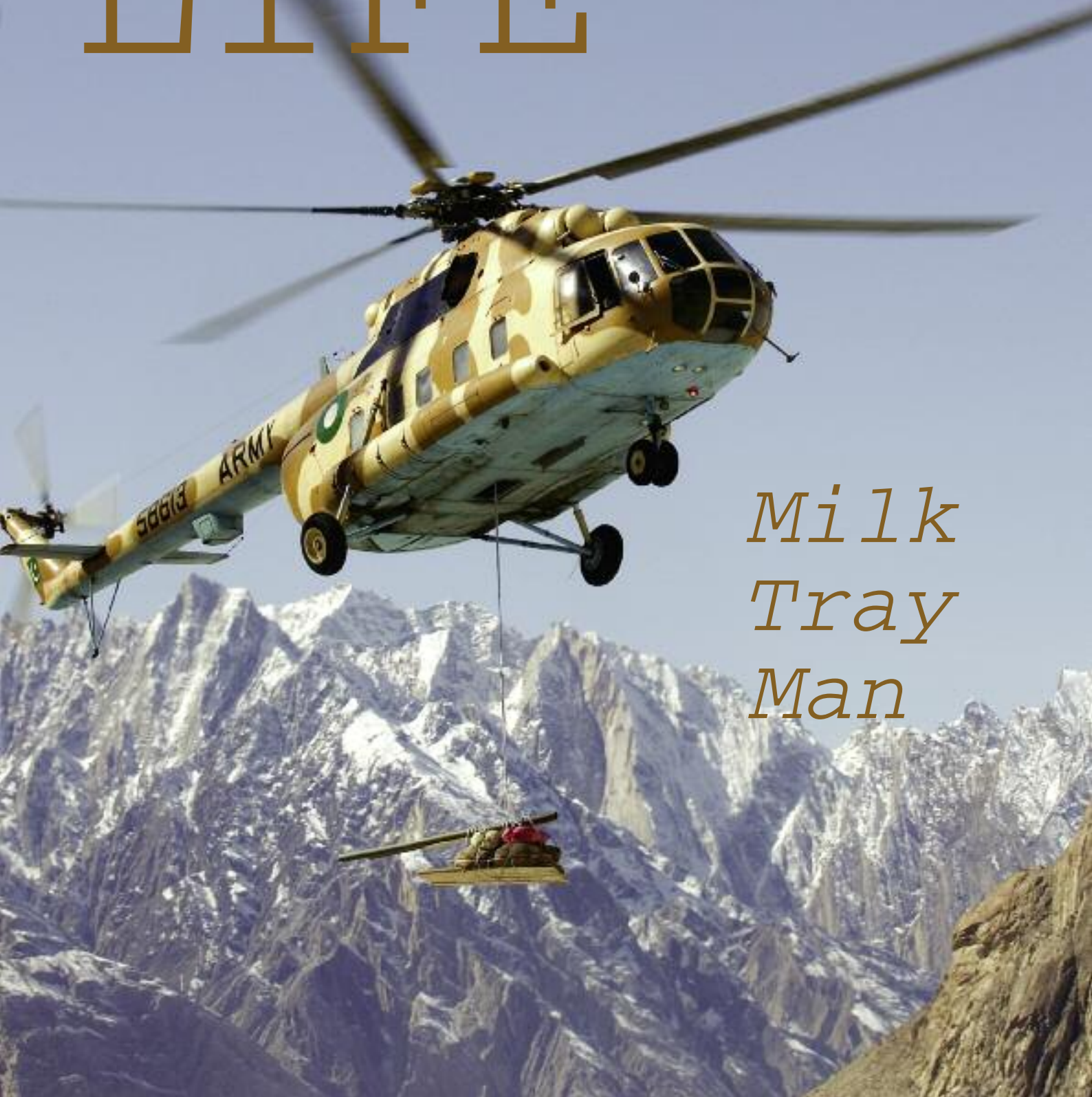


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COVER PHOTOGRAPH

Mil Mi-171 with the TV3-117 VM engine
heavy lifting in Pakistan
by Rogier Westerhuis

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As the credit crunch tightens, it seems that people are looking for many different ways to keep flying, while also trying to keep the price down. For some people this will mean switching from helicopters to aeroplanes, for others it will mean changing from a turbine helicopter to a piston engine helicopter, for some it will mean moving across to try gyrocopters, and for others again it will involve looking at the increasing forms of 'alternative aviation', including the flying car and the Flyke, the flying bike.

The flying car was at Cholmondeley giving a display. This particular model is made by Parajet, has a car chassis, a pusher engine and a parachute-wing for lift. It has recently flown from London to Timbuktu in Africa. Although most of the journey in Europe was actually done on the ground, once they were in Africa they used the car's flying capabilities more and more.

Parajet offer their own licences, which can be done in Spain, although it is apparently possible to get lessons in the UK. It is recommended, but not essential, that you have a microlight licence.

The Flyke, the flying bike, recently flew the full length of Britain with a schoolteacher, John Carver, at the pedals. He flew from Land's End to John O'Groats, and took eleven days to make the 800-mile (1,300 km) journey. The Flyke is made in Germany, and accepted all over the world, according to the website. The parachute wing can be stored when you are not flying, and the bike can then be ridden in the normal manner. The Fresh Breeze Flyke has a parachute-wing, but if you want something more like an autogyro then there is also the

Super Sky Cycle, which is (apparently) almost ready to fly. The Super Sky Cycle is produced in Boyd, Texas, and markets itself as the way to combine road transport with a gyro. It says it is a flying motorcycle, and it has a recommended maximum pilot weight of 280lbs. The website is www.thebutterflyllc.com.

Then, just before we went to press, a British family set the world record for the longest solar-powered flight by a paramotor.

The Cardoza family and friends flew from Monte Carlo to Morocco, using four paramotors, three of which were powered by bioethanol-fuelled engines, and one by lithium polymer batteries, which were charged in rotation using twelve solar panels on top of the team's support vehicle. They wanted not only to show that this type of aviation is viable, but also that it is quite capable of being carbon neutral.

All the flights also raised money for charity.

The imagination and the drive to get aviation entirely 'clean' as well as useful is clearly there, but it still needs time and money, both for research and for trials.

Although I didn't get a chance to fly any of the more esoteric alternatives to helicopters, Chris Jones Gyroplanes at Kirkbride in Cumbria did invite me to fly the MT-O3 gyroplane.

It was a brilliant experience. I really enjoyed flying the MT-O3, but I was surprised to find how different it was from helicopter flying: in some situations your natural helicopter instincts are actually the wrong thing to do in a gyrocopter, as you will see in the article.

One surprising thing about gyroplanes is that their licences are not European. Apparently EASA had no



time for gyros in any form, and so the licences are national, and in the UK that means the CAA.

Coincidentally, I did a helicopter PPL Skills Test on a pilot who had been flying gyrocopters for twenty years before he came to helicopters. Both he and his instructor said that he had a lot to unlearn: for example, in gyrocopters you keep your speed up on landing, because allowing the speed to bleed off also kills off the lift. However, he thought it was easier moving to helicopters from gyrocopters than vice versa.

For Russians, used to the large size Mils and Kamovs, the Robinson family of helicopters provides the smaller alternative, as we see from Mikhail Kazachkov's article on the possible future development of Russian aviation. He looks at how safe and cost effective the Robinson machines are, compares them with the development of cars, and urges the Russian authorities to look again at how they might use these machines to their advantage, and to that of their people. It is a really enlightening article.

Regina Andrius

New Philosophy of Helicopter Application

Mikhail Kazachkov, Chairman of the Helicopter Industry Association of Russia, writes about the future choices for Helicopter flying in Russia



The success or failure of a helicopter project is almost always directly related to the personality of its creator. Thus, the appearance of Eurocopter, now one of the leaders in helicopters, became possible thanks to the felicitous tandem of Jean-Fracouis Bigay and Siegfried Sobotta, and Kamov's survival is a result of the extraordinary personality of Sergey Mikheyev. The latest famous successes of AgustaWestland are inseparable from Giuseppe Orsi, and the revival of MDHI is the achievement of Lynn Tilton. Sikorsky's genius was present at the origins of the entire helicopter industry, and probably Providence itself was guiding him in his moments of inspiration, and forcing him to pursue his goal unswervingly.

It is at such critical points in time that the importance of the leader's role is enhanced multifold. At such moments, the leader's persistence changes the direction of the industry's development, and the ability 'to see over the horizon' becomes a priority. Without doubt, Frank Robinson is such a visionary. To all intents and purposes, he is the patriarch of a new type of rotary wing aircraft.

As of today, we have seen only the first wave generated by his company's R-44 model helicopter. To follow is the R-66 model, which may well devastate even more the old and obsolete routine of aviation. The light helicopter industry has evolved into a self-developing system: its extraordinary success has effectively sparked a boom in demand for the next model, even before it goes into mass production. And the fact remains: never before have helicopters been purchased in such quantities for private use. And, as yet, other helicopter constructing companies have been unable to attain the 'golden ratio' of simplicity and reliability.

Prior to this, helicopter operators were unable to compete with the army of private light airplanes, with their accessibility, safety and simplicity. Yet now, in only a short period of time, the number of light helicopters in the world has grown six times, and that is a vivid illustration of the explosion in public interest. Such a 'popular movement' in those countries with democratic traditions does not escape the attention of the politicians, and it puts many obligations on the security structure. While still in office, George Bush Jr personally visited Robinson's plant in California to testify to the authorities' attention to yet another spontaneous source of 'soft' American influence.

Curiously enough, most people who have straddled the

Robinsons had previously (64%) had nothing to do with aviation. It wasn't the love of the sky per se that attracted them into this new community, but other reasons that are no less worthy — they like to be free, and to have at their disposal new possibilities for business management.

So why didn't they opt for helicopters earlier? That too is not difficult to understand. It cannot be said that there were no suitable technical solutions before, that there were no helicopters — starting with the post-war Hiller 360 (the first club helicopter of the future HAI — Helicopter Association International), and then the Bell 47, Hughes 269, and so on. These machines brought thousands of pilots to the sky, but none of them were easy to fly and maintain, and they required of the user a deep penetration into the technical details, not to mention their low comfort level. One of the best light piloting helicopters, the Mi-34, which was created in the USSR, has the same drawbacks.

The point is that one of Robinson's important technical achievements was to develop, so to say, an 'automobile' approach to operation. The helicopter is mostly serviced by one person, ie the owner, who need not have special technical training. It is sufficient to be a competent user. Such individual servicing is prescribed in the flight operation guidelines of the R-44, and the company guarantees a high safety level. In any case, there's no need for the daily involvement of a technician or engineer.

We are on the threshold of a transformation in the operational part of the helicopter industry. For many years, the servicing difficulties deterred potential individual pilots. The mass application of R-44 class helicopters is a result of the simplicity of their maintenance.

Robinson, however, had an integrated approach to the solution of this task. Taking into account the high level of responsibility and high safety level requirements, all the units of the helicopter are equipped with devices that operationally monitor their technical condition. Therefore, during the daily pre-flight preparation, a Robinson helicopter user is able to receive information on the condition of every unit of his machine with 100% certainty. Such simplicity and accessibility make every R-44 flight a desirable and delightful event. The pilot acquires a sense of pleasure from each flight undertaken, and this is the recipe for the popularity of this class of machines.

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Telephone: 020-7430-2384, Email: editor@helicopterlife.com.
Please include your name, and email or phone.

A Polish Paradox

Dear Georgina,
Here are some photographs
from the Aviation Museum in
Krakow.

I have a question:
How can anything as big as
these Mil's really fly?
Do they? Or is it just a big
Russian joke?

Best wishes,

Robin Dabrowa
Student helicopter pilot



Russian Helishow

Dear Georgina,
At HeliRussia we do not completely agree with your assessment of our show.
You gave the impression Robinson helicopters had no dealers at the show, whereas in fact there were two: Aviamarket and Aerosoyuz. Of course this might be the problem with having signs only in Russian, something we will be changing. By the next show next year, you can expect signs in both Russian and English.

As for Bell, although the dealer Jet Transfer does work for other companies, it is Bell's

official dealer. However, as you probably know, Bell has now announced they will be initiating a service Centre in the Russian Federation, another exciting addition for next year's show.

Best wishes,

Andrey Zorin.

Bruno Misonne

Dear Georgina
I was interested in the piece about Bruno Misonne, and, doing research on the web into flying and music, discovered there is a FLYING MUSICIANS ASSOCIATION, which gives its goals as: "to generate the desire and yearning for both amongst young people."

It seems this association, founded by John Zapp and Aileen Hummel, both aviators and musicians themselves, has its first Fly-In Musicfest this Nov. 7, at Fort Worth Spinks Airport, does anyone know anymore about this.

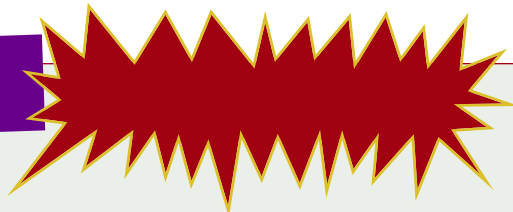
Many thanks,

John Martin

Robin Dabrowa at the Krakow Aviation Museum in Poland



PHOTOGRAPHS COURTESY OF ROBIN DABROWA



Lebanese Water

A new fleet of fully-equipped helicopters dedicated to aerial firefighting will operate in Lebanon using the Simplex FAST Bucket and accessories making it more effective. Feu Vert, a non-profit organization responsible for the protection of the historic cedar forests throughout the country, funded the acquisition of the aircraft and FAST systems after a technical committee comprised of several agencies reviewed equipment options and made recommendations.



The Lebanese fleet will be made up of three S-61 helicopters equipped with the FAST Bucket aerial fire fighting system manufactured by Absolute Fire Solutions (AFS). In addition, 10 complete FAST systems were chosen to modernize and expand the country's UH-1H fleet's capabilities.

Mountain Rescue Charity to Benefit from Lottery Win

When British man Ted Newton went to his local shop to buy bread, he noticed there was a rollover on the mid-week lottery, so he bought a ticket and won the 8 million pound

jackpot (12 million dollars). He is sharing the win with his family, and his son, who was recently saved from a climbing accident on Ben Nevis, has promised to give some of the money to his rescuers.

HeliTech ready to Go

The 2009 HeliTech visitors will be able to see the latest offerings from companies of all sizes and from across the supply chain and around the world. The enthusiastic response from industry indicates a robust and positive approach to meeting the challenges of tough market conditions. As a senior representative of one of the companies exhibiting at Helitech put it, "Often the fear of what might happen can cause companies to back themselves into a corner". One of the main attractions of Helitech for visitors is that the event reflects the latest developments within the rotary wing sector. The crucial importance of safety systems and training has been further highlighted by recent accidents in the oil & gas sector. At the same time the economic squeeze is causing operators in the parapublic and commercial sectors to keep existing equipment operational for longer periods, creating demand for those involved with service delivery, together with manufacturers of parts and components. Helitech's Exhibition Director, Sue Bradshaw, said, "This is the 13th time that Helitech has been staged but the indications are that the event will continue to go from strength to strength."



Snorkle training

Snorkel Training in LA

Los Angeles Helicopters will be working with Erickson Air Crane to train selected pilots in vertical reference and long-line training. Using R44s they have been teaching long line since

Don't Throw me Flowers Anymore

When the bridal bouquet was thrown for her bridesmaids, it hit the engine of the jet aircraft the bride and groom were travelling in and brought it crashing down. The flowers were thrown from an accompanying smaller aircraft, but clearly not in the direction the bride desired! The couple were flying in Livorno, Italy and their aircraft hit a hotel, but all survived.

Alcohol is good for you

A recent study in the USA has shown that people who have 8 to 14 alcoholic drinks a week are 37% less likely to develop neurological conditions than teetotallers. However, those who drink twice as much are more than twice as likely to suffer brain damage. Little bit of what you fancy does you good, 'eh what?

PHOTOGRAPHS BY LOS ANGELES HELICOPTERS AND SIMPLEX



Sloane Helicopter's Triple Celebration

Three times a Winner

Sloane Helicopters celebrated their 40th anniversary as a helicopter company; the 20th anniversary of the opening of their headquarters at Sywell Aerodrome; and the recent completion of their new building extension, incorporating the new Flying School, a new flight training simulator and a new stores department, and offices in June 2009. Guests included many members of the Helicopter Club of Great Britain, former employees, clients, and friends. About twenty helicopters flew in to the aerodrome and parked on the lawn outside the hotel, where guests were entertained with conjurers, juggling, dancing, drag acts and caricatures and a talk by David George.



