MINIMOA

Magazine for Pilots & Fans of Schempp-Hirth Sailplanes - April 2019 / No.4

Discus-2c "supercharged": The FES

A New Game Is on for a Sailplane

Adventures Around the World

From Denmark and Canada to the South Hemisphere

Formula 1.0: Fun'n'Dust in Australia

Old Plastic Tins Get Some Fun with GP Concept

Editorial

Ralf & Tilo Holighaus / editor@schempp-hirth.com

Minimoa No. 4, Apr. 2019

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Editorial
Solar Power

2018 was probably one of the best ever years for gliding in Europe, with record weather conditions far beyond average. Flights adding up to an amazing 54 Million km have been scored in the OLC and we are very proud that Schempp-Hirth gliders from Cirrus to Ventus-3 have contributed 21 Million km in more than 58,000 flights, representing almost 40% of all uploaded kilometers. This is an increase of 75% compared to 2017 and breaks down to an average of 1,75 Mio. km flown every month.

If you acknowledge that OLC flights only get scored while no engine is being used, this means that, in average, Schempp-Hirth gliders flew almost 1½ times around the Globe each day without burning fossile fuel nor producing any CO_2. Not bad!

On the same basis, gliders of all vendors together circled the globe in average 3.75 times every day - and this figure only covers the flights that were actually uploaded to the OLC! These figures should help each of you to demonstrate to the World that we are one of the most environment-friendly sports, having relied on using solar and wind energy for nearly a hundred years now. Let's hope the upcoming season will be equally exciting so that we can top these results!

Enjoy reading this issue!

Yours,

Ralf & Tilo Holighaus.

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Discus-2c FES in Netherlands above the clouds.

A new game for a sailplane, and FAI’s just pushed the start button

Discus-2c “supercharged”: The FES

Think tanks inside the World gliding community are, from time to time, scratching their heads to predict what tomorrow’s gliding sport will be like. Around 15 years ago, the Grand-Prix concept appeared and it is now a standard competition in our calendars, spreading even into the Club class and some local championships (see “Formula 1.0” in this release), but what’s next? Real life trend is all about techno: Hybrid cars, hybrid cycles, … but can we introduce a tiny bit of this into our glider world too - and will it still be gliding?

After few attempts from competition, a new interesting electric concept was created few years ago by a young engineer from Slovenia, Luka Znidarsic, and his father, from LZ Design. They won the OSTIV prize with their Front Electric Sustainer: The “FES” was born. Some other solutions appeared before and after, more based on the typical retractable pylone with electric engine, but still the FES gets a fast growing fans community - why?

First, you have to go deep inside the History of gliding to understand the evolution of our sport but also the goals people were following even during the first steps of sailplane manufacturing. Among our company the Gö4 was the first “non experimental” glider to get a “turbo”! This path was natural: Do you know of any sailboat without a small engine for retrieval? No… And the basic problem of our sport was the same in the 40s as today: Perfect gliding weather (with lift) is an “anomaly”, so rarity needs compensation, i.e. an engine. Wolf Hirth was talking about “luft wandern”, basically a walk in the sky, not depending on perfect weather, just good enough to fly and enjoy the glider. French glider manufacturer from the 50s came to same conclusion: Charles Fauvel, well known for his tailless gliders, tried to motorise them as soon as possible, and in an interview he explained that future was about gliders with engine to enjoy them more, more days, more during a day.

Then came the fame of composites with better performance, the Golden Age of the 70s and 80s for gliding, with the purest point of view: No engine, outlanding and adventures, many of us enjoyed this era! This trend drifted then gently, but continuously, towards sustainer-equipped gliders and then self-launchers in the 00s: Open class Nimbus-4M, Ventus-2cM and now Arcus-M are the most used gliders around the world when pilots want to travel and enjoy gliding wherever they are. Just being able to take off, taxi, retrieve, even on areas with no tug planes, they are the perfect tools.

In parallel, competitions pilots went from 15 to 18m class, more and more with a sustainer to avoid outlandings, which risk damage to the glider and are tiring to both pilot and crew. 20m double seater class appeared, almost 100% with engines for the same reason: Who wants to retrieve a double seater from a field ?... And competition tasks went from very long to shorter and faster years after years. So question is: What could a hybrid glider offer to the whole gliding community, from club operation to cross country and competition pilots?

Let’s first go back to Luka Znidarsic from Slovenia, his story and approach are interesting: Becoming a father, not a big fan of typical greasy engines, model scale pilot at first, then engineer. …

Installation of the FES system in the fuselage frame needs extra care and precision. Schempp-Hirth Kirchheim.

