

pilot

LAA ČR

Bulletin Letecké amatérské asociace ČR

1/2023



Ultralehký letoun Dingo foto Kamil Večeřa

PF 2023 3



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Aviation Amateur Association of the Czech Republic Association entrusted with the administration of sport flying equipment, records, training and organization of sport flying of SLZ pilots.

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What awaits us in 2023

Dear female pilots, pilots and fans of flying, the year 2022 is behind us and after a two-year fast, it was full of events.

I think that, looking back, it is appropriate to thank everyone who participated in their organization. The memory of the year 2022 will certainly be preserved for a long time in the memory of the participants of the two World Cups. But I believe that even those of you who have actively participated in some other competition organized by LAA ĵR or even a gathering, will fondly remember the event. The activity of the members was great in 2022 and we hope that the year 2023 will be similarly varied.



The year 2023 will certainly be a big test for the owners and managers of companies, whether they produce parts or directly complete SLZ. The challenges they are already facing are not few. The situation on the electricity and gas markets, rising inflation, increased personnel costs and other inputs into the production process, these are all items without which production simply cannot do. In addition, it is also very difficult to estimate what kind of new sports flying devices will be ordered by pilots in the future, whether in the Czech Republic, Europe, or worldwide. We hope that all manufacturers will manage to bridge this period. We have our fingers crossed for you and believe that the year 2023 will be a turning point for the better.

Looking at the filling calendar of events that we are planning for this year is definitely more joyful. According to the long list that we sent at the beginning of January this year as part of the grant application to the National Sports Agency, I am convinced that this season will be interesting. Once again, it will be difficult for us to decide which competition or event to attend, and the organizers can count on our support. However, financial support is also important for the implementation of the event. Its amount largely depends on how this year's redistribution of funds for organizing competitions from the National Sports Agency turns out. So far, our mutual cooperation has been winding in a direction that fills us with mild optimism for the year 2023. We believe that support will reach at least last year's level and that all planned events will be carried out.

The challenge for 2023 is the media. In particular, the website of the LAA CR. Unfortunately, this task is taking a bit longer, but we hope to launch the new site soon. However, we also need to work on the media image of the LAA CR as a whole. We are now working on a visual style that should help unify the media activity of our association externally. A lot of work awaits us even on seemingly obvious things. For example, during the opening and closing ceremonies of competitions, representatives of the Czech Republic's Air Force should be identifiable at first sight as athletes of the Czech Republic and, at the same time, of the Aviation Amateur Association of the Czech Republic. Here there is a big difference in approach between the individual associations, and the upcoming unification will certainly contribute to a better presentation of our association. In this context, I would also like to call on the organizers of events and competitions organized with the support of LAA ĵR, who through our association receive subsidies from the National Sports Agency, to pay attention to the presentation of not only commercial sponsors, but also these supporting organizations. We are convinced that it is possible to do a lot of work in seemingly small things, which in its outcome can significantly contribute to building the good name of our association. We have nothing to be ashamed of. The events organized by our members and associations are of a very high standard and, for example, the two mentioned world championships were highly rated internationally. One of the things that directly follows on from this is the improvement of the presentation of our events and sporting achievements to the wider public. We hope that this task will be accomplished and that the media image of LAA ĵR will be slightly better at the end of 2023.

For the year 2023, we wish the companies producing SLZ and supporting assortment a commercially successful year.

We wish all members and supporters of LAA ĵR good health and good health always good weather, so that our flying can also be flying for joy in 2023.

With wishes for a relaxing year 2023

Aleř Trtil,
president of LAA CR

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Interview with Kvido Hadaš, the hope of the paragliding national team



Seminar for general aviation 2023 On 14/01/2023, a traditional seminar was held at IATCC Jeneř, the headquarters of řLP, in which new and important information for general aviation is presented every year by our leading aviation institutions and experts. This year, after the covid break, the seminar was face-to-face again. Selected information from the seminar is usually presented by your instructors in "winter training sessions". You can watch the recording of the lectures yourself on the following page, where you can also download the presentations of individual lecturers: <https://aim.rlp.cz/?lang=cz & p=seminarjvseobecnejetectvi-2023>

Here is an overview of the lectures, including the times when they start in the recording: <https://www.laacr.cz/Stranky/Aktuality/default.aspx?UID=849>

- 0:03:34 FIC information – R. Pšovský, řLP CR, s. p.
- 0:45:25 Arrangement of the airspace of the Czech Republic – J. Kopp, řCL
- 1:11:10 Changes to LKCS – P. Hrabica, řLP CR, s. p.
- 1:37:56 Current information from the Airports Department with an impact on GA operations – Lenka Javřrkov, řCL
- 1:49:08 Airworthiness – V. Zrybnick, J. Seyfried, řCL 2:45:28 Analytical evaluation of the events of the past 2 years – V. Plos, řZPLN 2:59:01 Presentation of selected air accidents of the past 2 years – J. Bejdk, řZPLN
- 3:44:35 Air pressure and errors in interpretation - J. Kerum, AV 4:02:00 Changes in aviation meteorology - T. Novkov, řHM 4:14:48 řLP news in the field of drones - R. Hodař, řLP řR, s.p.
- 4:38:59 AIM information – L. řuřik, řLP CR, s. p.

Kamil Veřera

Corporate "Oscar" for GyroMotion

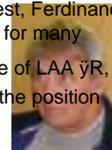
The "Innovative Company of the Decade" award in the Innovation category within the Czech Goodwill project was received by Pavel Březina on 10/30. The prize was awarded on the basis of the successful development and homologation of a "flying vehicle" - a UL modification of the AutoGyro gyroscope for operation on public roads (or on the road).

The Czech Goodwill award is primarily based on public nominations, with the nomination itself being the biggest award. The public also decides on the holder of the title Personality. The original Czech project with a tradition since 2013 recognizes entrepreneurs and companies that people respect for their responsible approach to business, moral qualities and honest work. We can be pleased that the public is also paying attention to entrepreneurs in aviation.



Red, www.ceskygoodwill.cz

Termination of the position of inspector At the end of 2022, due to his advanced age, at his own request, Ferdinand Jurřa, who had devoted himself to this expertise for many years, almost from the beginning of the existence of LAA řR, in the Vyřkov and Prostřjov region, retired from the position of technical inspector of the MZK.



Ferdo, thank you for the work done and I wish you good health for many years to come!

Petr Chvojka, Chief Inspector MZK

Only with accurate information is flying a true joy



The UL Association provides its members with the usual information package for the following year:

Aerial map of the Czech Republic 1:200,000 in a set of five sheets CR+SR airport database including a set of air maps

In order to get the maps and the Database, you have to pay the contributions of the UL Association and also the contributions of the LAA řR for the

Event calendar

n 31. 1. LKPR - Czech Aviation Training Center Prague Ruzyně
Gathering of pilots and women in aviation The first official event recently established

Czech Association of Female Pilots, zs (YAP)
Info: Czech Association of Female Pilots,
zs ceskepilotky@gmail.com

n 11. - 12. 2. Mniší Cultural House PARA
bumBALL 2023 PILOTS TO
THEMSELVES :) Parachutists invite other sky
swimmers to a winter ball!
Info: www.parabumbal.cz

n 18. 2. Dolní Dobrouč, cinema hall XV.
"Have wings..." 15th annual popular
aviation film festival Info:
strasmeier@gmail.com, SPV Letohrad



24. - 26. 2. Přebyslav Airport (LKPI)
PPG-SKI
Info: pavellaznicka@seznam.cz

n 8. - 9. 4. Turkovice, 1 km north
of Podhořany (LKPN)
Aviation Ball
Podhořany Aviation Ball 2023 will take
place in the restaurant hall in Turkovice,
near Podhořany airport.
You can also fly in! Accommodation and after party
at the airport bar provided.
Info: František Tremel 728 008 674

**Are you organizing
a gathering or another
interesting aviation event?**

**Make yourself
known in Pilot! eYmail:**

**pilot@laacr.cz,
www.laacr.cz - calendar of events**



XV "To have wings..." The

Letohrad Friends of Air Navigation Association (SPV) is organizing in cooperation with airZone.TV on February 18, 2023 the XV. year of the "Have wings..." film competition. We will be very happy to send amateur and professional short films from the environment of UL flying, motorized and non-motorized paragliding, hang gliding in all its forms, from the environment of balloons, rotorcraft, helicopters, gliders and airplanes of aero clubs, military aviation, air rescue services and of course even from the skydiving environment. Our competition is simply about everything that flies. In the case of a larger number of competing films, categories will be established (e.g. documentary, clip...). Each creator can submit up to three images. The length of the submitted film should be up to 15 minutes, but an exception can be agreed upon. We accept the MPEG-2 or MPEG-4 format as media, the registration deadline is January 31, 2023. Send the films by post or by saving them on data servers (ulozto.cz, etc.) with a link to the e-mail: strasmeier@gmail.com.

We are very much looking forward to the films and their authors, as well as to all the other viewers in the cinema in Dolní Letohrad Welcome from 1 p.m.

For the organizers
Marek Šnajdar, head of SPV Letohrad

Beginning of theory for new students in Podhořany The East Bohemian Aeroclub

Pardubice is starting theoretical training for new aviation adepts on Saturday, March 4, 2022. At the end of March, we start practical training depending on the weather and track condition.

More at www.letistepodhorany.cz

M. Švorc, AK Podhořany

Parabumbal 2023

The Beskydy Aviation Club and its partners invite all cultural aviators to the biggest social event of the winter aviation season: the 2nd annual PARA bumBÁL ball, which will take place on February 11, 2023 in the Mniší Cultural House. The rich social program will also include a raffle with valuable prizes - a Mac Para Levity seat, a Go Pro camera or a Quatro Light bookmark from Sky Paragliders and many other interesting and practical things. At the ball, there will be a concert by the eco-agro-punk band "ZÁHRADKÁři", DJ Klega will also provide entertainment. You can purchase tickets at the same time as dinner reservation at www.parabumbal.cz. All profit after paying expenses remains with the BLK association for rents of take-off and landing sites.

Kamil Kabat, Ed



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www.aerozurnal.cz
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Nejzajímavější a často mainstreamovými médii opomíjená témata, přesah do celostátních veřejnoprávních i soukromých médií, pozitivní zprávy.

airZone.TV vám přináší mediální agentura Cumulus media s.r.o.

Training dates for ULL, ULK, MZK, ULH and ULV pilots and instructors in 2023 It is always necessary to make an appointment for the training with the relevant traffic inspector in order to secure a place.

Date	Place	Information
18. 2.	campus Let. schools Frýdlant n. O. J. Špaýek, 602 753 423 25. 2,	
	from 9.00 Hotel Richmond, Karlovy Vary Jiří Duras, phone: 603 871 189, j.duras@seznam.cz Jiří Vašák, phone: 723 756 145,	
18. 3. , from 10.00 a.m.	Pilsen - Letkov airport	jirivasak@seznam.cz Jiří Vašák, phone: 723 756 145,
1. 4. , from 10.00	Hořovice airport	jirivasak@seznam.cz Zdeněk Pazdera, phone: 724 672 213,
1. 4. , from 9.00 a.m	Olomouc airport	eýmail zpazdera@seznam.cz areál Let. Frýdlant school n. O. J. Špaýek, 602 753 423
4. 3.		
25 March, from 9.30 a.m.	SLZ Aircon Miroslav area	Libor Stehlík, phone: 603 772 838, sdk.stehlik@seznam.cz
March 25, from 4 p.m.	restaurant Dvůr Strítež near Třebíč	Ing. Martin Zušýák, phone: 602 979 270, zustakmartin@seznam.cz Jaroslav
25. 3. from 13.00	area of SLZ Chvojeneč	Šimek – phone: 728 270 972, simek.jbc@centrum.cz, or Vladimír Mádlo – phone: 724 996 829, madlo.vladimir@email.cz

If other dates are known, the list will be supplemented.

Zdeněk Doubek, HI. ULL and ULK operation inspector

Event calendar

12 – 16 June Czech Republic
Air Defender 2023 military exercise
Info: PPE No. 012959-22-701, AIP SUP

19 – 23 June Czech Republic
Military exercise Air Defender 2023
Info: PPE No. 012959-22-701, AIP SUP

28. – 30. 7. ěrvený Potok Field Airport
Slet Chroustý Info: SPV Letohrad

29. 7. ěská Třebová Airport (LKCTRE)
A traditional gathering of everything that flies
Refreshments provided for aircraft crews
Info: Kaderka Jan 737 427 275, MUDr. Martin Formánek 731 467 131



26. 8. Jihlava (LKJI)
LAA TO YOURSELF 2023
Info: www.laacr.cz

26. 8. Sown (LKSZ)
AeroTour Sazená
33rd annual traditional air rally
in Sazená for aircraft with a TAS of 120 km/h Info: <https://www.akkralupy.cz/>

8/28 – 9/8 Czech Republic Military
exercise Resistant Sky 2023 (ODON
2023) to be specified, AIP SUP

Test flights of the STOL Cruiser At the end of last year, the test flights of the latest STOL Cruiser aircraft of the Brno manufacturer Direct Fly, s.r.o. continued at the airport in Medlánky. Test pilot Jan Šponer sat behind the stick.

According to designer Jan Kalný, the flight tests to date confirm the expected flight characteristics and performance. The tests will continue after minor aerodynamic adjustments, which should ensure even more favorable behavior of the aircraft. Strength tests will also continue according to the LAA ýR building code with the aim of obtaining the LAA ýR Type Certificate and certification according to German (LTFýUL) and American (ASTM) regulations.



The STOL Cruiser is the manufacturer's attempt to satisfy those interested in short take-off and landing (Short Take Off and Landing) aircraft, who at the same time require a significantly higher cruise speed than is common for STOL-type aircraft. The structural solution of the STOL Cruiser offers an aircraft with a spur landing gear a superior view both in flight and on the ground, as well as a spacious cabin that can accommodate a person lying down. The wing is equipped with efficient Fowler flaps and slots.

The UL STOL Cruiser aircraft is being developed in cooperation with the Institute of Aircraft Technology of the Faculty of Mechanical Engineering of the Czech Technical University in Prague. The project is co-financed with the state support of the Technology Agency of the Czech Republic within the Epsilon Program.

Red, directfly.cz



Mana2 – new product from UP

Paragliders At the end of December,

UP gliders introduced the new Mana2, the successor of the universal ultralight "A". In addition to the minimal dimensions in the folded state, the wing impresses with intuitively easy starts and unobtrusive behavior in the air, which makes it suitable for beginners who are engaged in mountain sports or directly hike & fly. For the second generation of its wing, the manufacturer emphasized the improvement of performance and the durability of the wing, which is why it deliberately advertises its new product as one of the lightest, but not the "lightest" wing. The construction used a combination of 32g Skytex and 27g Skytex Classic II, which is up to three times more durable than regular 27g Skytex thanks to the double coating.

Ed

Everywhere you read Pilot...



Hi, while reading the pilot magazine on the plane to Bangkok, I came across the article "Where everyone reads Pilot". I am sending a photo.

Have a good flight, Vlaĝa ěadsky



Hello, I noticed that in the last issue there were photos where Pilot is read everywhere, in what places, etc., so I am also sending my usual place for reading: I always save Pilot for service. Now in autumn and winter, due to the weather, I tolerate twelve-hour shifts with complete peace. When there aren't many people, I like to read the Pilot there and leave it available to non-flying colleagues.

Best regards, Karel Filip

Photo exhibition "Stories and

beauties of paragliding" We cordially invite you to the photo

exhibition "Stories and beauties of paragliding", which will take place from January 17 to February 23 at the Visio Art Gallery in Pilsen (address: Na Roudné 443/18, Severní Předměstí, 301 00 Pilsen). In their films, ten authors share unusual views, experiences and events that paragliding writes and that even the best director would not have imagined. Non-flying visitors will be able to try sitting in the pilot's seat, and those more technically oriented can admire the world's first IoT weather probe, developed by our flying friend. The entrance fee is CZK 50. You can find more information at www.visioart.cz.

Pavel Janeĝek, the organizer, is looking forward to your visit



XC PG World Cup Super Finals in Mexico

The XC Paragliding World Cup Super Finals took place in Valle de Bravo, Mexico, on December 6-17.

The Czech colors were defended by a team composed of Jan Jareš, Joĝnáš Horáĝek, Petr Kostrhun, Vít Pekárek, Karel Kĝta and Martin Kubiĝek. The exciting race had ten challenging laps and was won by the Frenchman Honorin Hamard, followed by Philippe Haage (Germany) and Baptiste Lambert (Fr.), (same as Enzo 3). Among the women, French Constance Mettetal (Icepeak XĝOne) won, second was Japanese Keiko Hiraki and third was Swiss Yael Margelish (both Enzo 3).

