



Charlie Tango Victor



“Charlie Tango Victor” is aviation-speak for CTV. For clarity in air-to-air or air-to-ground communications, the phonetics are almost always used rather than the aircraft’s full registration: C-FCTV.

The new CTV helicopter, which went into full service at the end of January, is billed as “the only high-definition capable ENG helicopter in the Canadian broadcast industry, and quite likely the most advanced and highly integrated ENG platform anywhere in the world.”

Scott Gibson, the Manager, Engineering Projects at CTV Inc., who has overseen the development of all CTV ENG projects, says CTV Toronto operates the new HD helicopter each morning for CTV’s Southern Ontario specialty news channel, CP24, for



breaking news coverage on either CTV Toronto or CP24 and for special events such as the Junos.

Gibson said this helicopter's build, after the necessary avionics, began with the HDTV gear. "It was all new," he said. All of the work was performed by Kitchener Aero at the Waterloo-Wellington airport.

The Flir UltraMedia HD camera, in the big white accessory hanging off the nose, is covered by the International Trade in Arms and International Traffic in Arms Regulations (ITAR), a set of U.S. regulations that control the export and import of defence-related articles and services on the United States Munitions List.

"It took three months in paperwork before the camera was allowed to be shipped from the States to Kitchener," said Gibson. "This is our second Flir and we had the same problem with the CTV British Columbia helicopter."

Flir succeeded the WestCam installation on the old CTV Toronto chopper.

"Kitchener Aero is a Flir dealer so we bought it from them," he said. "The same for the microwave system. Novanet sold it to them and they sold it to us."

Because of the relationship between all onboard electronics, any integration problems or equipment problems are the responsibility of Kitchener Aero. That makes sense because of the approvals required through the Department of Transport for the installation of electronics and to hang equipment off the exteriors of helicopters and airplanes.

The D.O.T. approval process on C-FCTV was easy. Scott Gibson said that "two people came in for two days and went over the entire thing, and we had it. Compare that to the original CTV Toronto helicopter that was very expensive and a long, drawn-out process."

The new helicopter started with a base Bell 206L-4 that was delivered to Kitchener Aero in the fall of 2010. The ENG equipment then integrated into it included a Flir UltraMedia HD Camera, MRC Strata PTX-PRO

Microwave System, NAT AA97-CTV Custom Audio/ICS System, three Iconix HD cameras and two Motorola two-way radios.

In the cockpit is a Garmin G500H flight display system, which also displays ENG video to ease pilot workload. Other cockpit avionics include a Garmin GNS 530W WAAS GPS/Nav/Com, King KY-196A VHF com, Garmin GTX 327 transponder, L3 Skywatch traffic systems, NAT AMS-43 panel and FreeFlight TRA3000 radar altimeter system.

When flying a racetrack pattern over an area of interest, pilots knew where they were laterally but had no idea in which direction the technician had pointed the camera. As a result, pilots did not know if they'd drifted over the subject area. When that happened, the technician had to spin the camera 180-degrees.

That problem was resolved thanks to an innovation. One of the pilots always wanted a monitor up front so in the Garmin there is a video input. Usually, the Garmin shows a moving map, just like any GPS, but when the pilot hits a button it switches to the video input connected to the Flir.

"I didn't realize just how much he did until just a few months ago," said Gibson. "While at Buttonville taking care of some measurements, the helicopter had to go and I was invited along. Of course, I accepted. The technician in back is sitting behind a rack that is floor-to-ceiling. He can look out the side window or he can look at his equipment [but he can't look forward]. So he's normally got the Flir up on his monitor and shooting. He sees what he's shooting but he doesn't see what else is going on. It's the pilot who has the overview. For example, he can tell the technician about a fire truck coming or something else on the ground that's not in the tech's line of sight."

The Novanet Advantage

Satellite • Broadcast • Microwave/Wireless • Multimedia

Think Novanet to deliver or broadcast your data, audio, video or multimedia information. Our customized design and implementation, along with leading industry manufacturers provides superior, reliable solutions to all your communication needs.

We understand the importance of your network and will provide technologically advanced services that are worthy of your investment today, and capable of handling your needs tomorrow.

See us at the Canadian Suite NABSHOW

Novanet Communications Limited
Trusted provider of broadcast and information solutions

Design • Install • Monitor

4-725 Westney Rd. South Ajax, ON L1S 7J7
Tel: 905-686-6666 info@novanetcomm.com
www.novanetcomm.com

West 800-663-0842	Ontario/Maritimes 800-268-6851	Quebec 800-361-0768
----------------------	-----------------------------------	------------------------

apt
ADVENT
LARCAN
ascSignal™
MRC
envivio:
EDDYSTONE BROADCAST
ERI
ORTEL A DIVISION OF ENCORE
LINK
audemat
PROLUN
Tieline

Novanet



When the helicopter is in an orbit, the cameraman is so focused on where the camera is pointed that he really has no idea in which direction it's pointed until he looks down. Now, there are indications on the remote to tell him that the camera is, for example, pointed 90-degrees to the left of the aircraft. Without those markers, it's too easy for the technician to lose track of where he is.

Every piece of gear is new, including IKAN monitors. Gibson describes them as being “beautiful little full HD monitors, a full HD input plus analog plus SD and everything else. Two of them are mounted up front for the talent, one will show the main camera system and one will normally show off-air. If we tape something and the talent has to do a voiceover to it, we can actually feed VTR to the second monitor as well so they can see what they're voicing.”

The technician aboard can switch whatever he wants to any monitor, all through an Evertz HD2020. The only active components are two reference DAs and a 2020.