06 Discus-2c "supercharged"

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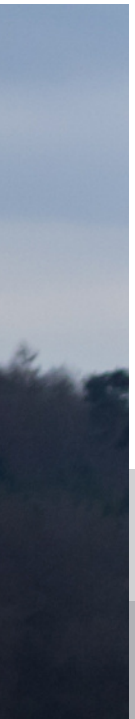
He still praises his wife for having pushed him enough to create this system, the Front Electric Sustainer. "I was a young father and I flew a lot of competitions and performed many cross country flights. But one day my wife, who is always very supportive and with me on all competitions with the kids, she told me "I will not get you out of the fields anymore" and I can fully understand that… I don't like the engine systems available, greasy, noisy, and you don't have a glider anymore when they run. So I made some tests with an electrical engine on 2 positions on a scale model: Nose position and the typical back pylon position we all know. Fact is, you need much more power from a pylon position and you get no instantly available power like in the nose, so the choice was easy. To make it reality was another story but first glider with a FES was my personal Lak19. Schempp-Hirth Ventus-2cxa, Discus-2c and Ventus-3 followed few years after and today there are many flying around the World."

When you ask him if the idea of the FES was just to offer another sustainer to avoid outlandings, Luka says "At first when we created it yes, but after the first flight I knew it was much more than just a typical turbo solution, as you can adjust power output smoothly, and the glider just acts like a glider even with the power on: Vario information is accurate, feeling in the cockpit is like a pure glider except a bit of noise and vibration, controls are no different, this is just a glider that does not sink anymore! So perhaps a new way of gliding?"

FAI did think twice when the idea to create a new class with new rules was under question. We have already many classes, but e-gliders could be a way to advance our sport. Decision taken, only question left was related to the wingspan. Currently the just born 13.5m class is building up with very few manufacturers in the competition. Still GP and Lak, and before them Alistar with the Silent series are the main contenders and few of them are electrical. The big number of electrical gliders are currently from 18m class gliders: Lak19, Lak17, Shark, Ventus-2cxa, Ventus-3, Discus-2c… So first attempts to make proper FAI competition including use of engine during the task will be based on 18m class with some handicaps applied on turnpoinmts radius, and completely new rules : total time of flight on task is scoring basis, and naturally use of engine allowed! Hardly flyable weather should not make scrub days anymore thanks to engines, and very likely longer tasks will be set as engines will help a lot to achieve them. But not only competition pilots will enjoy this revolution in our sport, some clubs are already using Discus-2c FES and feedback is very positive, with ease of use in the cockpit, minimal maintenance except care of batteries, and a lot of fun in the air even if you can't (for now) win an OLC day when you use the engine! But perhaps one day…

So what's next? September will be the event in Italy a lot of competition pilots will watch carefully to get feedback from this first "FAI electrical gliders event", held in Pavullo, in parallel to the 13.5m World Championships. More and more people are also asking "When do you make a double seater available with FES?". This may be the next step to turn the e-gliders into a "normality" in our sport. Just imagine making a training course out of the winch with no more time pressure thanks to the FES and no needs of thermal activity...



FAI

First E-glider FAI event
Pavullo, Italy
31st Aug. - 7th Sep.

Official website :
1eglidecontest.home.blog

FES glider during ground test, Schempp-Hirth Kirchheim.

Discus-2c FES during flight test in Hahnweide, Kirchheim unter Teck 2018.

Do you want to join this first FAI e-glider event?

Please contact us and we will pass you throught FAI team to apply for entry!

info@schempp-hirth.com

08 Around the World: Canada & Australia

Chester Fitchett, Jorgen Thomsen, Makoto Ichikawa

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Walk-around the Arcus-M early morning with Chester Fitchett.

Calgary sits on the eastern slopes of the Canadian Rockies. CuNim, the local gliding club, is known for strong spring soaring on the prairies, and wave soaring along the Livingston range - Canada's Diamond mine. A few single-seat motorgliders have experimented with cross-country wave soaring, but that changed in 2018 with the arrival of an Arcus M.

In November/December, over 4 weeks, C-FZWW and Chester Fitchett put up 4 flights over 1000km. Notably, 1050km were flown on the shortest day of the year with Chester's wife, Marta!

The ultra-modern two-seat supership has unlocked the full possibilities of soaring at CuNim, which may be the most versatile gliding location in Canada. When the Prairies are hot and flat in summer, the Arcus can safely lift off from the 3700' ASL grass strip, and motor to the front ranges of the mountains. As the summer finishes, wave arrives, and may show up any month of the year.

The downside of soaring the Arcus from CuNim? If you don't keep an eye on the weather, you could miss a great flight any day of the year!

Chester, Canada.

Makoto Ichikawa : Use of the frontal conditions on final glide.

Need for Speed with Arcus in Australia & Canada

Glorious Light on Fast Days

New Free Triangle Distance Oceanian Continental Record 1116km. Took off with 1250km distance declaration but thermals did not start as advertised. Had to switch brain very quickly and went for free triangle distance record attempt. We just managed to fit 1116km in weather and airspace. We had altitude to glide to east of Corowa for 1250km OLC but just turned back to land at Tocumwal. Sadly we had to sacrifice OLC speed today, to fit 1250. But the leg Barlanard to home was very fast, sometimes 300kph GS at FL150. Thanks Jorgen and Judy for Arcus "OO"!