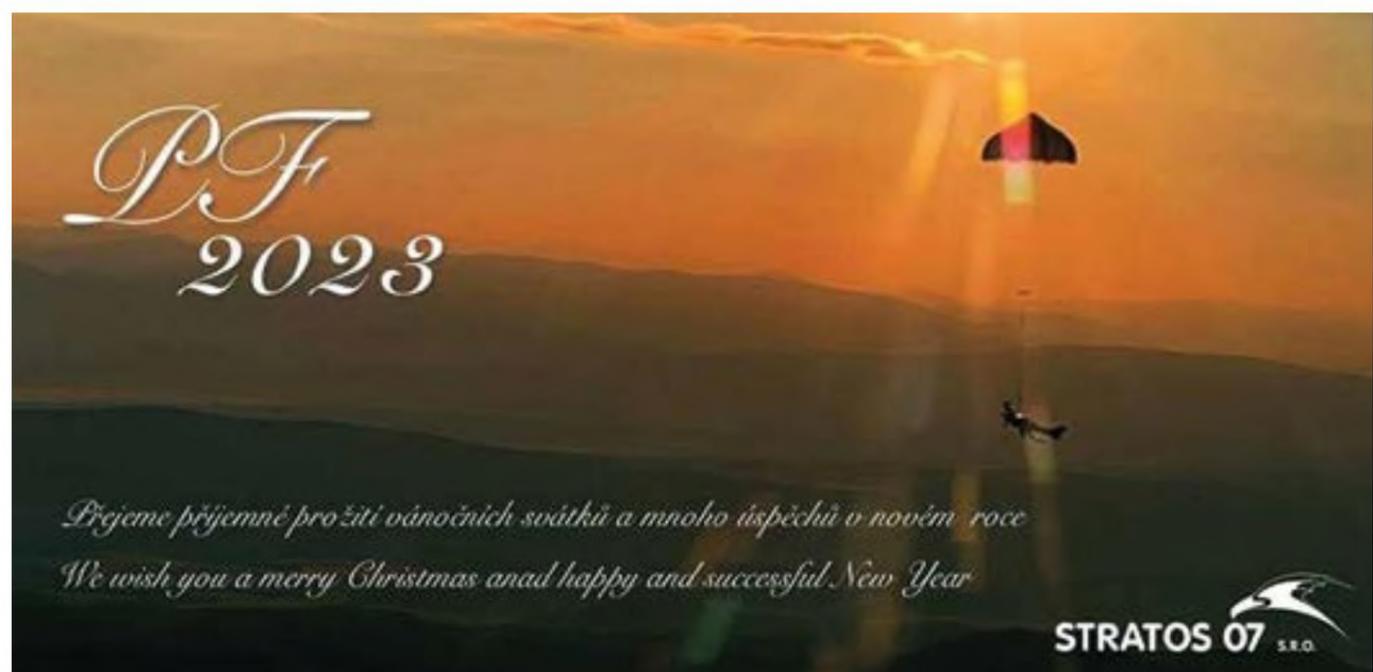
The placement of Jonáš Horáĝek (Enzo 3) in the top ten is a great success - he finished in 8th place in a strong competition of 160 pilots! (V. Pekárek 47., J. Jareš 71., P. Kostrhun 101., K. Kĝta 103., M. Kubiĝek 121.)

Congratulations to the representatives for their great performance! The first round of this year's World Cup will take place in Brazil from March 18 to 25, 2023.

Red, www.pwca.org



We share with you a selection of wishes for the new year. Thank you to everyone who came!



Dingo – ultralight with param

Vojtěch Šaman, photo by Kamil Vejeřa

When I found myself at the airport in Jaroměř in June, a tiny, light biplane with an axle chassis, which lacked a few details to be able to fly, caught my attention in the hangar. "That looks like an aerial recreation apparatus," I thought, and for a moment I daydreamed about what it would be like to fly it. Before we flew the three-day refresher course, the airplane was completed and flown in the color of the material. Before long, there was an opportunity to meet him at the LAA SOBě meeting in Jihlava, where he beautifully complemented the diversity of the contemporary aircraft fleet. There, already with wings in red and sheet metal parts in the color of the material, it attracted a lot of

attention and slet, where the test pilot of the company Future Vehicles s.r.o. behind its creation, Jan Jílek, showed up with it. It is not surprising, because in the flood of increasingly faster and more sophisticated, stronger and more expensive machines, it is a beautiful return to the roots of ultralight flying.

I was pleased with the hospitality of Honza Jílek and Marko Ivanov when I already expressed my desire to fly with Ding in Jihlava. After a few attempts and waiting for the weather to start, a beautiful day was found in autumn (October 20) when we went together with Kamil Vejeřa to Jaroměř to get to know Ding better and take some nice flight photos of him. There was time to talk about the creation of this beautiful airplane.

The sun was shining and there was a fresh south/south course, almost on the axis of the local runway 14. Before I got dressed in the borrowed overalls, the unbraked Dingo took off on its own out of nowhere, making me wonder if he was afraid of me. He wasn't afraid. The breeze moved it along the smooth asphalt - because it does not have braked wheels. I, on the other hand, had more respect: the new, unusual design - a biplane with a "T" tail and a floating elevator, unsprung spur landing gear and pedals hung so low that you could brake with your heels if you bumped it up a bit more... After all, that was the only thing about it a warning that I received from Honza Jílek on the flight control side - that I should not press too hard on the ground when adding gas at the same time. They say it could fall on the nose. Probably already



otor's heart



"Speedometer"

someone was braking, I thought...

I made myself comfortable on the laminate seat, set the radio, put on my helmet and goggles, and Honza started the engine with one graceful pull of my hand. The starter, with which you first stretch the spring, which will release itself after reaching the necessary force and turn the engine, works flawlessly. The single-cylinder, liquid-cooled Polini Thor 250 DS engine jumped and purred contentedly.

Hurray for air!

Being escorted to the plane, I remembered the feeling that Rosja Duchoř had once prepared me for during training before my first flight with Sluka: "If until now you felt like you were sitting in a plane, now you will feel like you are wearing it." "I fly a little

even with a parachute, so I'm used to the feeling that I'm wearing airplane clothes. Only on a parachute does one have free ends in the field of vision. But here? Nothing. Ě In front of you there is only a small "parizek" (dashboard) and a little in front of it is a console on which the foot control pedals are suspended (they have minimalistic "stirrups" underneath so that the pilot's feet do not fall off them). But with your feet on the floor, you have a pleasant, comfortable seat in the air. After a short endurance, You perceive the ends of the wings with your peripheral vision, otherwise you have a free space in front of you, where nothing restricts your view. In general, a pilot who has less in front of his eyes sees more.

Compared to the small one-wheel Straton (another of my favorite "flying clothes"), the Ding with its two-foot under

with a cart and a steerable spur, it can be easily driven. Thanks to the propeller blowing directly on the "slaps", taxiing was a complete "squeak" even with a bit of crosswind. After entering the runway and adding gas, I overcorrected the effect of the propeller a little and inadvertently stepped on the rudder as if it were an organ, but it balanced itself out beautifully. In two seconds it didn't matter anyway, because in the table seats in the air. After a short endurance, Dingo told himself that there was no need to push the saw (actually the stick), and at a speed of 50-55 km/h with his written 36 "mares" he nimbly climbed up to three meters in height, where I finally recovered a little from it, that I'm flying a biplane for the first time by myself, and the tiniest one I've ever seen.





Minimalist stirrups under the heels keep the pilot's feet securely on the pedals

In order to get my hands on the steering wheel, I turn left and come back over the edge of the airport. The rudders of the beauties obey them, as do the ailerons. I try turns of 30-45 degrees and transitions from one to the other and I find the Dingo to be quite nimble, but at the same time pleasantly stable. The steering forces seemed responsive and well balanced in all three axes. I noticed that since the June flight, the Dingo has slightly increased the depth of its wings. This, together with the sealing of the gap between the wing and the aileron, contributed to their better efficiency.

After climbing a few more meters of height (for sichr), I also tried to "trouble" Ding on

speeds, both with throttle and under throttle. With no engine power and throttled up, the Dingo waded along the horizon until it settled slightly, going slightly left wing forward. However, the drop in the nose was minimal and the wrapping of the wings was immediately restored.

While torturing the aircraft at performance, I was quite surprised that even the ailerons, which are along the entire span of the lower wing, began to warn of falling. All the better, at least the pilot has more of an indication that he is doing something completely stupid. In both cases, the speed was so low that the "float" in the speedometer tube floated somewhere below the 40 km/h line.

I was not at all tempted to try the maximum speed - the disadvantage of the open cockpit is that the air flow "pulls a noodle from the nose", so I liked to stay with Dingo below the speeds at which this effect becomes more intense. It made flying all the more pleasant.

Despite its small dimensions (span of only 6.57 m and length of 4.5 m), the aircraft is beautifully manoeuvrable. It was no problem to make a turn on the width of the track at a cruising speed of approx. 60-75 km/h. Just like a paramotor, but with wings. Despite the rising euphoria from the flight, the voice of reason commanded to make a few more passes for Kamil, who for the time being was lingering with the camera



The usual label "cockpit" doesn't quite fit here



Future Vehicles The

company Future Vehicles s.r.o. deals with designs, development and certification and testing in light aviation, from ultralights to machines with a MTOM of 5700 kg. The owners of the company, which employs more than a dozen aviation experts, are Jan Jílek and Marek Ivanov. Marek Ivanov is a well-known aircraft designer, whose handwriting is borne by a decent line of light aircraft types, e.g. B612, Friendship 3, Vítr, Song, UL replica of the historic Farman III, Sparrow, Desire, FK9, BF139, F2 and others.

Photo by K. Pilot LAA dinner and collection, fk-aircraft.com



Foreign inspiration, domestic know-how

According to Jan Jílek, the impulse to create the Dingo project came from several sources. The actual construction solution of the machine is the work of Marko Ivanov, the concept of the machine and the operation "for the project" was the result of collective work. "On my part, it was more of an internal reaction to where the ultralight category has moved," says young engineer and test pilot Jan Jílek. He was introduced to flying by his father, Jan Jílek, who is an MPK technical inspector. So he also began to fly with "parachutes", both free and motorized, but gradually

on the ground. And you can probably tell from the photos that I had a lot of fun with that too. Then it was time to land. I did the approach a little under the throttle, both to not cool the engine too much with a longer descent, and to avoid having to pick up more resistance with a steeper descent in the last phase of the landing.

I'm used to flying with a spur, but I couldn't shake the impression that the undercarriage is quite subtle and that it has to bounce nicely on every bump because it's not sprung. However, my first landing completely dispelled those fears. Although at first it was a bit difficult for me to estimate the height above the ground, there was nothing to complain about my landing - I landed just high enough and the speed when I touched the ground was already so low that with a slight headwind I was standing a few meters away. The next two landings were already routine.

But I didn't feel like climbing (or rather "climbing") at all and I would prefer to think



Nothing prevents the view and contact with the air

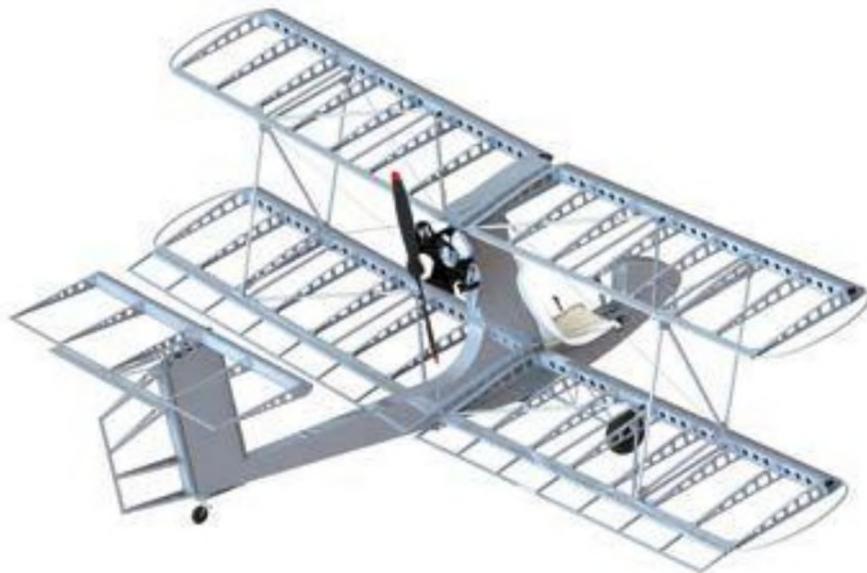
he made a lazy photo flight himself. In the meantime, Pepa Kubišta arrived at the airport with a motor scooter to load Kamil so that he could take flight photos in which Honza Jílek posed with Ding. But we still had time to talk about why Dingo looks the way it does.

thanks to work on the development of aircraft - UL and "adult" (GA) - he became a test pilot of aircraft weighing up to two tons. Perhaps he likes to chase the acrobatics through the sky with the Extra. As he says, the progress in the construction of UL aircraft is great, but... "on the other hand, I personally began to miss the simplicity and joy of flying itself. I mean the feeling you get, for example, on a parachute - it's just you there, the air is flowing around you and that fills you with joy and a sense of freedom. But I like being able to control the plane with a stick." And that's why, when Mark Ivanov showed several drawings of a small biplane at the beginning of 2021, the narrow company circle immediately agreed: This must fly!



Polini Thor 250 DS engine, on the right of the strut there is a mirror for checking the fuel level





"It's been a dream of mine for a long time to build something like the Hovey Whing Ding, because I like it, but a little bigger so I can fly it," says Marek Ivanov.

Marek has already constructed a lot of "classic" two- and one-seater airplanes, but also a light single-seater low-wing ZJ Viera with a towing engine. It was the experience with this aircraft that was very valuable when designing the Dingo.

The inspiration from the Whing Ding II aircraft was clear - the biplane gives the possibility of a bravely large and solid bearing surface for low speeds, at which I don't mind the wing struts. Also, the push engine layout came in handy. Due to the dimensions of the aircraft and the position of the engine behind the wing, it was necessary to use a light engine, and modern engines for the MPK perfectly meet this requirement. By the way, simply turning the paramotor unit facing backwards (meaning the propeller forwards) has always had a negative effect on its reliability. Usually, the reducer "went out"... Otherwise, however, current paramotors - used correctly in a push configuration - are reliable and offer outputs from 20 to 40 horsepower.



Another thing was the location of the elevator. In order to be able to land with Ding even on a higher rise without the risk of damaging it, it was placed above the turn signal (although I don't know what it would do under the carriage with a "mowing bar" in the form of a continuous axis of the wheels in such a case...). And since the elevator must be effective even at lower speeds, it is

Ease of construction was also taken into consideration. The construction is therefore all-metal, made of sheet metal, processed with hole-to-hole technology, i.e. hole to hole, when there is no need to additionally drill the parts before riveting.

Those interested in Dingo will thus buy a kit of metal

part that comes in four boxes.

By the way, the acceptable dimensions of the shipment with the construction kit are also a conscious part of the business strategy - smaller boxes are easier to send anywhere, unlike a large box with a finished hull. The cover and its coloring, the choice of the drive unit and its installation remain with the builder.

Right from the first flight, I was surprised by how smoothly the plane steered - it had no tendency to tighten the turn, but neither did it straighten, which is the result of an appropriate choice of the size of the tail surfaces and lift. "The dimensions of the tail surfaces had to be calculated, then I chose the same as for the other monoplanes and it worked out the first time," says Marek Ivanov. In short, such a "well-ripened dream".

Technical description

Dingo is a single-seater biplane with an open cockpit and pusher engine. The airframe is riveted from Al alloy 6061 and 2024 sheets. The wings, floating elevator and rudder are covered with Ceconite polyester fabric. Ribs with relief holes are pressed from thin sheet metal, similarly the beams are made. The hull itself is 150 mm wide. In the front part there is a riveted laminate seat.

The push engine is attached to the hull by means of rubber silent blocks. A ten-liter plastic fuel tank is located in the fuselage behind the pilot's seat. The pilot can see the fuel level in flight through a cut-out in the side fairing of the fuselage, using a mirror located on the strut.

The unsprung main chassis is welded from thin-walled steel tubes.

The floating-braked wheels of the main chassis have dimensions of 300x100 mm. The spur is steerable and sprung with rubber silent blocks. The sharp wheel has a diameter of 125 mm. On the lower wing, there are aluminum riveted wings coated with Ceconite (on the prototype, the length of the wing is made of bent sheet metal).

Whing Ding II About two

summers ago, when Future Vehicles was deciding what to build for fun in addition to the work that supports the company, Marek Ivanov came up with sketches of a biplane inspired by an ultralight aircraft from the United States of America from the early 70s called the Whing Ding.

At the turn of the seventies in the USA, a certain Bob Hovey, with the intention of creating the lightest aircraft that could carry a person, constructed a miniature biplane with conventional controls and a pusher engine. It had a mixed construction using both plywood and duralumin (the tube carrying the tail surfaces) and Styrofoam. Two modifications were successively created, but although over 6,000 sets of plans were reportedly sold, few of these aircraft were flown due to the absence of a suitable light and reliable engine. And the one that flew didn't really satisfy the user in terms of performance - it usually didn't rise above ground effect. Even so, Whing Ding sparked a lot of interest in this category of aircraft. This led to the formulation of relatively strict, but sufficiently simple and enforceable rules for ultralights in the USA, FAR Part 103, during the following decade.

Photo Wikipedia.org, aviadejavu.ru, Jane's All the World Aircraft





Dingo and in front of him the crates that come to you when you order the kit. Engine, cover and possibly devices must be ordered elsewhere.

Main technical data

Span 6.57 m Wing area 12.55 m² Fuselage length 4.45 m VOP span 2.24 m VOP 1.68 m²
 Empty weight 95 kg Maximum take-off 220 kg
 Tank volume Average fuel consumption Maximum multiples Speeds Max. VNE speed Max. horizontal speed (7800 rpm)

10
 15 l
 h +4 g / -2 g
 100 km/h
 70 km/h

Cruise speed (7000 rpm) 60 km/h
 VSO stall speed 40 km/h

Power unit The Dingo can be equipped with a power unit with a power in the range of 25-40 hp and a weight of up to 24 kg.
 Two engines were used on the first prototype: a Vittorazi Moster 185 two-stroke, air-cooled single cylinder with manual starter (aircraft empty weight 95 kg) and a Polini Thor 250 DS two-stroke water-cooled single cylinder with manual starter (aircraft empty weight 105 kg).

