

## **The attractions of the 8th Night at the Institute of Aviation**

### **The 1st Tactical Aviation Wing (23. Tactical Air Base in Minsk Mazowiecki)**

- The MiG-29 fighter

### **The 3rd Airlift Wing**

- CASA C-295M aircraft
- The Multi-purpose Mi-8 Helicopter
- M-28 B / PT Transport aircraft (PZL M28 Skytruck / Bryza)

### **The 3rd Airlift Wing (2<sup>nd</sup> Search and Rescue Squad, Minsk Mazowiecki)**

- The W-3WA SAR 'Sokol' Helicopter

### **Warsaw Flying Club**

- Static Presentation of the AT3 Airplanes (2 craft)
- the PW-5 Smyk Glider
- Meetings: experienced jumpers, Polish record-holders , beginner enthusiasts of the Warsaw Flying Club, newly parachuting instructors
- A Balloon basket
- Parachute equipment (an opportunity to take a memorial photo)
- Flying models (Suchoj Su-26MX, P-38 Lichting, CIRRUS SR22T)
- Presentation of various sections of the AW (parachute, balloon, modeling)
- Fragments of the exhibition: "Dreams of flying. Warsaw Air Tales "- the exhibition of the History Meeting House and the Warsaw Flying Club brings back the forgotten history of aviation and its legends - aviation pioneers, engineers, constructors, extraordinary personalities and their CV's worthy of many films. This is the result of the collection and organization of distributed photographic materials, films, exhibits and knowledge about the development of pre-war and post-war aviation - which has been saved by the efforts of various individuals and institutions. The exposition consists of previously unseen collections of the Warsaw Flying Club, private collections of Krzysztof Kowalczyk, Marek Masalski, and Dr. Eng. Stefania Wojtulanis, which were partially preserved in the collection of the Aviation Museum in Cracow, as well as photos from The National Digital Archives, Polish Press Agency, Forum and the Card (KARTA)!

The prepared attractions and the exhibition are part of the celebration of the 90th anniversary of the Warsaw Flying Club.

### **Polish Aero Club**

- Presentation of activity
- National Team of Powered paragliding

### **Pratt&Whitney**

- Model of the PT6A-28 turboprop engine
- A booth of Pratt&Whitney Poland

### **Military Aviation Works No. 2**

- Presentation of the UAVs: DROZD, DRAGONFLY, SOWA
- Ejector seat

### **National Headquarters of the State Fire Service**

- Presentation of both fire-fighting and special cars, including equipment used for operation by the Warsaw State Fire Service,.
- Presentation of combat vehicles:
  - development directions of fire-fighting vehicles;
  - ergonometry of the firefighting vehicle;
  - technical innovations in fire engines.
- Pieces of equipment that serve the daily work of rescuers and improve their safety in extreme operating conditions: multi-gas detectors, immobilisers, multi-layer clothing, air apparatus, etc.
- 9:00 p.m. - 9:30 p.m. – A show of the life-saving on the roads - a combat vehicle in action (a show at the parking next to building X)

### **Helicopter Emergency Medical Service**

- The Robinson helicopter

### **‘Polish Airports’ State Enterprise**

- LSP - PANTERA rescue and firefighting car
- Paving Maintenance Vehicles - OVERAASEN and BOSCHUNG

### **SkyartXtremeSp z o.o.**

- An Initiative by Skyforce
- A Static show of Artur Kielak’s airplane

### **Salt Aviaton**

- Presentation of the Robinson R44 helicopter
- Presentation of Salt Aviation activity

### **Silvair**

- A static show of the TS8-Bies (optionally C152) and TECNAM 2002 aircraft
- Presentation of Sobienie aviation school and an airport-golf course complex