Makoto and Jorgen, Australia.

Makoto Ichikawa : Air mass conflict for nice convergence conditions.

10 Around the World: China

Andrew Peng Du

Minimoa No. 4, Apr. 2019

天弓

The Arcus in the Sky

This picture was taken during the JingMen Airshow, in the Province of Hubei, where a glider was first time displayed during an airshow in China after around 20 years!

I use this Arcus M in China and Australia to teach pilots during training camps, fly competitions and make flying adventures in unknown areas.

In China, the Arcus M is called 天弓 which means "The Arcus in the Sky".

Andrew Peng Du, Schempp-Hirth China
@andrewpengdu

12 Come and Fly Denmark!

Morten Bennick, Vladimir Fedorov

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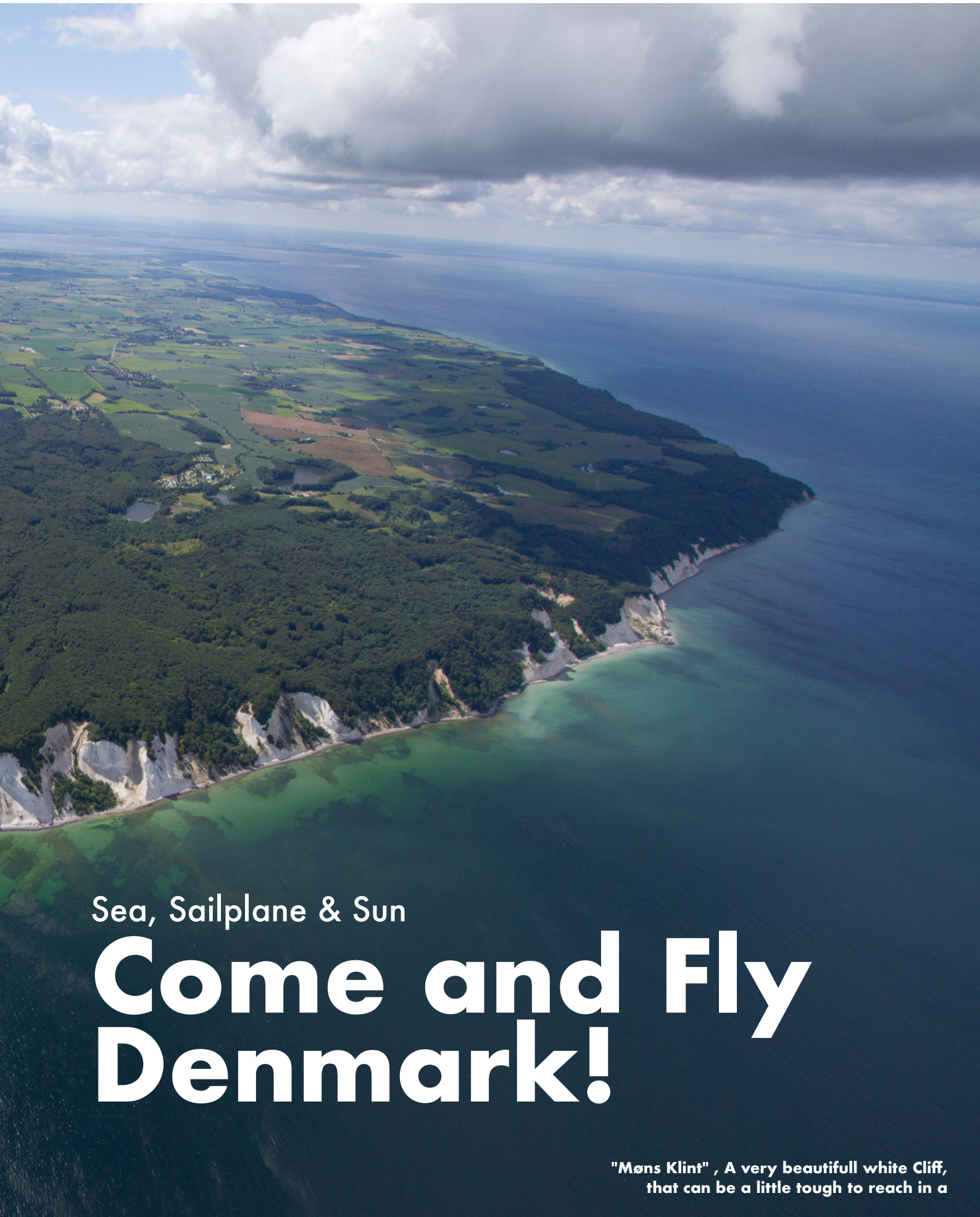

Sea, Sailplane & Sun

Come and Fly Denmark!

"Møns Klint" , A very beautifull white Cliff, that can be a little tough to reach in a

14 Come and Fly Denmark!

Morten Bennick, Vladimir Fedorov

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We all look regularly for new destinations to get some fun in the air. There are mainstream spots around the world which are the "no brainer", French Provence, Spain, Italy, Africa, New-Zealand,... but other places are real "underdogs", and after discussions with the pilots who fly these playgrounds, it opens your eyes to a complete new sailplane world and gives you the unique experience you will be able to reinject in your home flight area.