Hannah Miley and her father Patrick

Bristow's Girl

Bristow Helicopters' training pilot Captain Patrick Miley has taken off on an extra special mission – to help his daughter become a world champion. Aberdeen-based Captain Miley, 48, is the father and coach of Scots swimming star Hannah Miley. And the pair have just left their home in Inverurie to

head for the swimming World Championships where Hannah is aiming to bag a clutch of medals. The 19-year old Olympian is ranked world number one in the 400m medley and third in the 200m medley – thanks in no small part to coaching by her dad.

We will hef Zeppline Training Airship Ventures is now offering full and half-day zeppline piloting experiences to private-pilot-rated individuals holding a current medical certificate. The company is charging \$2950 per student slot. Pilot training sessions include a half day of training to cover ground and flight operations, limitations and performance, and systems, as well as airship history and terminology. A next half-day flight session offers students (taken aloft six at a time) thirty minutes at the controls including climbs, descents, turns and 'hovering.' Students also get to try their hand at two takeoffs and landings. The pilot training course takes place in the ZeppelinEureka and, according to Airship Ventures, 'is the only one like it in the world.' Alternatively, sightseeing flights are \$200 - \$750.

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TOP PHOTOGRAPH COURTESY OF SLOANE HELICOPTERS
BOTTOM PHOTOGRAPH BRISTOW HELICOPTERS

continued from page 6

So it was here that changes in both the ideology and the psychology of helicopter usage in daily life started.

Plus, in the early 1940s, the first publications on Igor Sikorsky's helicopters in educational publications like Popular Science were illustrated as follows: daddy takes off for work in his private helicopter, and wife and son are waving to him from the front lawn of their house. This naïve fantasy remains only a picture 70 years later, but the helicopter has become safe and accessible in terms of servicing and operation by a private owner. Current Russian air law, despite the trends of the last decade and a half, and coordination with ICAO requirements, still remain hostage to its creators, who have no idea of the philosophy of such machinery. As to the helicopter aviation regulation issues, the regulatory framework still relies on the postulates of former times, when only medium size and heavy helicopters were going up into the Russian sky, and the industry executives' tasks were quite different. There simply couldn't have been any light aircraft at all at that time, let alone in the form in which they exist today. The mindsets of flight and air controller personnel are still based on that reality, on the notion of helicopters as aircraft with a takeoff mass of 3.5 to 12 tons.

Modern private aviation, which employs aircraft with completely different characteristics, encounters these stereotypes at every step, both from the application of current legislation, and at the level of communication with the air traffic organizers. The rigid rules associate the flight safety level with such machines as the Mi-4, flying which required maximum effort from the flight commander. But, the level of information load on the R-44 helicopter pilot doesn't differ much from that of an SUV driver. Today, Robinsons and similar class helicopters have proven statistically that they belong to the safest types of transportation. Many flight functions are now automated. The application of the automatic rpm governor, the advanced level of helicopter balancing and the latest navigation system make the pilot's task much easier, and lower the vibration level in the helicopter to an imperceptible level.

Right from the beginning, the Robinsons have stood out and things that had previously been brushed aside are nowadays an everyday reality: the helicopter has become an analog of a business class car for everyday use. For the majority of the population, the helicopter was traditionally outside the limits of safe activities: hurricane force air streams during takeoff and landing, and high noise levels. To land, an Mi-8 or Ka-32 must undoubtedly go to an airfield, or large specially equipped site. The R-44 can find a landing site among residential buildings, or at a traffic intersection, with no danger to the people around. Therefore the regulatory requirements must not ignore this difference, and must not impose the same requirements on aircraft with such a large difference in takeoff mass. To draw an analogy with shipping, no one would think of imposing the same requirements on a motor yacht and a vessel of tanker displacement tonnage. Such a motorboat is not only fast and comfortable, but it can also be safely kept in a garage, without any concern about its port of registration. The Robinson, with its two-blade rotor, fits into an area of only 30 square metres. A helicopter with this level of individual usage provides complete freedom of movement. But here we inevitably encounter the lag in legislation, which still requires the owner to indicate the airport of registration. Unfortunately, our legislative acts have plenty of such remnants. After all, registration with a taxi company or transportation company is not required when registering a motor vehicle. The owner's residence is sufficient. Thanks to the Robinsons, it is as if we have returned to the origins of aviation, when it was an absolutely private, individual activity, and the aviation business was in many respects similar to a sporting hobby. Correspondingly, the initial social agreements were also individual, i.e. directly between the pilot and society's representatives. And there was an impressive level of trust between the parties to those agreements. The pilot bore the maximum load of responsibility, and yet at the same time he was free. A return to these origins should become the new philosophy of small aircraft aviation.

Yes, to fight the obsolete stereotypes steadily, the efforts of the helicopter community and

focused work by the Helicopter Industry Association (HIA) will be required.

HIA's role in this process, as an idea accumulation tank, with the active participation of all the key figures in the helicopter community, is more important than ever, and any member of the Association and the helicopter industry can contribute to perfecting the aviation regulations in this country, by aligning them with current realities.

Indeed, as we see the rise of a large class of light helicopter users, we thereby expand the opportunities for the wide scale development of medium and heavy helicopter aviation. Such a community will become the best base, on which many trained pilots will be prepared for all of aviation. It will thus be easier to close the pilots' 'personnel gap', which has become so very large in recent years. A direct correlation is inevitable here: the larger this helicopter population, the more opportunities generated for the application of helicopters in all spheres of the economy and technical areas.

I would like to emphasize that open access to airspace is not a whim or something excessive. It will only give this country's citizens the possibility of enjoying the rights and freedoms guaranteed by the Constitution.

Individual helicopter aviation simultaneously embraces several potential growth points: technological, personnel, economic and legislative; and, without exaggeration, it facilitates the development of democracy. Technological developments are already in demand by the new community – the demand and supply that stimulate research and development in the sphere of avionics and safety devices have formed around these particular requirements. The demand for the liberalization of the legislative base of aviation will inevitably also lead to the enhancement of the status of such subjects of air law as the private helicopter pilot.

The only questions are whether the new aviation order will come from abroad, e.g. from the International Civil Aviation Organization, or from the HIA of Russia, and whether the entire helicopter community will be able to take care of its future and of the future of the industry, as a potential locomotive for the growth of the common welfare?

I think the answer is obvious.

Bet You've Never Seen This Aircraft...!!

Dear Georgina

Is this real? Interesting rudder hinge on the 2nd pic.

I read the below about the machine, but is it is true?

The K-7 first flew on 11 August 1933. In 1930s the Russian army was obsessed with the idea of creating huge planes. At that time, they tried to have as many propellers as possible to help carry those huge flying fortresses into the air. Jet propulsion had not yet been implemented. Not many photos were saved from that time, because of the high secrecy levels of such projects. The weaponry carried by this behemoth is shown in the last pic!

Best wishes,

Gill Jenkins



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World Air Games 2009 a parallel universe



BY BRENDA NICOLL PHOTOGRAPHS BY BRENDA NICOLL AND MILUTSKY GENNADY

The 3rd World Air Games took place in Turin from the 7th to 14th June, 2009. Sixteen British Athletes attended, covering seven of the ten disciplines to be fought over in a unique week long event. Five hundred athletes from all over the world poured into Turin to compete in the Games. Ten disciplines, 25 awards, 28 nations, televised in 20 countries, 3 venues, 1000 volunteers, 300,000 spectators and one week to win your gold medal. The event brought Turin city centre to a halt when the opening ceremony was held in the Piazza San Carlo, the famous baroque heart of Turin, which is known as the “Drawing Room of Turin”, such is its elegance. The ath-

letes took part in a parade of nations, the Games torch was lit by the Mayor of Turin, and Red Bull unleashed their parachute team to land in the middle of it all, under the gaze of the television cameras.

Two of these athletes were David Monks and Caroline-Gough Cooper, competing together for the very first time in the helicopter section of this aviation spectacle. This is the first time helicopters have been invited to take part in the World Air Games, and to take their place amongst paragliding, glide racing, aerobatics and ballooning, to mention just a few of the diverse activities spread over the three venues.

The helicopter event took place at

Torino Aeritalia Airfield, just outside Turin City Centre. David and Caroline were joined by three Russian teams, the current World Champions and Ladies World Champions in their Mi2s, along with a Robinson 44; two Alouette IIIs and a Robinson 22 from Austria; 2 CH-7s, one from France and one from the host nation, and two further R22s containing the German and the British Teams. Sadly, the Swiss team didn't make it and neither did a second German crew, which had won the test event a year before in Turin, so it was sad not to see them at the Games.

The competition was both well publicised and well attended, and was also

PHOTOGRAPHS BRENDA NICOLL

televised! The two helicopter events were to be flown as parallel events to try to sex up the whole concept of competitive helicopter flying, especially as it was this event's formal introduction to helicopters. The WAG 2009 events were the slalom and the fender, and both were to be flown according to WAG rules, not the usual FAI World Rules. Many penalties had been greatly altered, but the most outstanding difference was the reduction in the time allocated to each event. The slalom was only ninety seconds and the fender sixty, which left both events mere shadows of their former selves when it came to the stop watch!

The fender drop still requires precise flying within a competition area of 179 x 110m. As often seen in the World and UK national events, the crewman carries a boat fender as the load along the course, and deposits it in a container. During the competition, the fender will be of three lengths—4, 6 and 8 metres—and the order of these lengths will be given to the crew prior to take off, along with the direction in which they must fly through the gates.

In the slalom, the crewman's load this time is a bucketful of water on a five metre rope increasing to eleven metres, and it must be flown through twelve gates, moving backwards, forwards and sideways. This course differs from the World Rules as it contains six gates in a long narrow course: the competitors fly up and back

through the same gates. Apart from the time challenge, the table for landing the bucket was reduced to a diameter of thirty centimetres! There was not even any room on it to paint the traditional target and bull's-eye!

Understandably, David and Caroline were both nervous, but they became calmer as soon as the competition field was ready. We were kept on a tight timetable because so many disciplines were sharing the same airfield: micro-lights, parachutes and paramotors, to mention only a few. Sharing space meant that events were run back to back, with no closing down of aircraft in between disciplines.

First up was the qualifying round, with only eight helicopters going through. As predicted, the Russians all went safely through, joined by one Austrian crew, the Germans, the French, the Italians and the Brits. There was no practising prior to the event, so Team GB was pleased to have got airborne to settle competition nerves. This proved to be a comfortable ticket into the next round for them, with an encouraging performance, and it started to look as if they might actually pull it off, and get a medal place.

Day 2 saw the quarterfinals. David and Caroline flew a blinding fender, and finished in third place with Russia in first and second. Not the slightest hint of nerves from the co-pilot, and very well flown indeed in a thoroughly respectable time. However, luck can change in an instant, and it did in the slalom. When David and Caroline had reached the preparation line they asked the judge if the

The fender drop still requires precise flying within a competition area of 179 x 110 metres



PHOTOGRAPH BY MILUTSKY GENNADY

gates could be straightened, as the previous competitor had knocked several of them quite badly. Whilst waiting for this to be done, and sorting out the rope, David and Caroline had their heads down for a last minute tactics session prior to giving the thumbs up to start. As Caroline looked up ready to give the thumbs up, and David was getting light on the skids – the Russian ladies in their Mi2 were approaching the third gate!! In the heat of the moment David and Caroline rocketed off the line, and did a great job of catching up on the Russians, but it just wasn't enough and, sadly, Team GB exited from the Games! It was mortifying that this was not taken into consideration in the judging, despite an admission of error by one of the judges, who had mistaken the gates being OK for them being ready!

(The following day during the briefing we were given the gift of a quote from an official of the Games– “Yesterday we could not get the attention of David and Caroline so we just started” – which was of little consolation to D&C!!).

The four teams through to the semi-finals were the three Russian crews and the CH7 of the host nation! Finals day loomed, with the semi-finals and finals run back-to-back to avoid any need to close down between the semi-final and the finals. The running order was Mi2 (WHC 2009 Champions, Viktor Korotaev and Nikolai Burov) v Mi2 (WHC 2009 Ladies Champions, Lyudmila Kosenkova and Elena Prokofyeva), and R44 (Russia, Elean Zhuperina and Georgy Arbuzov) v CH- 7 (Italy, Pierluigi Barbero and Luigi Marocco). Due to the competition field layout, and the time restrictions, the event sequence was semi-final fender then semi-final slalom, followed by final slalom and final fender.

There couldn't have been a doubt in anyone's mind about who was going to win, but then nerves starting to play their part! Even the cool as cucumber Russians were affected by the nerves of the parallel 'race'! The fender saw the Russian ladies miss a gate completely. The biggest surprise was the Italian team slotting into third place, to split the Russian pack and put the Ladies World Champions last. Four good slaloms were flown with only time penalties. The Russian Ladies and the Italians were both eliminated after admirable performances. This left the Mi2 against the R44. This time the slalom was incredible, with the reigning world champions missing two gates! The Russian contingent could not believe what was happening! Thankfully, they were able to take each of the gates again and pass them successfully, but this incurred a time penalty, so the last fender was flown with everything to play for. To this day no one has any



Placing the skittle in the doghouse



Caroline Gough-Cooper and David Monks



The winners

PHOTOGRAPHS BY MILUTSKY GENNADY

idea how Viktor and Nikolai managed to regain their composure so quickly after the disaster of the slalom. But they did, and they also flew the only perfect fender of the week-long event, with no time penalties at all, in a breathtaking 56.2 seconds, giving them a perfect 300 score and the WAG gold medal. The silver medal winners also had the added award of their pilot, Elena Zhuperina, being the highest placed female competitor in the Games.

The best bit is always the post competition talk in the bar, with the ifs and buts and comments! WAG2009 was no exception. Had David and Caroline flown their fender in the final, they would have been second in the world after the reigning WHC 2008 champions, who have been together for 25 years rather than 2.5 weeks! Had they been allowed to re-fly their slalom then who knows what might have happened? Monks and Gough-Cooper made a highly unlikely and competitive pairing, but they rose to the challenge and proved they were capable; they performed excellently and even took the knock of the slalom in their stride, which will be unheard of for those amongst you who know either party. Caroline was heard to say that she loved the whole concept of WAG, the parallel events were a refreshing change, and she even enjoyed the prospect of a new challenge from her old seat!

Team Captain David Monks spoke of the unquestionable benefit to the team of being able to pair two pilots together in competition at short notice, and them being able to put in a credible performance. Such flexibility in the crews could only be of great advantage to the team in competition, giving them an obvious competitive advantage over other teams. This certainly was the case in Italy

Maxim Sotnikov and
Oleg Puodzhukas



as the initial perception was that the UK entry was a token gesture, but their subsequent performance spoke for itself!

Was there any British success in Turin? Yes, of course! The Brits absolutely dominated the pylon racing (trikes) microlight racing, with Chris Saysell & Rob Grimwood and Rob Keene & Rees Keene winning the gold and silver medals in their event. Gerald Cooper won bronze in powered aerobatics. The most unlikely gold went to Michael Stern in aeromodelling hand-thrown gliders. Within the rules of the sport you can get someone else to launch for you, which was just as well, as the gold medal winner Massimiliano Sacchi had broken his foot, so Michael launched for him and Massimiliano GAVE him his medal as a huge thanks. Michael savoured the moment but is going to post it back! Such was the spirit of the WAG 2009.

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Sikorsky's X2 (and others) take giant steps into the future

Sikorsky X2 has fully engaged the back propeller for the first time



The Sikorsky Aircraft Corporation X-2 Demonstrator achieved another milestone with the completion of two test flights that included full engagement of the pusher propeller for the first time. In one hour of testing, conducted in two flights, the aircraft flew at speeds reaching 52 knots in one test and 42 knots with the propeller providing forward thrust in the second flight. The X2 is designed to reach speeds of 250 knots approximately twice as fast as helicopters can currently fly. So far, the X-2 has accumulated more than three hours of successful flight time at Sikorsky's facility in Horseheads, N.Y. The aircraft has now relocated to the company's Development Flight Centre in West Palm Beach, Florida, as it begins the next phases of testing in the experimental programme leading up to the 250-knot speed record.

"The program is progressing extremely well both technologically and from a future applicability standpoint," said Mark Miller, Vice President of Research and Engineering at Sikorsky. "Certainly we've got much more to do, but interest continues to grow among both the military and commercial sectors in how this technology might ... enable new missions that today are simply not possible with the current helicopter flight limitations. These are exciting times."

Kevin Bredenbeck, Chief Test Pilot for Sikorsky, did the flights with the pusher propeller engaged on June 30. "The aircraft completed a series of accelerations and decelerations from hover to 52 knots," he said. "The

Stability Augmentation System operated as designed, and vibration and noise levels were very low."