### **Goldwings Flight Academy**

- Static show of the PA-42 aircraft
- Multimedia presentations
- Simulator

### **ENTERAIR**

- The Harvard IIB aircraft
- The Yak-3 aircraft

### **SprintAir S.A.**

- Models of the Saab 340 and the ATR72 aircraft
- Presentation of the company

### **The Red & White Wings Foundation**

- The An-2 aircraft
- The AT-3 aircraft
- Presentation of activity

### **The DHC-1 CHIPMUNK**

- The first CHIPMUNK registred in Poland – Jacek Mainka’s aircraft

### **The Museum of Air Force Lt. Col. Jan Zumbach of 303 Squadron.**

- Aston Martin car modelled on the legendary Spitfire
- Memorabilia of the pilots of 303 Squadron
- Historical uniforms
- Aircraft for children

### **Warsaw University of Technology**

- The X-planes
- State Higher Vocational School in Chełm
- Aircraft
- Flight simulator
- Parts of aircraft
- Educational offer in the field of the aviation specialization: Aircraft Mechanics and Pilotage

### **Technical School No. 9**

- the PIRAT glider flight simulator
- The X - PCANE flight simulator
- Simulator of the CESSNA aircraft

### **The School of Military Defense Sports**

- Projection of 24 educational films from the NASA exhibition
- Photos
- Rocket models
- Space equipment

### **Aviation Artur Trendak**

- Presentation of the company
- Autogyro

### **uAvionics**

- The S-410 TIGUAR unmanned aerial vehicle (a new version of the S-380 BARACCUDA unmanned system)
- The INSPECTOR multi-rotor

- Unmanned long-range aircraft and industrial surveillance UAVs
- Equipment used in unmanned aviation

### **Air Dron Polska S.C.**

- Demonstrations of multi-rotor platforms and unmanned aerial vehicles (demonstrations in the rotunda) LIVE SHOW!
- Promoting of conscious and responsible use of drones in accordance with applicable aviation law
- Promoting of trainings for UAV operators
- Flight simulators of unmanned aircraft

### **DRONPORT**

- Multi-rotors based on MULTI F custom frames in different weight categories
- Presentation of a UAV version for training of UAVO VLOS and BVLOS and fully equipped kits for recording from the air.
- Custom Gimbal 3D constructions for actuators
- Presentation of the possibility of using the multifunctional concept of flying platforms + actuators
- Presentation of individual models in flight (shows in the rotunda)

### **UAVO Academy**

- Remotely controlled, diesel and electric models (drones, quadcopters, hexacopter, octocopter, Heli class from 250 to 700, RC aircraft, two models for road)
- A station with simulators
- Attractions for kids: crosswords, puzzles, coloring pages, plane-shaped cookies, origami aircraft
- Promoting modelling (model building, flying, LEGO robots and programming them)
- Safe use of airspace (an information point on the rules for UAV users)

### **UAVS Poland**

- The DC-01 Mucha UAV

### **PZL Świdnik S.A.**

- Models of helicopters: the W-3PL GŁUSZEC and the W-3RM ANAKONDA

### **Air Force Institute of Technology**

- Presentation of products (UVA)
- Presentation of the company

### **Military Institute of Aviation Medicine**

- Presentation of basic and confirmation training for pilots of various types of aircraft and trainings on medicine and medical rescue
- Multimedia presentations of the activity of the Military Institute of Aviation Medicine activity as a research, training and clinical-diagnostic center specializing in aviation medicine. During the meeting the unique research infrastructure of the Institute will be presented.

### **Copernicus Science Center**

- "What do you see through the telescope?"  
To use the telescope, first of all you have to know the rules of the operation of the telescope. We will teach them and test the device. If the weather allows, we will look at cosmic objects. Participants of workshop will receive a personal certificate with the Heaven of Copernicus planetarium stamp confirming their ability to operate an amateur telescope.
- "Fly to the Galaxy Borders"  
We will get to know the intricacies of The Heaven of Copernicus planetarium. Everyone will be able to explore the solar system, nearby planets, stars and ends of the Universe. During the flight we will talk about the celestial objects passing by
- "Pop the planet into orbit"  
Next to board with solar-system and the distant star around which the planet is circling we will talk about Space. The task of the visitors will be to attach the appropriate models to the corresponding orbits so that the planets will be placed in the correct order.

