

HPH TwinShark



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HPH TwinShark

HpH
sailplanes

HPH TwinShark









TS

OK-7393

Twinspark





-7393

TwinShark



OK-7393

TS

Twin Shark





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Blanik

GAC

OK-1827 真理

SHARK 304MS
1000-1000 Class
Lightweight B&B Standard Tube System

SHARK 304JT
1000-1000 Class
1000-1000 Standard Tube System

SHARK 304ES
1000-1000 Class
Electric auxiliary engine

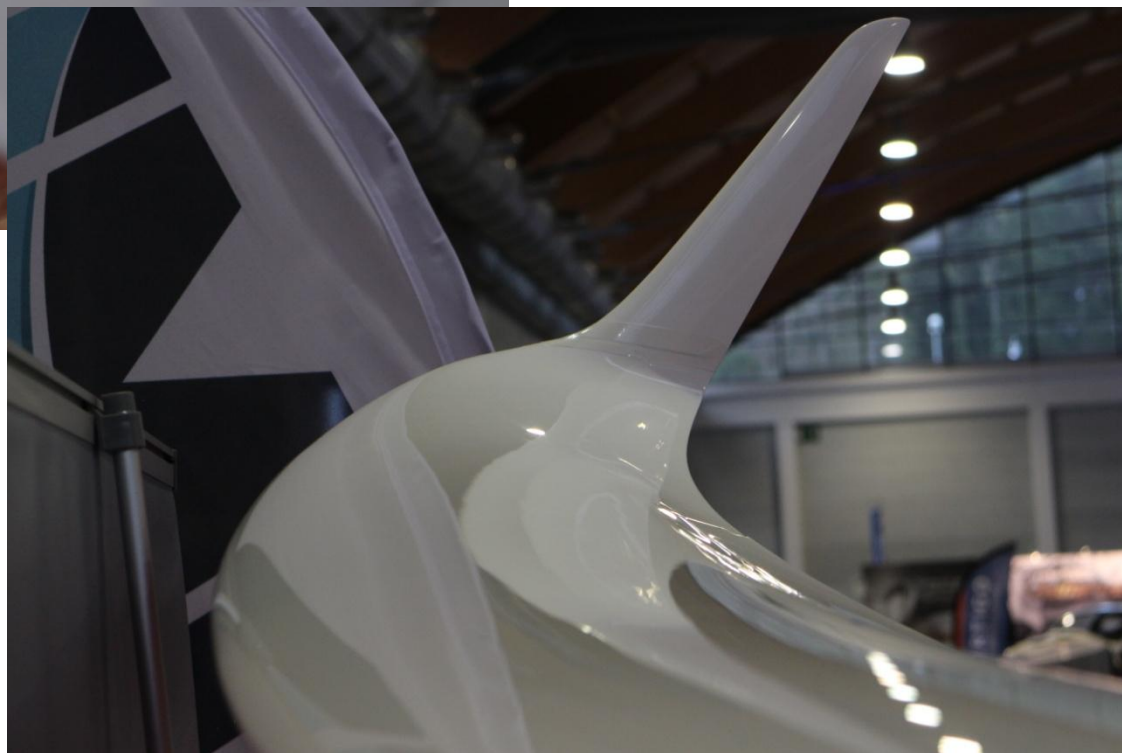
TWIN SHARK 304TS
1000-1000 Class
New model B&B or B&B