So this article will not be about crazy speed and distance records, but more about sensible thermals, decisions to take, and also preparation before the flight. But what an adventure you can get from these kind of destinations! Denmark is part of these, a land surrounded by water, how can it be good for gliding?!

Vladimir Fedorov explains to us how it works: "We call it "Soaring on Islands" and basically the game is to cross channels to fly from one to another playground of Denmark or even fly Sweden. Usual weather of Denmark is based on the following points: Flatland, entrance of Baltic Sea, windy with WSW influence, mild climate due to surrounding sea, and no strong sun... So when I talk about Denmark with foreign pilots they usually say "it's not possible to fly there, it's a lot of water!". But we have a lot of cloudstreets, sea breezes, so it's all about understanding these phenomenon, and even if it is a blue sky day. Because of wind, you will have to forget the usual "hotspots" and think more with lines and fronts. And to understand the thermal you are in and how it evolves you have to watch much more upwind. So cloudstreets and low layer wind forecasts are one of the most important things to check the days before and on the morning just before take-off to set your task.

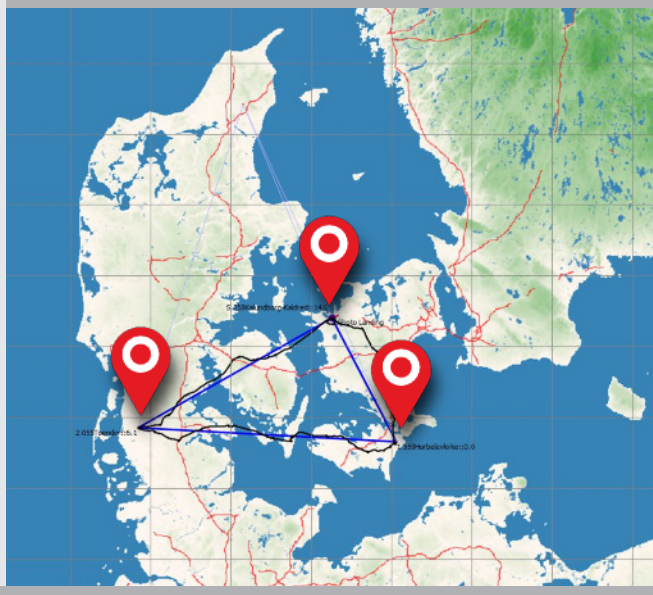
Sea breeze is another big topic here, with great evolution during the day. For example you have to make a turnpoint close to the shores on the morning as see breeze will make it much more difficult when thermals activity reaches its peak. Also see breezes from spring and autumn will be much less windy and strong than see breezes from summer as temperature difference between cold air from the sea and inland air is much higher in summer. So, in spring you can have thermals much closer to the shores and so travelling between islands will be much easier. Then comes wind additionally to See Breeze, and with more than 6 to 7m/s of meteorological wind, you have a complete drift of the thermals away from the shore to the sea, sometimes more than 10km away!

Also with wind, as air gets warmer and warmer downwind on the islands, the max altitude of thermals goes higher and higher the more downwind you fly on the island. This makes you choose a lot the area you will fly.

Finally, I have what I call the "Neighbor island effect". If you have 2 Islands and moderate wind, the island downwind gets some already warmed up air by the 1st island, so the conditions will be better on the island downwind. That's why sometimes, we get cloud street beginning upwind just on the shore of one of the island and it should not be because of expected sea dead air. But it is because this island has another island upwind which gives it an already warmed up air enough to trigger a thermal!

This altogether makes great lines of energy… and also big holes and great lines of sink! And a lot of fun and adventures in Denmark with the beauty to cross the channels to make your classic 300km FAI!"

Map courtesy of Naviter SeeYou



For more information:

Timelapse of the flight on youtube: https://www.youtube.com/watch?v=2NV0GC3abO4
Find the flight on OLC: https://www.onlinecontest.org/olc-3.0/gliding/flightinfo.html?dsId=6528174