### **National Information Processing Institute**

- The virtual parachutist - an interactive application for children and teenagers, controlled by eyesight – souvenirs for the best!
- A popular science publication "How to promote science?"

### **Industrial Research Institute for Automation and Measurements – PIAP**

- Presentation of robots for exploration and pyrotechnical activities
  - TRM (Tactical throwing robot) – A small device for support of operations in difficult to access and dangerous environment
  - PIAP GRYF - mobile pyrotechnic robot
  - IBIS - robot for pyrotechnics and reconnaissance
- On a specially prepared track you will be able to try your hand at overcoming obstacles

### **The VREAL simulators**

- A combat aircraft simulator
- The Octopus 7D VR Simulator

### **SimOn Solution (SKB Consulting)**

- The Boeing 737 Flight Simulator

### **Polish Aviation Museum**

- A replica of the muscle-powered aircraft – a rotorcraft made by Mikolaj Surmanowicz
- Boards showing the history of Rakowice-Czyżyny Airport and the current Museum
- Souvenirs of the pilot, Lt. Col. Felicjan Sterba (hero of the struggle for independence during the First World War and the Polish-Soviet war) acquired thanks to financial support of the Ministry of Culture and National Heritage
- Presentation of the activity

### **HYPER POLAND**

Presentation of the new HYPERLOOP transport model which is combination air and rail technology

### **Photon Entertainment**

Photon the Robot - the world's first interactive robot that develops with your child. When we pull him out of the box, the robot cannot do anything. From the application we find out that the robot came to us from another planet, but before landing he collided with an asteroid and lost all abilities. Children need to help him recover. They do a lot of experiments with the robot to find out how the sensors in the robot work. When they understand how they work in practice, they need to learn how to use the robot. They do it by writing simple programs in block language.

### **Bemowo Cultural Center in the Warsaw District of Bemowo, Aeromodelklub BCM**

- An exhibition of large photographs presenting Aeromodelklub's achievements during 38 years of activity
- Presentation of the modeling training system for children and the adolescents used in Aeromodelklub BCK (including a large exposition of flying models of different classes and competition levels - from the simplest to the most competitive which our representatives took part in the World Championships)
- Showing the types of aeronautical modeling, i.e. displaying a Flipbook presenting particular categories and model classes, and the organizational modeling page in Poland and in the world. The persons interested will be able to independently view the Flipbook illustrated with a large number of photographs, presented on a large screen.
- A show of R/C hand launch glider model. The F3K is a relatively young "modeling discipline" that is gaining in popularity - even among "fifty years old". It was given the status of the championship in 2007, and four years later the first world championships took place
- Workshops for the youngest visitors, "FabrykaLatawczyka" ( The Kite factory). Each child on their own or with the support of a parent will be able to build a bamboo-paper kite, which flies and makes the children happy.

### **The Student Aviation Association of the Warsaw University of Technology**

- The PIRAT glider flight simulator
- The CESSNA 150 aircraft flight simulator

### **The Vehicle Aerodynamics Student Research Club**

- Presentation of the KROPELKA 2.0 vehicle (a vehicle that can do 600 km on 1 liter of fuel)

### **The Avionics Club MelAvio, the Faculty of Power and Aeronautical Engineering of Warsaw University of Technology**

- Presentation of UAVs used by Aviation Club MelAVio
- The platforms prepared have been used during events such as the nationwide Droniada academy or the international UAV Challenge Medical Express

- The visitors will be able to see the original design of the M7-Murena vertical takeoff and landing aircraft, which is a combination of a multi-rotor with a wing aircraft
- Quadcopters and a model of flying wing will be also presented.

