

Space orbit for two

MT correspondent reports from Centre for Flight Control

By Vladimir Yakovlev

Two months have passed since a Russian rocket took twin-satellites into space from the Baikonur launch site: Belarusian BKA and Russian Kanopus-B. This was a landmark event for Belarus, giving us our first spacecraft in orbit. Recently, our MT correspondent visited the Belarusian Centre for Flight Control, situated at Geoinformation Systems Scientific-Engineering Republican Unitary Enterprise — part of the Belarusian National Academy of Sciences' United Institute for Informatics Problems. A huge antenna on the roof of the building vividly confirms its identity as the place where information is exchanged with our orbital traveller.

Geoinformation Systems' chief engineer and the deputy chief designer of the Belarusian satellite, Oleg Semenov, takes us to his office. A laser screen on the wall tracks the Belarusian satellite's orbit as a red point, alongside its trajectory (a curving line) and zone of connection (an oval). The same picture is seen on another monitor, and a further dozen screens reveal data on the satellite's sub-systems — in schematic, table, text and mnemonic form.

I can hear those at the Centre discussing a recent management meeting but it's hard to understand their chatter, which is filled with so



Monitoring of Belarusian satellite data at Minsk Flight Control Centre

many technical words. However, Mr. Semenov 'translates' for me, explaining, "We're tracking the state of the satellite and its on-board systems. It's orbiting at 510km but, due to the Earth's gravity, is gradually losing height. We need to 'raise' it, using special engines. At present, we're testing the craft's flying ability, adjusting its systems. The Belarusian space complex (including the satellite, terrestrial hub and mode of connection) are part of a complicated system which we need to refine. We'll 'teach' it to fulfil the satellite's

task of photographing the Earth and sending data back to us."

Colleagues from the Russian Space Agency are working jointly in helping the Belarusian satellite achieve its mission, including liaison with the Russian Centre for Flight Control. By the end of flight tests, the satellite should be fully operational. Of course, it can already do a great deal, as Mr. Semenov tells me, showing photos taken from space of a Minsk residential suburb being constructed. I recognise the

existing road and houses but also notice the recently constructed buildings, clearly visible. It's as if a space photo has been placed over an official blueprint with digital help. "In reality, you're seeing three completed shots," continues Mr. Semenov. "They're not perfect but we believe that the system produced by Belarus' Peleng will meet our needs. Preliminary assessment of the received photos confirms that they can focus down to a resolution of 2.1 metres (shot at the satellite's nadir — almost perpendicular to Earth.)"

The data can be used for map drawing, including updating GPS and other systems of space positioning, helping drivers navigate city streets. Naturally, it's vital to update the system regularly, adding new buildings, transport and roundabouts. Land registrars also need this information, to be convinced that a building has been constructed within a permitted land lot. Meanwhile, farms will benefit from the Belarusian satellite 'reading' the spectrum of grains' electro-magnetic emission; this can reveal the best time

for harvesting and can be used to detect possible problems. Many other branches will also be able to use data from the Belarusian satellite.

In line with the laws of ballistics, the satellite passes over Belarusian territory six times every 16 days. It's not much but nothing can be done to improve the situation. The question arises as to whether this is an efficient way to solve land-based tasks but Mr. Semenov explains, "The efficiency of BKA will rise several fold once it starts working jointly with the Russian satellite. Both complement each other, travelling on opposite sides of the Earth. As a result, observance frequency over Belarusian territory can be doubled. Moreover, the satellites pass over other countries, producing wonderful photos of Dubai's artificial islands. We plan to offer remote Earth sensing data for export."

The possibilities for the satellites are developing dynamically and, to preserve competitiveness, Belarusian specialists are already working on the next generation. With the same size and weight, even sharper focus is possible. Sci-tech experience garnered by Russian and Belarusian scientists over the last three space programmes (the fourth was adopted at a recent session of the Union State's Council of Ministers) — would be used.

Prestigious diploma should guarantee successful career

Students being prepared for British Master's Degree in Minsk

By Inga Ivanova

A partner office of Oxford's Magna Carta College (UK) has opened in the Belarusian capital, launching a unique *Pre-Masters* programme. The Executive Director of the new branch of Magna Carta College, Vadim Titov, explains that the programme offers preparation in readiness for taking a British business education MBA (Master of Business Administration) Degree — or any other Master's programme. Candidates do not need an existing diploma of higher education or certificate of language proficiency.

The programme provides the opportunity to select any MBA course, studying on terms convenient for the applicant. According to Mr. Titov, the cost of the course is



Oxford Professor David Faulkner

an affordable £350 and is delivered in English and Russian, with consultations offered by the British University's academic staff. Mr. Titov underlines that *Pre-Masters* students have

the unique opportunity to master English at a level necessary for studying in the UK. Students are also eligible for a 50 percent discount at language schools affiliated as Magna Carta

College partners: Streamline, International House and VIP Mulberry Club.

The *Pre-Master's Certificate* paves the way to the Magna Carta College Master's programme (if an applicant has higher education and an English language proficiency certificate). According to Mr. Titov, this will allow students to receive an MBA diploma within a reasonable time, with minimum effort, as the major share of work will have been already conducted during the *Pre-Masters* programme.

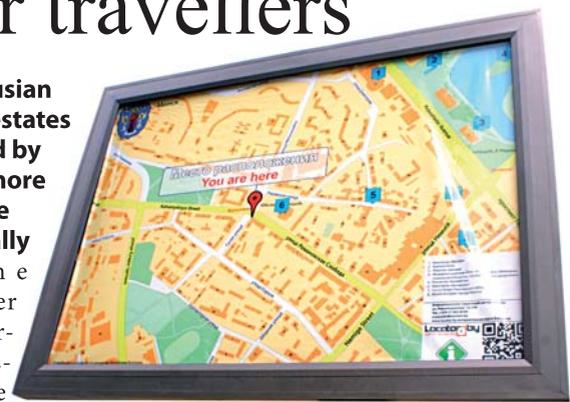
Mr. Titov believes that a prestigious diploma guarantees a fruitful career internationally, as well as in Belarus, explaining, "Investment in world class quality education pays for itself in full. Vitality, investments in yourself are never lost."

Wide opportunities for travellers

Belarusian agro estates visited by ever more people annually

The number of tourists using the services of agrotourism in 2011 exceeded 144,000 (1.2 times more than in 2010). Among such visitors, Belarusians accounted for 85.2 percent, Russians for 10.5 percent, Ukrainians for 1.2 percent and Poles for 0.6 percent. The average length of stay was 7.2 days last year (up from 2.6 days in 2010).

According to the Ministry of Taxes and Duties, in 2011, there were 1,576 sites offering related services: in the Brest Region — 178, in the Vitebsk Region — 359, in the Gomel Region — 332, in the Grodno Region — 185, in the Minsk



Routes for tourists on info-display

Region — 304, and in the Mogilev Region — 218.

Wide opportunities are open to travellers to the Republic of Belarus, with new routes being developed and work being done to enhance the image of the country.

In 2011, our health resorts saw 813,300 visitors — up 102,700 on 2010. Last year, 421 health resorts were operational, including 73 spas, 13 children's rehabilitation and fitness centres, 3 rest houses, 1 pension, 93 recreation centres, 6 tourist and recreation centres, 19 tourist centres and 22 health centres.