The profile used is based on the originally Russian CAGI R-3 profile, thinned to 12% and with a modified trailing edge, which is formed by the rear spar of the wing in order to maintain the simplicity of the design.

The ailerons and elevator are controlled by tie rods and the rudder by steel cables. The floating height forging is equipped with a weighting surface.

Build a Dingo!

If someone is captivated by the sight of the ultralight Dingo, they don't have to wait a year or two for their dream to come true. He can buy a kit (for CZK 299,000), download the manuals via the Internet, print them out and start building. The airframe can be assembled (without painting) in 200 to 250 hours. To customers who

do not have time to build the Dingo themselves, the company also offers the option of building the plane for them with the supplied engine with propeller, covering material and instruments.

Thanks to its unusual shapes and the enthusiasm of its creators, the Dingo is gaining popularity, which is also supported by a Facebook group of fans of this ultralight aircraft called Dingo Aviators.

So far, the material for ten kits has been produced, and by the time this article is published, another example has been completed, and everything indicates that it will definitely not stay with one machine.

It's good that there is someone who defies the prevailing trends in the development of UL le

tadel towards heavier, more complex and more expensive machines (adequately more difficult to control) dared to come up with a design that directly encourages aviation enthusiasts to roll up their sleeves and start building, as was common for the generation of LAA founders.

The advantage of such enthusiasts nowadays is the fact that they do not have to explore dead ends and run into misunderstandings of the authorities.

All you need are good hands and some money. I just think that the creators of the Dingo should consider whether (beyond what the regulation requires) it would be wise to place a sign in the pilot's field of vision "Caution, flying this machine is addictive!" ý n





6/25/2022 at žeské Budějovice Airport



24/10/2022 near Vlíkovic in Podkrkonoší

Analysis of extraordinary events

Every year, on this site, we bring a summary of the extraordinary aviation events of our sports flying devices for the past year, and we try to draw attention here to shortcomings and errors that were the cause of aviation accidents and incidents or were somehow related to their occurrence. We try to do everything as responsibly as possible, so that this analysis is a lesson for everyone else, who could then avoid similar mistakes and shortcomings. The year 2022 was essentially comparable to the previous years in terms of the total number of these extraordinary events. But what about fatal and serious consequences

concerns, 2022 was markedly unfavorable compared to recent previous periods. In the past, I have drawn attention to the very fine line between when an extraordinary event has minor consequences and when, on the contrary, very serious or fatal consequences. And this year's statistics have unfortunately shown us that again. I think that the following analysis should also contribute to this realization and lesson that we should not trivialize any of the extraordinary events, or even the assumption of them.

Jiří Koubík, director of the LAA CR administration

Extraordinary events in ULL operation

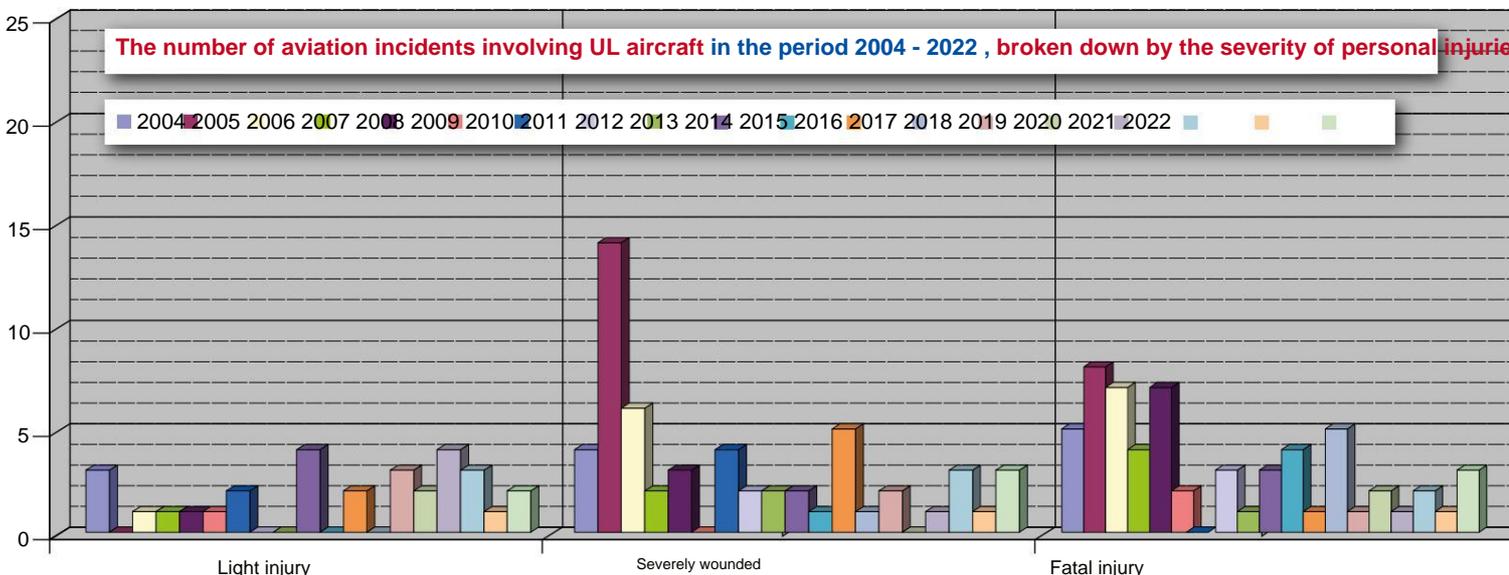
manned aircraft occurred in 2022. In operation, ultralight aerodynamics for a total of 29 recorded extraordinary events. Of these, 10 were qualified as an air incident, 13 as an air accident, 2 events were qualified as a ground incident and 4 events were classified as a ground accident. Although the total number of events was lower than in 2021, there were unfortunately more severely and fatally injured persons. In 2022, they had three

accidents in ULL operations resulted in fatal injuries to the crew, in two air accidents the crew suffered serious injuries and in two air accidents the crew suffered minor injuries. The pilot of an ultralight motorized glider suffered serious injuries resulting in death. The other air accidents were without consequences for the health of persons.

As can be seen from the above figures, there were accidents with fatal consequences on airlines and severe injuries resulting in death

not in percentages, but in multiples worse than in 2021. Although these are still units and so-called "small numbers" statistics, this finding should be a strong appeal leading to learning from the errors and shortcomings listed below, and also to realize the fine line between minor consequences and, conversely, fatal one

All accidents from 2022 that resulted in the death of the crew are being investigated by the ÚZPLN and have not yet been closed. For this reason, it is not possible to comment on them in detail.





26/10/2022 skeleton of a burnt aircraft fuselage and hangar structure damaged by impact and fire



11/12/2022 wreckage of UL Quallt 200 aircraft

those in SLZ operation for the year 2022

At the moment, only a few facts that have been discovered so far can be mentioned about individual events, but they can have a very fundamental effect on future security, and thus lead to general lessons.

The first air accident resulting in the death of the crew occurred on 6/25/2022 at ýeské Budýjovice Airport. On that day he decided, in my opinion, a very experienced pilot, to solve the heaviness "on the head" of the Banjo motorized glider during take-off. Since we will no longer learn from the pilot his specific motivations and specific intentions, I assume from the facts known so far that it could have been the so-called "trial and error" method. Taking into account his experience and essentially a lifetime of experience in aviation, the use of the "trial-error" method seems incredible to me, but... The pilot decided to take off that day after he attached approximately four-kilogram (!) weight. During the climb after take-off, a loss of speed resulted in a fall and subsequent impact with the ground.

The pilot suffered severe injuries as a result of the impact with the ground, which despite all the care of the medical staff after several days

he died in the hospital. During the subsequent weighing of the aircraft after the accident, it was found that the weight added by the pilot to the rear of the fuselage shifted the center of gravity of the machine beyond the extreme rear centering.

The first of these commented events with the most serious consequences in ULL operations did not occur until the end of the first half of the year, and then it seemed that the year 2022 might not turn out so badly in terms of consequences. But then came the third quarter and that view changed completely. In less than a month, there were three plane accidents, resulting in four fatal injuries.

The first of this "series" of events took place on October 24 in a field south of the village of Vlýko vice in Podkrkonoší. The pilot took off that day in a TL 2000 Sting with another person on board, allegedly for a check flight.

It took off from Hradec Králové Airport and steadily climbed to 3500 ft AMSL first in a northerly and then in a northeasterly direction.

About 8 minutes after takeoff, the UL plane was seen by a random witness falling to the ground in a spin. After hitting the ground, the UL aircraft immediately burst into flames and was completely destroyed by the subsequent fire. Both crew members suffered non-life-threatening injuries. The investigation so far has established that approximately 70 seconds before falling into the corkscrew, the UL aircraft was flying at a height of approximately 500 m AGL, heading 060° and at a ground speed of 65 kt (i.e. about 120 km/h, note red). Just before falling into the corkscrew, the plane changed direction to the right. According to the tracks, the plane hit the ground flat, without any subsequent horizontal movement, and the engine was working at power at the time of impact. The UL aircraft was equipped with a functional rescue parachute system, the controller of which was unlocked in the cabin. Although, according to the facts established so far, the crew had sufficient height from the onset of the crisis situation to activate the rescue parachute system, this system was not activated by the crew.

As can be seen from the above figures, there were accidents with fatal consequences (fatal

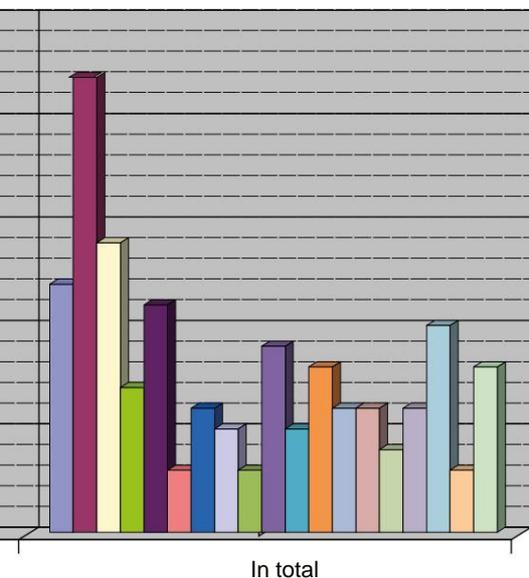
injuries and severe injuries resulting in death) not in percentages, but in multiples worse than in 2021. Although these are still units and so-called "small numbers" statistics, this finding should be a strong appeal leading to lessons from further of the mentioned errors and shortcomings, and also to realize the fine line between minor and, conversely, fatal consequences.

All accidents from 2022 that resulted in the death of the crew are being investigated by the ÚZPLN and have not yet been closed. For this reason, it is not possible to comment on them in detail.

It is currently possible to state only a few facts that have been established so far about individual events, which, however, can have a fundamental influence on future security, and therefore lead to general lessons learned., i.e. just two days after the previous, above-mentioned tragic event, we recorded initial information about a hangar fire on the site of SLZ Osijina. At the time of the announcement, it was not clear whether it was "just" a hangar fire or a plane crash. Only later did it become clear that it was an air accident, when the UL TL-232 Condor plane crashed into its home hangar, which was largely burnt down in the ensuing fire, and the pilot died in the accident. According to witness statements, the final phase of the flight was an erratic flight, with the aircraft moving along a "wavy" trajectory, mainly with changes in altitude.

According to other witness statements, on the day of the critical flight, the pilot did not feel in very good condition, and therefore equipped himself with an oxygen cylinder for the flight. This oxygen cylinder was found in the wreckage after the crash. It is not clear at the moment whether or not the pilot's state of health had any effect on the occurrence of this event. What is already clear, however, is that we (none of us) should not sit in the cockpit of an airplane with the intention of flying if we are not me

The last of this "series" of tragic events occurred on November 12 near the Ralsko-Hvýzdov pheasant in the northeast of the SLZ Hradýany area. On that day, the weather in the given place was very changeable with strong winds





changes mainly consisting in the reduction of vertical and horizontal visibility. In the afternoon, the pilot decided that, when the conditions improved, he would make a recreational flight in the vicinity of the airport with a UL Qualt 200 J aircraft. After takeoff, the pilot flew to the area of the village of Hvýzdov, where he performed horizontal maneuvers at a low altitude. After they ended, he probably intended to return to the airport. Charred wreckage of the UL plane was found in a field north-west of the inhabited part of the village of Hvýzdov.

According to witness statements, at the time of the accident, there was a rapid deterioration of meteorological conditions within a few minutes.

If the above brief statement is not enough for someone to learn, I will "add" the information that the Qualt pilot was not alone at Hradčany airport on that fateful day. There were other pilots as well. They, however, correctly assessed the meteorological situation as "non-flyable", they are still with us and are not written about in this analysis.

In the next part of this analysis of events in the operation of ULL for the past year, I will not individually address the notorious and already discussed numerous times landing errors, when the event usually begins with an incorrect and uncorrected landing budget.

In most of these cases, the pilot continues to land with a so-called "long budget" and tries to land at all costs. The first contact with the ground is then usually at a higher speed followed by a bounce. An unrepaired or incorrectly or late-repaired rebound ultimately results in damage to the landing gear, mostly the nose.

Sometimes a bounce or a series of increasing bounces results in the machine tipping over on its back. From these events that happened during the past year, I have chosen as an illustration the photograph from the UL le toun Storch accident on 4/30. This is because I have personal experience with this type of ULL in hundreds of flying hours and in this position we never "managed" to get him even with the students in training. And that's not even during an emergency landing after landing the engine in a field with a meter high grain...

Another group of extraordinary events in the operation of ULL, which I will discuss in the following



the analysis to deal with are land accidents. Yes, from the point of view of health consequences, these are mostly banalities, but from the point of view of material consequences, it does not have to be so, and from the point of view of possible lessons, it also has its meaning, in my opinion.

An accident from this segment, which had significant material consequences, happened at the airport in Tábor at the beginning of the year. Here, the pilot of the UL TL-232 Condor aircraft wanted to perform an engine test and drove into the area of parked aircraft on stands. As a result of starting the engine with the throttle lever locked in the high power position and the nose landing gear deflected, the aircraft started moving towards the parked aircraft. The pilot was not able to react properly and the Condor crashed into two stationary Golf and Sierra aircraft. Part of the damage is evident from the attached photos.

In addition to this completely unnecessary ground accident, I would like to mention that we should all realize that the damage caused by it will be covered by the insurance company from the so-called liability insurance, but that the insurance company is not a charitable organization. The insurance company, among other things, calculates the so-called loss course, and when its costs increase, it also increases the premium. And that affects all of us within our collective contract. Sure, anything can happen, at any time and to anyone, that's what we insure against. After all, I would like to try to encourage everyone to learn from this accident and similar accidents, so that we don't have to complain about more expensive insurance premiums. Do (we)

I mean, actually doing it) properly "pre-launch actions" might be worth it, right?

The second ground accident that I will mention in this analysis is an event that happened at the somewhat specific Hořovice airport. The peculiarity of this airport lies in the fact that its space is crossed by a regular road used by vehicles. While taxiing to runway 06 with UL aircraft Topaz KR 030, a collision with a passing passenger vehicle occurred on 9/4. This collision caused significant damage to both the UL aircraft and the passenger vehicle. The pilot of the plane was also seriously injured. Knowing and above all respecting the local conditions at a specific airport could also be one of the lessons learned from this event.

Regarding the events arising from technical causes, I would like to mention in this analysis the one that I also consider to be one of the most unnecessary. It happened at the Tábor airport (LKTA) with a UL Legend 540 plane, where the pilot was landing after a flight from Kolín. In this event, the left landing gear leg of the main landing gear broke during the approach after landing, with the subsequent fall of the left half of the wing to the ground and its damage along with damage to the VOP. I mention this incident here for the sake of learning because the pilot found a crack on the left landing gear leg of the main landing gear during the pre-flight inspection, but after consulting with the instructor he still decided to fly. Here, with the passage of time, I cannot state anything other than that it was a mistake and he did not have a flight



Damage to the UL Topaz aircraft in a collision with a passenger car on the road crossing the airfield



Legend 540 in Tábor

to be executed. The aircraft was to be inspected and repaired in more detail.

A technical circumstance that was not directly determined as the cause of the event, I would like to mention one more ground accident

This happened at the Šiklův Mlýn - Zvole airfield on 15 July. The pilot was taxiing to the take-off point when, while trying to approach the runway after increasing the engine power, the aircraft did not respond to the directional control and turned left uncontrollably. This uncontrolled turn was caused

by a blown tire of the left main landing gear wheel and as a result, combined with the pilot's incorrect reaction, the left half of the wing crashed into a pillar next to the runway.

The photo shows damage to the wing and the empty wheel of the main landing gear.

Extraordinary events in ULV operation

in 2022 to a total of six extraordinary events in the operation of ultralight aircraft of the analysis, after the ULL category.

In this connection, however, I also state that there was no accident with fatal consequences in the operation of the ULV. Since I am already making some comparisons at the beginning of this chapter, I would like to mention one, in my opinion, interesting comparison. While in ULL operation there were 3 extraordinary events during take-off and 18 extraordinary events during landing, in ULV operation it was the opposite in 2022. There were 5 events during takeoff and one during landing. In my opinion, this different ratio indicates, among other things, that the ULV is more demanding on the precision of the piloting technique during takeoff than that of the ULL. At the same time, it also says something about the greater "friendliness" or "mercy" of the very low landing speeds of the rotorcraft

I will start a more detailed and specific commentary on this chapter of the analysis with the incident on September 21 at Pýibram airport, which occurred during a training flight with a student. The instructor and student took off in a Kallithea-type UL rotorcraft for one of the initial flights

training curriculum for pilot qualification. In this phase of the training, the control of the UL gyroplane is fully under the guidance of the instructor. In the take-off phase, the control lever was not released after the front wheel came off and the tail part of the rotor came into contact with the runway.