#### **The Physics Scientific Club – Warsaw University of Technology**

- A Hydraulic arm
- Power from potato
- A Generator of the Chladni Patterns
- Workshops: making a robot's hand with straws and strings

#### **The Student Association of Aviation and Cosmonauts, The Faculty of Mechatronics and Aviation, Military Academy of Technology**

- Two General Aviation simulators
- Presentation of research projects at the Institute of Aviation Technology, The Faculty of Avionics and Aircraft Equipment
- Current activity of the Student Association

#### **The Melprop Propulsion Science Club, Warsaw University of Technology**

- 2 x pulse engine
- valveless engine
- Valve motor
- 2 x rocket engines (liquid and hybrid fuel)
- Engine construction, operating principles, simulations

#### **The Astronautical Student Club, Warsaw University of Technology**

- The Ares cross-country vehicle
- The Gaja mobile robot
- The H1 supersonic rocket model
- Models of artificial satellites Pw-Sat and Pw-Sat 2
- The Strzybóg and the Capella Balloon Gondolas:

#### **The Aerodesign Student Interdepartmental Scientific Club**

- Presentation of construction taking part in Aero Design in the USA
- Presentation of the Scientific Club activity

#### **Institute of National Remembrance**

- Presentation of aviation games
- Starry Squadron: 303
- 111: Alarm for Warsaw
- 7: In defense of Lviv
- Wojtek
- Awans

## **The Warsaw Branch of Polish Astronomical Society**

- Sky observation by telescope (observation deck, building X)
- Fastron - amateur astrophotography
- Individual creating of the spectroscope
- A 3D astronomical clock
- Model illustrating LEM satellite control

## **LOT AIRCRAFT MAINTENANCE SERVICES**

- Competitions with rewards
- Presentation of the Internship Program Become a Senior Flight Mechanic
- For the children - meeting with Amsik—a small robot –the LOTAMS mascot
- Presentation of the AI-14 piston engine section
- Presentation of LOT AMS activities

## **Airpoint**

- The Boeing 737 flight simulator

## **"Hesja's Highs 4 " – an exhibition of aviation photography**

An exhibition of 100 pictures of Sławek "Hesja" Krajniewski – the author of the most recognized aviation photographs in Poland (patio, building X)

## **Maciej Margas**

- An exhibition of aviation photography (building X)
- The booth of Warsaw Gift Shop - an aviation photography album of Warsaw

## **Kino Polska – presentation of Polish movies and newsreels**

## **ComaroN**

- Two gyroscopes – a simulation of pilot work conditions

## **A booth of University of Brasilia**

## **Information booth of Zespół Szkół z Oddziałami Integracyjnymi nr 126**

## **Information booth of MILWomen.pl – Technology and Science of Security e-Magazine**

## **Information booth of Wojskowa Komenda Uzupełnień Warszawa-Ochota**

## **Heaven without borders**

- Aircraft monument for the 100th anniversary of the Air Force



- House of Culture with a retro-cafeteria and a memory room for major pilot Ludwik Idzikowski on the former ski jump

### **Promotion of the „POLISH AVIATORS NIGHT” event**

The official party of the 8<sup>th</sup> Night at the Institute of Aviation.

The event will be held in the Rozrywka club, 6/8 Marszałkowska St. Start at 10:00 pm.

You are cordially invited!

### **Sener**

- Presentation of the URM for ExoMars model and the MGSE for Euclid

### **Semicon Sp. z o. o.**

- Presentation of the offer: laser modules, industrial tapes, PCBs, chemical preparations

### **Dreamline**

- Interactive English course

### **Nikon CEE GMBH**

- Presentation of the products: binoculars and telescopes
- Presentation of photographic products: cameras and lenses
- Photo Tips