Fun'n'Dust in Australia: F1.0

Nick Gilbert / info@f1gp.com.au

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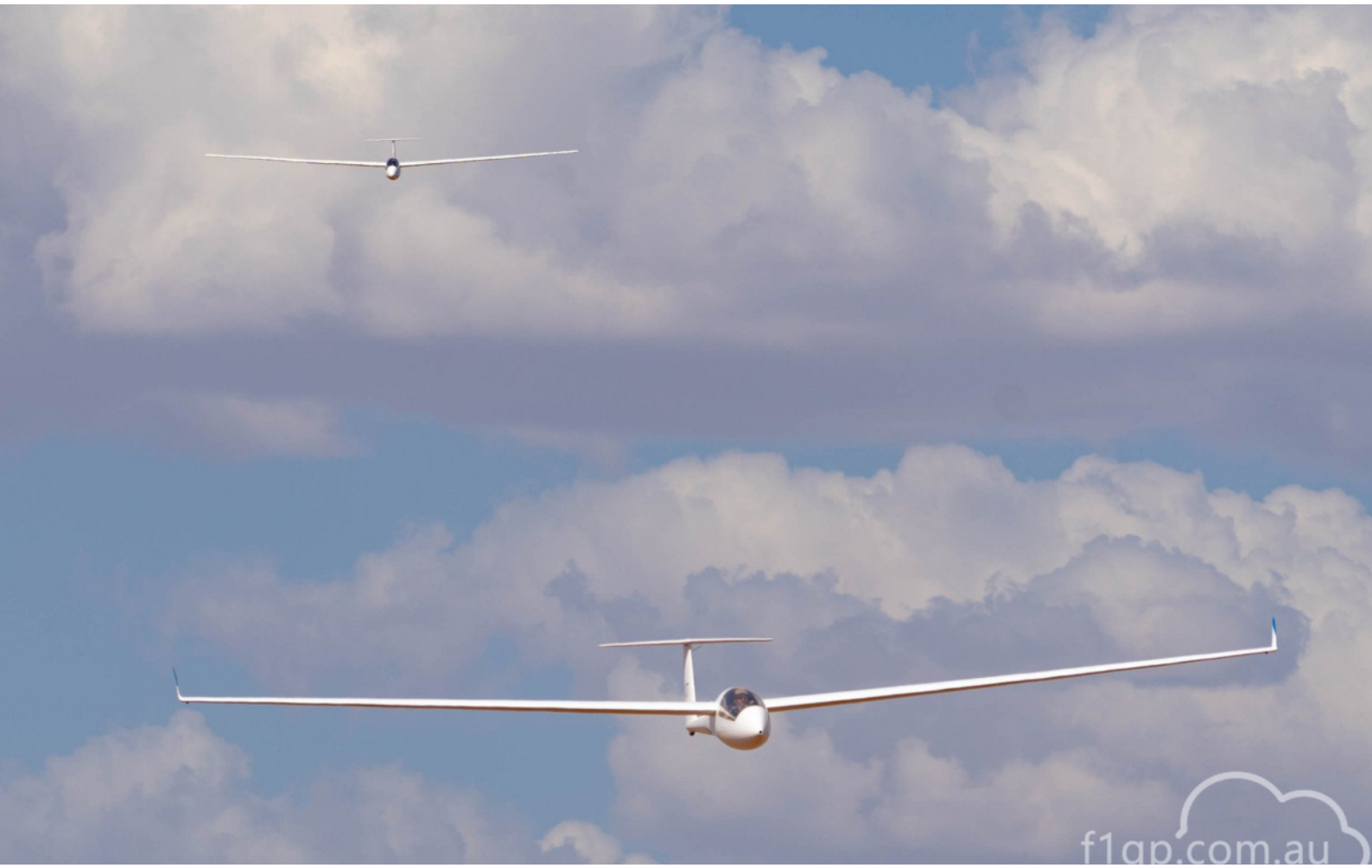

Grand Prix concept brilliantly applied to vintage plastic tin!!!

Fun'n'Dust in Australia: F1.0


joey glide
lake keepit
2012
Supported by the
NSW
GOVERNMENT
innovact
Consulting
f1gp.com.au
lx nav
AERO REFUELLERS
f1gp.com.au

18 Fun'n'Dust in Australia: F1.0

Nick Gilbert / info@f1gp.com.au

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Grand Prix concept is a high end product for top of the line 18m class gliders with a world title to win. This format of championship is more and more popular: Short, fast, no pain on the start, easy scoring, full tracking and even sometimes real time commentaries. The Aussies applied it brilliantly on vintage glassfibre gliders and it seems to be very very fun!

Minimoa Magazine: Hi Nick, how did your team created this new kind of competition?
Nick Gilbert: A group of friends came up with the idea for the Formula 1.0 Grand Prix. They are all racing pilots, an all passionate about their "old" gliders. It seemed like the current Club Class doesn't really suit these gliders now, so the decision was made to make a competition that suited us better.

MM: But your concept seems to have a special taste when we see the pictures and follow the social media?
NG: Another possible trend that was noticed is that a lot of competitions are no longer social events, and the children that could be seen 'growing up' on airfields must now being taking their holidays somewhere else. These 2 key areas form the F1GP mantra.

MM: After only 2 editions, already 34 pilotes are competing, what a start!
NG: Since the competition was first staged at Leeton in central New South Wales in 2017, the popularity of the event is difficult to deny. Already the largest single class in the Australian competition gliding scene, the number of entrants increased 30% the second year making it a clear favourite among those who feel their Standard Cirrus, Libelle, Hornet, etc still has racing DNA.

