



Simulators form the second leg of BTA's three-pronged approach to flight training.

The right side of the tracks

Bell has what are probably the most extensive helicopter flight and technical training centres in the world. Gideon Ewers went to the Bell Training Academy to find out more.

The genesis of the Dallas-Fort Worth metroplex becoming Helitown can be traced back to the relocation of Bell Aircraft's helicopter division to Hurst, Texas, in 1951.

Over 70 years later, the company still occupies that original site and quite a lot more.

In fact, Bell's Hurst facilities can be divided to north of the tracks and south of the tracks as it is bisected by the Trinity Rail Express. (Bell has its own station on the line, but that's not important right now.)

To the north of the line sits Bell Plant 1, and as part of that for the moment the customer delivery centre and Bell Training Academy (BTA) hangars.

I say for the moment because under

construction south of the tracks and adjacent to the main BTA building are new hangars and aprons which will allow all BTA activities to take place on the "right" side of the tracks.

At the time of writing, the BTA at Hurst supports pilot training on all in-production aircraft as well as the 206.

On the technical side of the equation, the scope is rather larger. All in-production aircraft courses are also available on legacy models, including the 222/230, 427 and 430, and in the practical demonstration room there is also one of the early 525 prototypes available for students to examine.

In total, around 2,000 pilots and technicians pass through the academy's portals annually.

Hands on

Since my tour began there, let's first discuss the technical training suite. While of course much instruction is based on theoretical training, the real benefit comes from getting out of the classroom and out amongst the hardware – getting your hands on and dirty.

Accordingly, at the BTA there is an extensive range of full and part airframes for students to work on – this equipment being for every type covered under the portfolio of courses.

Since we live in the days of health and safety, the part airframes even include rotorheads and sections which allow instruction and practice at hangar floor level.

Meanwhile, back in the classrooms, the latest in CBT training awaits, with a number of intuitive and user-friendly formats designed to hasten the learning process.

On the pilot side of the equation, the BTA operates a three-pronged approach

with academics, simulation and flight.

Of course, all training begins in the classroom, but the class experience is about as far as it is possible to be from the days of “chalk and talk”.

As Nick Girouard, Manager, Technology Simulation Maintenance and Training, who is responsible for the teaching aids developed by BTA, explains: “We went from a starting point of asking the question ‘How do we want to build up the student’s knowledge of whatever element we are talking about?’ and we went on from there.”

To the easily distracted pilot – okay, that would be me – the resulting presentation was a godsend, since rather than being overloaded with all-up diagrams by the dozen, which then required a mental distillation – which never works because when being taught about the swash plate I inevitably spot something shiny about the tail rotor gearbox – the net result was an academics system that bolsters not only the attention but ultimately knowledge retention.

Serious business

Moving on to the simulation element, I joined Todd Bufkin, Bell’s Chief Flight



Todd Bufkin, Bell’s Chief Flight Instructor, says flying complex aircraft is much about system management as hands-on skills.

Instructor, in one of the 429 FTDs to not only see the equipment in action but also think about the wider philosophy of training for operations.

While the 429 is a very capable aircraft and finds favour in a lot of applications, it is also generally speaking one of the first “grown up” aircraft that a lot of pilots encounter.

By grown up, I mean an aircraft that is very much operated as a flight platform, be it a HEMS, law enforcement or corporate/personal aircraft.

As such, it does present some additional challenges for instructors imparting the methodology moving away from hands-on flying.

“I get that from students a lot,” says Bufkin. “They’ll say to me, ‘But all this autopilot stuff, it’s not flying – I want to fly.’ I have to try and get it across to them that, sure, we all like to fly, but this is about learning the system architecture to ensure that you can complete whatever mission type you are flying as accurately and safely as possible.”

In other words, leave your silk scarf at home, this is serious business.

Millionaire flying

Possibly the jewel in the crown of the BTA, and the final aspect of its three-pronged approach to flight training, is the Floyd Carlson Training Field.

For our sortie, I was paired with Bell’s Joseph Decapite, Senior Manager, Flight Training in a freshly minted Bell 505.