However, Sikorsky is not alone in their pursuit of a faster helicopter. Also looking to get that combination of speed and hovering ability is Piasecki with their X-49A Speedhawk, which was first demonstrated in 2007. Ironically, the Speedhawk is also based on a Sikorsky design, a Sikorsky Blackhawk, onto which Piasecki have bolted a 'Vectored Thrust Ducted Propeller' - a shrouded propeller, eight foot in diameter, which sits on the tail boom in the place of a tail rotor.

The design of this propeller dates back to the 1960s, when Bell, Piasecki and Sikorsky all flirted with 'fennestron-like' tails. In 1964, the Piasecki version, the Pathfinder 11 reached 225 mph, however it did not go into production. At the moment Piasecki are in Stage 1 of development and Stage 11 depends on whether funding will be forthcoming.

Whether either of these helicopters or another one, such as a version of the Tilt Rotor, can reach significantly high speeds, may depend on eliminating blade drag. With this in mind the US Defense Advanced Research Projects Agency is funding Boeing and Virginia Tech University in their development of a 'DiscRotor' in which the main rotor can be tucked away during flight into a circular housing. However, that would necessitate aircraft wings for the cruise phase of flight, which to many people might seem like a return to aeroplanes. Back to 'bright light thinking' perhaps?

Airbox Aerospace the new flight map aid



Airbox Aerospace is a new company founded by William Moore and Tom Hedges, former distributors of Flymap. It was launched this year at AeroExpo at High Wycombe, and is already doing good business. They have used completely new technology. William feels that it is a great advantage to have worked on other systems. He said, "what we hope we have done is take the best features of all our competitors and combine them into a box."

David Clark, who was the founder of the car GPS company Road Angel, is chairman of the company. He is an aviation enthusiast, and has an EC120, in which we tested one of the Foresight seven-inch screen models (see page 54). There are currently two systems, the Foresight, a seven-inch screen, carry-on version, and the Freedom Clarity, which is about half the size. Both systems use the CAA half mill and quarter mill charts, and the heli-routes map. They are computer-compatible, so planning can be done on a full screen at home. Updates are simple and can be downloaded from the website.

They are also introducing a full postcode search, the first available to GA pilots. Other systems currently use five digit postcode searchers, but this new full postcode system will allow the pilot to pinpoint exactly where he is going, not just the general area. There is also a commercial system with the full postcode, which is used by the police, but it costs much more, and is outside the range of the normal GA pilot.

All Foresight products come with an external power source and an ordinary plug, so you can work on them away from the helicopter. They also have standard fittings for use

inside the helicopter. There is both a long and short arm model. Airbox supplies a double attachment suction grip, as they had noticed in the past that the single suction grips could work loose as a result of vibration from the helicopter. The boxes are slimmer than other models, because Airbox found that the fatter boxes could interfere with the helicopter's controls.

The maps can be run in three different modes: with the movement buttons on the bottom of the page showing, with the bottom buttons taken out but keeping the side buttons, and with the full map and no buttons. Both map and buttons are touch screen, rather than side buttons on the edge of the box, in response to requests from previous customers. Airbox intend to keep the boxes as simple as possible, and for this reason there are no extra features, such as photo albums or radio channels, to complicate the system. However, they are open to suggestions from any users who think that the box is missing something vital. William is very proud of his after service care, one of the most dedicated in the aviation world.

At present the maps cover only the UK and Europe, but they are looking to venture into the Australian, New Zealand and North American markets very soon. Their aim is to provide full worldwide data eventually.

Airbox do include a printed manual, although they say that the system is so easy that it hardly needs one. The cost of the basic kit, which includes half mill maps, is £1499. The cost of the Helipack, which also includes the quarter mill map and the heliroute charts, is £1900.

For anyone wanting to fly in and talk to Airbox, there is a helipad at the office at Grove, for use by arrangement.



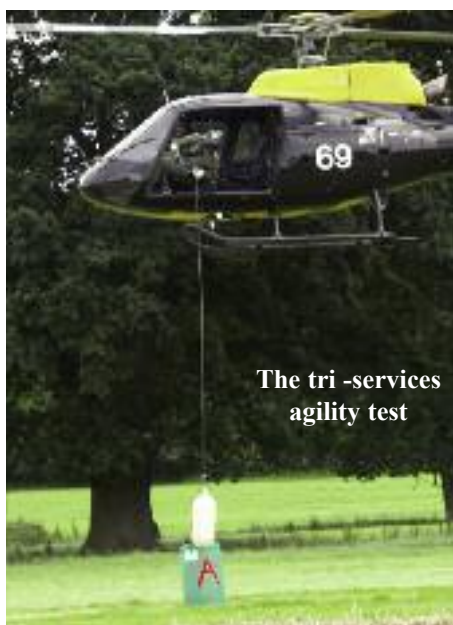
Cholmondeley Pageant of Powe

took place on 18th and 19th July 2009

BY GEORGINA HUNTER - JONES

AirCovers' John and Sasha Pattinson ran the aviation side of the Cholmondeley Pageant of Power. As John says, "about 74 helicopters registered to come in ... although because of bad weather, particularly in the south, this was reduced to about 30 a day. Nonetheless it was a brilliant weekend, the fireworks were great and the aviation displays and the racing well worth watching."

Cholmondeley was launched in 2008, as a county show, bike, car, water and aviation rally. Last year's success convinced the Marquess and his team that the show would go on.



The tri-services agility test

This year, the second, looks to have been as successful and spectacular as 2008.

On the racing track, the quickest times were posted during Saturday's less showery conditions, when Justin Law set the pace (68.40s around a 1.2-mile course) in a Lister Jaguar GT Prototype.

Cars and motorcycles were divided into eight classes. There was a range of impressive machines from the Opel Manta 400 (1983) and a BRM-engine Lotus Elan (1968), to an Audi 80 (1989) and a Chevron B17 Formula Three racer (1971).

The fastest bike was Chris Mayhew on a Honda Fireblade, who took just

PHOTOGRAPHS GEORGINA HUNTER-JONES



Hields were doing pleasure flights. Inset: Bob Hields, who had been cooking sausages for his guys

74.19s to do the 1.2 mile course, while the slowest was James Baxter in a 1910 Singer, the oldest competitive entry. There was also a display of bike aerobatics from the motorcycle grand prix and Isle of Man TT winner Tommy Robb, who at 74 years old was in direct competition with most of the cars!

The aviation displays included the Falcons, the RAF parachute team, Nigel Lamb in his Breitling MXS, a selection of classic aircraft, including the Supermarine Spitfire and the P-51 Mustang, the Forces Agility Test non-competitive competition, and the flying car.

The flying car is a Parajet Skycar. Parajet took a Rage chassis, fitted a more powerful engine, and attached a large parawing to give it lift. The skycar recently flew from London to Timbuktu, a journey of 7,000 km. The first aerial crossing was over the Straits of Gibraltar, and most of the European leg of the journey was done as a car, but most of the African leg as a Skycar, because in Africa the weather is better and the roads are worse. The journey took five and a half weeks.

To operate a Skycar, you are advised to have a micro-light licence, although Parajet offer their own training service, which offers six- and twelve-day training courses, including accommodation, if required. They will also train beginners with no aviation experience as well as more experienced pilots, and it is possible to learn in either the UK or Spain. The Spanish base is at Aeromodo Ordiz, between Barcelona and the French border.



Future pilot?



Flying car which Neil Laughton flew to Timbuktu

PHOTOGRAPHS GEORGINA HUNTER-JONES

On the water there was a breadth of categories from Juniors to OSY 400 Hydroplanes, which are flat wooden boats with 400 cc engines that originated in Japan and can reach speeds over 70 mph.

There were also F4 and F2 Catamarans, which cruised up to 125 mph, as well as Thundercats, including a Thunderkids section for the 10-16 age.

John Pattinson said that the feedback from all the helicopter pilots was positive despite the rain and the occasional ‘dodgy departure’, and that most had said that they would come again next year.

There were around 30,000 visitors, almost all of whom seemed to think there was something there for them. There were complaints, but most concerned problems in getting across the course, because there was only one way through under the course, and a couple of race-course crossing areas, and these were shut most of the time. Next year things will be improved.

As John Pattinson says, “Aircovers agreed to plan and arrange airside for no fee, on the condition that no helicopter would be charged landing fees, and that all helicopter passengers should get access to the event for free!”

Planning for 2010 is well underway. The HLZ will be in the same location as in 2008, which will mean no waiting times to cross the track, because people will already be inside the track. It is also planned to place the display line closer to the Castle. This will mean that anyone wanting to watch the military and civilian displays will not have to walk far at all.



WAGs Emma Rigby and Kym Marsh



60 helicopters and 1 gyrocopter flew in over the 2 days



Falcons, the RAF Parachute team, doing their display. Inset: using the theodolite to measure the wind speed and direction

PHOTOGRAPH GEORGINA HUNTER-JONES AND COURTESY OF MASCON-WILLIAMS AND NICK MOUTON



Latest Update on the Presidential Helicopters

The US House Defence Subcommittee has approved funding for five helicopters in the Presidential fleet.

Even as layoff notices were going out to workers at Lockheed Martin's Owego NY plant, the House Appropriations Defense Subcommittee seemed to change its mind, and agreed to provide \$455.2 million to help continue the VH-71 program.

The \$13 billion dollar program had already been written off as scrapped, but Congressman Maurice Hinchey (D-NY) fought back. "It's taken a lot of hard work to get to this point, but funding for Lockheed Martin's presidential helicopter is back on track," said Hinchey, in a statement on his website. "It has been clear all along that cancelling the presidential helicopter project would be an enormous waste of taxpayer money, and force the president

to continue flying in an extremely old and outdated helicopter. By providing \$485.2 million for Increment 1, we will put people in Owego back to work building a state of the art presidential helicopter fleet that is badly needed. Providing continued funding for the VH-71 project is the most fiscally responsible step we can take to produce a much-needed helicopter fleet for the White House." Incidentally, Hinchey represents the district where the Owego plant is located.

"There are several legislative steps that the bill needs to go through before the funding for the helicopter is officially allocated," his office told the Elmira, New York, Star Gazette. The staff also predicted that final approval of the funding would result in the restoration of most, if not all, of the recently announced job cuts associated with the development of the presidential helicopter.

Congressman Hinchey said that they have been trying to encourage Lockheed Martin to keep this congressional process in mind.

"We hope the Senate can act this month or take it up in September."

The appropriations process is long. Following this subcommittee vote, the full House Appropriations committee would have to include the funding, and there is currently no companion bill in the senate, although Senator Charles Schumer (D-NY) has said that he would work to keep the program alive on that side of the Capitol.

However, even if it passes both houses of congress, there is no guarantee that President Obama will sign the bill.

The good news is that apparently Adriana Huffington and the Huffington Post are supporting the bid to keep helicopters, as the least bad alternative. Or did I hear that wrong? As ever the debate goes on.

What is the Risk?

WORDS AND PICTURES BY RALPH ARNESEN



When I was gainfully employed, one of my extra jobs was as a member of a team that performed precision and non-precision sling load operations. We removed and exchanged flare tips on offshore platforms with the BV234LR (Chinook) and EC332L1 (Super Puma), using docking and vertical reference techniques. Before the operation started we had to undergo a job analysis and a risk analysis, which then became part of the documentation for the operation. It was the team leader's responsibility to prepare this, and it was usually done with the whole team's participation. Before the actual job, a meeting with all those involved took place and the whole job was briefed. For some jobs we even did a dry run, or we hung the new flare tip by a crane, to ensure that it would hang correctly. It was always stated clearly that any person who saw anything that might cause a problem, or anything unsafe, could stop the mission. We

always performed as briefed, and we had few if any problems.

The criteria for conducting a risk analysis was whether the operation was a standard flight that had already been approved with a risk analysis done, or a non-standard flight. All non-standard flights required a risk assessment, and the approval of a management pilot who was not involved in the operation.

Now let's say you are going to make a major change to your organisation: bring in a different type of aircraft, fly a new route, or perform a mission that you have not done before. What are you going to do to make the transition smooth, and to ensure that the outcome is not tears? You are first going to plan a course of action. If you are smart, you will also look at what can go wrong, and at how you can eliminate or reduce the problems, by doing a job analysis and a risk assessment. What you are really doing is testing how much you know against how much you don't

know. You use brainstorming, and you try to find out where the hazards lie. Hazards are defined as actions or things that can cause damage to people, equipment, or your economy. These should be noted, and then the extent of any possible damage should be established, and the likelihood of it occurring.

For this, you use a matrix, as below.

The severity of the hazard, and the likelihood of it occurring, increase from the top left corner to the bottom right corner. Each hazard now has to be evaluated and given a value, from 1A to 5E. On another form, the Safe Job Analysis, the Job IDs are noted in one column, and another column records what you intend to do to eliminate or reduce the hazard. This will give you a new value when next plotted in the matrix. There is then a total number that will fall into one of three risk classes: red, yellow, or green. It would be unadvisable to do a job that puts you in the red, whereas a yellow means

PHOTOGRAPHS COURTESY OF ERICKSON AIRCRANE

that you have to monitor closely, and you may have to stop to rethink the operation. Green would be reasonably safe to perform using normal procedures.

It may all seem rather complicated, but it is, or can be, a very useful tool, and in many professions it is mandatory. For example, the car club I belong to is required to do one risk matrix every year for our annual show, and my sister-in-law had to undergo one before she took a group of children on a trip to the Isle of Wight. In a profession such as ours it should also be required, but, and this is more important, the teamwork involved in the planning will pay large dividends. You may also hear some nice words from your customers, and from your insurance provider, if you can show him that you are taking risk seriously. The CAA will also favour those who take the time to do so. Above all, you might just find that you save time and money by eliminating or reducing some of the risks.

There are a variety of matrixes, and the one I used for this article is a little too complicated for a one aircraft operation. On the Internet you may find one that suits your operation. If you can't find one then get in touch with me through the magazine, and I might be able to help you, by sending the forms HS Safe, which were developed for our operation.

The authorities are now pushing for risk management. This stems from a Safety Managements System, which is a requirement for commercial operators, but there will be more of these programs coming. How you view them is an indicator of the safety culture you subscribe to.

Basically, we do risk assessments almost all the time.



Exchanging flare tips

When we go out to fly we do a series of risk analysis when we check the weather, determine the fuel, and check the route we are going to fly. Experience helps us to bypass the nasty bits, and to get more enjoyment out of the flight. I would like to leave you with one thought that I picked up along the way: when faced with a decision between two alternatives, one of which produced a bad result the last time it was used, some people may then be inclined to try the remaining alternative without knowing its outcome. Beware this trap. Fly safe.

Severity	Man	Machine	Reputation	A	B	C	D	E
				Very unlikely to occur	Unlikely to occur	Quite possible - it has occurred on some previous occasions	Probably will happen	Certainly will happen, no question
1	No injury	No Damage	No impact	Green	Green	Green	Green	Green
2	Slight injury	Negligible to slight damage	Slight impact	Green	Green	Yellow	Yellow	Red
3	Serious injury	Moderate damage	Moderate impact	Green	Yellow	Yellow	Red	Red
4	Permanent disability/ Single fatality	Serious structural damage	National impact	Green	Yellow	Red	Red	Red
5	Multiple fatalities	Total loss	World wide impact	Yellow	Red	Red	Red	Red

Risk Class	Risk Index	Action Criteria
1	1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 3C, 3D, 3E, 4A, 4B, 4C, 4D, 4E, 5A, 5B, 5C, 5D, 5E	Unacceptable, immediate action required, Risk must be reduced
2	2C, 2E, 3B, 3C, 4B, 5A	Undesirable, actions to be evaluated through non-conformance control system
3	1A-E, 2A, 2B, 3A, 4A	Managed through normal monitoring

PHOTOGRAPH COURTESY OF RALPH ARNESEN



Paris Texas

Helicopter Life sees how Bell Helicopters used
2009 Paris Le Bourget Airshow to try and regain
its position in the helicopter hierarchy



The Bell 429 which should be certified in November.

Inset: the new 429 double-stratus tail-rotor



Paris Le Bourget 2009, celebrating 100 years of flight, felt more like ‘the recession air show’ than a real celebration. Lutz Bertling of Eurocopter even admitted that things were not going well with sales of Eurocopter helicopters, and that he expected 2010 to be a worse year for helicopters generally and the company in particular, although he looked forward to a reprieve in 2011 and 2012. Sikorsky apparently felt so down that there were no press conferences (although there was a signing), and AgustaWestland’s conference was only part of Finmeccanica’s, even though they were displaying the AW149 mock-up. There was no sign of MD. The one exception to all this gloom, however, was Bell Textron Helicopters. There, and amazingly, considering that they were simultaneously dealing with a union strike, there was a surge of energy, and a very apparent desire to regain their former place in the helicopter market.