### **Spot Group**

Cloths and accessories with accents of Polish airports

### **Lectures in the Auditorium (building X) - in Polish only**

- **5:30 pm** – pilot Łukasz Wójcik – a guest of the Air Sports Promotion, National Glider Team’s competitor
- **6:00 pm** – Prof. Romana Ratkiewicz-Landowska, Dr the Institute of Aviation "Great Space Missions: History of Voyager, Ulysses and IBEX space probes"
- **6:30 pm** – Maciej Margas, WarsawGiftShop.com, "WARSAW ON AIR – about photos taken from high-flying doorless helicopters"
- **7:00 pm** – pilot Wojciech Bógdał – a guest of the Air Sports Promotion, a competitor of the National Powered Paraglider Team
- **7:50 pm** – Dr. Natalia Zalewska, Institute of Aviation, "Man on Mars: NASA's latest research, plans and hopes for humanity"
- **8:20 pm** – first officer Paulina Różyło, Wizzair, "Fly above the clouds: how to become a female pilot?"
- **8:40 pm** – Sławomir Krajniewski – a lecture and photography workshop "Hesja’s Highs"
- **9:20 pm** – Professor Piotr Wolański, Institute of Aviation "Development of rocket propulsion technology at the Institute of Aviation"
- **9:50 pm** – pilot Artur Kielak - an aerobatic pilot, the representative of Xtreme Sky Force team
- **10:20 pm** – Drone Radar – presentation of the application

\* Hours and program of the lectures are subject to change.

### **EDC – Let's Digit-All**

EDC Industrial IoT Hackathon For the first time!

First Polish Hackathon connected with the Predix 2.0 platform

- 3D printers will be printing copies of the metallic parts of machines presented next to them
- Remotely Operated Vehicle (ROV) simulator, a remote-controlled underwater vehicle for inspection of underwater technical infrastructure, on which simulation of interventions into a device installed on the ocean bed can be performed.
- A multimedia exhibition where you can see the real part of the machine, e.g. a fragment of a composite wing structure or engine blade, and movies showing how parts of a machine work.
- A nook for robot programming
- Exhibition of miniature train models
- Touch-sensitive tables with the Memory engineering game
- Many other digital attractions

### **Tests Laboratory**

- Equipped with professional testing devices for:
  - carrying out the tests for the qualification of equipment and products used in the oil and gas extraction and processing industries
  - tests for aviation and power industry.

### **Materials Laboratory**

- One of the best equipped research laboratories in both Poland and the EU. The main tasks of the laboratory are material tests of commercial engines, gas turbines, steam and wind turbines, piston compressors and cover elements for the aerospace, power and mining industries.

### **EDC Engines Training Laboratory**

- A place where the EDC engineers get to know how engines work. The Engines Training Laboratory serves as a learning center for theoretical and practical trainings. The laboratory is equipped with audiovisual equipment and teaching materials for beginners and advanced engineers.

### **Lab Maintenance And Development Team**

- Will present the use of high speed cameras in aviation research (calibration footage recorded during Bird Strike, determining missiles flight speed and physical phenomena speed)

### **CENTER FOR COMPOSITE TECHNOLOGIES**

- AFP (Automated Fiber Placement) system in action (a show of cutting)
- A press for moulding thermoplastic composites in action
- The new generation rotor blades for the ILX-27 helicopter
- Specimens and devices for material testing

- Technological facilities for the production of composite structures
- Show of 3D scanning technology

#### **CENTER OF TRANSPORTATION AND ENERGY CONVERSION**

- A UAVs booth:
  - SUDIL
  - MUCHA
  - MOSUPS

#### **Landing Gear Laboratory**

- A coaxial rotor

#### **CENTER OF SPACE TECHNOLOGIES**

- **Aircraft Propulsion Division**
  - The SO-3, the K-15, the D18 jet engines
- **Environmental Laboratory**
  - Thermobaric chambers
  - Climate chambers
  - Shock vibrators
  - Mobile Cleanroom
  - Remote Sensing Division

#### **CENTER OF NEW TECHNOLOGIES**

- The largest wind tunnel in Central and Eastern Europe (show of an inlet to turbofan / passenger engine)
- Trisonic wind tunnel

#### **MATERIALS & STRUCTURES RESEARCH CENTER**

- The DPZ250 cannon
- The cannon for throwing objects up to about 15 kg with speeds up to about 300 m/s – static exhibition