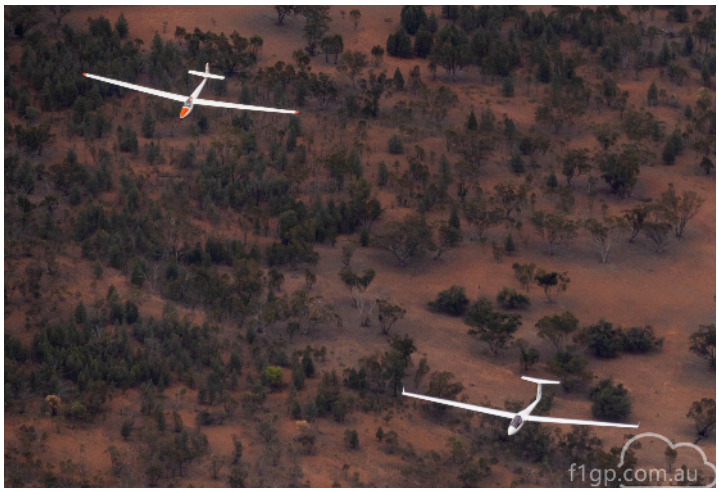
MM: So what about the last edition, it seemed to be fun!
NG: During the most recent event conducted either side of New Years eve, the weather was incredible. On most days the thermal exceeded the height where oxygen is required (10,000 feet), and climbs of 10 knots or more became common. On one day, Ben Loxton, flying a Standard Cirrus, completed a 300km task at an average speed of 137.5kph. Something to consider with this speed is that the contest is flown without water ballast.

MM: Impressive ! You use also all the modern technics to ensure that we are in a modern contest even if they are old gliders, what are the few goals you try to achieve for that?
NG: Part of making the event social is ensuring the contest is easy to understand, and easy to follow for those on the ground. An integrated tracking, scoring, and contest management system has been developed making the downloading of IGC files a thing of the past. As soon as a competitor crosses the finish line, it is clear to everybody how well they have flown on that day.

MM: So what's next?
NG: Next year we have decided to add a class for early generation Open Class gliders such as Nimbus 2, ASW17, Kestrel, in the hope that these gliders can also compete again with an equal chance of winning. So see you in Leeton (NSW) from 29/12/19 to 04/01/20!

Overall results:

Place	Points	Pilot	Glider Type
1	54	Ben Loxton	Standard Cirrus
2	47	Lumpy Paterson	Standard Cirrus
3	31	Andrew Maddocks	Hornet
4	30	Philip Ritchie	Hornet
5	29	Finn Sleigh	Standard Cirrus
6	28	Alex Wallis	Standard Libelle
7	27	Mike Maddocks	Standard Cirrus
8	26	Eric Stauss	Standard Libelle
9	24	Adam I'Anson	Standard Cirrus
9	24	Scott Lennon	Standard Libelle
10	23	Todd Sandercock	Hornet
11	22	Heath L'Estrange	Standard Libelle
11	22	Nick Gilbert	DG-100
11	22	Steve Jinks	Standard Cirrus
12	20	David Meredith	Jantar Standard 2
12	20	Reuben Lane	LS-1f
13	19	Tony Condon	DG-100
14	15	Leigh Stokes	Astir CS / 77



Big Numbers Need a Top Team!

Schempp-Hirth Team / info@schempp-hirth.com

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Round numbers always provide the same satisfactory feeling (except sometimes for birthdays… what do you think Tilo? ;-)) and we just had quite a lot of round numbers in the factory these last weeks so we can proudly wear our best happy face.

Can you imagine? Already more than 300 Arcus are in the air and among them are 200 self-launchers! And what about Duo-Discus XLT? 300!!! Even the new Ventus already hits the 50 bar and production is now in full power after all the work we had to do inside the company to integrate the self-launcher's line into production!

Yes, production is really one of the challenges, an everyday task all our team are committed in. Modern tools sure help but still 3D expectations show limits from aerodynamic flow prediction to first pre-production models of any type, no matter what. But our highly commited and ultra-responsive team with expertise in all areas required for building a modern glider, are always ready to fix whatever comes up, expected or not.

Today we have built around 6000 modern gliders and we estimate around 70% of them are still airworthy around the world. To ensure that even a glassfibre glider from the 60s can still give a lot of fun to his owner(s) or in a club is another big task and commitment for the whole Schempp-Hirth team and our local representatives.

This is where the OLC data are interesting to get a better picture. Yes, how do you use our gliders around the world? For the year 2018, top distance runners are Arcus M and Ventus-2cM with a total of around 5,7 million km and we can assume these gliders are mostly privately owned and a lot of them fly in both hemispheres.

But still Duo-Discus as pure sailplane comes in 4th position squeezed between ASH26 and LS4. Moreover, if we add all Duo versions plus Arcus, Arcus T, all versions of Discus, Janus and Cirrus we get a whopping total of 8,1 million km! And this figure should be a good reflection of your club operations.

We wish you all many happy landings!

300 Arcus, 200 Arcus-M, 300 Duo XLT, 50 Ventus…

Big Numbers Need a Top Team!