Bell Textron

Bell had two major initiatives to bring forward; one was the Bell 429 light twin helicopter, whose certification

was imminent. The other was a new service centre in Russia, where they plan to try and make inroads into that attractively lucrative but rather elusive market.

It is no secret that the certification of the Bell 429 has been a long time coming, indeed so long that some wags have suggested that being imminent was another word for apparent, and that the certification might actually not occur this year. However, even though the market has had to wait awhile for the machine it does seem to be worth it.

According to Neil Marshall, Commercial Programme Director of the Bell 429, “the 429 is being built for the first time with the traveller, rather than the pilot, in mind.”

To this end, there has been a strong emphasis on getting rid of the vibration and blade slap that most customers take for granted as part of helicopter flight. Bell have created a helicopter made in three pieces: the body is a single composite cocoon, with the engine bay above, and the electrics and fuel below, rolled into place as completely separate entities. It is not possible to enter the head or the base

from the cockpit, which is totally different from, for example, the MD 902.

I flew in the 429. I sat in the left back seat, apparently the worst seat for vibration, and was favourably impressed: there was a little shimmy, which I could feel through my feet, but the overall ride was smooth, although there was a little blade slap. The windows were large and the view was excellent. I thought the Bell 429 more comfortable than the Sikorsky 76B (the only other helicopter I have experienced from the passenger’s angle).

Following the general trend towards more ecological helicopters, Bell also announced a life cycle ecological study starting with the 429, in what they call a ‘cradle to grave’ programme. This will examine all their working practices, from the materials they use to manufacture the helicopter, to the final disposal of the product at the end of the line.

Eurocopter

Eurocopter might be feeling a little less buoyant than usual, but they were still looking to the future. On their booth they had a mock up of the

Agusta AW149, side and back views



EC175. In their press conference, however, they were keen to separate themselves from their Chinese partner Avicopter, who are building the Chinese version, the Z15, saying that it and the EC175 will be “two different aircraft.”

The EC175 should have its first flight at the end of next year, at Marignane, in the south of France. They are hoping for certification by 2011 and the first deliveries in 2012.

The EC175 will be powered by two Pratt and Whitney Canada PT6C-67E engines, although a combination of Pratt and Whitney and Eurocopter are “modifying an existing engine, so that the -67E will be the first PT6 turboshaft with a dual-channel fade,” said Joseph Saporito, Executive VP for Commercial Programmes.

The EC175 is designed for oil platforms, and it can seat 16 passengers

with survival suits.

Eurocopter is also, in combination with EADS, creating a new ‘Bluecopter,’ which is intended to be far more ecological than its forebears. The emphasis is on the engine, which will be a low emission, high compression piston engine, using diesel fuel and having “state of the art exhaust gas cleaning systems.” The design will include an advanced catalytic converter and a particulate filter. As Oliver Janis, the director of the project said, “The engine will be more efficient than a turbine, and it will have reduced fuel consumption and a reduction in carbon dioxide ratio.”

The research into the project is being done by EADS, who will then pass it to Eurocopter to take out into the market, to see how it works. What you might call a family project! There was another entertaining thing here,

which perhaps goes along with the less serious side of this year’s Le Bourget: EADS and Eurocopter did a sort of stand-up duo routine in the press conference, and one thing is sure: the French have a lot to learn from the English about stand-up comedy!

AgustaWestland

Finmeccanica brought the Agusta AW149 mock-up to the show, and it was on display in their static park on the apron, complete with weaponry. The first prototype of the machine will be ready in 2010.

Pier Francesco Guarguaglini, CEO and Chairman of Finmeccanica, said that this was the “dawn of a new era,” and that they “had not expected the economic crisis.” However, the company did well in 2008, despite the negative climate. They expanded worldwide and improved in the



Eurocopter's Bluecopter



Bluecopter details

Camcopters,
used for filming



domestic sphere. Group revenues were 7.8 billion Euros in 2002 and 15 billion Euros in 2008, of which 17% came from the helicopter market.

In the UAE, Finmeccanica were starting a partnership with Mubadala, while in India they had an agreement for a joint venture with the AW119, with the Indian company Tata.

In Russia, they were working on two joint ventures, and in Turkey they were working with Gokturk Satellite Systems with the AW129. They also saw future openings in Japan and Saudi Arabia, Brazil, Australia and Morocco and elsewhere.

Little was said about the Presidential Helicopter, but they continue to remain optimistic that the programme will be able to continue.

CamCopters

The CamCopter is made by the Flying-Cam Company, founded in Belgium in 1988, by Emanuel Previnaire. Previnaire is a film enthusiast and director, who directed his first film at the age of sixteen. In 1979, he started the development of the first unmanned free-flying Close Range Aerial Camera for motion picture photography, as his student thesis for the Directors Film School in Belgium (IAD). He was also an aviation enthusiast and passed his fixed wing pilot's licence in 1979. Both he

and his father had a passion for model helicopters.

The current version of CamCopter is used mainly for filming. It is flown by a pilot, who aids the cameraman. However, the newer version of the CamCopter, which has just been developed, is so simple that the cameraman will be able to fly it by himself. The CamCopter was used in the Harry Potter and James Bond films, and it was flown in combination with larger helicopters that had cameramen on board. Sarah Krins, the Chief Operating Officer of Flying-Cam, said that "the CamCopter is particularly good in close-ups, as it can hover just a few metres from your

face, which a large helicopter could never do."

The newest version of the CamCopter, the Flying-Cam 111 E Sarah (Special Aerial Response Autonomous Helicopter) has an option for military use as well as its normal filming roles. This CamCopter uses green electrical propulsion, and is flexible enough to be tailored to the client's needs.

The CamCopter gave an impressive display of its work at Le Bourget, and the results of its camerawork were shown on large screens around the airfield.

This year's Le Bourget was definitely less vibrant than the last, two years ago. There were fewer aircraft, particularly business jets, on display, and the feeling was very much one of 'laissez faire' and 'à demain'. However, as a journalist, I found it an entertaining affair, very much thanks to Bell Helicopters' desire to return to the front of the market: Bell had a party, and were doing flights in the Bell 429, which is more usual in American trade shows than European ones. Or perhaps it is just that I don't usually get invited, but this year I did! It will be interesting to see what happens at next year's Farnborough.



Autogyro for
Christmas?

PHOTOGRAPHS GEORGINA HUNTER-JONES

**Le Bourget
Heliport**



**French pilot
American helicopter**



**Le Bell of
Le Bourget**



**Dark days at
Paris air show**

**Remembering a
glorious past**



**More cheerful tails
to come**

PHOTOGRAPHS GEORGINA HUNTER-JONES



AeroExpo High Wycombe June 2009



AeroExpo 2009 took place at High Wycombe airfield in Buckinghamshire in June, there were 10,000 visitors.






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Pakistan Army

Tomaz

Humar



Pilots Colonel Rashid Ullah Berg and Lt Colonel Khalid are interviewed by Rogier

In August 2005, the Slovenian climber Tomaz Humar found himself trapped on the 8,125 metre high Nanga Parbat, also known as ‘Killer Mountain’, and the Pakistan Army was asked to rescue this world famous climber. It became the most daring rescue in the history of the Pakistan Army. Helicopter Life talked to the two pilots who risked their lives in what seemed to be an impossible mission to complete.

Col. Rashid Ullah Beg was the

pilot in command during this mission. As he explains, “In the afternoon of 8 August 2005 I received a mission to rescue a climber from a reported altitude of around 21,325 ft (6,500 m). A quick calculation made it clear that it was impossible to hover at this height, and I suggested that the mountaineer be brought down to, say, 18,050 ft (5,500 meters). Later that evening I received a call from the Corps Commander asking me to undertake the mission as if it was a military

mission. This meant that we could accept an amount of danger and risk that we would normally only accept in a military mission. This was a request beyond the normal call of duty, and it was our respect for the life of a young man that propelled us to accept, even at the cost of great danger to our lives.”

The climber in trouble was the Slovenian Tomaz Humar, who is famous for his daring climbs, which always explore new and different routes on some of the world’s most



Maj Farrukh Saleem taking oxygen while flying a Mi-171 over Concordia, 16,400 ft. Oxygen is normally taken at heights over 10,000 ft to reduce the effects of hypoxia

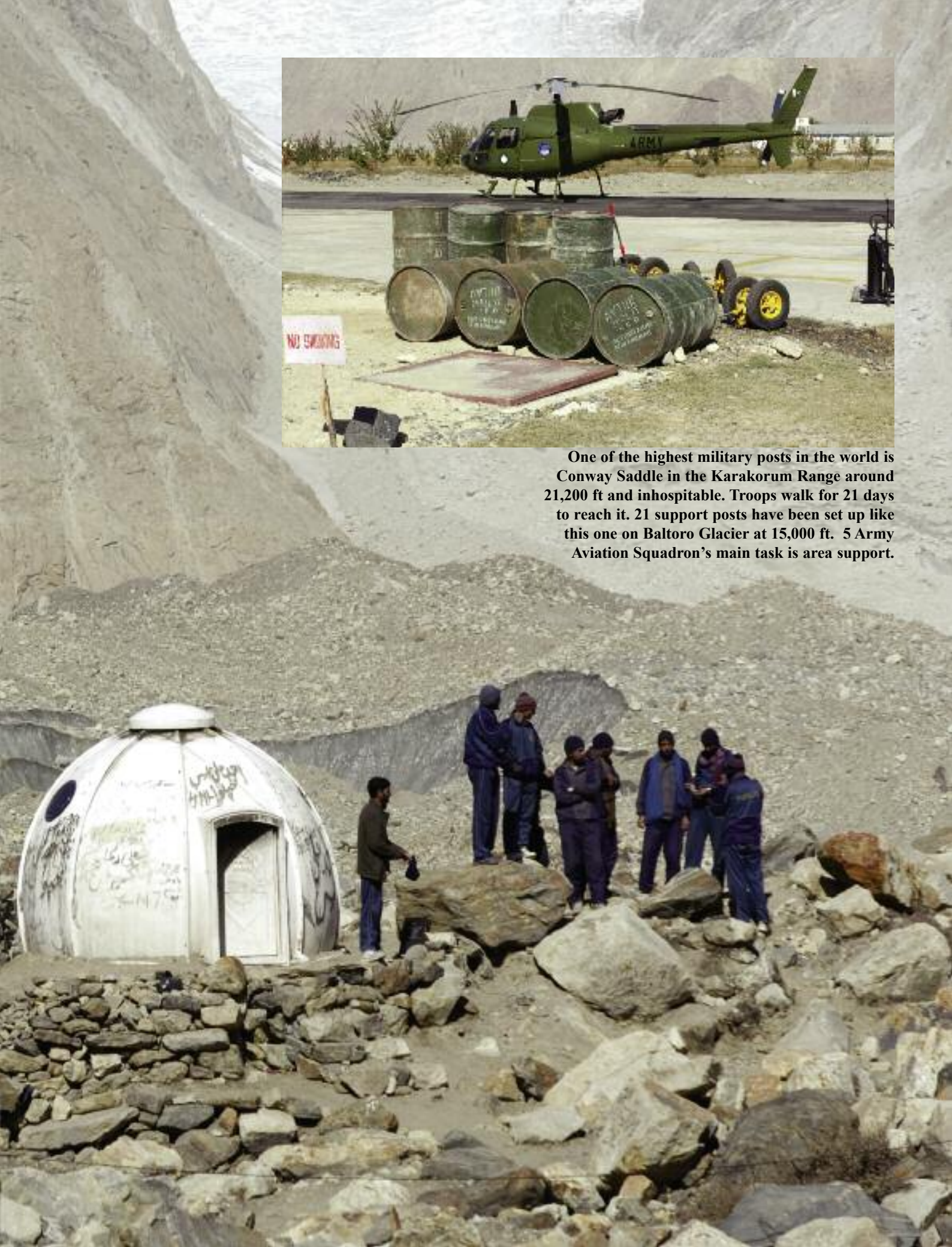
challenging mountains. Tomaz was stuck on a vertical wall. There was some confusion over his actual height, but an official survey has since confirmed that Tomaz was trapped at 22,300 ft (6,800 m). There was no foothold to put down even a single skid of the helicopter, and there was a sheer fall on one side and deep ravines on the other. Avalanches were a constant threat. The weather picture showed that the first two days might offer a chance of rescue, but after that the weather would close in again. Tomaz would not survive the wait until the next opportunity.

Col. Rashid continues: "A quick appraisal of the situation made it clear that a classical hoist operation was impossible, given the weight, centre of gravity and power limitations of the helicopter. Prevailing temperatures indicated that the density altitude would be over 23,000 ft (7,000 m), where hovering





One of the highest military posts in the world is Conway Saddle in the Karakorum Range around 21,200 ft and inhospitable. Troops walk for 21 days to reach it. 21 support posts have been set up like this one on Baltoro Glacier at 15,000 ft. 5 Army Aviation Squadron's main task is area support.



The Mi-171 is powered by the TV3-117VM engine, an engine developed for operations in hot and high environments so suitable for the mountains and deserts of Pakistan. The first Mi-17's entered Pakistani service in the 1990s.



would be almost impossible, let alone picking up a man weighing 70 kg. Using a long sling was our only option, and we would have to reduce the weight of the helicopter to permissible levels to hover out of ground effect at that altitude. Calculations showed that this was impossible.”

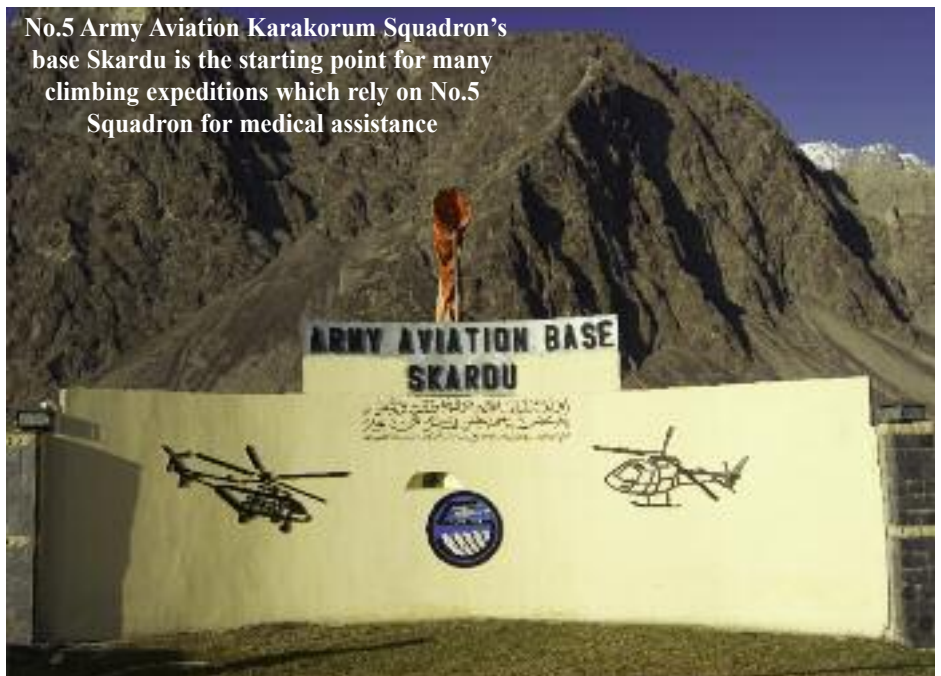
Another thing that concerned those who were to execute the mission was the physical state of the climber, who would have been battling against extreme conditions. Would he be able to hook himself up at such high altitude, with strong rotor wash, hardly any oxygen in the air and extreme temperatures? Would he survive the 60-70 kph winds while descending under the helicopter, when the chill factor would reduce temperatures to -30°C or -40°C? However, Tomaz was an extremely experienced climber, and fit and well equipped, factors that would greatly improve his chances of survival. The helicopter to be used for the rescue would be the Lama, and the idea was to fly two Lamas and a Mi-17 to Nanga Parbat Base Camp (11,155 ft / 3,400

m). The Lamas left Rawalpindi early in the morning of 9 August, but their arrival was delayed by poor weather en route.

Col. Rashid: “At around 15:00 hours we finally reached Base Camp, where we were met by the expedition members, who quickly showed us pictures taken by an Askari helicopter the day before.

