

Supply of remote diamond mines

## **Hercules in continuous use**

In the far north of Canada, things are booming after enormous deposits of various mineral resources have been discovered in recent years. While a gold and copper mine are being built in British Columbia, the mining of diamonds in the Northwest Territories (NWT) has been in full swing for years. In Yellowknife, the capital of the NWT, various airlines are stationed, all which profit from the diamond business. A look from within the cargo department of First Air, which claims to be “The Airline of the North”.

He just introduced himself to me as Tony, he flies as a flight captain for First Air. I meet him on December 3 at six o'clock in the evening in the common room over a cup of coffee. Instead of a uniform with a tie, which is usually the case for airline captains, a thick Helly Hansen peeks out from under the blue flight overalls. Outside it was dark for about two and a half hours, and icy cold at minus 30°C. Tony's fiber fur has its justification. Immediately I realize that in this rough area of Canada, at least in terms of flying, surnames, titles and good-looking clothes play a subordinate role and other qualities are more important.

### **The only civilian Herks in Canada**

Tony is in no hurry to drink coffee, as the arrival of the cargo is delayed by half an hour and thus the planned departure is at 8 p.m. No problem, because only one rotation is planned for tonight in clear weather. “However, we often fly six to seven rotations a day, each lasting 2.5 to 3 hours, which means that the machines are in use practically around the clock,” says Tony. By “machines” Tony means the two Lockheed L-100 transport aircraft from First Air, the only Hercules still operating in civilian operations in Canada. He continues: “Since we are here at 62° north latitude, the flights take place almost exclusively during the day in summer, but almost exclusively at night in winter.

No Problem, nothing fazes the experienced pilot.

Meanwhile, the Hercules with the registration C-GUSI is being prepared on the icy apron. "USI" is a word from the Inuktitut language and means "to carry". Tonight, USI will once again live up to its name and fly 40,600 lbs., (18,400 kg) of cargo to the DIAVIK diamond mine, 310 km away. While Flight Engineer Greg completes the pre-flight check and refueling, the semitrailer truck with the cargo is already rolling backwards to the loading ramp of the Hercules.

To keep loading and unloading times short, the freight is prepared and lashed down on a 12-metre-long metal pallet at the customer's material depot. At the airfield, the entire pallet is then pulled into the Hercules with the on-board winch on permanently installed rollers. The fourth crew member, Loadmaster Jeff, is responsible for this process tonight. He also has every move in place and soon the cargo is safely stowed away.

### **Warm air for the engines**

The Ground Power Unit (GPU) roars deafeningly as we climb into the spacious cockpit of the Hercules. The entrance door is immediately closed again to keep heat loss as low as possible. In addition to the power supply, the GPU also has the task of keeping the engines warm. "This is done by directing warm air through internal lines to the engines and blowing them from below," explains co-pilot Gilles, who is making the final flight preparations in the right-hand seat.

C-GUSI, with construction number 4600 and built in 1975 has only about 28,000 flight hours behind it, but has already been in use on all continents, which has not left it entirely unscathed. "Because it was used in tropical areas for a long time, we experience a lot of electrical problems, mainly due to corrosion," says Greg, adding that the second Hercules, the C-GHPW, is much more reliable, although it is younger and has much more flight hours, but has always been owned by First Air and its predecessor companies Northwest Territories and NWT Air.

### **Night Flight and Ice Road**

At 8:03 p.m. we take off from RWY 09 and soon the brightly lit Yellowknife disappears below us. On course 040, the Hercules climbs into the night sky at 210 knots and almost 2000 feet per minute, only to reach Flight Level 190 ten minutes later. At this altitude, the cruising speed quickly climbs to 310 knots and a little later three bright dots appear on the horizon. "It's the diamond mines EKATI on the left, Snap Lake on the right and DIAVIK in the middle, our target," I hear Greg say. The GPS shows a remaining distance of 160 km at this point, which makes me aware of how big the mines must be if they are already visible. At 40 KM inbound, Tony reduces the power, initiates the descent and before turning onto the runway axis, the autopilot is deactivated before the heavy transport aircraft touches down gently on the well-lit gravel runway. While the Hercules is still rolling to the unloading area, Jeff disappears into the cargo hold to release the chains. As soon as the propellers come to a stop, Tony also leaves the cockpit equipped with gloves. "Tackle it yourself" is the motto.

"For 10 months of the year, these mines are supplied from the air due to a lack of roads, but only with the bare necessities, as the Hercules costs around 18,000 USD per rotation," Greg reports and continues: "In February and March, the so-called Ice Road is in operation, a more than 500 km long ice road through the Canadian Arctic, which leads mostly over frozen lakes.

During these two months, it gets a bit quieter for us, because the trucks then roll north every 20 minutes, a total of up to 8000 trucks per season with an average load of around 30 tons each. This results in a staggering 240,000 tons of material, from fuel to spare engines, and corresponds to around 90% of the mines' annual requirements. Putting the Ice Road into operation, maintaining it and managing the smooth movement of so much material is a huge logistical task."

### **Diamonds worth Billions**

While I am still thinking about what I have heard and trying to visualize these numbers, Tony swings back into the left pilot's seat. The turnaround time lasted just under 25 minutes, everything went smoothly.

"We're taking back another empty pallet," Tony briefly informs the co-pilot. The fact that it weighs just under two tons can already be felt during take-off, because this time the USI rotates after an extremely short taxi. I only have a few seconds to look at Canada's largest open pit, where even in this icy cold there is a lot of activity. Excavators and trucks remove the diamond-bearing kimberlite here around the clock, seven days a week.

To be able to carry out this work without interruption, around 600 people must always be on site, representing a total of 30 different professions. After a stay of several weeks in the mine, everyone is probably longing for the Boeing 737 or ATR42, which will bring them back to civilization in Yellowknife.

Even after my short stay, I am glad to have escaped this ice desert without incident. The Hercules crew, however, have to go back tomorrow, day after day, week after week, incessantly, until the mine will probably not give anything more in 2020 and will then be closed.

Until then, however, diamonds worth several billion dollars are still being mined, much to the delight of First Air!