In this extended position, the rotorcraft continued to move forward, and even after the main landing gear wheels were detached, the tail part rubbed against the runway. The longitudinal inclination was so great at that moment that the rotor blades came into contact with the runway and tail surfaces. Only then did the instructor intervene in the control and the subsequent interruption of the take-off.

The second event is the accident on 6/24, which occurred after take-off from Lu Hařovice Airport. From my point of view, this event is worthy of a more detailed analysis, especially for the reason that the unclear definition of competences on board contributed to its occurrence.

The critical flight was a "familiarisation/check" where one crew member was a validly rated pilot intending to borrow that particular machine and the other crew member was an equally rated pilot

and at the same time the owner of the machine, or the company that owns the machine. The situation leading to the accident occurred after takeoff from Luhařovice airport, where a stopover was made after the first part of the flight. The first part of the flight was driven by the owner of the machine, and the next part, departing from Luhařovice, was to be driven by a pilot who wanted to borrow a gyroplane. While the flight to Luhařovice went without problems, when taking off from Luhařovice airport, the plane did not climb to a safe height with the wind at its back. When solving a situation where it appeared that the machine would not fly over the slope opposite to the direction of flight, the pilot-in-command decided to land in the terrain. It is difficult to assess today which of the two pilots contributed more to the subsequent damage to the machine during the forced landing attempt. However, the truth, in my opinion, is that only one person can drive at a time and it must be clearly stated who it will be at any given moment. But it is also true that a pilot without the qualifications and experience of an instructor can usually only find it difficult to foresee errors and shortcomings and as such should not even interfere with the management of another pilot who is the commander at the given moment.



Damage to the tail surfaces of Kallithea rotorcraft



24. 6. rotorcraft Calidus after the failed departure from Luhařovice



12. 6. Xenon II

The need for clearly, precisely and pre-defined competences of pilots on board is therefore a lesson learned from this event. And also probably the fact that if I am to be "controlled" by someone, I should be convinced that they really know how to do it and will handle it even if I make a problem. A pilot with instructor qualification should have the prerequisite for this.

The last event from ULV operation to be commented on here will be the accident on 12 June near the area of SLZ Charvátce.

The pilot took off with another person on board

in Charvátce with the Xenon II rotorcraft, when the engine performance decreased at about 80 m above the ground. The pilot decided to return to the area, but during the turn the engine stopped completely. The pilot was therefore landing in a terrain with a high growth of canola, in which the machine braked sharply and it overturned on its side. The crew exited the plane without injury. Further findings from its investigation lead me to comment on this event in more detail. Dismantling and examination of the engine after the accident revealed different levels of individual wear

engine parts, with the immediate cause of the engine failure being the connecting rod sticking on the neck of the third cylinder of the 912 engine conversion.

I deliberately do not write about the Rotax 912 engine, because in the given case it was a modification of this type of engine. In addition, it was found that the engine was "assembled" from parts of different wear, when the fundamental problem appeared to be the wear of the crankcase showing values significantly exceeding the resource of the engine until overhaul. And this despite the fact that there were still enough hours in the aircraft book for the prescribed GO engine.

Extraordinary events in the operation of the **MZK**

of apprentices (motorized rogals) occurred in the operation of registered suspension locks. Both occurred in June and both took place within the Central Bohemian Region.

The first of these occurred at Mnichova Hradišty level during the flight of MZK Ixess 13 from the Vyskeý area to the Borek area. During this flight, there was a gradual reduction in engine power until it stopped completely. The pilot decided to make an emergency landing in a field with mature oats, where, after contact with the machine's undercarriage, there was a sharp braking followed by a rollover on its side and damage to the MZK. The pilot was not injured in the accident. An interrupted fuel supply to the pump was determined to be the cause of the engine failure.

with a modified Honda engine. The cause of the incident was a flight in an area that did not allow for a safe landing.

The second incident in the operation of the MZK occurred during an attempt to "fly" the MZK and its pilot with a flock of wild geese. On the third flight of the day, the pilot tried to adjust the flight speed to the wild geese and in the second right-hand turn he slowed down so much that he lost speed and fell from a height of about 20 m to the ground.

The MZK was damaged when it hit the ground and the pilot was seriously injured. Where the wild geese flew to was not the subject of the investigation... (sorry, I did not forgive myself a little relief during this joyless and ungrateful summarizing).



Extraordinary events in the operation of **ULH**



I will finish my part of the regular season annual analysis. And it was a bit joyful, because there was one plane accident in the operation of ULH, with fatal consequences.

This accident occurred on March 11, approximately 1.8 km north of the take-off point from the Olomouc airport. This accident has not yet been closed, and the following can be stated from the ÚZPLN investigation so far: The pilot was flying from LKOL to the area of the Dolní Morava ski resort. In the process

during pre-flight preparation he refueled and placed downhill skis and ski boots in the cabin of the UL CH 77 Ranabot helicopter in front of and above the left seat. After takeoff, it continued in a northwesterly direction, when witnesses then saw it fall in a spin around the vertical axis near the E 442 motorway feeder.

When the helicopter fell, structural elements gradually separated (main rotor blade, part of the tail beam). The UL helicopter was hit by a rotor on the tail spar and hit the ground with subsequent fire

completely destroyed. The pilot suffered non-life-threatening injuries in the wreckage of the helicopter.

Although this incident is still not closed and specific conclusions have not been drawn up in the investigative report, I dare say that the pilot decided to place downhill skiing equipment in the cabin of the UL helicopter, contrary to the manual, but also to common principles.

Moreover, according to the investigation so far, in a way that did not sufficiently prevent his unwanted and unwanted movement in the cabin and control elements during the flight.

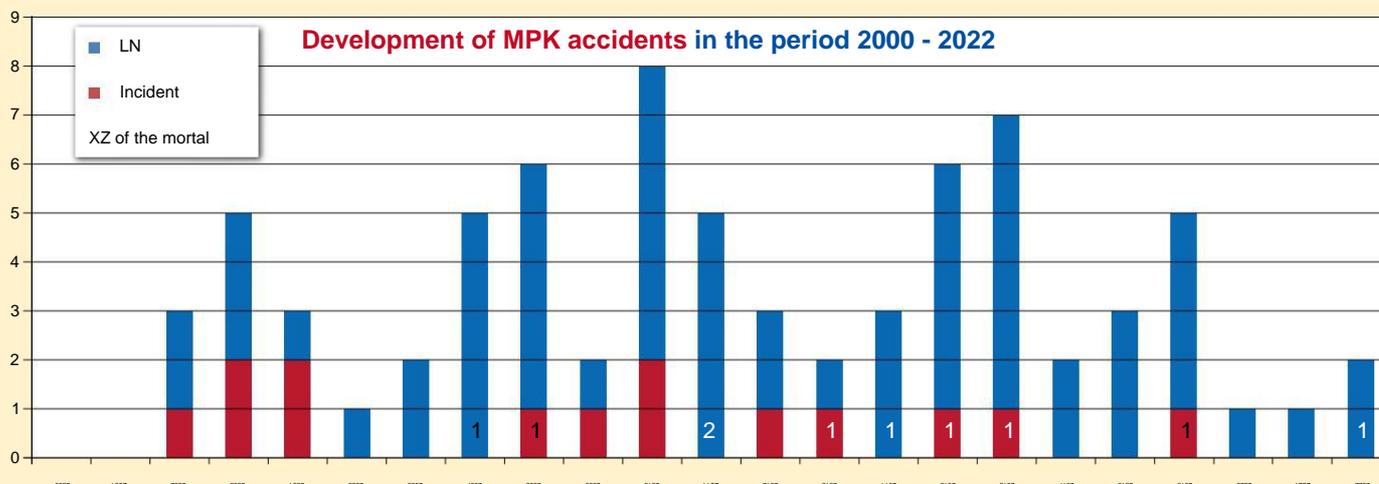
[There were no extraordinary events in the operation of hang gliders and ultralight balloons over the past year.](#)

With the sincere wish that next time none of the readers will be the subject of similar analysis, and with the wish for only successful landings

Jiří Koubík,

director of the LAA CR administration

Extraordinary events in MPK operation



In 2022, MPK became operational in the Czech Republic to two plane crashes. Unfortunately, one of them resulted in the death of the pilot.

The following graph shows the development of MPK accidents since 2000.

Even last year, the accident rate of motorized paragliders remained at a low level. The accident rate graph does not include one accident of our pilot, which occurred on the territory of a foreign country, accompanied by a serious injury to the pilot and extensive material damage. The accident is being investigated by the authorities of the neighboring state and is therefore not included in our statistics.

Accidents in brief The first

accident occurred in the morning hours of 6/1/2022 at Stichovice Airport. The pilot of a motorized paraglider with a removable landing gear took off from the airport area to practice the competitive discipline of flying around the pylons. At 6:06 UTC, while performing a practice turn around the pylon, at a height of approximately 5 to 7 m above the ground, he flew into his own buoyancy. As a result, there was a massive tilting of the paraglider and a subsequent change in flight direction by 180° horizontally and 90° vertically, and immediately after that, the pilot's body hit the ground head-on. In doing so, he caused serious injuries, as a result of which he died. At the time of the accident, there was no other person at the airport who could possibly provide him with assistance. The pilot was found almost an hour later by a randomly passing modeller.

However, the emergency medical help that was called could only declare death.

As is always the case with accidents, completion was preceded by a connected chain of causes. The pilot was intensively preparing for the upcoming international competition in flying around pylons. For this, he borrowed a Warp 2 16 canopy from the Polish manufacturer Dudek Paragliders before the event. He only had the canopy at his disposal for a short time, while he could not yet fully familiarize himself with its flight characteristics. To

approach is the fact that he was moving at the upper limit of the maximum flight weight of the PK, which was manifested mainly by changed flight characteristics in the sense of significantly faster responses of the canopy to control and external stimuli. Competitions in flying around the pylons take place in the immediate vicinity of the ground and for safety reasons are carried out above the water surface. In the event of the canopy collapsing, which occasionally occurs, injury to the pilot by hitting the ground is ruled out.

In this case, the pilot decided to conduct training above the ground. The next link in the chain was the fact that he decided to train alone, without the presence of another person who could possibly provide him with assistance. After a few minutes of practice, he started a 360° turn. At the same time, it is a safety rule that such turns are made by a maximum of 270°, precisely because of the danger of flying into one's own flood.

Subsequently, after flying into the turbulent flow in the flood, the aforementioned massive collapse occurred. It was very fast due to the large surface load, and it was no longer within the pilot's ability to prevent impact with the ground.

Although the mentioned accident happened under conditions under which "normal" pilots usually do not fly, i.e. intensive preparation for a top competition on top equipment, it is possible to find lessons valid for others as well. Firstly, that no one should ever fly alone, so that in case of an emergency there is someone to help them. And also that a horizontal turn with MPK is possible, and not only at ground level, by a maximum of 270°.

If you continue, you will inevitably fly into your own flood, which usually means the collapse of the canopy with all the consequences.

The second motorized paraglider accident happened on 7/25/2022 during student training at Frýdlant nad Ostravici airport.

The pilot student is under the guidance of an instructor

prepared a motorized parachute for take-off from the edge of the VPD for take-off in a northwesterly direction against the wind direction. The conditions for take-off were satisfactory and had no influence on the accident. At the threshold of the runway, to the side of the expected take-off direction of the MPK pilot, at that time there was a training station for glider pilots, where there were several pilots and gliders.

After raising the canopy, the student did not apply full throttle in time and ran about 50 m with the paraglider overhead. He subsequently decided to abort the takeoff, but immediately changed his mind and applied throttle again. While doing so, he slipped on the grassy surface, pulled the left driver of the PK as he fell, still kept the gas handle pressed, and thus in the left turn, he slid along the ground, pushed by the skis, into the area of the hang glider training station. Here, with the canopy, he caught a man sitting on a bicycle, who was watching traffic at the airport, and he fell off the bicycle. He did not report any injuries after the fall. There was no damage to the parachute or bicycle.

However, in the evening, the cyclist attended for treatment, where he was diagnosed with a fractured rib. For this reason, the event was qualified as an air accident.

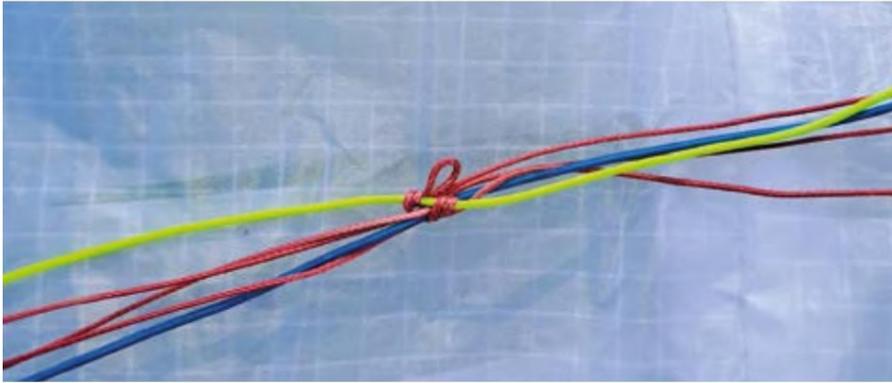
This event, which may be laughable for some, is a lesson for us in that, not only during training, but during any take-off, it is necessary to ensure sufficient free space in advance in the direction of the planned take-off, but also in its surroundings in case the pilot was unable to maintain the intended take-off direction.

It is also necessary to properly guide third parties not involved in the operation, so that they cannot be injured.

All that remains is to wish everyone soft and safe landings until this year.

Ing. Miroslav Huml
 Chief Inspector of MPK Operations,
 Chief Technical Inspector of MPK and PK LAA yR

Extraordinary events in PK operation



and incidents reported in paragliding operations in 2022, we record 21, which is 3 accidents more than in the previous year. Much more serious is the fact that there were two fatal accidents in the Czech Republic and one abroad. We are recording an increasing number of incidents where no injuries or damage to property occurred, but components of the integrated rescue system (IZS) were called to the scene of the accident.

In all cases, it was a landing in the forest, when witnesses or the pilots themselves called for help to rescue the pilot from the trees.

In some cases, the pilots attempted to descend and the injury occurred as a result of the fall.

On January 23, 2022, an accident occurred near Vaňov involving a PK pilot who failed to land and ended up in the treetops. While climbing down from the tree, he fell and slightly injured his leg. Fortunately, the injury was not serious and the pilot was released after a check-up at the hospital. This was a pilot who fell into the Elbe after the canopy collapsed the previous year.

The pilot flew at PK BGD Base 1. His pilot's license was issued in 2016, liability insurance was taken out.

In the past, we dealt with several similar accidents, including a fatal accident, when pilots fell to the ground and were injured after landing in trees and during the subsequent descent without the necessary protection. The recommendation is to call for help and not climb without the necessary equipment and training.

Another accident occurred on Table Mountain in February 2022. The 24-year-old pilot was flying a PK Ozone Delta 4 (EN C). After 10 minutes from the start, with half of the speed pedal depressed and a turn controlled behind the C line, an asymmetrical right-side tilt and a dynamic rotation occurred at a height of 15 m above the ground, which the pilot managed to manage shortly before hitting the ground. However, as a result of the impact, there was an injury (ruptured lung) and the pilot was airlifted to the hospital.

The pilot has a license issued in 2019. He holds the Sports Pilot qualification.

On March 27, 2022, a 45-year-old pilot with a pilot's license issued in June 2020 had an accident at Rané u Loun. The pilot turned incorrectly during a cross takeoff and became detached from the ground with twisted lines (in a so-called twist). This made it impossible for him to control the flight, followed by a turn against the slope and a crash into the slope. The pilot was flying PK Gradient Bright 5. The SE wind was blowing 3-5 m/s.

The cause of the accident was a poorly executed start. The accident could have been avoided if the pilot had practiced cross-starts on a meadow. This recommendation is especially important after a longer break and for less experienced pilots.

Another accident also happened at Rana, on 11/04/2022, a 46-year-old student in training on the training field. There was a squat and a broken leg. PK Bright 5 was used for training. There was a weak westerly wind of 1 m/s.

This type of accident can be prevented by observing the terrain below you before contact with the ground and using suitable footwear.

Another accident has consequences similar to the previous one. During the winch start at the Cherniv area on 7/31/2022, the rope pull was interrupted and the student in training (36 years old) sat down and broke his leg during the landing. He flew a PK Gradient Golden 4. The wind was blowing up to 5 m/s.

On June 17, 2022, an accident occurred near the village of Jílové. A 47-year-old pilot, with a pilot's license issued in September 2021, wanted to land in a meadow near the cemetery in Jílové. He was landing against the wind and was lifted by thermals. In order not to take too long to land, he made a 360° turn, in which he hit a tree and fell to the ground from a height of about 10 m. A paraglider (Advance PI 3) became stuck in a tree. After about an hour, the pilot's health worsened and the people present called the medical emergency service. The pilot suffered numerous bruises, luckily no serious injuries.

On August 3, 2022, the pilot who took off from Lysá hora near Rokytnice nad Jizerou had an accident. The pilot was flying in the Krkonoše mountains and in the vicinity of Mohyla Haný and Vrbata he got into a strong downdraft, from which he was not able to escape.

able to fly. He fell on the grass below the path leading from the mound to the source of the Elbe. He then called a friend to come pick him up, but he didn't answer. After further communication, he told his friend where he was and that he was injured. After that, his phone overheated and his friend could no longer call him, so he informed the IZS. The injured pilot was taken away from the accident site by the Mountain Service.