When we saw the pictures our worries magnified a thousandfold. Tomaz was clinging on for dear life on a few feet of space, with a mushroom of snow right above him. A fresh snow fall could turn into an avalanche on the slightest triggering action (such as a helicopter’s rotor wash or echo noise.) The downdraft created by an avalanche could send the helicopter

No.5 Army Aviation Karakorum Squadron's base Skardu is the starting point for many climbing expeditions which rely on No.5 Squadron for medical assistance



PHOTOGRAPHS ROGIER WESTERHUIS

Some army posts out of Skardu are 60 minutes flying away. To allow the helicopters to operate in those areas refuelling posts have been set up with 200 litre fuel drums flown in by Mi-171.



plummeting into uncontrollable flight. The almost vertical slope might not allow enough rotor clearance to place the sling. We needed to have enough power to hover at this height out of ground effect, and also sufficient spare power to lift 70 kg from the mountain and, at the same time, be heavy enough to descend the 10,000 ft (3,050 m) to Base Camp within 10 minutes. These were all very serious concerns, and a small error or problem meant certain death.”

The helicopters were stripped to the bare minimum, and at 16:30 the two Lamas took-off for a rescue attempt, but had to return because of clouds and almost white-out conditions. For Tomaz it meant one more night in the freezing cold. On their way down Col. Rashid (who at the time of the rescue was a

Lt Col.) and his co-pilot Lt Col. Khalid Amir Rana (Major at the time of the rescue) spent some time practicing a few high altitude manoeuvres and checking the various weight/balance equations, to ensure that the helicopter was performing as it should be. The results were promising.

As Col. Rashid explains, “We decided to start as early as possible. Although the cold air early in the morning is comparatively denser and so increases the helicopters’ performance, it also creates katabatic winds that flow down the mountain slope. This could offset the advantage of the low temperature and pose a strong disadvantage altogether. When the sun shines on to a slope the opposite happens, and the wind starts blowing up the slope. However with a rising temperature the density decreases, affecting the performance of the helicopter and creating an increased risk of avalanches. So we aimed at being there when the sun had been shining below Tomaz’s position for almost half an hour, to give us an hour of relatively good circumstances. With every passing minute our chances would reduce, and it was unlikely that Tomaz would survive another night.”

They left Gilgit, where they had spent the night, early, and arrived at Base Camp at 05:45 hours. After shedding all necessary weight, they prepared for the mission. A layer of cloud was still hiding Tomaz, but the sun was shining below him, so the decision to take off was made, in the hope that the rising winds would lift the clouds.

The crew of mission Karakorum 55 relaxing between flights along the Baltoro Glacier in the heart of the Karakorum Range.



PHOTOGRAPHS ROGIER WESTERHUIS



An Ecureuil flying over the Deosai Plains some of the highest plateaus in the world where the average height is around 13,500 ft (4,100 m)

The helicopter ascended to 20,000 ft (6,100 m) pressure altitude and a last hover check was conducted. The helicopter responded well, but it was almost at the limit of its power input. The lead helicopter spotted Tomaz and the rescue itself was started.

Col. Rashid continues: “On our approach to Mr Tomaz we kept hovering with him at our 9 o’clock position using almost all the power we had. We started to slowly inch sideways towards him, and the collective pitch indicator showed that we were using 98% of our power, barely enough left to pick up 70 kg or more! As we closed in, we could feel the sinking cold air trying to push us down. Our rotor disc was getting too close to the almost vertical slope. However we still had a few percent of our power available, which was reassuring. In the sling mirror I could see that Mr Tomaz was unable to reach the sling with his ice axe, and that the confinement of his area did not give him space to move.”

In the meantime Lt. Col. Khalid and Col. Rashid were repeatedly changing controls and oxygen to avoid hypox-

ia. The oxygen mask could not be fitted because it would fog up the visor. They tried for five minutes to get the rope close enough for Tomaz to grab, but to no avail. The rotor wash was creating white-out conditions, and the canopy started to mist up. Opening the cabin heater would consume valuable power. Outside the helicopter, Tomaz was struggling to breathe, and fighting the cold air from the rotor wash. As a last resort, Col. Rashid decided to pull the helicopter back, create a bit of forward motion, and stop the helicopter at the very last moment to allow the rope to swing forward. This was an extremely risky movement, as the rotors could easily have hit the mountain slope, which would surely have made the helicopter crash, with no chance of survival for its occupants. However, it worked and Tomaz was able to grab the sling and, while battling the elements, he managed to secure himself. Lt Col. Khalid was at the controls and could feel the load on the collective. Tomaz gave the ‘thumbs up signal’ and Lt Col. Khalid started to pull up. This is when disaster almost struck!



1967, post 1965 Indo-Pakistani War, the Pakistan Army ordered 24 SA-316B Alouette IIIs. Used in the Northern Area and Kashmir its role has been taken over by the Eurocopter AS-350B3

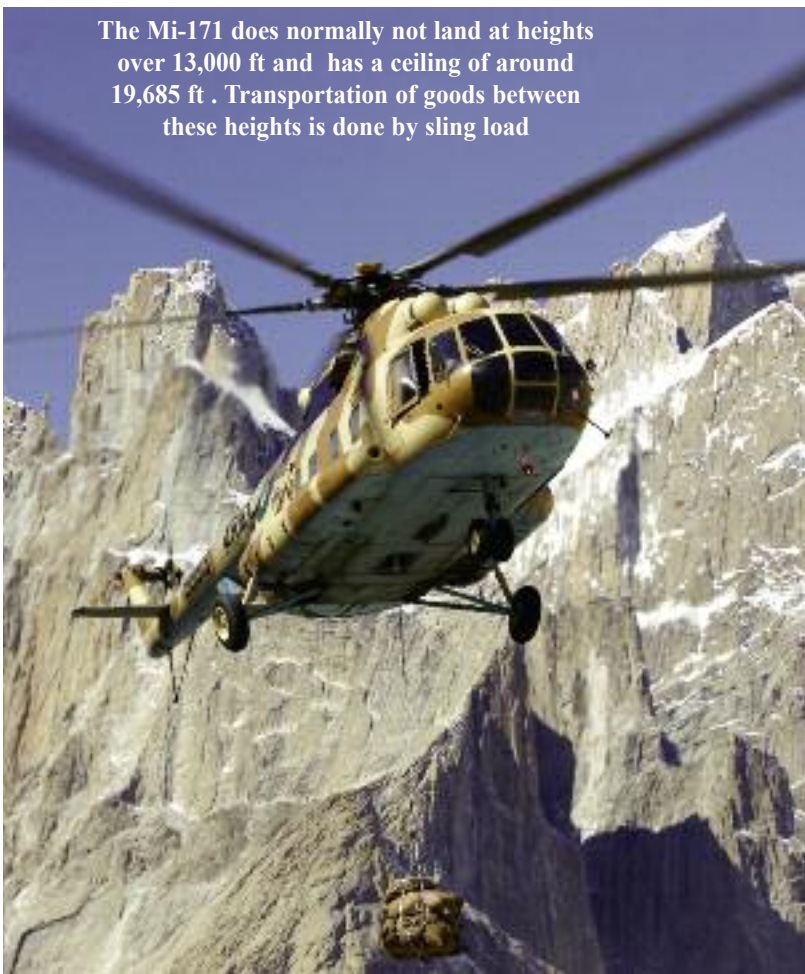
As Col. Rashid explains, “We had by then hovered for over ten minutes and the fuel warning light had started to flicker. The mushroom of snow and ice just above Mr Tomaz might break and turn into an avalanche at any moment now, and although lifting 70 kg should correspond to only .02 to .03 collective pitch rise, we were actually experiencing around .06, twice as much. The helicopter was at the maximum of its limits and still not going up. Then suddenly the helicopter started to sink, and I thought it had come into a vortex ring, which is similar to the stall of a fixed wing aircraft. The procedure then is to jettison the load, but we had agreed before the mission that we would not operate the emergency release switch, and we had taken out the fuse. In the sling mirror I saw the sling rope in full tension. That was when I realized in horror that Mr Tomaz had not managed to cut his anchor line, and that he was still secured to the mountain! This was a desperate situation, and at the next little sink I immediately took the controls and moved the helicopter to the side to avoid collision with the slope. At exactly the same time I felt a pronounced jerk and the helicopter felt light. Lt Col. Khalid shouted, ‘Sir, I think he has dropped!’ because Mr Tomaz was not visible from his side. A cold wave ran down my spine, and sudden disappointment engulfed both of us. But just at that moment I saw Mr Tomaz catapulted to the right, still tied to the rope. I immediately moved the helicopter so that he would not slam into the rocks. However, the danger was not over

yet, as Mr Tomaz was swinging wildly under the helicopter, and it took some time to stabilize him.”

The second Lama, which was orbiting at a safe distance, closed in once Lt Col. Khalid had established the required rate of descent. To everyone’s joy, Tomaz was waving at the second Lama to indicate that he was OK. Minutes later he would be down safe at Base Camp. It was a mission that had demanded the most from helicopter and crew. It is a prime example of the courage and skills of some of Pakistan’s best and most experienced helicopter pilots, who are ready to risk their own lives to save that of a foreign mountaineer. The night before the rescue, Tomaz had changed his normal anchor line for one that was less strong. He was aware that he might not be able to cut it, or might forget to do so under the influence of hypoxia and the extreme conditions. This saved his and the crews’ lives. Tomaz suffered no serious injuries and he has since continued climbing. Following this spectacular rescue, Col. Rashid and Lt Col. Khalid were invited by the Slovenian Government to visit the Republic of Slovenia, to receive the ‘Golden Order for Services’, the highest Slovenian award ever conferred upon a foreign national. In November 2007 Rotor & Wing magazine awarded them the ‘Rotor & Wing Helicopter Heroism Award’, in recognition of this heroic rescue.

Acknowledgement: The author wishes to express his gratitude to the following persons for their help in preparing this article: Col. Baseer Haider, Col. Rashid Ullah Beg, Lt Col. Khalid Amir Rana, Major Aamer Masood, and everyone else who contributed to the success of this project.

The Mi-171 does normally not land at heights over 13,000 ft and has a ceiling of around 19,685 ft . Transportation of goods between these heights is done by sling load



Lama flown by Lt Col. Khalid Amir Rana who rescued the Slovenian climber Tomaz Humar from Nanga Parbat 22,300 ft





Welcome to the Machine

Tracking to and from Grove with the EC120 Voyager using the new Airbox Foresight

Dave Clark, the Chairman of Airbox, owns one of the only two EC120s with a full autopilot. These versions, which come from Regourd Aviation, are called the Voyager. David collected his from Pontoise.

As he says, “I wanted one with an autopilot, because I did lots of training on a Squirrel with an autopilot. I was a typical low-time pilot who needs support from an autopilot. My RT was rubbish, and I found it difficult to do that and fly and navigate. Now I’m a much better pilot, thanks to the autopilot.”

Dave was the founder of Road Angel, the car accessories company, which he sold a few years ago. He has always loved cars and helicopters, but he started with a microlight and moved through aircraft, before finally fulfilling his dream of owning a helicopter, in his case the EC120.

He is a keen admirer of the EC120, which he calls “so quiet and so frugal”. “It really does not use much fuel,” he says, “a bit more with the floats on, but it goes 120 knots comfortably.”

He has never had any loss of tail rotor authority, although he is aware that this is often mentioned in relation to the EC120.

We wanted to give the Foresight Airbox map a test, so we flew from Grove, where Airbox is based, to Rob Lamplugh’s ‘Aviation Museum of Parts’.

On the way I flew, and although the wind was sometimes as much as 30 knots, the machine behaved extremely well. The controls were smooth and it felt fun to fly. We did a couple of autorotations to local fields, and the rate of descent was less than the H269, probably around 1200 fpm.

Using the Airbox, and comparing it to my car Binatone

GPS, I found the helicopter model considerably more reliable: for a start we did reach our destination, something that can be variable with the car's GPS!

I found the buttons easy to use, and to my surprise their position on the screen did not actually interfere much with my vision of the map. However, I did notice that the vibration in the helicopter sometimes led me to press the wrong button, or in the wrong place - this may also be what happens with the Binatone in my car! I was told that having the Airbox on the left hand side of the cockpit actually exposes it to more vibration than on the pilot's side. Dave said that he had not found vibration a problem when the Airbox was set up on his side of the cockpit.

One very important thing about the Airbox is that it is a 'carry on' device. This gives it a very different legal status from an 'installed device', which is considered a minor modification. Dave says he has found the machine very low on power consumption, and it works well with the normal pack battery.

Dave's previous work with Road Angel also helped enormously when setting up the Airbox. For example, when Road Angel first starting making software for Australia they forgot to allow for it being in the Southern Hemisphere, with all the changes that entails. As Airbox is planning to expand worldwide, these kinds of insights will save them a lot of money in the future.



William Moore, the Technical Director, mentions that, so far, every person who has looked at the demo on their premises has bought the machine, and so far none have been returned. Of course, this may be because if you decide to fly in to an airfield to buy a GPS you are a serious buyer. Or it may be, says William, "because they know we give 100% back up. For us it is not about the sale but keeping the ongoing relationship."

An advertisement for Cabair Helicopters. The background shows a low-angle view of a city skyline with several skyscrapers. A blue helicopter is flying in the sky. The text is white and yellow. The Cabair logo is in the bottom left corner, and the slogan "Look us up." is in the bottom right corner.

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Bubbles on the cockpit allow extra room for the head.
Inset: the blade is double-jointed, which means they hang low



Thomas Wawrina
owner and builder of
the Brantly B2B



The Building and Flying of a Brantly B2B

words and pictures by Thomas Skamljic (pictured above)

Some time ago I read a very interesting biography about Bill Lear, the father of the Lear Jet. In one chapter I found something about an acquisition of a company named Brantly Helicopters. I had never heard of that company, but the distinct ice cream cone shape of the helicopter engaged my interest, so I started a short Internet research to find out more about that helicopter. Mr. Newby O. Brantly started in 1943 with the development of the B-1 helicopter, which was a coaxial design, and he first flew it successfully in 1946. In 1953, the B-2 (equipped with a more traditional tail rotor) took off for the first time. Developing the B-2 took four years, and two years later, in 1959 the FAA granted the certificate. Further design improvements led in 1963 to the B-2B helicopter. The good performance figures of the B-2B insured a decent production run, and by 1964 the market share of Brantly Helicopters was slightly above 50%.

In 1963, the development of the 5-seater B-305 began. Developing a helicopter has never been a cheap undertaking, and as a result Brantly Helicopters was integrated into Lear Jet Industries in 1966. Unfortunately financial success never materialized, and in 1968 Lear Jet Industries sold off the helicopter division. Brantly Helicopters then went through about six different hands.

At present the company Brantly International, in Vernon, Texas, produces the B-2B helicopter (according to their website, although my email requests to learn more about the company were never answered). All in all, my chances of flying such a rare bird seemed pretty slim.

To my astonishment, I soon discovered that there is a Brantly B-2B in flightworthy condition only 70 km from Vienna. Of course I immediately contacted Thomas Wawrina, the proud owner of the helicopter, who, when not enjoying life in his helicopter, is the Captain of a Boeing 737. Just for info, as he has flown the MD-80, the A-330 and the A-340, his logbook boasts an impressive 11,000 flight hours.

And so it happens that I am standing in a very nice garden in front of a small garden house, where I can see a Brantly B-2B. With a little effort we manage to pull the helicopter out into the open, and remove all the protective coverings. While preflighting the helicopter, Thomas explains all the details of the Brantly, and also how he obtained this helicopter.

In fact it should have been an EXEC 162 kit, but a close friend of Thomas (Peter Jakadofsky) had recently imported exactly this helicopter from Phoenix Arizona (this was 1996), and it did not take long to get on board

for the restoration work. Over the next two years, basically every minute of spare time was dedicated to the restoration of the Brantly, “and not always to the delight of my family,” explained Thomas.

“Fortunately for us, Peter found a maintenance handbook and a parts catalogue, and the addresses of some Brantly owners and that of a former employee of Brantly Helicopters, and with this combined knowledge and technical expertise we disassembled the B-2B quickly, and without causing any additional damage.

“During the restoration process we also made sure that we would be fully compliant with all the AD that had been put forward in the meantime.”

Inspecting the structure of the helicopter for rust was one of the first and most important tasks. Despite the favourable climate in Arizona (where the helicopter was in the open for about 17 years), there was severe to very severe aluminium corrosion on many parts. Fortunately this job was completed without any hiccups.

“As it turned out, the tail rotor shaft (the long one) proved to be a major problem. It had been damaged beyond repair when the helicopter was transported to Austria, and finding a used one was impossible. So we set out to find a similar shaft (but of better quality, of course), and a company to do the necessary work. As you can imagine, all that took time, but a company in Germany did the job with the required quality. Needless to say, this company also produces structures and parts for Eurocopter.

“Next on the agenda were all the small bits like bearings and screws. All the load carrying parts, the rotor head and the tail rotor blades were checked for cracks by AUA-technicians (AUA is Austrian Airlines). An X-ray and an ultrasonic inspection later, we had to find a new rotor head, because our 36-year-old one featured a prominent incision.