This particular example was fitted with high skids, the reason being that these are more resistant to the punishment meted out by repeated autorotation exercises compared with the standard skids.

Our sortie as briefed was a short transit over to Carlson Field. It is just a couple of kilometres east of the BTA, where we’d carry out a couple of circuits, some hovering work and conclude with a sequence of autorotations.

Carlson Field consists of three north-south runways – the prevailing winds in this part of the world are one or the other – and a single east-west runway.

Each of the runways is equipped with a number of spots and lighting options. Also on the field is an elevated structure that is fully lit for rooftop and helideck operations training.

On an average day the sky around Carlson is busy, but at the time we flew it was millionaire flying – we had the place to ourselves. Or as Decapite put it: “You can tell it’s lunchtime!”



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BTA is billed as the gold standard in helicopter training, and having spent a single day at the facility it's hard to argue with that assertion. It really does have it all – except for one thing.

As we shut down at the end of the sortie, Decapite asked if I had any more questions.

“Yes,” I replied. “Do you have the numbers for this week's Powerball lottery? I think I'd like one of these [the 505] and pop back for my initial.”

“No,” he retorted, “and if I did I'm not going to tell you!” ■



Jewel in the crown: Carlson Field is arguably the world's best civilian flight training ground.

Bell Training Academy, Valencia

Every year, the Bell Training Academy (BTA) in Valencia welcomes around 200 pilots to train using the facilities located there.

At its centre is the Bell 429 Level D Full Flight Simulator (FFS), which has so far accumulated close to 1,000 simulator hours in 2023 alone.

At BTA Valencia, pilots can embark on the training programme to train for any unforeseen circumstances in different meteorological conditions.

Patricia Charcos, Valencia Training Centre Manager, says: “I really enjoy talking to the pilots to learn about their experience, not only in the simulator and during their training but also their daily activity flying different missions. It's rewarding to hear how useful the simulator training is to help pilots prepare in case of an emergency or a malfunction.”

Beside customers from Europe, the training facility receives customers from around the world, offering them the option of dry leasing the simulator to use their own instructors for training, along with ground school training and other options to match each attendee's goals.

In fact, dry leasing has accounted for over 200 hours of simulator time this year.

Marcel Costa, a former trainee from Helitrans Pyrenees in Spain, says: “A few weeks ago, I attended the BTA in Valencia to do an initial type rating and found that



the simulator exceeded all expectations.

“The visual system is close to reality and once you are immersed in the training you don't realise you are flying in a simulator. I was able to perform all training manoeuvres – especially malfunctions and emergencies – enabling me to understand and learn how the helicopter responds in the unlikely event of these failures.

“The instructors are exceptionally experienced and knowledgeable, and more importantly they know how to share that knowledge with the pilots. The facilities are impressive and the staff are very kind and attentive. I am sure I will go back to Valencia next year for further training.”

The Bell 429 Simulator has an operational efficiency of more than 99 per cent, so the number of training interruptions and reschedules is close

to zero.

The Level D Full Flight Simulator is used for the 429 Initial Course, involving EASA-approved training with the introduction needed to fly a Bell 429; a Recurrent Course, consisting of refresher training with a combination of ground school and the flight simulator to help customers continuously master the aircraft; and a Performance Based Navigation Course, combining theoretical and practical training on the flight simulator to meet EASA requirements for all instrument rated pilots.

Tiago Mesquita, a former BTA attendee from JCPM Group in Brazil, told *RotorHub International*: “I recently had the opportunity to retrain on the Initial Bell 429 Course. The Ground School was important to consolidate the knowledge acquired and learn about the updates to the GPS and display units installed on the new aircraft. The simulator training is of great value because we can train the loss of effectiveness of the tail rotor and other scenarios in IFR flight, where it is necessary to manage several systems.”

With training facilities in Europe, Asia, and America, Bell has attracted customers from around the globe, with over 130,000 pilots having completed pilot or technical training at a Bell Training Academy since 1947.