The pilot, aged 58, has a pilot's license issued at the end of 2021. He flew PK Advance Alfa 7/26.

Another accident occurred on October 7, 2022 in the Vítovka area, north of the village of Odry. A 48-year-old pilot with a pilot's license



exposed in 2019 misjudged the landing budget and landed in a tree canopy that broke, sending the pilot crashing to the ground. He used PK Mac Para Technology Lucky 3 for the flight.

A more serious accident happened on October 9, 2022 on ýerná hora in the Giant Mountains. The start and subsequent sequence of events was filmed and subsequently published on the Internet. A 24-year-old female pilot with a pilot's license issued in May 2019 took off in the afternoon in conditions where there was no wind at the start, or a weak wind from the side.

After detaching from the ground, she let go of the left driver and straightened her seat to get into the cocoon. There was a massive frontal tilt of the PK with a turn to the right and a subsequent pre-shot. Due to the low height above the ground, the PK (Axis Comet 3 S) did not have time to regenerate and hit the ground.

A timely reaction by braking to the oncoming frontal rollover could have prevented the accident. There is a general recommendation not to let go of the steering wheel, especially at a low height above the ground, and if at all, then both female drivers in one hand.

Another accident, which might not have happened, happened at the landing area in Kunyčice pod Ondřejníkem on 13/10/2022. A 35-year-old female pilot with a pilot's license issued in 2017 took off with a knot in the lines, which limited the function of the left side management. This, even with the control released, was partially braked and when the control was intervened during the landing maneuver, the PK was dragged. The pilot was landing on the official airstrip, which, due to its location, obstacles and dimensions, requires maneuvering. In the given situation, it would be a better choice to land, even at the cost of a conflict with the owner of the land, on the former landing area, the so-called Tabaška meadow, or anywhere else without the need to maneuver.

Legislation recognizes the concept of an emergency or safety landing, and for eventual compensation of the land owner in such cases, members of LAA ýR have taken out liability insurance, which covers possible damages. And even within competitions.

The first fatal accident in 2022 occurred on June 5, 2022, in the upper part of the Kramolín slope, when two pilots set out to fly on this terrain.

At the time of the accident, there was a person with paragliding experience on the Treetop Path at the top of Kramolín, and according to his testimony, "at that moment the weather was partly clear and there was a relatively strong southeast wind with gusts from the northeast." In these conditions and in rugged terrain, one of the pilots managed to land on the leeward side of the Jezerní hill (slope). Co-pilot (aged 44 with a pilot's license issued at the end of June 2021) flying PK Axis Comet



A photo taken by a witness of two paragliders in Kramolín, one of whom will never return home...

28, but without a rescue parachute (!), he was not so lucky. After he started to lose altitude while flying west towards Lipno, he decided to make a 180 degree turn over the top of the ridge and the Forest Kingdom Children's Park and tried to land. The witness said that at that moment he "saw a partially collapsed wing plummeting towards the ground".

The accident report will be issued by the Institute for the Investigation of the Causes of Aviation Accidents (ÚZPLN), which is the only institution in the Czech Republic authorized to do so.

It is clear from the witness statement that the accident was influenced by meteorological conditions and the topography of the terrain. From the other circumstances, it follows that little experience played a role, as well as the irresponsibility of the pilot, who (although he had) left a spare parachute in the car...

A very tragic event occurred on September 4, 2022 in Krupka. A 37-year-old female pilot with a pilot's license issued in 2018 took off with an unfastened seat. After about 7 minutes of flight, it fell from a height of about 170 m above the ground near the landing area. The seat was equipped with a safety element against slipping out of the seat, but the pilot only slipped the seat over her hands and closed the cocoon.

Probably due to adjusting the bar for getting into the seat. After the adjustment, however, it no longer performed the five-point check before takeoff.

The circumstances that led to such a tragic accident are the subject of an investigation by the ÚZPLN.

A similar accident (i.e. taking off with the seat not fastened) also occurred in 2014 at Velký Javorník. In both cases, these were seats with a cocoon, where there is no visual control of the buckles when the counter is turned on. The final report from the accident at Javorník can be found here: <https://uzpln.cz/incident/406>

The last fatal accident happened on 24/11/2022 at about 15:30 in Morocco at the Tizi'nTest field of a 21-year-old female pilot with a pilot's license issued in June 2021. Flying conditions were calm. Inversion, light wind, under cloud. The pilot was flying with PK Kudos (Sky Paragliders) and it was her second flight that day. Witnesses reported that there was an asymmetric flap of half the wing and the PK went into a spin. However, the pilot did not react to the situation and crashed into the ground after 3-4 turns of the PK.

An ambulance arrived at the scene only after an hour, and the pilot died during transport.

Since the accident did not take place on the territory of the Czech Republic, the ÚZPLN, under whose competence it would fall, does not investigate this incident. No investigation was carried out by the Moroccan authorities.

The paraglider arrived in the Czech Republic a short time ago, and the LAA of the Czech Republic will carry out a PK expertise and further investigation of the circumstances under which the accident occurred.

The use of the rescue parachute, which the pilot was equipped with, could have probably prevented the accident, or at least mitigated its consequences.

In the previous period, the last fatal accident while operating paragliding in the Czech Republic was in 2016. Keep in mind that accidents can happen to anyone and unfortunately we will probably have to accept the fact that they will happen this year as well. What can be influenced, however, is the use of common sense, respect for meteorological conditions, physical laws and compliance with the basic legislative rules for flying. In this way, most accidents can be prevented and the consequences of those that do occur can be mitigated.

M.Sc. Jan Hájek,
chief inspector of PG operations

Static tests of wooden structures

Emil Prádný

There are weight issues when building replicas of vintage aircraft to fit the UL category. If the scale is reduced compared to the original, a different construction technology and different aerodynamics are chosen, an almost new airplane must be constructed, which at first glance only looks like a model. The kite is mostly made of wood. Due to the required low weight, it is not possible to proceed too much on the safe side in static calculations. With the required numerical multiple of 6 and the current quality of the woods, it is difficult to meet these requirements.

At the Metoděj Vlach Foundation, during the construction of the replicas, it is possible to carry out tests of the main nodes until they tear, thus verifying the actual accuracy of the calculations. The test results may be of interest to aircraft designers whose main structural elements are made of wood.

Static test of the sample

Specimen description (Figs. 1 and 5)

Flange material:

Spruce - tensile strength $\check{y}_p = 70$ MPa, compressive strength $\check{y}_{tl} = 40$ MPa, plywood tl. 1.5 mm - tensile strength $\check{y}_{p\check{y}} = 73$ MPa, compressive strength $\check{y}_{p\check{y}tl} = 55$ MPa

Fitting material:

Steel 12 020.1, $t = 5$ mm

Adhesive:

Epoxy 1200

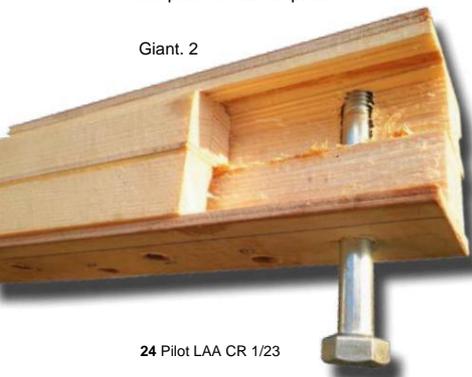
Test procedure (Fig. 2, 3, 4 and 6)

In

tension: The thickness of the fittings and the material of the pins were chosen so that the destruction occurs reliably "in the wood".

The destruction started with the breaking of the plywood at the place of the last pin (on one side by the slippage of one layer) and the subsequent slippage at the place of all the pins.

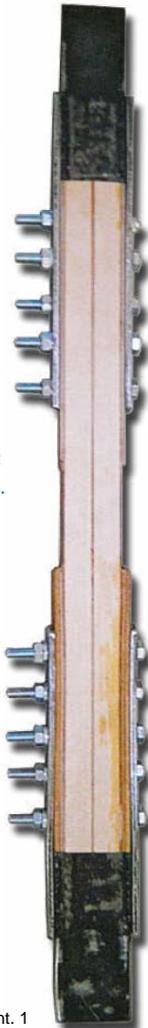
Giant. 2



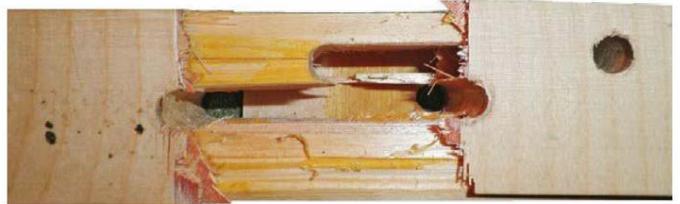
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compression: The other side of the sample was used for the tests.

During the test, the joint was broken and the flange at the opposite end began to crumble. The test was stopped at demonstrable collapse of the flange. (see Fig. 8)

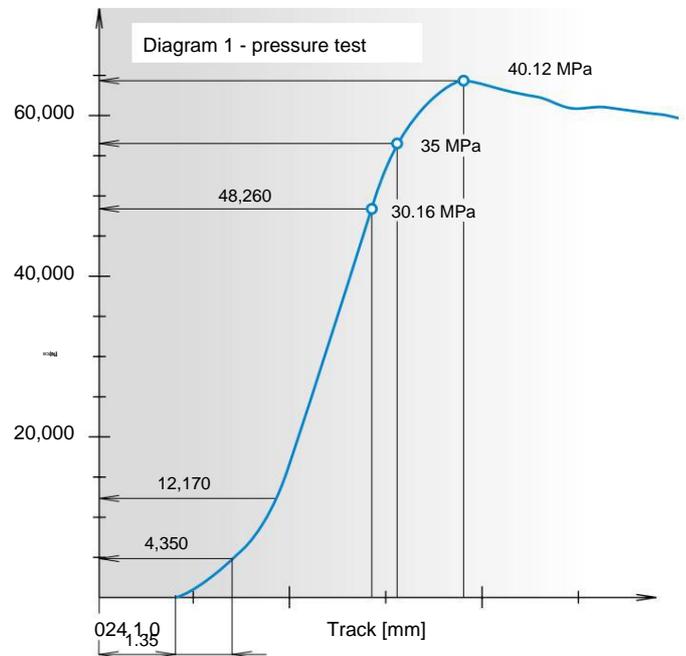


Giant. 1



Giant. 3

Calculations after the test



From diagram No. 2, we subtract the maximum force P_D (destruction force) 62,223 N

Pin specific pressure:

$$\sigma_{st} = \frac{P_d}{5 \cdot d \cdot b} = \frac{62223}{5 \cdot 8 \cdot 43,5} = 35,8 \text{ MPa}$$

Tension in the flange at the location of the last pin:

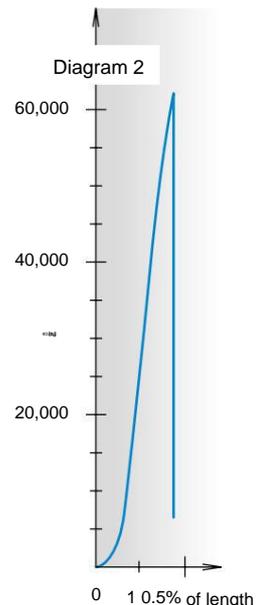
$$\sigma_p = \frac{P_D}{F_p - F_{\check{c}}} = \frac{62223}{1740 - 348} = 44,7 \text{ MPa}$$

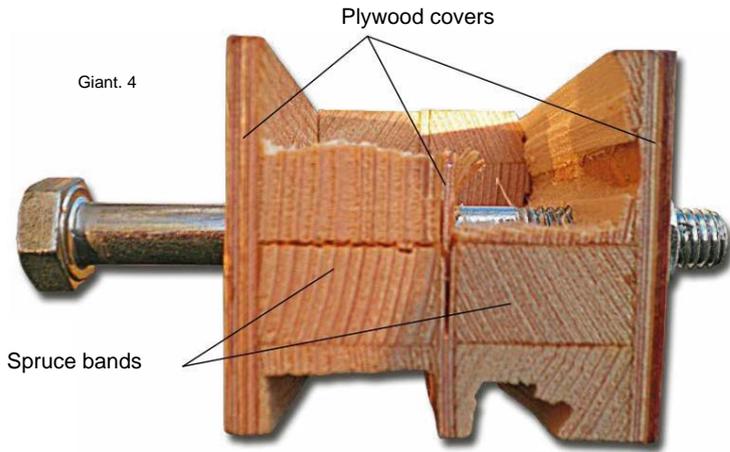
$$F_p = 40 \cdot 43,5 = 1740 \text{ mm}^2$$

$$F_{\check{c}} = 8 \cdot 43,5 = 348 \text{ mm}^2$$

Shear stress

$$\tau = \frac{P_D - P_{p\check{r}}}{F_S}$$





Theory

When designing a joint, the width of the flange and the transmitted force are usually given. The diameter of the studs (screws) is chosen and their number comes from the permissible compressive stress. Their spacing is given in the literature as a multiple of their diameters.

In the tensile test, slip occurred in two layers, so an expression for the stud spacing - l can be derived

$$l = 0,5 \cdot \left(\frac{\sigma_{ot}}{\tau_s} \right) \cdot d$$

where - allowable compressive stress
 pin diameter

Next, the joint is pasted with plywood, but if the plywood has a larger modulus of elasticity in tension, the task becomes statically indeterminate and the stress in the flange and plywood is divided by the ratio of the modulus of elasticity of these materials.

ys - tension in the web

yp - tension in the plywood

Es - modulus of elasticity in tension of the web

Epr - tensile modulus of plywood

$$\sigma_s = \frac{P}{F_s + F_{př} \cdot \frac{E_{př}}{E_s}} ; \sigma_{př} = \frac{P}{F_{př} + \frac{E_s}{E_{př}}}$$

If the ratio $\frac{E_s}{E_{př}}$ is less than 1, the stress in the plywood will increase.

Critical stress in plywood

The plywood was torn in three layers (the last outer one was poorly glued) with a thickness of 3 + 1.5 + 1.5 = 6 mm.

$$F_{př} = (40 - 8) \cdot (3 + 1,5 + 1,5) = 192 \text{ mm}^2$$

$$P_{př} = F_{př} \cdot \tau_{př} = 192 \cdot 73 = 14\ 016 \text{ N}$$

$$\tau_{krit} = \frac{P_c - P_{př}}{F_s} = \frac{62223 - 14016}{10080} = 4,78 \text{ MPa}$$

This value corresponds to I-class spruce, $\tau_{crit} = 4.9 \text{ MPa}$

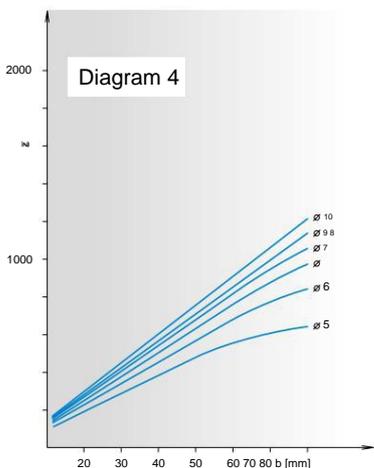
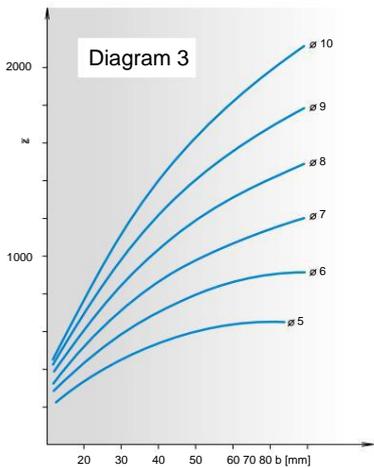
In

pressure In diagram #1, the maximum force is Pkrit = 64,197 N.

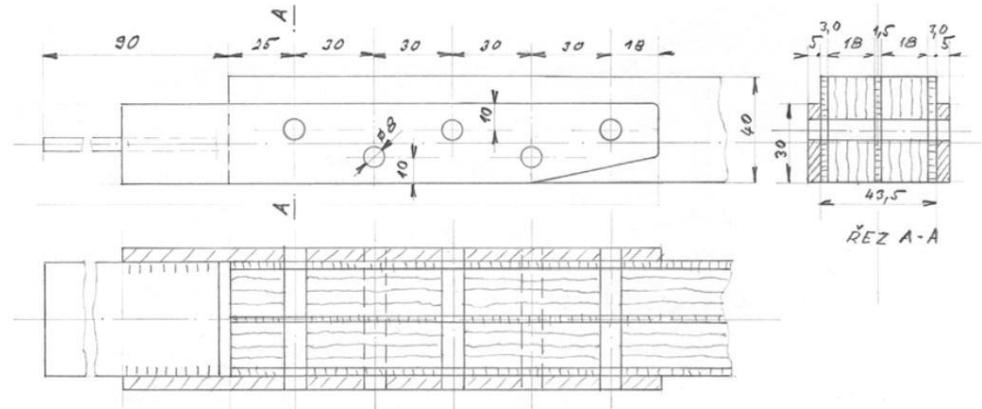
Pin specific pressure:

$$\sigma_{ot} = \frac{P_{krit}}{F_{\xi}} = \frac{64197}{(5 \cdot 8 \cdot 43,5)} = -36,9 \text{ MPa}$$

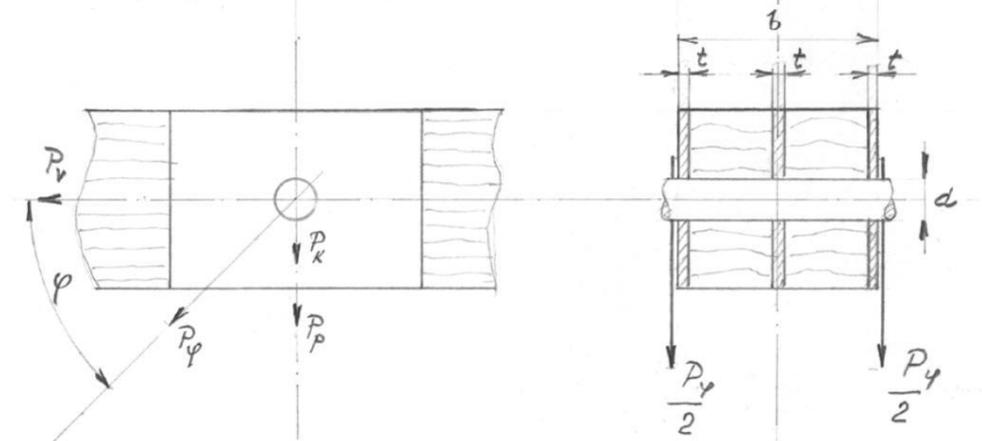
The critical value corresponds to Spruce II. class ($\tau = 35 \text{ MPa}$)



Giant 5



Giant 6



Giant. 7



With the same (close) modulus of elasticity, we can calculate the load-bearing capacity of joints with plywood overlays from the ratios of the cross-sections of wood and plywood.