“It took quite some time, but we found a new rotor head and three almost new rotor blades, which had at that time 1,000 to 1,100 hours remaining, so one more problem was solved.

“The engine was a major headache, as was the main gearbox. The crankshaft, the connecting rods and the rod bearings had to be replaced completely. We discovered hairline cracks in three of the four cylinder heads, the intake ports and exhaust ports needed work, and so on; lots of work, I can tell you. But again we were lucky. Peter found a crankshaft somewhere in Canada, along with some old ‘new’ valves, and we successfully rebuilt the engine. All under the supervision of a qualified technician, of course. With the necessary paint jobs complete, we were ready to check whether we could assemble our helicopter from all the bits and pieces that we had been working on for so long.”



They spent two years, working every spare minute, rebuilding the machine

The main rotor was a serious challenge. “There are so many small parts that need to be put together precisely. You have one flapping hinge at the rotor head, plus you have another flapping hinge at 40% of span, and there you also have a drag hinge and a damper. And now multiply this by three,” explains Thomas. “So we measured the weight and the centre of gravity of all these bits and pieces, and put everything together in different combinations. We fully assembled and disassembled the main rotor three times, and by then we had found the optimal set up.

“With the main rotor complete, it was time for the first engine start. Guess what? It immediately sprang to life; and one minor modification later we had succeeded in having no leaks, something that is pretty rare on these engines.

“When we started to ‘break in’ the tail rotor, it made strange noises, which of course was not good news. After some experimentation, we were able to cure that by adjusting (many, many times) the blade pitch of the tail rotor. Then it was time to get the main rotor blades to fly in line. As suggested, we started with tracking tape, but the results were disappointing and the whole procedure was not quite safe.

“The search was on for a better solution. Several brainstorming sessions later, and equipped with three LEDs (fitted on the bladetips), we completed the blade tracking, with excellent results. By flying after sunset, we were able to check the paths of the blades precisely, and it was easy to make the necessary adjustments.

“We completed our restoration work in 1998, and exactly at that time Brantly Helicopters went back into

Thomas Wawrina parks his Brantly at home in the garden



Thomas Wawrina got his licence in Florida in march 1999 on the R22

business again. Sure enough there were no more problems getting parts for our helo, but by then the only thing we had to do was the necessary official inspections, which we passed with flying colours. Just to be on the safe side, Peter flew to Dallas TX to compare our helicopter and a factory new one. His test flight convinced him that we had done an excellent job. Our helo flew a lot more smoothly, and the ride quality was a lot better,” explains Thomas.

“It was during the restoration work that Peter offered me a shared ownership of the helo. Many discussions with my family and the bank later, I took a 50% share. In the next two years, both of us flew the helicopter regularly, but then Peter found a reasonably priced Alouette II, and he needed the money from the Brantly to start the Alouette project. So in 2001 I became the sole owner of the B-2B,” explains Thomas.

In the meantime, we have completed the pre-flight inspection, which was easy and quick. All the relevant fluid levels are easily accessible for checking, and for a more detailed inspection, access to the main gearbox, engine and main rotor hub is good. The main and tail rotors are mounted rather low, which allows for a very easy inspection, but you have to keep a watchful eye on passengers and onlookers when you start up...

So I asked Thomas how he had managed to get permission to operate the helo from his backyard. (This is not usually allowed in Austria).

“My Brantly’s home was the hangar of Diamond Aircraft, but since they needed a lot of money (yet again), they decided to increase the fees substantially. To give you an idea, for a helo they charged three times as much as for a fixed wing of the same weight. I asked them why, and they answered that if you can afford a helicopter, then you can afford the hangar fees as well. Enough is enough, I said. I cancelled all the contracts, took my Brantly, flew back home, landed in my garden

and put the helo in my own hangar (garden house).

“In 2002, I started on the necessary paperwork for the permit, and it worked. It was not easy and it took some time, and of course there are some restrictions, but all in all it works fine for me. Apart from the convenience of being able to operate your helo from your own backyard, you also save some money, as you need not pay hangar fees. And speaking of fixed costs, the Brantly will remain on the American register, since it’s a lot cheaper that way, and somehow also more appropriate for that kind of aircraft,” smiles Thomas.

“Restoring a helicopter is one thing. Flying it is quite another. So, having almost completed the restoration work, it was about time to get the helicopter licence. Since the B-2B was to remain on the American register, I had to get an American licence, and so, in October 1998, I started my helicopter training in Florida.

“To convince my family, I promised them a fantastic vacation time in Florida. It all started well, but in the second week my kids suffered from an ear infection (they spent a lot of time in the pool), and in the third week a hurricane ended my helicopter training (R-22 of course). But in March 1999 I got my licence.”

On the main differences between the R-22 and the Brantly, Thomas tells me that autorotations with a Brantly are very comfortable. “In the case of an engine failure, you need not dump the collective in a hurry, because there is enough energy left in the rotor for about four seconds before the rotor speed decays into the danger zone. And then there is no danger of mast bumping, the problem with ground resonance is reduced by the hinges in the rotor blades, and by the layout of the landing gear. And, finally, the ride quality in the Brantly is also very good.”

The main reason for the very comfortable ride is the rotor blades, which have been upgraded (i.e., three lbs of weights were put into the blade tips, and the main spar

was strengthened). However, with these changes the maximum rotor rpm now is 472 rpm (instead of 472-500 rpm), and if you should exceed the upper limit, you will have to exchange the hinges in the rotor blades.

“Pilotwise, the Brantly is certainly less demanding than the R-22,” explains Thomas.

Getting into the cockpit is easier than you might think, and you quickly find a comfortable seating position. The cockpit is roomier than the R-22’s, and cyclic and collective fall easily to hand. Speaking of the stick, it is a real stick (yes, I know that a T-Cyclic does have its followers, but I have experienced the disadvantages of the T-Cyclic first hand, so personally I prefer the real stick). All the instruments are on a central pedestal and are clearly visible. The speed indicator has a red line at 100 mph. The rotor rpm limits are 400 and 472, engine rpm limits are 2700-2900. Oil pressure, oil temperature and cylinder head temperature, and the altitude indicator are all mounted on the central dashboard. All-round visibility is excellent.

Engine start: priming is achieved by rolling the throttle two times fully on and off, then closing the throttle again. Ignition on, and slowly rev up the engine to 1400 rpm: the clutch bites and the rotor spins up.

Two minutes later the engine oil temperature is fine, and we can rev up to take off RPM, the necessary checks are complete, and we are ready for take off.

Thomas is at the controls for the first take off, and I watch carefully. We lift off and leave the garden via the approved route, heading towards Spitzerberg airport, for some helicopter-specific exercises there.

As we clear the trees, Thomas hands me the controls. I try some gentle manoeuvring, to get a feel for the helicopter.

I also detect that we are flying with an impressive nose-down attitude, but Thomas tells me that this is because on the ground the tail sits a bit low, so the impression of a nose-down attitude in flight is a bit exaggerated. As promised, the Brantly flies very nicely, and the vibration level is pretty low. However, if you straighten up and move your shoulders a little backwards, enough to touch the firewall, you will receive a very good massage. The reason for that is the very interesting engine cooling system. The engine compartment is essentially closed, and the only openings in that system are the air intakes behind the cockpit and the exhaust pipes. So in flight there is slightly higher air pressure in the engine compartment, and the air going into the engine compartment is forced to leave the engine compartment via the cooling exhausts. Into this cooling exhaust go the engine exhausts as well, so the exhaust gases serve as a “jet pump” that ensures a continuous airflow over the engine. If everything is stabilized, the air in the engine compartment will pulse with the 2,900 rpm rhythm of the four-cylinder engine. The big advantage of the system is that it does not cost any engine

power and it is also weightless. The main disadvantage is that, when you are in a prolonged hover, you need to keep an eye on the cylinder head temperature, as the indicator will crawl up to the red line (depending on OAT) fairly quickly.

I like the controls very much. Cyclic pressures are small, and the collective needs a little more effort. Every stick or collective input translates very well into movements of the helicopter, and it is very easy to fly the helicopter precisely.

The left hand of the pilot is the governor/correlator, so I play with the throttle a little, to get a feel for the reactions of the engine and the system. Engine response was quite good and I did not have much trouble keeping all the needles in the green when working the collective. All was quite pleasant and under control during this manoeuvring, but, as I was to discover during my first auto with power recovery, it took rather more power to get the rotor up to speed, and as I was already rather low you can imagine that the recovery was a bit unsmooth. However, my unsmooth recovery did not jolt Thomas into action, so he must have great confidence in the helicopter (or maybe in my ability to get out of trouble). I discovered that the Brantly is really very forgiving, and since the speed limits for the rotor were not exceeded Thomas did not have to change the hinges in the rotor blades. The next autos were a lot nicer and the RoD was quite comfortable.

We climb up to 3,000 ft to continue the trip to the airport. Still at 3,000 ft, I reduced the forward speed from 90 mph to 30 mph, and back to 90 mph, to check the workload necessary to keep the altitude constant. No above average skills were necessary. I did not try the OGE hover because, during deceleration to 30 mph, the cylinder head temperature and manifold quickly moved towards the red line.



As already mentioned, all-round visibility is excellent. However, without any line of reference in the cockpit, I found it difficult to hold the altitude precisely when flying turns with some more enthusiastic bank angles. Thomas of course detected my problem, and suggested I use the compass (hanging from the cockpit roof) as a cue, and it worked. Next I checked the dihedral stability: I pushed the left pedal very gently, and the helo rolled and yawed to the left, just as it should (same thing to the right).

In the meantime, we had arrived at Spitzerberg airport, and we approached runway 15. Finding the correct approach speed of 55 mph, and a reasonable RoD, is not a problem (although the dashboard does not sport a VSI). With minimal corrections, I came to a neat hover before landing on the intended spot. Keeping the Brantly in a hover to check whether we were inside the limits was also easy. We end the following two traffic circuits with steep approaches and no problem, as visibility is excellent, and in the meantime I have learned how to work the throttle.

Next on my checklist are the usual items, such as sideways and backward flight, pirouettes, spot turns and the gipsy roll. Of course when flying such a rare bird I tried to be very smooth with the controls, and I made no attempt to push the envelope, but throughout these exercises the Brantly did not complain, or feel strange in any way. Backward flight was easy too. The flight manual limit for safe cross-wind or tail-into-the-wind operations is 20 mph.

Spot turns were easy and pirouettes did not require any special skills. And although we spent quite some time in the low speed regime, the engine temperature remained firmly in the green. One thing was interesting, however. I could not really detect the typical shudder when accelerating through translational lift

We complete our exercises, park the helicopter and head for the tower to pay the fees. Immediately the helo is surrounded by interested onlookers, who are seeing a Brantly for the first time. They ask many questions, and finally I can show off, using my Internet knowledge.

The fact that a Brantly had participated in the James Bond movie Goldfinger was mildly interesting. That Mr. Newby O. Brantly also designed bras (to be precise the Brantly/Cameo bras) created huge interest. (I wonder what they will google tonight...).

We have paid the fees and we are on the way home. Flying the correct approach into Thomas' garden was no problem at all, and I land the helo right on the intended spot. Thomas completes the post landing checklist and switches off the engine. Just as the rotor blades come to a standstill, a policeman and some other people show up. As you can imagine, I expect major discussions but it turns out that the neighbours just came by to say hello, and to see the Brantly. One asked if the machine was okay, as he had heard some strange noises. Thomas explains that the engine

has two separate exhaust pipes (one on each side of the fuselage) and no collector, so you hear single detonations; and as the fuselage shields the detonations coming from the other side, you might have the impression that the engine is running very rough. Thomas invites the neighbour to join him on the next flight, but the neighbour remains sceptical, and not too enthusiastic about the invitation (at least for the moment...)

I now have time to reflect on my day and the flight. I was fortunate to fly a very rare helicopter. I was particularly impressed with the restoration work. The attention to detail is apparent everywhere. The performance of the Brantly is good, it is easy to fly, and so, being able to operate the helicopter from his backyard and having nice neighbours, what more can Thomas ask for?



Thomas Wawrina's Brantly B-2B N4992C was built in 1960 and has the serial number 27.

Crew:	1	
Pax:	1	
Engine:	Lycoming IVO-360-A1A	
Power:	134 kW	180 hp
Vne:	161 km/h	100 mph
Max. Alt.:	3.292 m	10.800 ft
Range:	402 km	217 nm
Empty weight:	481 kg	1.060 lbs
MTOW:	757 kg	1.669 lbs
Main rotor dia:	7,24 m	23,8 ft
Tail rotor dia:	1,29 m	4,2 ft
Rotorarea:	41,2 m ²	445 ft ²
Length (fuselage):	6,43 m	21,1 ft
Length overall:	8,53 m	28,0 ft
Height:	2,11 m	6,9 ft

The North Lakes Gyroplane
Club fly north from
Kirkbride, pictures by
Andrew Lysser



Practising their
formation



Is Scotland ready
for this?



Flying without Wings



by Georgina Hunter-Jones

Photographs by Georgina Hunter-Jones and Andrew Lysser

Chris Jones landing the MT-O3 on Kirkbride's main runway



It is fifteen years since I last flew a gyrocopter, and in that period the design and flying characteristics have changed enormously. You no longer have to learn on single seaters. Two-seat gyrocopters are now easily available, and gyroplanes are now far more stable and amenable than they used to be.

In the past gyrocopters had small fuel tanks, and their range was usually only within the small area around the airfield, but now they have up to four hours endurance and fly regularly on long trips, just like an aeroplane. However, there are still intrinsic differences from either planes or helicopters, and in many ways I am surprised that they are often still viewed as small sporty helicopters. There are, in fact, not only important differences from helicopters, but also occasions on which your inbuilt helicopter reactions are actually the wrong thing to do. These differences are particularly obvious on landing, and at the top of the climb.

I flew with Chris Jones from Kirkbride Airfield in Cumbria, in his two-seat MTO3. He calls his machine a gyroplane rather than a gyrocopter, partly so that potential pilots do not assume they are flying a small helicopter.

After an extensive pre-flight check, which includes peering behind the back of the instructor's seat at the front of the engine, we prepared to start. In the gyrocopter, unlike a helicopter, you need to dress for flight: warm suits, gloves, and electric helmets to ensure that you can hear each other.

Engine and blades are started separately. Chris started the engine, which is electric and has a double ignition for safety. The MTO3 has a rotax four-stroke engine, which is part water-cooled and part air-cooled.

We taxied out with the blades still tied to the front of the gyroplane, using propeller power from the pusher engine behind the cabin. The

MTO3 is a tandem machine and the instructor sits behind. This has some disadvantages, the major one being that, if the student is very tall, the instructor cannot see most of the instruments, as to do so he must use the front panel, having very few instruments in his part of the cockpit. However he does have his own throttle and brakes, and an altimeter. The rest he viewed over my shoulders.

While taxiing the rotor brake is kept on, and the stick kept forward, to stop the teetering head blades from flapping down and striking the tail plane.

When we were ready for take-off the blade tie was removed and a switch on the console was changed from brake to flight mode. It is worth noting that one instructor did manage to complete a full flight with the switch in the brake mode, although he said that the controls were very stiff, and the rpm slightly lower than normal. Clearly this is neither good practice nor good for the machine,



Checking the rotor-head before flight



Chris Jones demonstrating how low the blades can flap

but it is possible in an emergency.

Once the gyroplane is in flight mode, the pre-rotator button on the stick is held down until rotor rpm reaches 250 rpm. Then the wheel brakes are released and the gyrocopter motors forward, with the stick now held back, until around 300 rpm, when the nose wheel lifts slightly from the ground. At 350 rpm the gyro lifts into the air, and climbs out at 60 mph (all speeds are in miles, not knots). Rpm varies slightly depending on varying wind conditions.

It is important to keep the speed up in the turn, as the increased drag may lead to a loss of height, as one student found to his cost, when, turning at about 200 feet, he lost so much height that the gyroplane landed back on the ground and had to be fetched on the trolley. He and the machine were unhurt, but embarrassed.

We headed out towards the Lake District to do some turns. The gyro can turn very steeply at slow speed with the stick held right back, which is rather different from planes, as there are no wings to stall, but in this case too height is easily lost.

One way in which the gyro differs from many modern planes is in the need for a rudder. There is a little flap in front of the cockpit which works like a piece of string (i.e., in the opposite way to a balance ball) to indicate balance, and this shows that there are fairly large rudder changes. Moreover, when flying out of balance there is a rush of wind into the open cockpit.

‘Autorotations’ were fantastic in the gyro. With no power on, the gyro happily turns and spirals at 30 mph, and is very manoeuvrable. However, as we got nearer the ground Chris emphasized that it was important to keep the speed up, to avoid sinking on to the ground.