Calendar 2019

Schempp-Hirth Team / info@schempp-hirth.com

Minimoa No. 4, Apr. 2019

Sporting calendar is another time exciting this year with European Championships for Seniors and World Championships for Juniors and Women.

For sure the Women will enjoy the destination of this 10th WWGC. Celebrating the 10th anniversary after the 1st WWGC was held in Pociunai, Lithuania in 2001, the female pilots will travel to Australia and fly in Lake Keepit, competing in the now 3 typical Women classes "Club", "Std" and "18m". Everybody will enjoy following the races in real time tracking during the early January 2020 (even if it is officially a 2019 event). Just expect a time shift of around 10 hours, only early birds from Europe will follow the start, but should be able to get the finishes! And the American night owls will enjoy the full races.

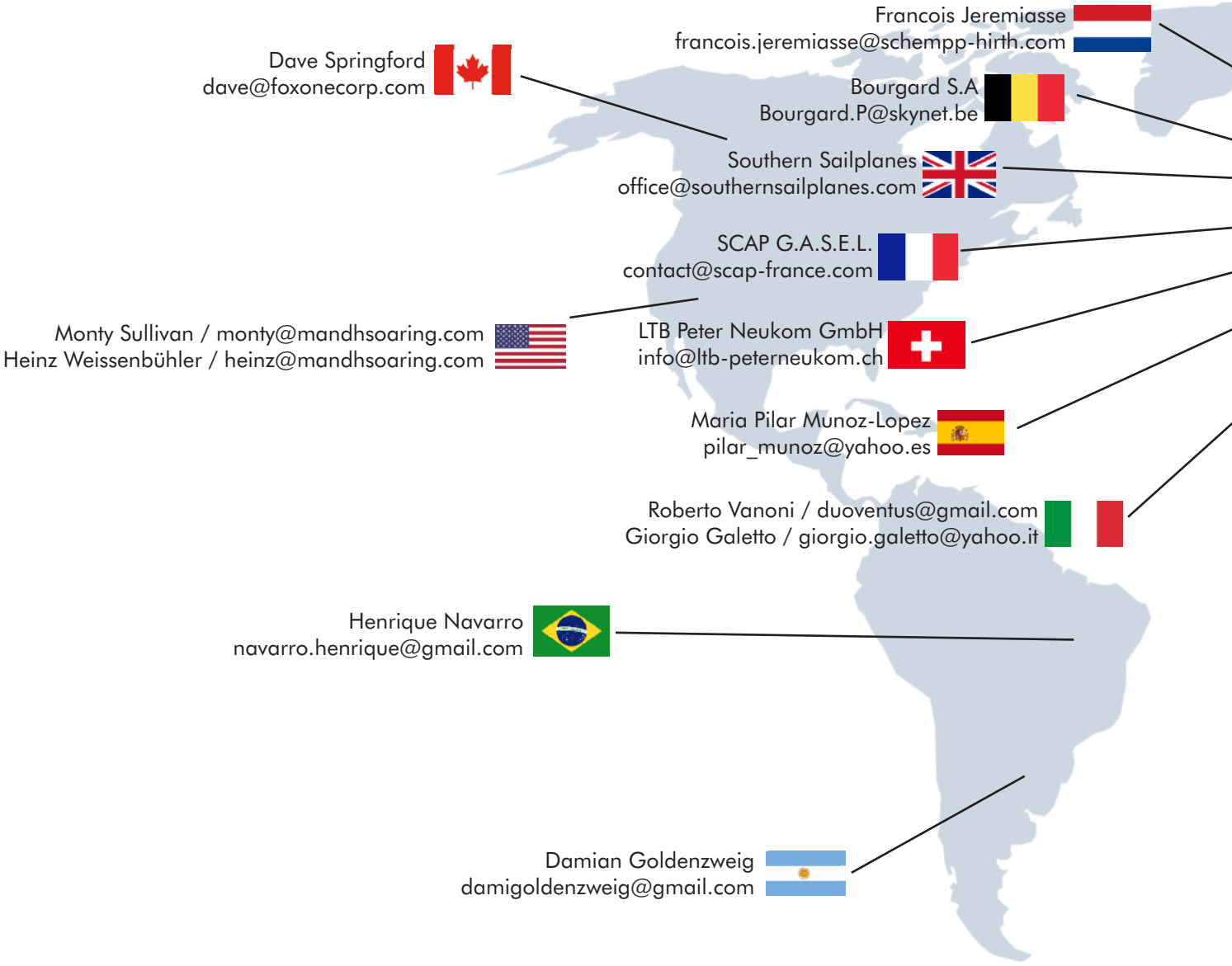
Juniors will fly "Club" and "Std" classes on a very popular place at the Danube river: Szeged in Hungary. The event takes place in August 2019 and you will be able to monitor the pilots who will probably push the Seniors in the upcoming years...

Seniors will finally enjoy all classes above 15,1m wingspan in the south-east flatland of Poland next May and the others below 15,1m will scratch the hills and mountains of Slovakia in Prievidza during July.