The resulting numerical stress is given by the expression:

$$\sigma_{\delta} = \sigma_s + (\sigma_{p\bar{r}} - \sigma_s) \cdot \delta_1$$

$$\sigma_1 = \frac{\sigma}{b}, \text{ where } b \text{ is the joint width}$$

$\bar{y} = \bar{y}t$ – plywood thicknesses

then the coefficient of influence of plywood overlays:

$$\eta = \frac{\sigma_{\delta}}{\sigma_s} = 1 + \left(\frac{\sigma_{p\bar{r}}}{\sigma_s} - 1 \right) \cdot \delta_1$$

According to diagrams 3 and 4, we see a significant difference between the magnitude of the load force along and across the fibers. If the joint is glued with plywood under load across the fibers, its strength will be greatly increased.

For example, a joint made of spruce [$\bar{y}sv = 35$ Mpa (compressive load along the fibers), $\bar{y}sk = 6$ Mpa (across the fibers)] and plywood [$\bar{y}p\bar{y} = 40$ Mpa (has the same value along and across the fibers)]

$\bar{y}v$ when loaded along the fibers

$$\eta_v = 1 + \left(\frac{40}{35} - 1 \right) \cdot \delta_1 = 1 + 0,14 \cdot \delta_1$$

$\bar{y}k$ = when loaded across fibers

$$\eta_k = 1 + \left(\frac{40}{6} - 1 \right) \cdot \delta_1 = 1 + 5,67 \cdot \delta_1$$

The value of $\bar{y}1$ ranges from 0.1 to 0.25; $\bar{y}v$ from 1.01 to 1.035 and $\bar{y}k$ from 1.5 to 2.42.

The strength of plywood overlays under stress along the fibers can be neglected, but across the fibers, plywood overlays can increase the strength of the joint up to twice.

Calculations of bolted joints in wood can already be found in literature from the 1920s, e.g. "Airframe Structures" Miles & Newell, 1929, "Wood in Aircraft construction", 1930. They contain formulas and diagrams that are rewritten in more recent books and textbooks, and according to which you can work quite accurately even today.

This calculation is very precisely described in the book by Ing. O. Olšanský CSC "Construction and calculation of UL", but is limited by the effective length of the screw defined by its diameter ($l_{ef} = 4 \cdot d$). For the sample used, it would be $l_{ef} = 4 \cdot 8\text{mm} = 32\text{mm}$ (actual 43.5mm). According to this calculation, the critical force is 45,600 N (actual 62,223 N). The result is on the safe side, but the error is 36%.

There is also the case where the force is not parallel to the flange but has general direction (case of strut anchoring in the wing) (Fig. 6).

The given formula (empirical) is in a different form according to RL Hawkinson. More practical is:

$$P_{\varphi} = \frac{P_v \cdot P_k}{P_v \cdot \sin^2 \varphi + P_k \cdot \cos^2 \varphi}$$

We read the forces P_v and P_k in diagrams 3 and 4.

The diagrams apply to wood with compressive strength $\bar{y}tl = 35$ Mpa and shear strength $\bar{y} = 6$ Mpa. For other woods, the results are recalculated with the K coefficient.

$$K = \frac{\sigma_{tl} \text{ použitého dřeva}}{\sigma_{tl} \text{ diagram}}$$

An example of a joint (Fig. 6) with a plywood overlay loaded with a force in the general direction. The joint is formed by spruce flanges ($\bar{y}sv = 40$ Mpa and $\bar{y}sk = 5$ Mpa) and plywood overlays ($\bar{y}b\bar{y} = 40$ Mpa, $tl = 2$ mm). Joint width $b = 40$ mm and pin diameter $d = 8$ mm.

Direction of force to fibers $\bar{y} = 45^\circ$

From the diagrams (diagrams no. 3 and 4) we subtract the forces: $P_v = 10,300$ N and $P_k = 2,650$ N

The strength P_p increased by plywood will be:

$$\eta_k = 1 + \left(\frac{6\bar{y}p\bar{r}}{6\bar{y}sk} - 1 \right) \cdot \delta_1 = 1 + \left(\frac{40}{5} - 1 \right) \cdot 0,15$$

$$\delta_1 = \frac{\delta}{b} = \frac{6}{40} = 0,15$$

$\bar{y}k = 2,05$

$$P_p = P_k \cdot \eta_k = 2650 \cdot 2,05 = 5433 \text{ N}$$

The resulting force $P_{\bar{y}}$ according to the formula

$$P_{\varphi} = \frac{P_v \cdot P_p}{P_v \cdot \sin^2 \varphi + P_p \cdot \cos^2 \varphi} = \frac{10300 \cdot 5433}{1030 \cdot \sin^2 45^\circ + 5433 \cdot \cos^2 45^\circ}$$

$P_{\bar{y}} = 7114$ N

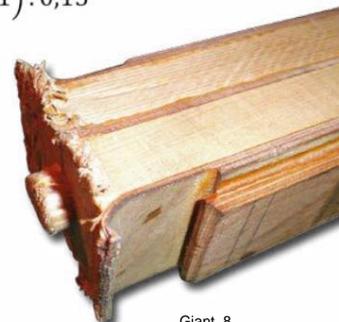
Conclusion

During the development of aviation, considerable progress has been made in calculation methods (especially composites), but no one deals with wood in aviation anymore, so it happens that the designer has to discover things that have long been known.

However, to understand the properties of the material, knowledge of the deformation mechanism and the mechanism of the failure process and total failure is more important than the absolute strength value. Therefore, it is important to focus mainly on the design of the structure (the ratio of \bar{y} pins to the height of the flange, the number of pins, the quality and thickness of the plywood, etc.) and try to predict how the hinge will deform under maximum load.

When designing the hinge of a UL self-supporting wing, more care is needed for the lower hinge (results from the operating multiples of +4 and -2). It is worthwhile to make at least two designs and to know as precisely as possible the values of the maximum compressive, shear stresses and modulus of elasticity of the wood of the flange and the plywood of the overlay.

The required safety factor of 2 (for fittings) guarantees safety in operation. As can be seen in the test diagrams, there is still a large margin before the hinge is destroyed. n



Giant. 8

Změny ve stattech LAA ČR and in the organizational rules of the unions

Ales Trtil

Already at the end of 2021, we at the LAA ŷR council started to consider the idea of revising our statutes. Our organization tries to modify this document as little as possible, because it is one of the pillars of the association and its frequent changes would not contribute to stability. On the other hand, the articles of association had to be revised and adjusted in such a way that they reflect the development of society as a whole and the changes brought about by the progressing time. The previous modifications that our statutes received were only of a very small scale. They only dealt with the situation surrounding the change in the post of president of LAA CR and the necessary transition of the organization's legal form from a civic association to a registered association.

We therefore decided to revise the statutes for the next year. Based on the decision of the LAA ŷR council, a relatively narrow working group was established in the spring of 2022, consisting of LAA ŷR president Aleř Trtil, LAA ŷR council member Kamil Koneŷnŷ, LAA ŷR administration director Jiřŷ Koubŷk and lawyer JUDr. Jan Camrdy, who is one of the authors of our original statutes and who continuously participated in their development to the present form. Just JUDr. At the very first working meeting of our group, Camr da drew attention to several necessary adjustments, in particular to the need to bring the new regulations into line with the amendments in the Civil Code, which concern the rights of a citizen as a member of an association. Specifically, these are amendments in § 5 and § 6 of our articles of association.

During this meeting, several changes were also proposed, which solved the challenge of the increasing process of digitization of the administration of the LAA CR and the use of electronic communication. These changes are contained in § 12.

Other proposals were the impetus for further work meetings that took place on the electronic platform Skype. Changes allowing individual unions to resolve matters of union membership directly in their organizational rules were discussed. These changes can also be found in § 12. The amendment to the text of § 13 is also significant, which deals with the procedure for convening the union's general meeting in the absence of its presidency. Sports and other professional commissions, whose existence is newly anchored in § 13 in the General Assembly section, also received a better status.

The incorporation of these and a number of other minor changes that were discovered during the modification process took place gradually during 2022

§ 6 Termination of

membership 1. Membership

terminates: a) Upon notification by the member that he is

withdrawing from the LAA ŷR, at the time of delivery of the written notification to the LAA ŷR.

b) The death of a member or the dissolution of a member – legal entity.

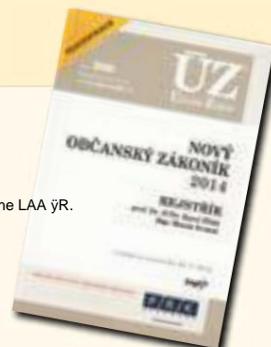
c) Exclusion of a member by decision of the LAA CR Council.

2. Exclusion is possible exclusively for the following reasons: a) gross violation of the Statutes of LAA ŷR, b) damage to the good name or interests of LAA ŷR, c) serious disruption of friendly relations between members of LAA.

3. Any member of the LAA ŷR, any body can submit a motion to expel a member

... LAA ŷR or any union of LAA ŷR... g) An expelled

member may, within three months from the delivery of the written decision of the Conference of LAA ŷR on the rejection of his appeal against the decision on his expulsion, propose to the court to decide on the invalidity of the expulsion; otherwise this right expires. If the member has not been served with a decision rejecting his appeal against the decision on his expulsion, the member may submit a motion to the court to decide on the invalidity of the expulsion within three months from the day he became aware of it, but no later than one year from the day he was after the issuance of the decision, the termination of his membership by exclusion entered in the list of members. Otherwise, this right expires.



§ 12 Membership in associations

1. Each member of the LAA ŷR can register in a certain association by means of a written statement delivered to the LAA ŷR, thereby becoming its member. The declaration can be made electronically in the relevant LAA CR system. A member of LAA ŷR can be a member of several unions at the same time. 2. A member of the LAA ŷR may cancel membership in the union at any time by a written statement delivered to the LAA ŷR. It can also do so electronically in the relevant LAA CR system.

and resulted in the final draft of the new wording of the hundred nov. It was prepared for consultation in the Council and subsequently in the presidencies of individual unions already at the beginning of autumn. Changes to the statutes could thus also be reflected in other important documents of our organization, which are the organizational rules of the unions.

These rules expand and specify the statutes of the LAA ŷR for the needs of individual unions and are therefore subordinate to the statutes of the LAA ŷR. The presidency of the hang-gliding and paragliding associations, which was preparing the programs of its general meetings, reacted flexibly and presented the necessary changes in their organizational rules to the members present for their consideration. The presidiums of the motor paragliding and UL flying associations still have this task, but due to the smooth progress of the voting on this point at the general meetings of the PG and ZL associations, the adoption of the changes should not be problematic for the remaining associations as well.

The new wording of the statutes was also sent as a basis for negotiations to the delegates of the conference held on November 26, 2022. During the conference, JUDr. Camrda explained and justified all changes to the statutes. The entire process was concluded by a vote of the conference delegates,

who the new wording of the aviation amateur statutes associations of the Czech Republic approved. The full text of the statutes can be found on our website and in physical form also in the Bulletin in the middle of this magazine. You can use the QR codes to view the statutes and rules of one of the flying associations.

I would like to take this opportunity to thank everyone who participated in the amendments to the statutes and organizational rules. We managed to prepare documents that are in line with both the possibilities of using modern communication technology and the amendments to our laws.

I hope that these statutes will accompany us in the following years without further modifications or changes and will contribute to the stability of our organization.



Statutes of the LAA CR



Organization order of the ZL Union



Organization rules of the PG Union

Kvido Hadaš

young paragliding hope

The next in a series of interviews is with the young paraglider Kvid Hadaš.

Kvido comes from solitude somewhere in Eastern Bohemia, where his parents moved when they had had enough of Prague life and wanted to live more in harmony with nature. They also enjoyed paragliding and traveling before settling for country life.

Kvido will celebrate his 21st birthday this year and last season drew attention to himself with a number of successes: a bronze medal in the Junior category at the 7th FAI European Championship in landing accuracy, first place in the Czech Paragliding League in landing accuracy again in the Junior category and first places in the Sport and Standard categories in the fly-by competition of the Czech Paragliding Cup.

Kvid was not pushed into flying, and how he found his way to flying and started collecting medals, you can read in the following story.

Qvido, the legend is that you got into paragliding by finding your dad's parachute in the attic, you took a course, and thanks to that your dad got back into flying? What is the truth?

Somehow. I knew about the fact that there was a parachute in the attic for a long time, but as a child I always spread it all over the attic and it was a lot of fun. It didn't even occur to me that I could fly on it. "Flying is only for pilots and being a pilot is very expensive", my parents did not meet with such enthusiasm for my entertainment.

But I only thought of starting to fly with a parachute after a conversation with a friend on the way home from school, he was planning to join the local aero club at the time and learn to fly a glider, so I started looking for what paragliding is actually like. When we already have the parachute, there's no point in going somewhere on airplanes. My mother did not take my research well, she hoped that I would parachute completely

he forgets, but dad got excited, so he took me to the meadow, and once I got into the parachute, there was no turning back.

Dad then discovered where paragliding had moved over the years and that only awakened in him what he had kept for a long time because of his mother.

Can you describe a little more about your next journey behind competitive flying? You did a lot of flying after the course. How to become a competitive pilot in two years?

After the course, I spent practically all my free time in the air, as a high school student I had a lot of it, and to that was added the coronavirus and distance learning, which directly led to further flying - all I needed was the internet on my mobile phone and connecting to online classes in cars on the way to the start, sometimes even in the air. Fortunately, only the biology teacher found that out



gie, others thought I just had a bad mic, I hope. However, the family and community of East Bohemian pilots probably helped me the most for my raid. I flew with the one who didn't want to miss a single flight day, and a bunch of local pilots explained everything I needed to know. I got into competitive flying thanks to the Talented Youth Program of the PG LAA CR Association. When I signed up for "talents", only the last course was free, namely the precision landing course ending with a race in řeladná, where I was adopted by a group of landers. As a very competitive person, I was very attracted to the races. I found that thanks to them I can improve faster, because I have a clear goal, which I lacked in free flying. Flying FAlek mi



Axis Pluto 2 modified for motor and very flown. Such wings can be found on the bazaar for a very reasonable price and it was quite enough for me in the beginning, anyway I was just discovering how the parachute is controlled and performance was not my priority. So getting the first wing is not such a problem in my opinion. The problem only starts when the pilot starts to improve and needs to progress somewhere.

You improved quickly and covered longer distances. How did the need to change equipment develop?

The fact that I would need new equipment never really gets to me, I always felt that

Apart from your dad, you didn't fly completely alone from the beginning, you formed a decent group in East Bohemia, how did this help you in the development of flying?

I think I owe the way I fly to our crew, at the beginning of my flying they explained everything I needed and thanks to them I tried to fly as well as possible - as I said, I'm a very competitive type and to go to the start in a car full of pilots, which I know fly over me helped me improve. I always tried to figure out a way to fly over at least one of them and hang on to the rest as long as possible.

If you didn't have any such party from the beginning, where would you look to join such a party?

it seemed impossible, my dad and I signed up for XC races just because we wanted to try it and it had the same effect on me. Flying in a gaggle of 50 pilots along a clearly marked track is completely different from just letting the wind blow you away and I find that it really pushes me as a pilot.

What were your hobbies until then and how did paragliding prevail over all your hobbies?

Until then, my interests were probably only cycling, I still like to ride a bike, but after trying paragliding I missed the third dimension and a certain dose of adrenaline on a bike.

After graduation, I completely separated from my friend, with whom I used to ride my bike, and thanks to whom I actually fly with a parachute. So paragliding was the obvious choice.

As I don't like to do things alone, not even sports, so paragliding, in which we had a large group from East Bohemia, was all the more fun for me.

Is it difficult for a novice pilot to get adequate equipment?

My advantage was that I inherited my equipment from my father, who tried to get to the "two-lane" as quickly as possible, so he often changed the wings. But my first wing was



the only thing holding me back is my piloting skills and the fact that I won't get everything out of the wing that it's capable of - after all, some pilots fly even kilos on an A1. They also helped me a lot in my piloting progress at Sky Paragliders by providing me with my first new Apollo 2 wing for racing, with which I achieved my first racing results. Now I have amazing support from the guys at Drift Paragliders, thanks to which I can race on amazing wings and continue to perform.