This is one major difference between a helicopter and a gyroplane: you do need speed, and speed keeps you in the air. The avoid curve on a helicopter shows places at which high speed at low height is a disadvantage, but this is not

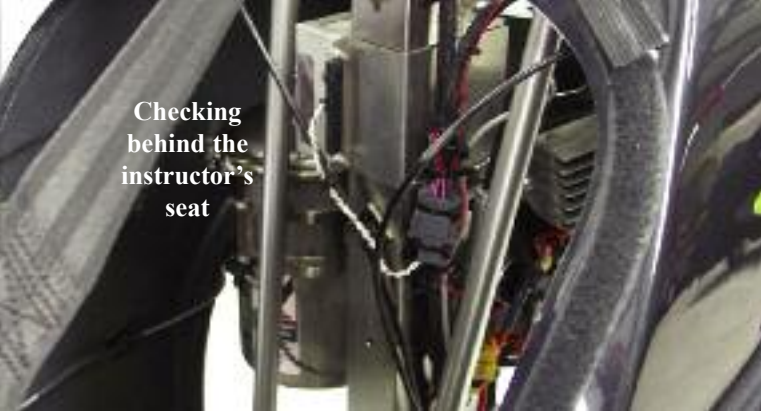


MT-O3 front (pilot's) cockpit



Chris Jones comparing the length of the instructor's extended stick with the normal 'joy stick'

Checking behind the instructor's seat



the case in a gyroplane.

To land a gyro, you 'dive' at the ground at 60 mph until the gyro is at about 20 feet, then you flare gently to bleed off speed, holding the nose level for landing, until just before touch-down, when you ease the stick back to keep the nose wheel off the ground, while letting the main wheels touch. A perfect landing – at least in Chris's case, although not necessarily in mine!

To do a touch and go, you need to keep the stick hard back for the landing run, then bring it forward to counteract the nose, which rises with the momentum. The gyroplane uses a speed of 60 mph for climb out.

At the top of the climb there is another big difference between helicopters and gyroplanes. In a plane or a helicopter we do APT—attitude, power, trim. In a gyroplane this will lead to problems, so you bring the power back first, allowing the nose to settle down, and then trim. (There is a cocked-hat trim on the stick just like in a MD 500, but the forces are not nearly so great). If you get these the wrong way round in a helicopter, there is no great problem and you can waffle along on the back of the drag curve. In the gyro, however, if you change the attitude without first reducing power you could get into pitch oscillations and bunting, which might lead to serious problems, so it is well worth taking this PAT seriously.

In the past there were quite a few accidents with gyroplanes, not least because, at one time, if you had a plane or helicopter licence, you could fly a gyroplane without further instruction. This has now changed. There is now a 40-hour (CAA, not EASA, licence) with dispensations for other aviation experience: helicopter pilots must do a twenty-hour minimum, and aeroplane pilots a thirty-hour minimum. You also need to do a test and forty hours of ground school, all of which has helped reduce the accident rate.

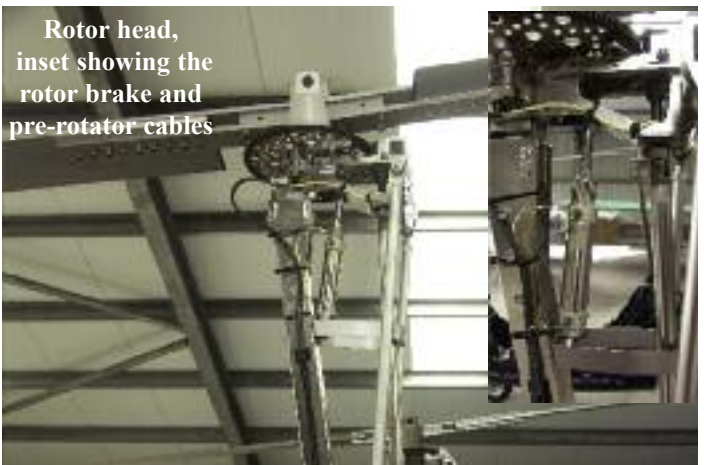
I loved flying the gyroplane, it was a really good experience and, as Chris pointed out, at around £100 an hour considerably cheaper than a helicopter. We had a brilliant time doing passes across the fields and around the control tower (their office), and it felt like basic seat of the pants flying, which gave me a buzz. As long as you remember it is not a helicopter you too should feel the fun of flying a gyro.



Lift-off begins with the nose wheel



Rotax 4-stroke engine



Rotor head, inset showing the rotor brake and pre-rotator cables



The office at Kirkbride

PHOTOGRAPH GEORGINA HUNTER-JONES AND ANDREW LYSSER

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Mil Mi-26



in Afghanistan

by Neil Walton





Above: Mi-26T crew
Below: watching the dam



Kandahar City with
smoke from cooking and
early morning mist

At 0630, the sun is just rising from the East, and a bitter cold wind is blowing down off the Hindu Kush Mountains from Pakistan. Winter in Afghanistan can be brutal, but some of the crew on the Mi26T have been here before.

Nikolay Palamarchuc, ex-Russian Mi25 Hind Gunship Pilot and Chief Captain today, was here for several years in the 1980s, fighting the Mujahedin. Now he is here as a Contractor flying the Mi26T for Vertical-T, a Russian Company based in Tver, Russia.

The Mi26T is used in Theater (Theater of War), mainly as a heavy lift helicopter for Military Supplies. Most nations here require their troop transports to be “protected” to some extent with a Missile Warning System or MWS, but there is no such thing on this Mi26T. Designed for both Military and Civilian use, the Mi26T is unmatched in its carrying capacity, and it is capable of carrying 20 tons internally or externally: there is not much that it cannot carry.

Complicated as it is, the Mi26T is owned by Vertical-T, a Russian company, contracted to DynCorp Australia, and then sub-contracted to the Netherlands Ministry of Defense. This leads us to the multi-national crew members: the Russian flight crew consists of Chief Captain Nikolay Palamarchuc, Co-Pilot Pavel Omelchenko, Navigator Victor Redkin, Flight Engineer Alexander Korotov, Loadmaster Oleg Kotchetov, Second Loadmaster Konstantin Iotov, Chief Ground Engineer Victor Brovko, Ground Engineer Avionics Alexander Boykov, Ground Engineer Vladzimir Pushkarou, Ground Engineer Alexander Afanasyev, Ground Engineer Aliaksandr Datsenka and South African Asset Protection Manager

Andre Els. This vast crew flies supplies for the Dutch, British, Canadians, Americans and any other nations that may require a heavy lift helicopter: this brings new meaning to the term “International.”

On this cold, clear, windy morning, the Mi26T crew is loading two British Defender Jeeps from KAF (Kandahar Airfield), destined for the British Marine Commandos based in Camp Bastion in Southern Helmand Province, Afghanistan. Once there, they will unload the jeeps and then reload a different jeep into the cargo bay, along with Christmas mail and some unspecified military cargo, to deliver to the Kajaki Dam. Then off to the Kajaki Dam, located in the Northern Helmand Province, to deliver the new cargo, and then they have to set up a sling to lift out a Jackal Armored Vehicle that was heavily damaged by an IED (Improvised Explosive Device). Thankfully, no one was hurt in this attack. In such circumstances, the sling is used if the vehicle is in such disrepair that it cannot be driven into the cargo bay.

The sun has barely risen as we depart KAF and head SW into the desert, towards Camp Bastion. On this morning, because of the rain, the air is free of the baby powder dust that plagues the country most of the time. This gives me an unobstructed view through the small portholes that open up in the fuselage of the Mi26T. I am happily snapping many of the 500 photos that I will have to sort later this evening, and oblivious to the temperature at this point. My liaison, the Mi26T Manager, Andre Els, is making instant coffee for us, and also trying to keep warm in the dark and unheated cargo bay.

Andre, a DynCorp Australia employee, is the Crew and Asset Protection Manager here in KAF for Vertical-T. Andre was previously with the South African Police

PHOTOGRAPHS: ROMINA CUJFA



Mil Mi-26T being unloaded in the 'Loading Zone'
Inset: Captain Nikolay

Force, as a Captain in the Organized Crime Section in the coastal town of East London, South Africa. He has operated on PSDs (Personal Security Details) for DynCorp in both Iraq and Afghanistan. He currently owns and operates a security firm in East London, SA. Andre has extensive training, and he speaks four languages, and can get by in several others. He has packed us a runaway kit in the event that today we need to put down somewhere outside the wire. Let's hope I don't need to find out what its contents are!

At our first stop there is an unfortunate mishap, and one of the main tires on the Mi26T blows. You would not think this is a problem for a helicopter, but remember that this one weighs in at a staggering 56000 kg, and with tires nearly four feet tall and weighing several hundred kg, it takes special equipment to accomplish the change. After the flight engineer has assessed the damage and made a few phone calls, it is decided to go back to KAF and replace the tire. We can now continue with the rest of the day.

An hour and a half later we have a new tire, and we are on our way from KAF to Camp Bastion, to FOB (Forward Operating Base) Kajaki with our cargo. It is starting to warm up now, and daylight is seeping into the

cargo bay of the Mi26T. It smells a bit like a garage, coffee shop and dirty socks all rolled into one. Young Loadmaster Konstantin Izotov is busy scurrying around to ensure that everything is tied down, and that the cargo bay is neat and tidy. This is his office, and it is obvious that he takes great pride in his work.

The entire crew is very professional and makes me feel at ease during the whole flight. Ironically there is only one English-speaking crew member, the Navigator Victor Redkin, so most of my communication with the crew is done with hand gestures.

Our trip takes us up the Sangin Valley, known as the Green Zone, en route to FOB Kajaki, and this is one of the most dangerous areas in Afghanistan. Here the British have lost 137 of their bravest young men. It is where we would want to have to put down. It is a spectacular area full of lush greenery and a swollen river, lined on both sides by 1200 m high hills.

Approaching the dam, gliding in like a great prehistoric dragonfly, we enter over Kajaki Lake and on to a small LZ (Landing Zone) on the very edge of the Kajaki Dam. We put down amongst a dozen or so young British Marine Commandos, all in their early 20s. This is where



**The Hindu Kush
Mountains that run the
length of Afghanistan**

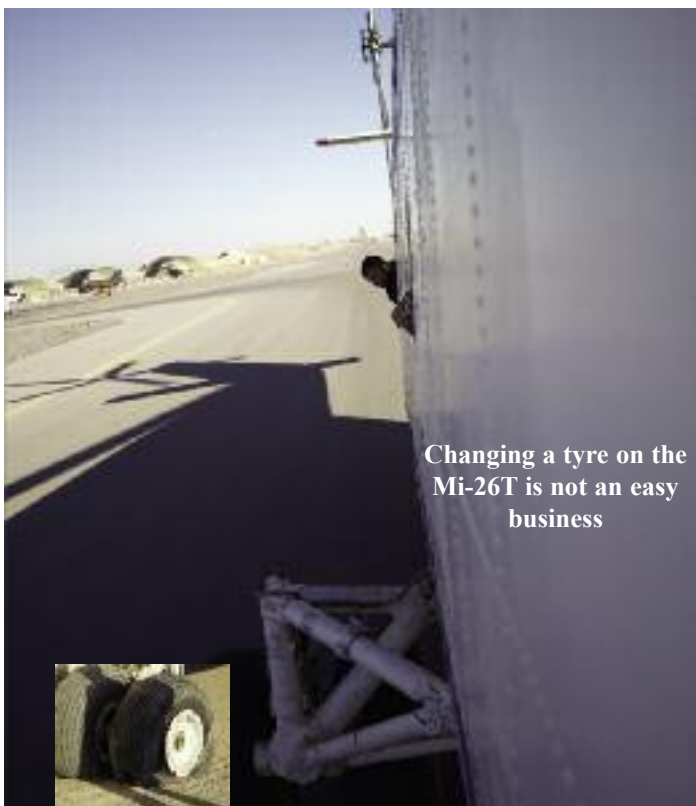
the main supply of hydro electricity for Southern Afghanistan comes from, and the Taliban would love to destroy this dam.

Standing on the edge of the dam, one of the British Commandos tells me that for 3 km around the Dam is safe, but beyond that the Taliban are gathering and waiting. He tells me it is safe to wander to higher ground and the gate that overlooks the landing site to take photos, but I should stay alert. I couldn't help but feel that there were eyes watching me from a distance, and waiting for me to make a mistake or a wrong move. At the top of the hill I come across a group of Afghan men in their 20s. They wave for me to come up and visit. They offer sweet tea, Afghan style. I apologetically thank them for the offer, but we are not staying long enough for that. They have been hired by the Americans to help secure this area, and they are very proud to show me their radios and their American-supplied jackets, and to pose for me. Money buys you everything here, and they will remain loyal as long as they are paid more than the Taliban can offer. Most of the time they are alone up here, and they spend their time fishing, drinking tea and watching for insurgents.

The load is secured to the hook under the Mi26T, and the process of lifting a 10-ton load begins. This is my first time in a helicopter carrying an external load, so I have no idea what I am in for. The Commandos outside are hunkered down amongst the offloaded cargo, and are being severely battered by the incredible wind and sand generated by the Mi26T. They are watching to make sure

that the lift goes smoothly, without problems. Minutes later we have defied gravity again and are at cruising altitude, on our way back to Camp Bastion. This is proof that anything will fly, if you put enough power into it.

Sitting in the back cargo bay, and looking down vertically from 3200 m, through a hole in the floor the size of a half sheet of plywood, provides an awesome view.



**Changing a tyre on the
Mi-26T is not an easy
business**

However, seeing and feeling the swing of a 10-ton load on a 50-ton helicopter is something that I, as a fixed wing pilot, would never be able to get used to. The constant feeling of the helicopter rolling over on its back is very uncomfortable. Right now I would do anything to be back in my room and curled up with a good book.

I move to the cockpit to see if that will make me feel any better. As I enter the cockpit the first thing I see is a small TV screen on the dash, with the Jackal in plain view, and Co-Captain Pavel Omelchenco with beads of sweat on his brow, and his eyes fixated on the TV screen, as he works the controls to keep the load where it should be. Captain Nikolay signals me to sit in the jump seat between the two of them, points at the screen, and then looks across at Pavel. With a roll of his eyes and a sigh, Captain Nikolay then takes control of the Mi26T using only his fingertips, as if he is sitting in his living room with the TV remote in one hand and a cocktail in the other. He is relaxed and casual, as if he has done this a million times

before. Meanwhile Pavel has now pushed himself back in his seat, and is rubbing the sweat off his palms and trying to get the blood flowing back into his fingers after the death grip he had while trying to control this beast. Captain Nikolay expertly guides the Mi26T and sling load on to the ramp at Bastion just as the sun sets in the desert, bringing us closer to the end of a very long day.

We take on fuel and Capt. Nikolay brings the beast back to life. He is a man of few words, but what he says and how he carries himself make you feel that there is nothing he cannot do with this monster machine. On the descent back to KAF, Capt. Nikolay leans back towards me, smiles, and says "Long Day, Neil. I smile back and say, "Yes Nikolay, 12 hours is enough for one day." A smile and a wink is all I get for my time with him and his crew, but it is a time that I will not soon forget.

All in a day's work.