There is an Iconix HD camera and a light in back so that talent can also be shot there. Two other Iconix cameras are mounted in the front and in the tail (see photo for the tail installation).

“We went through all sorts of pain to get that thing certified,” said Gibson.

Underneath the helicopter are mounts for the pod antenna. There's also a nitrogen bottle amidships to inflate pop-out floats.

CTV leases its helicopters at a set number of hours per year, similar to mileage on a leased car only much stricter. The company that supplies the chopper also supplies the pilots, two of them who cover the morning and afternoon/evening shifts. Their base is the Toronto Buttonville Airport in the northeast sector of the Toronto area.

There are two Sony SD Cams. The input to one of them is normally the Flir itself because that's what they're doing 99% of the time, and can switch whatever is wanted into the right-hand one. They're hooked up as an edit pair as well. If the helicopter is aloft for two hours and shooting, they'll edit it down to a minute so that they can actually completely finish their package up there; a little studio, as it were.

Scott Gibson explained that the audio all comes through the intercom.



Click the button for more information.

Dielectric • Bext • Audemat • KLZ • Scala-Kathrein • Mackie • Shure • AKG • Behringer • Integrated Tower Solutions • Inovonics • AXIA • Beyerdynamic • M-Audio • AVP • Tannoy • Bext • JBL • Coaxial Dynamics • Broadcast Electronics • Dielectric • Broadcast Electronics • JKL Audio • Soundcraft •

**NAB
SPECIAL**

FREE Telos Phone System!



Deal 1

Buy any two Axia Element consoles and we'll give you a 12-line Telos Nx12 system, with Desktop Director phone set and Assistant Producer screener software.

A \$5,295⁰⁰ value FREE



Deal 2

Buy any four Element consoles and get the new Telos VX broadcast VoIP system. The VX Engine can handle up to 50 phone lines, includes two VSet12 phone controllers, and VX Producer software.

A \$10,480⁰⁰ value FREE

Now you can have it ALL!

What's better than a new studio full of great-looking, greatworking, cost-saving Axia IP consoles? How about a new talkshow system from Telos, the broadcast-phone experts - **for free!**

Everyone knows Telos phones are cream of the crop. And when they integrate with Axia's popular Element consoles, you get spectacular caller audio plus phone controls right in the board, so talent's attention is always on the console. Which means smoother shows, with fantastic phones.

How long will this deal last? Frankly, we don't know. But you should probably snap it up before someone comes to their senses! You don't have to come to NAB to get it - just call us!



We Are Broadcast Engineering!

Call toll FREE 888-508-4677 • www.pippintech.com

Mackie • Shure • AKG • Behringer • Integrated Tower Solutions • Inovonics • AXIA • Beyerdynamic • M-Audio • AVP • Tannoy • Bext • JBL • Coaxial Dynamics • Broadcast Electronics • Dielectric • Broadcast Electronics • JKL Audio • Soundcraft •

Atlantic • Powerware • Audio Technica • Neumann/Sennheiser • Yellowtec • Radio Systems • Studio Hub • Dielectric • Bext • Audemat • KLZ • Scala-Kathrein • Mackie • JBL • Coaxial Dynamics • Dielectric • Broadcast Electronics • JKL Audio • Soundcraft • AVP • Tannoy • Bext • JBL • Coaxial Dynamics • Broadcast Electronics • Dielectric • Broadcast Electronics • JKL Audio • Soundcraft • M-Audio • AVP • Tannoy • Bext • JBL • Coaxial Dynamics • Broadcast Electronics • Dielectric • Broadcast Electronics • JKL Audio • Soundcraft •

There are special audio panels “where you can listen to either VTR, you can listen to the scanner, you can listen to our two-way radio, you can listen to the aircraft radios. Any intercom panel can go to air. There’s another small panel in there with just the mic switches on it. Whichever switch is on is the mic that feeds the audio mixer. If it’s only the technician up there, the technician can go to air if the ground wants in a ‘tell me what you see’ situation. Or the front talent or the rear talent, or multiple.”

Also added was another position where it’s now possible to take the aircraft radio to air. If there is an air-to-air shoot, CTV can get the pilot of another aircraft, something they couldn’t do before.

While flying over the Greater Toronto Area (GTA) the assigned altitude is usually 15-hundred feet. Asked about the magnification available, Gibson replied: “The technician told me the other day that they were over an accident scene and he could almost start to identify the person. They were able to get in that close! That’s not what we want, obviously, so we had to back off. It’s the longest lens we’ve ever had up there, over a thousand-millimetre focusing, without the extender. With the extender, magnification doubles. It’s incredible in that we typically try to get in as tight as we can and now we’re in the position of saying, no, we can’t go that tight.”

And then there’s the practical matter of flying the helicopter. Not long ago, C-FCTV departed on an early morning run to an accident site to the northwest. On the return leg southeast, the sun was directly in the pilot’s eyes and he had to tack (fly sideways) all the way back. The problem was that this particular pilot is too tall to wear the usual helmet with the visor built in. Gibson asked Kitchener Aero if a visor was available for the machine. It turned out that there was and two were mounted, one on either side of the bubble and both movable on a rail.

—BD

Learn about the new compact broadcast console C10 HD



Click the HBB logo.

DTC

RFA-5 AM RF Amplifier

DAV TRONICS



Still the Best...Our RFA-5 is a true TRF design, featuring low distortion, fewer artifacts and high gain, high output circuitry.

- AGC maintains constant output level over >30 dB input level variation
- Full 10 V RMS short-circuit proof output from as little as 600 µV input
- Optional audio and carrier fail alarms; balanced audio output

S.W. DAVIS

Broadcast Technical Services Limited
Tel: (604) 255-2200 • Email: dan@broadcasttechnical.com