Lasts for (real) 2019 season will be the new 13.5m class and the experimental e-glider class, both held in Pavullo, northern part of the Appenins in Italy. This will very likely close the European season in September.

Definitely gliding means travelling, all around the globe! And we hope pilots and followers will enjoy these playgrounds. Have fun!

GLOBAL SCHEMPP-HI



Follow all main international FAI events on www.spr.aero

11/05 > 25/05 European Gliding Championship
18m, 20m, Open classes
Turbia, Poland

01/06 > 08/06 FAI World Grand Prix Final
18m class
La Cerdanya, Spain

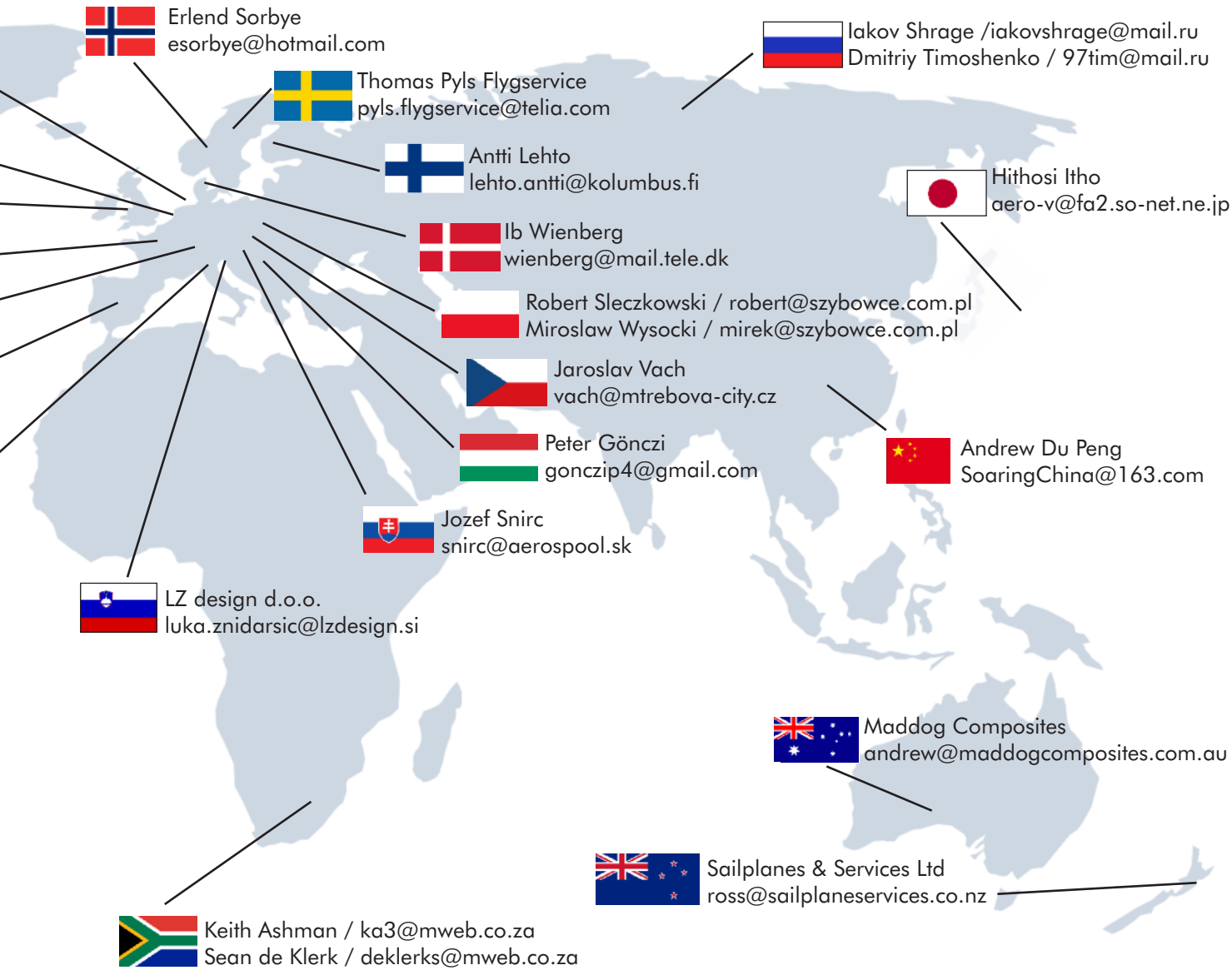
06/07 > 21/07 European Gliding Championship
Club, Standard, 15m classes
Prievidza, Slovakia

28/07 > 10/08 World Junior Championship
Club, Standard classes
Szeged, Hungary

01/09 > 14/09 World Gliding Championship
13,5m and 1st FAI e-glide event
Pavullo, Italy

01/ > 2020 FAI World Women Gliding C.
Club, Std, 18m classes
Lake Keepit, Australia

IRTH REPRESENTATIVES



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