General characteristics of the Russian Mil Mi-26

Crew: Six
2 pilots, 1 navigator, 1 flight engineer, 1 loadmaster, 1 radio/electronic systems operator

Capacity:
Up to 150 troops, 90 recommended
20,000 kg cargo (44,000 lbs)
Length: 40.025 m (131 ft 4 in) (rotors turning)
Rotor diameter: 32.00 m (104 ft 11.8 in)
Height: 8.145 m (26 ft 9 in)

Disc area: 789 m² (8,495 ft²)
Empty weight: 28,200 kg (62,170 lb)
Loaded weight: 49,500 kg (108,900 lb)
Max takeoff weight: 56,000 kg (123,500 lb)
Powerplant: 2- Lotarev D-136 turbo shafts,
8,380 kW (11,240 shp) each

Performance
Maximum speed: 295 km/h, 183 mph (160 kt)
Range: 1,952 km, 1,240 miles (1,080 nms)
Service ceiling 4,600 m (15,100 ft)

PHOTOGRAPH NEIL WALTON



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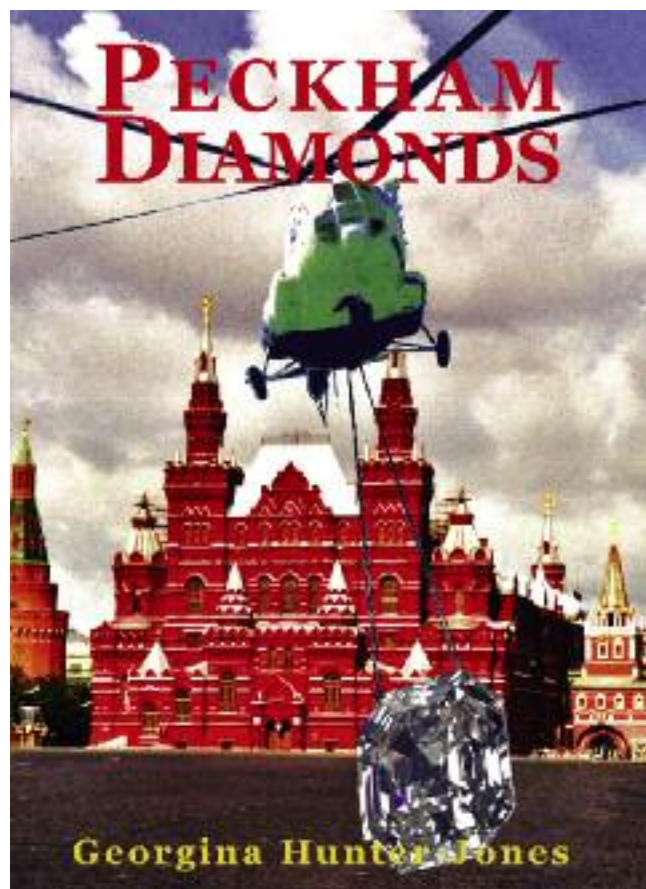
As many of you know, the American Helicopter Museum & Education Center, which is located at 1220 American Boulevard, West Chester, PA, holds our Whirly-Girls quilt and other Whirly-Girls Memorabilia.

Each year they host a Rotorfest and also have a fundraising dinner that is attended by some of the top companies in the helicopter industry. This year, they have asked the Whirly-Girls' President to be their keynote speaker for:

"Whirly-Girls Stilettoes to Combat Boots" the past, present, and future of the Whirly-Girls. The event will be in late October, so please watch the Whirly Girl's website for further details on dates, times, and locations.

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<http://www.whirlygirls.org/>



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Ghosts of Helicopters (and flyers) Past

RUGGS HARRISON: THE FLYING BOUVIER DE FLANDES



Ruggs Harrison, affectionately known as Ruggsie Bear, was not only the close friend of Guy Harrison, a 41 year old businessman from West Sussex, but also his favourite flying companion. Born on the 1st August 1996 Ruggs, a 9-stone Bouvier de Flandes, accumulated over 375 hours in his 14 long and contented years, and flew in 2 different types of aircraft. His flying career began in an Enstrom 280, which he made very clear to both pilot and passengers that he was rather disparaging of. Then he upgraded to a Westland Scout in which he developed a serious taste for flying. Ruggs detested being left behind and was



renowned, particularly to those who dared to close the door in front of him, for knocking people completely off their feet to get to the helicopter. He displayed a huge sense of ownership over the Scout and was less than accommodating to his fellow passengers in the back seats! Exhibiting entertainingly human traits, Ruggs would casually gaze out of the Scout window down at the English Countryside below, as if he recognised the local terrain. In doing so he would often cause great excitement to people below who witnessed any landing with Ruggs inside. Ruggs was also seen competing in the Helicopter Championships of Great Britain in 2004 (as head of Security & Chief Navigator).

PHOTOGRAPHS COURTESY OF GUY HARRISON

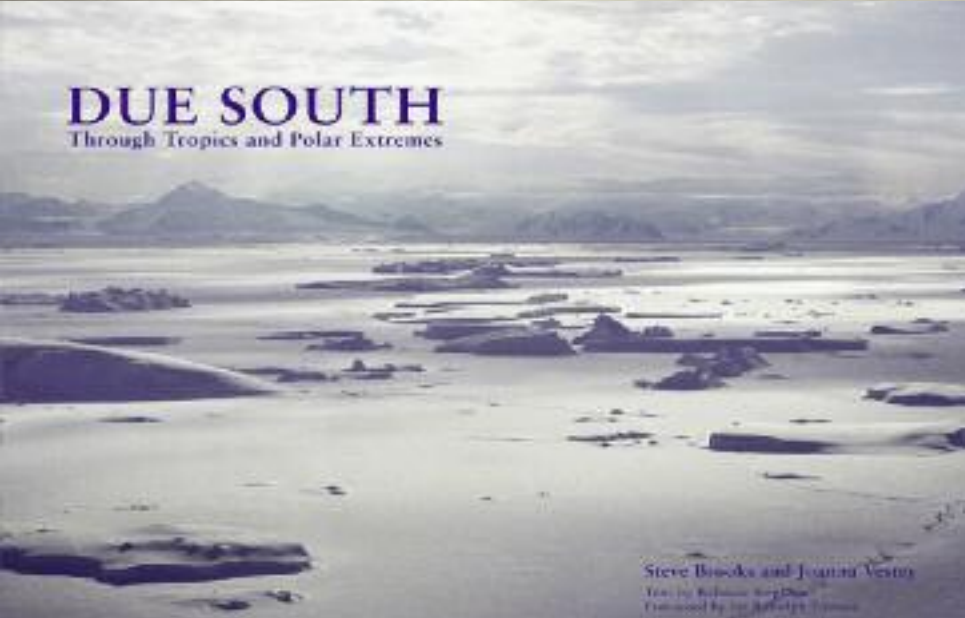


Due South

Through Tropics and Polar Extremes

by Joanna Vestey and Steve Brooks

with Rebecca Stephens



The original idea was gloriously simple, at least in concept – to fly a helicopter from the very top of the world to the very bottom – a feat never before attempted. The journey would take in some of the planet's most extreme wildernesses, from the polar ice sheets to mountain ranges and canyons, rainforests and deserts, river and oceans, glaciers and sand dunes, with visits to indigenous tribal groups along the way. Pilots Steve Brooks and Joanna Vestey were no strangers to adventure. Steve had already found his way into the record books as the first person to drive from America to Russia across the Bering Strait, while

Joanna had worked all over the world as a photographer. This is the story of how together they flew the length of the Americas, and the story of Brooks' further ambition to top and tail the adventure with flights to the polar extremes. Brooks' first attempt to cross the infamous Drake Passage en route to the South Pole was to end in near fatal disaster when the helicopter suffered engine failure and he ended up in the icy waters, lucky to escape with his life. Two years later he returned and successfully crossed the Drake, flying on to the South Pole. This book is the story of a young couple's phenomenal journey and their enduring will to succeed. Documented by Joanna Vestey's stunning images and told in the words of

Rebecca Stephens, the first British woman to climb Everest, it is both an epic adventure story and a striking testament to the power of positive thinking.

Joanna Vestey is an award-winning photographer whose work has been published widely both nationally and internationally. Steve Brooks is an avid adventurer, record-breaking helicopter pilot and joint founder of one of Europe's largest property investment companies. Rebecca Stephens was the first British woman to climb Everest and the seven summits, and is the author of several books.

Brantly B2B, G-BPIJ

The pilot was doing a training flight for the revalidation of the pilot's type rating. The pilot under instruction was in a low hover with the wind 20 degrees to the left, the instructor asked him to turn right to point downwind. Whilst carrying out the manoeuvre, the helicopter unexpectedly started to yaw right and climb. Having climbed to about 20 feet and yawed through 180 to 270 degrees with the throttle fully open and the left pedal fully applied, the instructor took control. The instructor lowered the collective to attempt to recover the rotor speed which had drooped, while maintaining full left pedal. By this time the helicopter was some 30 to 40 feet above the ground and had drifted downwind. It continued yawing right as the height was reduced, until it made a gentle touchdown. After touchdown the helicopter continued yawing and the left skid collapsed, causing the helicopter to roll left and the main rotor blades to strike the ground. The tail rotor authority under the prevailing conditions of high torque in the hover was likely to be marginal. If tail rotor authority is lost, the resulting uncontrolled yaw sets in very rapidly, and is inherently difficult to control. This is particularly so if the height is insufficient to permit an immediately lowering of the collective to reduce the torque reaction, without risk of the helicopter contacting the ground prematurely with an unacceptably high rate of yaw. The commander was 68 years old and had 9,444 hours of which 93 were on type.

Robinson R-44 Raven 11, N515DG

On June 25, 2009, at 1500 Pacific time, a Robinson R44 II landed hard during a forced landing approximately 7 miles west-northwest of Lakeport, Ca. The CFI reported that they were conducting a 180-degree autorotation with a power recovery. They put the helicopter into a glide and, as they made the turn, the CFI noticed that the oil and auxiliary fuel pump lights were on. The CFI then looked at the tachometer and attempted to increase the throttle. The power did not return so the CFI committed to a landing. During landing, the main rotor blades impacted the tail boom. The instructor and private pilot undergoing instruction were not injured.

Agusta A109A2, N745HA

A student and instructor were doing autorotations as part of a type rating course. The instructor initiated the autorotation with the words: "Double engine failure, GO" and retarded both Speed Select Levers (SSL) from the flight idle position. The aircraft was established in autorotation at 75 knots. When it became obvious the

student was not going to reach the aiming point the instructor advised on corrective action. Later he realized he had not reinstated the SSLs and advanced them to flight idle. He took control and landed on the grass next to the runway. The touchdown seemed normal, but after a precautionary check it was discovered that the retractable nose gear did not appear to be fully extended and close inspection revealed that the extension strut had collapsed and that the nose leg was resting against the underside of the fuselage.

The commander was 38 years old and had 3,220 hours of which 1,384 were on type.

Robinson R-44 N-7189W

On July 23, 2009, 2226 Eastern Time, a R44 helicopter was substantially damaged during a cruise flight when it struck a guy-wire and impacted the ground in Boonsboro, Maryland. The flight originated from Hagerstown Regional Airport, Maryland, and the helicopter was en route to Frederick Municipal Airport (FDK), Frederick, Maryland, when the accident occurred.

On the day of the accident, the helicopter flew from FDK to HGR, to transport a Director of the Advanced Helicopter Youth Foundation and another passenger to a business association meeting. In addition, the pilot was scheduled to give rides in the helicopter, in conjunction with that meeting. The pilot and the third passenger were employees of AHC. The helicopter arrived at HGR at approximately 1812. The pilot then gave rides in the helicopter until about 2000. The rides consisted of a flight around the pattern, and each flight lasted about 5 minutes. After the business meeting and the rides, at approximately 2100, the pilot called an employee of AHC about the weather conditions for the return flight to FDK. The employee informed the pilot that the weather conditions were "miserable," with severe thunderstorms in the area. He offered to drive in his car to HGR to take the occupants back to FDK. However, the pilot said they would "wait out" the weather. The pilot called back "sometime between 2200 and 2215," to ask again about the weather. The employee told the pilot that the rain had stopped. However, it was still foggy and windy, with lightning in the area. He again offered to drive to Hagerstown, and the pilot said that he would wait for the weather to improve. He also mentioned that the wife of one of the passengers owned a minivan, and could pick them up if needed. It was estimated that the helicopter departed HGR about 2215. The HGR air traffic control tower closed at 2200, and there were no known communications with the helicopter.

A witness, driving east on Interstate 70 (I-70), stated that he observed the helicopter pass him over his right side. It was a “dark night,” and there was fog about 50 feet above the roadway surface. The helicopter appeared to fly into “low clouds,” turned around, and was heading back toward the west, when it contacted power lines just as his car passed under them. The helicopter impacted the ground and burst into flames.

Another witness, driving on I-70, reported that the helicopter was flying parallel with the interstate, and “seemed to be getting lower.” It then disappeared from view, which was followed by “sparks in the sky.” The witness observed the helicopter descend toward the roadway. The helicopter struck and broke an unmarked steel guy-wire, which extended perpendicularly over I-70, and was about 70 feet high. The accident site was at an elevation of about 1,130 feet mean sea level, near the top of South Mountain. A ground scar was noted on the center median approximately 30 feet west of the power lines, and the helicopter came to rest on its left side. A post-crash fire consumed the cabin, most of the main rotor gearbox housing, and all drive belts. Initial examinations did not reveal evidence of pre-impact mechanical malfunctions. Initial review of maintenance records revealed that the helicopter had been operated for about 60 hours since its most recent annual inspection. The pilot had 630 hours of total flight experience. He and the three passengers were killed.

Robinson R44, N22HP

The private pilot reported that he was flying the helicopter about 500 feet above the ground and decided to descend to follow a riverbed. While descending to the river, one of the passengers alerted him to the presence of power line wires that obstructed their flight path. The pilot applied full aft cyclic and collective in an attempt to avoid colliding with the wires; however, the tail boom and tail rotor contacted the wires. The impact resulted in the separation of the tail rotor blades and the bottom section of the vertical stabilizer from the helicopter.

Following the collision, the pilot initiated an autorotation. Upon touchdown, the helicopter bounced, and when it touched down again, it was moving sideways to the left and rolled over. The helicopter came to rest on the bank of the river on its left side. Examination of the helicopter revealed substantial damage to the main rotor assembly, the tail rotor assembly, vertical stabilizer, tail boom, and fuselage. The pilot reported that there were no mechanical anomalies with the helicopter prior to the accident.

The pilot had 1250 hours, 105 on the Robinson R44.

Schweizer 269C-1, N94421K

The flight from APF originated about 2 minutes earlier. The pilot stated that he planned on performing a solo cross-country flight. Prior to departure, he performed a preflight inspection with no discrepancies. He also performed a check of the magnetos, and both were within the 125-rpm maximum drop. He did not recall or report anything unusual about the rest of the pre-departure process. He received clearance to depart to the southeast, and initiated a hover of approximately 5 to 7 feet above ground level. He then began the takeoff, accelerating to 55 and 60 knots indicated airspeed with almost 29 inches of manifold pressure. At the same time the engine rpm was near the bottom of the green arc. He lowered the collective down slightly to correct the high manifold pressure reading and also to increase engine rpm, and although the manifold pressure decreased, the engine rpm did not increase. He increased the throttle but there was very little response. About this time he began hearing an intermittent beeping from the low-rotor-rpm warning horn, and also reported that the sound from the engine was not typical, and that it felt sluggish. He notified the tower of his intention to return and turned to the left, while keeping the collective in the previously placed position. As he came out of the turn in a direction that he thought was towards the airport he applied nearly full throttle but, at the end of the turn, he heard the low-rotor-rpm warning horn change to a steady tone. The helicopter began descending at a rapid rate and he immediately started looking for a neutral landing spot. He aimed for an unoccupied pool and closed the throttle and lowered the collective. He then recognized that he would be unable to land in the pool and, just prior to contact with a wood trellis and small building near the pool, he pulled the collective. Injury precluded him from evacuating the wreckage; he was rescued by a local fire rescue. Preliminary inspection of the helicopter revealed that the fuel tank was nearly full, with no fuel contaminants noted. The engine was removed and inspected. This revealed that the right magneto was against the counter clockwise stop and that the flange adjacent to the lower clamp was fractured. The as-found position of the magneto was timed approximately 50 degrees before top dead center (specification is 25 degrees before top dead center). The magneto was repositioned and properly timed to the engine. The engine was then started and operated normally. The right magneto was retained for further examination.



Sangin, Green Zone

Helmand Province, Afghanistan. Photographs by Neil Walton

Sangin is a city in Helmand Province where many of the International units are based, including the British, the Canadians and the Danes. It is situated in the Green Zone, a fertile agricultural area of Helmand, which is also used for opium production.

The Siege of Sangin took place between July 2006 and April 2007. It started with a massacre of civilians by the Taliban. A Company was called in to secure the area, but this operation failed, and there was a general stand-off until a failed raid by the Special Forces, in which two soldiers were killed. A unit of Royal Engineers was called in, and they built a helipad with a double rampart of HESCO barriers. A Chinook, supported by Apaches, was then able to access the area and bring in 200 extra troops. This helped to weaken the Taliban and some were driven out, but they maintained their hold on the city.

Sangin was finally relieved in April 2007, by Operation Silver, which deployed a force of

more than 1,000 international troops. The troops used helicopters, ground fire and ground attack, as well as airpower. On April 5th, the town was secured and the Taliban were driven out. A new local governor was appointed and there is now a permanent military base in Sangin.



The Mil Mi-26T is used as a heavy lift machine in war areas and elsewhere. Its NATO name is Halo, and it is capable of carrying 20 tonnes (40,000 lbs). The prototype first flew in 1977, and it went into production in 1981. The Mil Mi-26 was first used by the Russian Air Force in 1983. It was the first helicopter to operate with an eight-blade rotor.

The one shown here on Whisky Ramp KAF (Kandahar Airfield) is owned by Vertical-T, a Russian company, and it is contracted to DynCorp Australia, which leases it to the Netherlands MOD.