In my opinion, it is easiest to go flying and sooner or later on the hill we will find someone with whom we will get along and with whom we will fly well.

Alternatively, try to make arrangements on Facebook, where there is always someone who will take care of you.

You are very close to Poland for various, even smaller flight terrains. Which weather forecast do you rely on? And how do you choose the flight terrain when the starters have the same orientation to the wind direction?

That's why I have the most time with my father, who has all the surrounding hills in his little finger, and predictions have never been my strong point. So I always try to figure out what I can do on all the sites I know, and then I just wait to see if my dad confirms my opinion, or if I'm completely out of my mind again.

You started competing in precision landings, how do you divide your "flying" time between XC and ACC training?

I was never very good at that. When I go flying, I usually go with XC equipment and I train ACC only at the end of the flight, when I find some small point that I try to hit, but if I go to a smaller hill that can be run up without too much effort, I take

in the car and the ACC equipment, and if I don't fly, or if the weather is more inclined, I land earlier than the others and try to fool around with the ACC equipment for a while, landing on a target or just getting to know the parachute.

You won a bronze medal in the junior category at the European Championships.

How did it feel?

It was an amazing feeling after the championship and I am happy both for the result itself and for the fact that I could participate in such a race at all. During the competition, however, it was completely different - in training I managed to hit zero twice and in the race I did well for the first few flights, but the nerves got to me and I stopped doing well, so I was rather angry with myself and thought, that the result will be worse.

Will this achievement attract you more to the accuracy of the landing?

I don't know if this is still possible. Overflights and landing accuracy I try to fly to the max, but sometimes it's difficult. Deciding between these disciplines is difficult and I would hate to limit any of them.

In your second year, you are studying IT management at the University of Hradec Králové.

How can you juggle flying and studying at university?

I think flying while in college is great. I always set my schedule to just two days a week and because of that I can almost always make time to fly. Of course,



it's not high school distance learning, but there's still time to devote yourself to flying. Distances are the biggest problem for me when I study, because there are no nice hills around Hradec, where I study, unlike Broumov, where I went to the gym and the nearest starting point was 15 minutes away.

Are you a brigadier, or how do you finance flying?

Between us, paragliding is not exactly a cheap hobby, especially keeping two gear for precision and for XC flying.

Yes, if there is no flight and I don't have to go to school, I try to work as much as I can

yes, the Paragliding Association and the Talented Youth Program are a huge help to me in flying, thanks to which I can participate in so many races, and probably the biggest help to me are the guys from Drift, thanks to which I have something to fly. Even so, my savings go to flying every year.

Who is a role model for you among pilots, whether Czech or foreign, and why?

The biggest role model for me has always been probably my father, thanks to whom I am where I am and Stanik Klikar, who manages even the impossible in the air and always surprises me with how well he understands flying.



Do you follow trends in flying, a blog or a podcast where you get inspired?

I probably get the most information from social networks, on Facebook and Instagram I try to follow everyone from whom I could find out what new wings, seats are or will be, or what is happening on the paragliding scene. But I also spend long hours on YouTube, where I learned a lot of different types and tricks for flying.

What are your plans for this season 2023?

That's my big problem, I'm not very capable of planning, before I always just waited for what would come and worked very impulsively. But this is a bit of a problem if I want to visit races that require registration months in advance. I would very much like to go around the entire Czech XC and ACC leagues again, in XC I would like to get to some races in Ra piece, because like everyone else I love alpine flying, and possibly try some World Cup races. In terms of landing accuracy, I'd like to at least do some Europa League races and any other races I'll be chasing.

I hope that we will write a lot about Kvid and his sporting achievements on the pages of Pilot magazine in the future as well.

Linda Mišková talked
with Kvid Hadaš



Results of the Czech paramotor XContest 2022

■ Tomas Berka

XContest is the world's largest online platform for the registration of paragliding flights, which also enables their competitive comparison using points based on the length and difficulty of the flights. The platform also has a section for paramotor pilots, where a total of 88 Czech pilots registered their flights in the 2022 season. From the six most valuable flights, the pilots' total point score is then calculated. The Czechia has long been among the world leaders in paramotor cross country flying at the XContest. Our team has always placed in the medal position in recent years.

In the 2022 season, we finished third behind the French and German teams.

Ranking of countries in the Paramotor XContest 2022

Pore.	Earth	Total points
1.	France	26961.26
2.	Germany	23794.52
3.	Czech Republic	17525.96
4.	Austria	17065.98
5.	Brazil	16270.53

The national team consists of the five pilots with the highest point gain.

The winner of the Czech paramotor XContest 2022 in the Open category was Jiří Jiroušek with 4206 points. He also became the winner of the krosen subcategory. In the three-wheel category, Václav ěapek became the best driver with 2655 points. The 2022 Czech season

brought several highlights: • Jirka Jiroušek's six winning flights

it has a total length of 1051.5 km, second in the order Václav Vinklárěk flew only 3.25 km less. • The average length of Jirka Jiroušek's six competitive flights reached 175.25 km. • The third pilot, Jan Krátký, is the only one who achieves his performances with the help of a combination of motor and thermal

Ranking in the Czech paramotor XContest 2022

Pore.	Pilot	XContest nickname	Wing	Total points
1.	Jiří Jiroušek	JirJir	Mac Para Samurai	4206.04
2.	Václav Vinklárěk	VacVin	Mac Para Samurai	4193.28
3.	Jan Krátký	Jaho	Gradient Golden 4	3804.00
4.	Jakub Laušman	Laushman	BGD Luna 2	2667.20
5.	Václav ěapek	venda	Ozone Roadster 3	2655.44
6.	Václav Skácel	VaclavS	Mac Para Charger 2	2602.72
7.	Michal Cihlář	Backdrop77	Bagpipe Nucleon	2529.00
8.	Jiří Vasátko	jurekk	Mac Para Charger	2424.76
9.	Martin Horký	Maky	Mac Para Colorado	2305.52
10.	Adrian Liptai	Don Adriano	Ozone Roadster 3	2142.92

flying. His longest flight of 203 km along the FAI triangle lasted an incredible 7 hours and 28 minutes.

- The longest flight of the season was flown by Václav Vin šyerek, a FAI triangle of 274 km in 4 hours and 47 minutes with an average flight speed of 57 km/h.

Even if the pilot does not plan to participate in the competition, XContest is the ideal platform for electronic flight registration. They can log in automatically, for example, via the XCTrack application on a smartphone. The pilot then has accurate statistics about his flights for the entire season. All you have to do is register on the organizer's website <https://paramotors.xcontest.org/world/cs/>.



It's been some Friday since one of the most successful motorized paragliding gatherings in the Czech Republic took place, called "Retro - Vraní slet".

I already remember a few events during the time I've been flying, so I did a little fishing in my memory and remembered the event of this name, which was very popular once upon a time. It was in the days when the world was still in order, when money did not play a big role and when all gatherings were done just for the pleasure of fleeting friends and acquaintances. It was in the times of the so-called aviation prehistory. I remember that such a similar event was organized by Vladimír Prošek (alias Vrána) from Hranice na Morava. One phone call and everything was clear. YES - "The Crow" is organizing a gathering. And he informed me that he wanted to somehow continue the old tradition, and so he called it the Retro Gathering. So the invitation said that each participant should bring any old parachute or equipment from the days when paragliding was still in its infancy. Go to the demo. But we didn't see what the organizer had prepared for us.

But let's start right from the beginning...

Unfortunately, I arrived at Drahotuš u Hranice airport late in the afternoon, after my work duties.

The forecast indicated that there would not be much flying in the next few days, so I just lightly tossed my caravan to the side of the airport and immediately assembled my motorized darling. Before the flight, I still received instructions on where to go, where not to go and what to avoid, and after a while I was already humming happily over the airport area. Unfortunately, the sunset, especially at this time of year, is relentless, so I had to get down after about 30 minutes. But that also counts, and so after a long time, it finally worked out that I was able to enjoy at least one nice flight on my birthday.

After landing, I pushed my flying apparatus into the prepared hangar, where pod



He didn't want to get too carried away



Retro Vraní slet

he was waiting by the castle to see if we would still work together. Super service at the airport. Thank you.

Then I slowly moved to the local bar, where I noticed a very strange looking tent outside the entrance, with a thick cloud of steam pouring out of it and people in bathrobes disappearing into it. That hinted at what was meant in the invitation, "PS: I'll be wearing a swimsuit," but I'd better talk about that later.

By that time, a number of friends had already gathered at the bar, and real airport fun was slowly getting underway. At the time of organizing this gathering, a few people were celebrating their birthdays, so they used this gathering to organize a celebration for their aviation friends and acquaintances. So each of you can probably imagine how it all went. Despite the fact that there was a preheated hot tub outside under the shelter, which was under heavy siege throughout the evening,

and even though the outside temperature was somewhere around 3 degrees Celsius, people of all ages were sitting around the airport and in the bar, covered in bathrobes and smiling very blissfully. They were mostly waiting for at least one spot to become free in the otherwise crowded "boiling" water or they were just relaxing and they were smoking very suspiciously. The weather forecast for the next day did not look very promising, so an insidious ground competition was announced for the next day.

The assignment was: There is an MPK three-wheel trainer at the airport, everyone takes their old parachute or chooses one from the prepared ones. He chooses a co-pilot and they demonstrate a creative ride with a historical parachute, preferably overhead over the airport area. The most points are for the age of the pilot, other points for the skill of the pilot and others for the creative stunts they perform during the ride.



It was flying



It was often a struggle



Everything was flying



And then that it won't work...

2022



Kristynka, let's go...



Celebrants and winners

Additional points can be obtained for bribing the jury or for other skills.

In the three-member, bribed and easily influenced jury, Vlāya Vrāna, Jirka Kutil and the squeals of gender balance and Katka Agentka stood for "stupid bullshit". In this composition, they scored points throughout the competition and thanks to them, not a single midfield remained quiet during the entire event. Roman Galius very conscientiously filmed the entire bagpipes and promised an evening screening as well.

I won't go into too much detail about how all the competitors wanted you to play at all costs and what they were willing to do for the first place, but we all laughed at them for many years ahead. ě

The truth is that trying out a position as a co-pilot where there is usually only a propeller and suffering what she has to hold during my take-offs is really an experience that will not be easily forgotten. Or just getting a parachute over your head, which had been lying somewhere on the ground for 20 years, that was also a heroic feat. In any case, not only the competitors, but also the spectators who watched this incredible competition had their way.

In addition, during the entire morning, when the air temperature did not exceed 8 degrees Celsius, the hot tub was under full siege,

and so even some spectators could watch the competition from the heat of the "boiling" water.

After a very tasty afternoon stew prepared for us by Hanka, some participants of the meeting went to catch up from yesterday's party and others tuned their machines, which was closely supervised by the MPK technicians. There was simply something to look at and debate about even during the day. The weather played some kind of strange game with us, but a few enthusiasts soared above the border airport for a few moments on Saturday and chased the afternoon sleepers out of their dens.

In the evening, the chairman of the MPK union, Jarek Sura, came to see us and together with Vrāna, they performed a very interesting aerial performance with their tricycles. They certainly deserve admiration for their piloting skills, but also for the fact that they stayed in the air for so long in that scythe. ě Brrr.

After the flight demonstration, we moved to the bar again, where we watched flight films, including a very successful montage of the morning flight from Roma na. Laughter and good fun filled the room in no time. Afterwards we had the opportunity to listen to a lecture (řko

laziness) about air accidents over the past period, and thanks to the very engaging commentary, learn from the mistakes that were made in the examples. Surely everyone has realized that our flying is flying for pleasure, but if we ignore some regulations and rules, or take flying lightly, the air trip can end fatally.

After the lecture, we watched some educational videos and the party started to gain intensity.

Subsequently, the best ground pilots and co-pilots from the morning competition were announced. I don't remember who was second or third, but I know for sure that the winners were defacto all of them. The main goal was to have fun and spend a few more nice moments with friends before the famous Christmas madness begins. I think that was really achieved during this competition and the entire Vrani slet.

Finally, I would like to thank all the participants who created one of the best gatherings of 2022. And also the MPK Association for supporting this event, the airport in Hranice for the perfect facilities, but especially Vrān for not breaking his stick over us and that even after years he managed to prepare such a wonderful gathering. I hope that this year's was not the last and that we will all meet here again next year.

Satisfied participant of the meeting Tomáš Berka

„He Flew Here“ or looking back

Lukáš Vojáček

We started this season with a group with a traditional spring trip to Bassano del Grappa. The weather turned out great. The morning headache from high altitudes did not deter us from flying long routes - 150 km or even longer. At the end of March, Petr Polách already flew the Bassan starting point record, 205 km with return, and thus predicted the spirit in which this season will develop. As you have played Hang Gliding Cup 2022, I was advised to share these experiences with you.

I remember my two longest flights from May and August last year the most. Both were from žerná Hora and they were the most points-valuable Czech rogalic flights in last year's XContest, which significantly helped me to win the ZL Cup.

May 15, 216 km, 389 b We stand at the start on žerná hora, myself, Franta Košýál, Jan Ptáček and Vladimír Pajkr.

We build a rogal and optimistically plan the route. Enthusiastically starting skydivers falling into the blueberry forest predict good thermal conditions. We will fly to Hradec and then we will see each other. We fly south together. Unfortunately, our paths diverge at Pil níkov. Franta sticks to the old plan. Since the conditions on the track have changed, I voluntarily allow myself to be carried away by a series of clouds leading to Náchod.

After Orlické hory, it's already a ride. On the way I meet an old acquaintance in a white glider. Under the black base, I make an agreement with myself that I will not turn before the 90th kilometer. It will be 180 km back to žerná hora, and I'll already "smudge" the 20 kilometers there.

At the 80th kilometer, everything starts to unravel

give. And that voice again, you've gone far enough, turn it around and fly back! But a promise is a promise. At 1500 above sea level, under a broken cloud, winter leaves zero and I wait for the riser.

I get up for a bit, dust, then again and again. I'm at the 90th kilometer, so what, I'm slowly coming back. After ten kilometers, I turn around the base and fly in a straight flight to Náchod, occasionally making a few turns in three meters. It's already weaker since Náchod. When I reach žerná, there are only ruins and a handful of parachutists above the Krkonoše mountains, who predict good thermal conditions with their circling flights.

Behind Žalý, the disintegrations disappear and it is now only blue. Above Žalý, I rev up to the max and it looks like the final slide to the northwest.

I radio to ask about the wind on the landing. From Honza Ptáček, I only learn about the quality of this year's vintage and the number of beers drunk. So I take the last sips of water from the camelbag, swallow bitterly and fly on.

Just before Rokytnice nad Jizerou, I finish the last gloom in a wide, meter-long climb and glide to the landing in jistá.

August 17, 202 km, 444 b

After yesterday's mess, I safely assured everyone that I'm not going to fly today. Jíjí Gut declared that there are no thermals on žerný and left for Hrušovan. But I look at the forecast in the morning, and what I don't see: sunshine with clouds.

That could be good. The boss at work doesn't protest much, so I once again declare the entire race off and before long, Franta and I are loaded into one car and we set off.

The weaker wind at the start and the forming clouds over the hill encourage me to start early. I start at 11:37 and Franta goes right away



behind me, but waited an interval of three minutes, and the wind turned. After a two-hour wait for the start and the psychological terror caused by my absence, Franta took off and immediately landed.

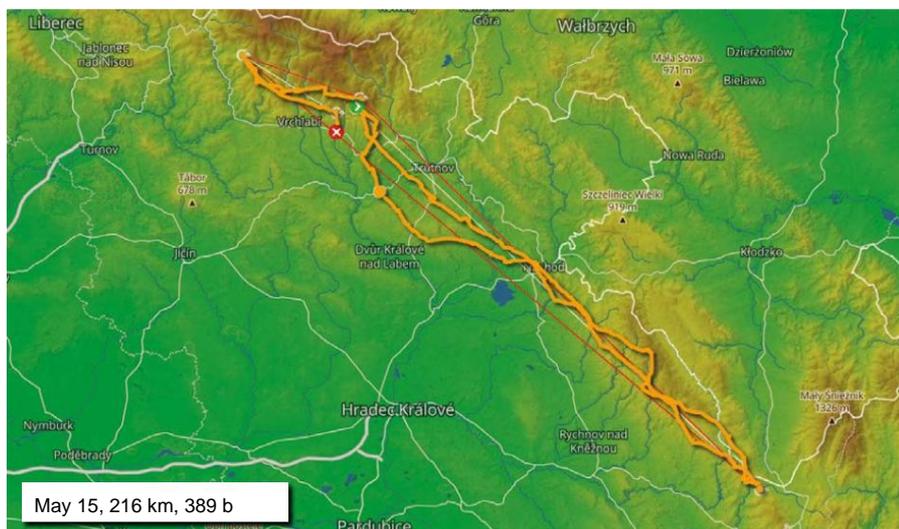
After slowly rounding the base above žerná hora, I fly to the northeast, as the clouds are furthest in this direction.

Beyond Mieroszów, I can see beautiful Christmas clouds all over the ridge. At Krá lovecký Špiják, I don't even turn around and fly straight there. I find a two-meter, spin for a while and then fly to where the clouds are blackest. To my surprise, the climb didn't and didn't show up. I think for a moment how lucky I am to witness this beautiful decay. On the other hand, the size of the village that I am approaching does not indicate that there is an open restaurant in it. And for more in Poland. I can only speak Polish about car and szuka. I also wonder how Fran will look for me here? Fortunately, I find a zero above the church at 150 meters AGL, and it gradually increases to the base.

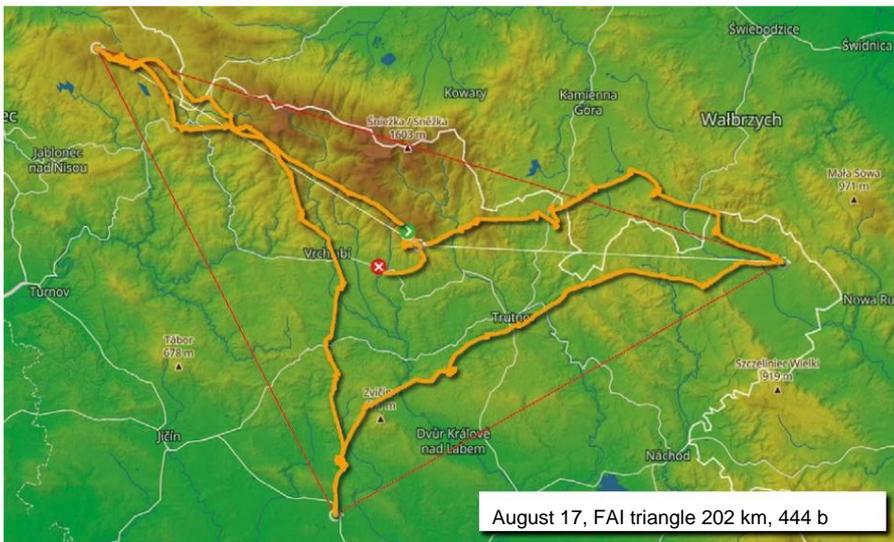
I jump another two risers to the east and turn around at the 45th kilometer. After jumping over Adršpach, the bases rise by 300 m to 2300 m and under a beautiful row of arched clouds I fly as if in a tunnel all the way to Trutnov. There, my friend in white windbreaker and I patiently dial 1.5 m/s and set off to the southwest. I push back a little (slow down) and let him fly in front. In the meantime, I relieve myself, but when I look up, I no longer see my friend in the white glider.

I must have pushed back too much.

The last nice lid-shaped cloud is near Zvížina. The very last cloud is located on the ridge near Hojice. It no longer has the shape of a lid, but of floating fertile mucus in a swimming pool. Long under



early ZL Cup 2022



Hang gliding cup 2022	
1 Lukáš Vojáček	1444.84 b
2 Jiří Gut	1356.57 b
3 Dan Vyhňalík	1317.01 b
4 Luboš German	1247.69 b
5 Petr Polách	1038.30 b
6 Milan Tichý	900.69 b
7 Jiří Nádvořník	893.26 b
8 Robert Kulhanek	882.63 b
9 Owned by Bartas	876.52 b
10 Jaroslav Týeštík	870.24 b
11 Franta Košýál	870.21 b
12 Stanislav Tyebeška	743.56 b
13 Henry the King	611, 58 b
14 Mitja Majerl	503.82 b
15 Petr ýejka	497.01 b
16 Jan Ptáýek	405.48 b
17 Rostislav Býýák	345.39 b
18 Karel Charlie Prejza	301.55 b
19 Zdenýk Kopýivík	286.57 b
20 Jan Sokol	272.34 b
21 Jakub Seagull	270.75 b
22 Ondra Pelucha	255.50 b
23 Artur Nedved	235.95 b
24 Ludýk Vejrych	201.74 b
25 Petr Nedoma	201.41 b
26 Jerónimo Juráý	167.37 b
27 Petr Fiala	157.68 b
28 Vladimír Šlachta	122.70 b
29 Jarmil Vana	120.67 b
30 Vladimír Pajkr	108.78 b
31 Staýa Pecha	108.35 b
32 Jindýich Bambušek	101.99 b
33 Pavel Görner	90.47 b
34 Petr Dolak	64.15 b
35 Jiýi Kocián	62.45 b
36 Lukáš Sedláýek	61.87 b
37 Zdenýk Haken	60.13 b
38 Borek Leitl	52, 01 b
39 Martin Lörincz	47.77 b
40 Jaroslav Dvoýáýek	47.63 b
41 Petr Losák	46.30 b
42 Otakar Room	27.72 b
43 Vlastimil Hecl	25.24 b
44 Little Hana	21.60 b

I'm waiting for the riser with it. I have to lose 200m first before a group of raptors arrives and shows me a riser 300m next to the cloud.

Then stretching as far south as possible into the blue and back under the already formed cloud. Further on, it is under broken clouds, so I let myself drift back to Krakonoša vo in half a meter. Stoupák nad Žalým 4 m/s shoots me up to 2600 m above sea level and I connect to the beautiful highway above the Giant Mountains, which leads to the end of the Jizera Mountains. At Harrachov, I turn on the Xctrack and find out the value of my whole day's efforts - less than 170 kilo meters. It's no longer possible to land, even if I can see a meadow there. Jizerka peat bog, I've never been there. I briefly remember Franta and his kind heart as a bookmaker. Well, I'm spinning at 2600 m above sea level and I'm flying with abandon in a lovely flight. I fly over the meadow at 1,600 m above sea level, only ruins and stiff legs above my head. I'll try to play the binek game, where the clouds are the densest, and I'll go stretch my legs. And voila - half a meter, a meter, the clouds are getting back into shape and that's it

we cuddle together I turn on the Xctrack, wait for the value of 201 and turn (I think it was at the 48th kilometer). The clouds are starting to break up again, so I fly out towards the south towards Koýenov, because there is an illuminated edge of the clouds that could carry them, and the parachute was spinning their heads there. From there it was already a ride below the base through the entire Krkonoše Mountains, a turn here and there at 4 m/s.

Milan Tichý also flew beautifully that day. Unfortunately, he started only at almost 1:30 a.m. due to bad conditions at the start.

I thank Frant for pulling me out of the work process and driving me to the start. I think it's better to suffer two days of physical fatigue than a week of mental fatigue and constantly wondering what it would be like if I was there.

Somewhere on the hill again! n



ULL/MZK/ZK



ÿ Eurostar for sale, Rotax 912 - 100 ps, year 2007, flight time 1380 h., three-bladed carbon propeller, 8.33 lcom radio, S transponder, rescue system, beacon, heater, hydraulic brakes, new ignition. Second owner, flight + engine book, hangared in Plešnice. Price to be negotiated CZK 950,000. Contact: 608 702 612



ÿ ULL Cora Legato for sale, year 1998, Nissan Micra engine, basic equipment, flight time approx. 430 hours, electric flaps + accessories. fuel pump, consumption meter. TP valid. Price negotiable. Contact: 603 759 369

ÿ UL Cora for sale, flown in July 2019, flight ~5h, valid TP until 8/8/2023. VW engine 1950 cc direct, completely overhauled using new parts. Trapezoidal wing with turbulators, factory made spar. New hull, complete instrumentation, electric flaps. Complete photo documentation of the construction, hundreds of photos. Hangared at Chornice airport. Price 220,000 CZK.

Contact: +420 727 821 014, stepan@huzlik.cz ÿ

I am selling the fuselage of an all-metal UL Koala-type airplane. The hull can be viewed in Kunovice. I will send a photo upon request. More information on tel. 734 705 237



ÿ I am selling a Seagull two-seater airplane.

In operation since 2013, airframe 374 hours, Verner engine 7 hours. Price to be negotiated CZK 500,000. Can be sold without engine for CZK 180,000. Contact: 602 595 739, vernermotor@vernermotor.com

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ÿ Shock Cub (STOL) for sale, year 2018, flight time 166 hours, MTOW 600 kg, Rotax 912 ULS 100 hp engine, new Woodcomp constant speed composite propeller, three-bladed, 2 m, hydr. controlled, filling indicator, glass cockpit Glance Eface (AHRS, GPS, digital engine instruments, flight data), Kanardia altimeter, radio ATR 833, el. trim tab on stick, fuel computer Vega FF4, start. LiFePo battery, ballistic protection the Stratos07 system. Included in the price is a Hecht petrol tow truck for handling the aircraft.

Price CZK 2,800,000. To be seen in Kladno (LKKL). Contact: 603 460 452, leosekani@centrum.cz



ÿ Two-seater MZK for sale, Fe nix Honzejk 2008 chassis, Woodcomp propeller, Rotax 462 engine, ESO 2 wing. Max. weight 352 kg, tank volume 36 l, consumption 9 l/h, travel speed 80 km/h. At Hory Airport (Karlovy Vary). Price CZK 60,000. Contact: 775 573 958, ridzon@econ-energy.cz



ÿ ULL parasol "ÿertolet" for sale. Welded tubular fuselage, Minimax wing, cruising speed: 100 – 110 km/h, maximum speed: 150 km/h, minimum speed: 65 km/h. Hull newly coated, VW engine 1.6 two-hole head, power 55 hp, tank volume 2x 20 l, propeller Wo odcomp 150, flaps neutral, landing and 1 position negative, balance fixed.

The price is 90,000 CZK, if there is serious interest, it is possible to go for a walk. Can be seen in Strunkovci. Contact: 730 587 328

ÿ I am selling a Profi 14 wing for a two-seater motor glider. All ready for electric trim. Price CZK 80,000. Contact: 602 254 464

ÿ I will quit at the end of the season. For sale MZK Tomi 3 with MW155 wing, new wing cover in 8/22. TK until 8.23.

Suzuki Swift 993 engine, solo consumption 7 l/h. LugoProp 1600 propeller. Galaxy rescue system (TK 2018), flash. Instruments: speedometer, altimeter, vario, tachometer, thermometer, fuel gauge, intercom, voltmeter, handle holder. Hangarage paid for by 3/23. I will send pictures upon request. Price 100 thousand CZK. I can also offer a NavComm NG-100 ANR flight helmet + another helmet (without ANR). Contact:

bertik23@gmail.com



ÿ ArrowCopter for sale, year 2011, put into operation in 2014, about 50 hours of flight time, has not flown in the last 5 years. Rotax 914 engine, DUC tri-blade propeller, dual steering, heater, MGL glasscock pit, etc. but no RDST. With a quick negotiation, the price is only 900,000 CZK. I will also sell a push, hydraulically adjustable Kašpar propeller (for R 914, price approx. ½ original, i.e. 40,000 CZK).

Contact: 777 579 223

ÿ I am selling a new original sail for the motor-powered rogalo Aeros Profi (mast). This is a full dacron tarp including a lead pocket (bright orange) made of high quality dacron from Bainbridge and Polyant. I will cover the frame, adjust and fly. Price for the sail itself: CZK 18,000. Contact: Jiří Hruška, 604 990 071, Hradec Kralové ÿ ULL Savage Classic Turbo for sale, Rotax 912, year 2013. Yellow color, 240 hours of flight time, 29" bush wheels, towing equipment (not used), three-bladed propeller, radio 8.33 , answering machine, Magnum rescue system, new Sennheiser headphones. Two-bladed propeller + small wheels included. Hangared in Plešnice.

Contact: 608 702 612

ÿ I will sell a complete new two-seater MZK with MW-155 wing, new sail (Polyant), new Cross-5 Sport chassis, all wheels braked, large front fairing with LED lighting, wind shield. New GALAXY rescue system for 450 kg, engine (after GO)

Rotax 503 2 V DCDI with el. starter, propeller new three-blade adjustable Woodcomp, warning light under the engine red, on the rear wheels mudguards with turn signal and flashing light. Locking tank for 42 L with external fuel label. Two plugs for connecting external sources. Variometer, altimeter, speedometer, tachometer and compass. All after the flight and running for 1.5 hours. Price negotiable. I will send a photo upon request. Reason for sale - canceling the hangar. Contact: 603 972 505

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ÿ ULL TA-1 Minimax for sale (OK-ZUI03) Empty weight: 190 kg, maximum weight: 300 kg. Cruising speed: 100-110 km/h, maximum speed: 147 km/h, stall speed: 53 km/h. No flaps, fixed balance.

WV 1.6 engine, 45 hp. Flight time approx. 500 hours. Basic instrumentation. The price is 85,000 CZK, if there is serious interest, an agreement is possible. Can be seen in Strunkovice. Contact: 725 011 280, cizap@email.cz.

ÿ I will buy ULL Sluka LK-2, preferably without wings. Contact: 602 493 783, danhel.z@seznam.cz

Different

ÿ I am looking for a Flightmate who I can join for flights abroad. I have a well equipped Sting. Please contact me at +420 604 213 162

ÿ I will sell everything for a rotorcraft - rotor blades (USA), set of mechanics, EA 135 kW engine, Xenon system frame. Very cheap. Contact: 724 996 829

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Contact: leos.liska@okafs.cz

ÿ Aeroklub Havlíčkův Brod offers for sale a brand new, never installed Peszke 160 cm propeller. S/N 1008, B-line B1600/1500-A-3 B /B-03) clockwise.

Under warranty until 08/2024! The reason for the sale is the unrealized reconstruction of UL. Contact: info@aeroklubhb.cz, +420 778 751

903 ÿ I am selling a solid wooden double-bladed right-hand rotating thrust propeller Kýemen, diameter 160 cm (for Rotax 503). The propeller is brand new, undamaged, for 5,000 CZK (i.e. half the price of a new one). Contact: Jirka Benda, 602 892 858, Týništy nad Orlicí

ÿ TOST towing equipment for sale, unused. I will send a photo upon request. Price 3500 CZK. Contact: 608 530 055

ÿ We offer hangaring in the newly built hangar in Jiýín. Not for schools - there are noise restrictions for training at LKJC. Contact: Petr ýivrný 603 866 295

ÿ I will sell new duralumin rotor blades with a rotor head. Contact: 724 996 829

ÿ Aeroklub Most offers 2 parking spaces for ULL in hangar no. 3 and 4. Also, one office in the Aeroklub building. Those interested, call the chairman of the AK, tel. 602 432 560 ÿ I will sell two unused helmets, each for CZK 1,800. Harness, second owner, board, I flew with it for less than 10 hours, 9000 CZK plus an unused spare parachute for 1000 CZK. Vario FlyTEC 3005SI free. Contact: Jiýí Smolík, 724 892 432, Kout na Šumava ÿ I am selling a three-blade thrust propeller NR Prop, a left-handed blade for R-912. Very nice, about 30 hours on the bagel, forged leading edges, white color, like new. Price 14,990 CZK.

Contact: jhurdik@seznam.cz, 736 779 862 ÿ

ROTAX 912 ULS 100hp engine for sale, year of manufacture 2008, flight time 1100 hours. TOP condition, above-standard maintenance every 50 hours, new freewheel clutch. Price: CZK 195,000, I am a VAT payer. Contact: 603 206 455 Slaný ÿ I am donating the Pilot magazine, editions 2015-2022, here and there the number is missing.

Contact: njsvadlenka@gmail.com, 720 755 254, Nymbursko ÿ I will sell

duralumin tubes diameter 12-60 mm, some anodized, also leftovers - quality. Contact: Jiýí Hruška, 604 990 071, Hradec Kralové ÿ Selling unused airbox for Rotax 912 UL/ULS. Photo on request. Price 10,500 CZK.

Contact: info@directmedia.cz, 777 715 015

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ÿ Advance Impress 3 seat for sale, size M. Kokon, console, Quick Out carabiners. Price 12,500 CZK.

Contact: Michal 723 883 544, Dýžín ÿ For sale UP Makalu 4 (85 – 110 kg) low B, also suitable after the course. Price CZK 45,000. Contact: 602 632 582, Liberec ÿ

PK Advance Alpha 6, 28 (85-125 kg) year 2019 for sale. Price: CZK 28,000. Contact: 775 920 401, Prague 10

ÿ Wouxun KG-UV8D walkie-talkie for sale, never used, like new, everything comes with it. Price €120. Contact: Peter +421 944 941 571

ÿ Axis Pluto III for sale, (105-130 kg). TP valid until 2/2024. Price CZK 17,000. Contact: Roman 607 585 712, Prague 1 ÿ

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MPK

ÿ I am selling a Nirvana Rodeo 125 cruiser, year 2007, in very nice condition with complete accessories (two-bladed composite propeller + wooden spare) Price: CZK 80,000. Contact: J. Krátký, tel. 774 747 499, jaholuka@gmail.com ÿ Simonini mini 3 motor for sale, unused, brand new, details on phone contact. Price Negotiable. Contact: Mária +421 907 294 264, Trenčín region ÿ I am selling a tricycle for paragliding, brand new, unused, information after phone contact. Price Negotiable. Contact: Mária +421 907 294 264, Trenčín region ÿ I will sell a tricycle capable of operation, which also includes a trailer and a Megpara parachute is also available. Hardly used, in full working order. Just fill in the gas and you can fly. A helmet is also available. More information when contacting by phone. Price Negotiable. Contact: Mária +421907294264, Trenčín region

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Contact: 725 148 867, Sokolov ÿ

Rodeo backpack for sale, newer Mac Para Charger 25 seat + parachute. Year of manufacture 2017 (very little flown), possible individually. Price CZK 99,000. Contact: 775 979 719, Kladno ÿ

Instinct NS230 backpack for sale. New TK, incl. transport case. Price CZK 99,000. Contact: 775 979 719, Kladno ÿ I

am selling a spin spinner with a Polini Thor 250 engine. incl. tricycles, 2-blade and 3-blade propeller, tandem Axis Vega (year 2009), Mac Para Paradox 24 (year 2019) spacers, 2 helmets with bluetooth, ZP for solo, all as a whole for 250,000 CZK, agreement possible. Contact: 774 804 795, Zlín ÿ I am selling an XC 200

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