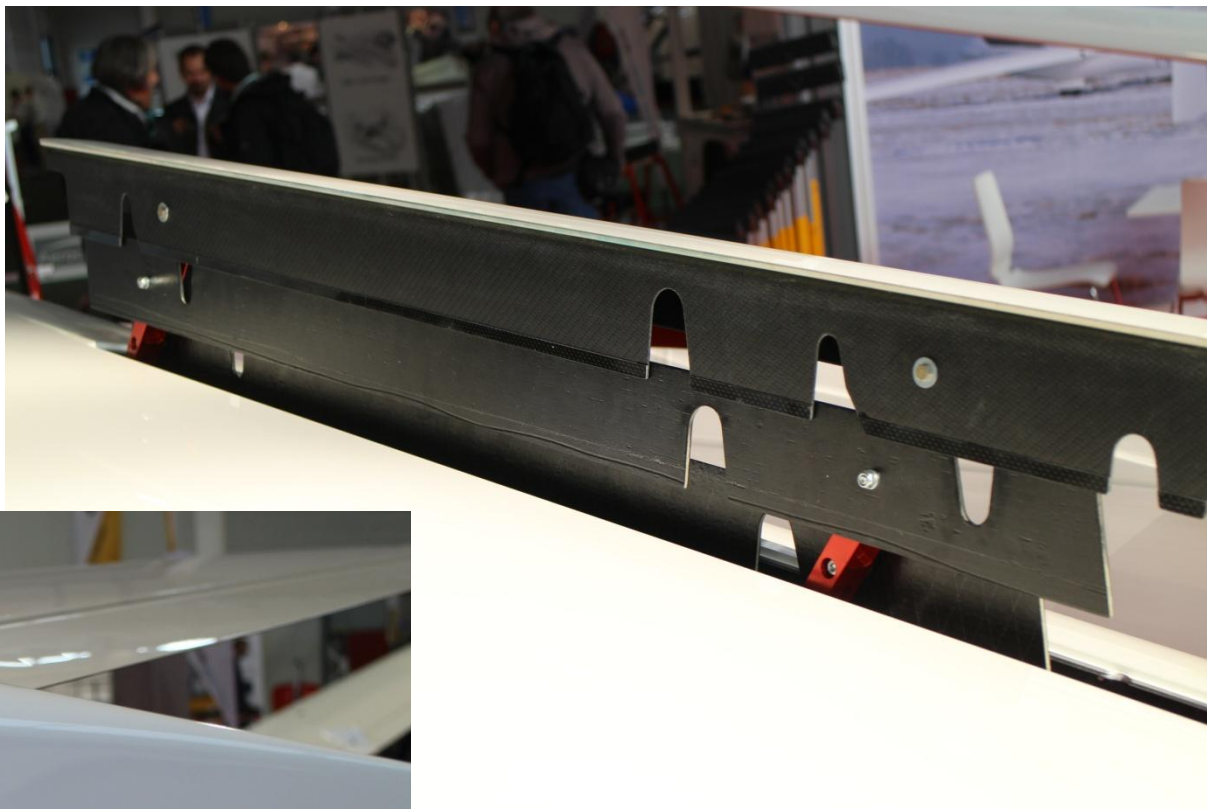
HpH sailplanes

HPH TwinShark



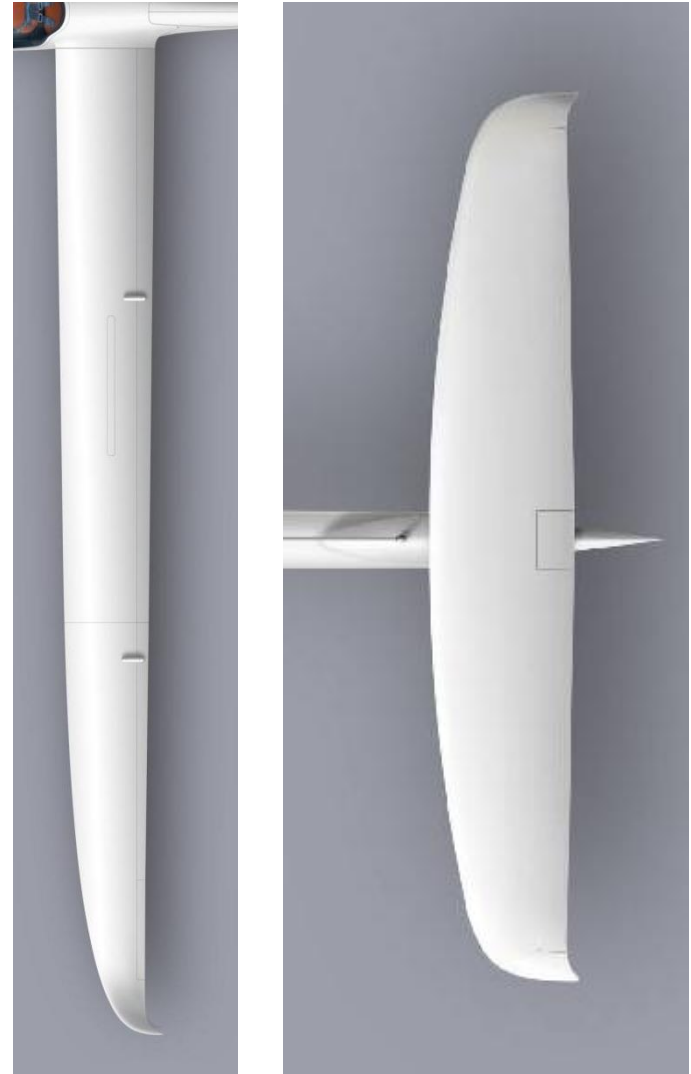






TwinShark Design Factors

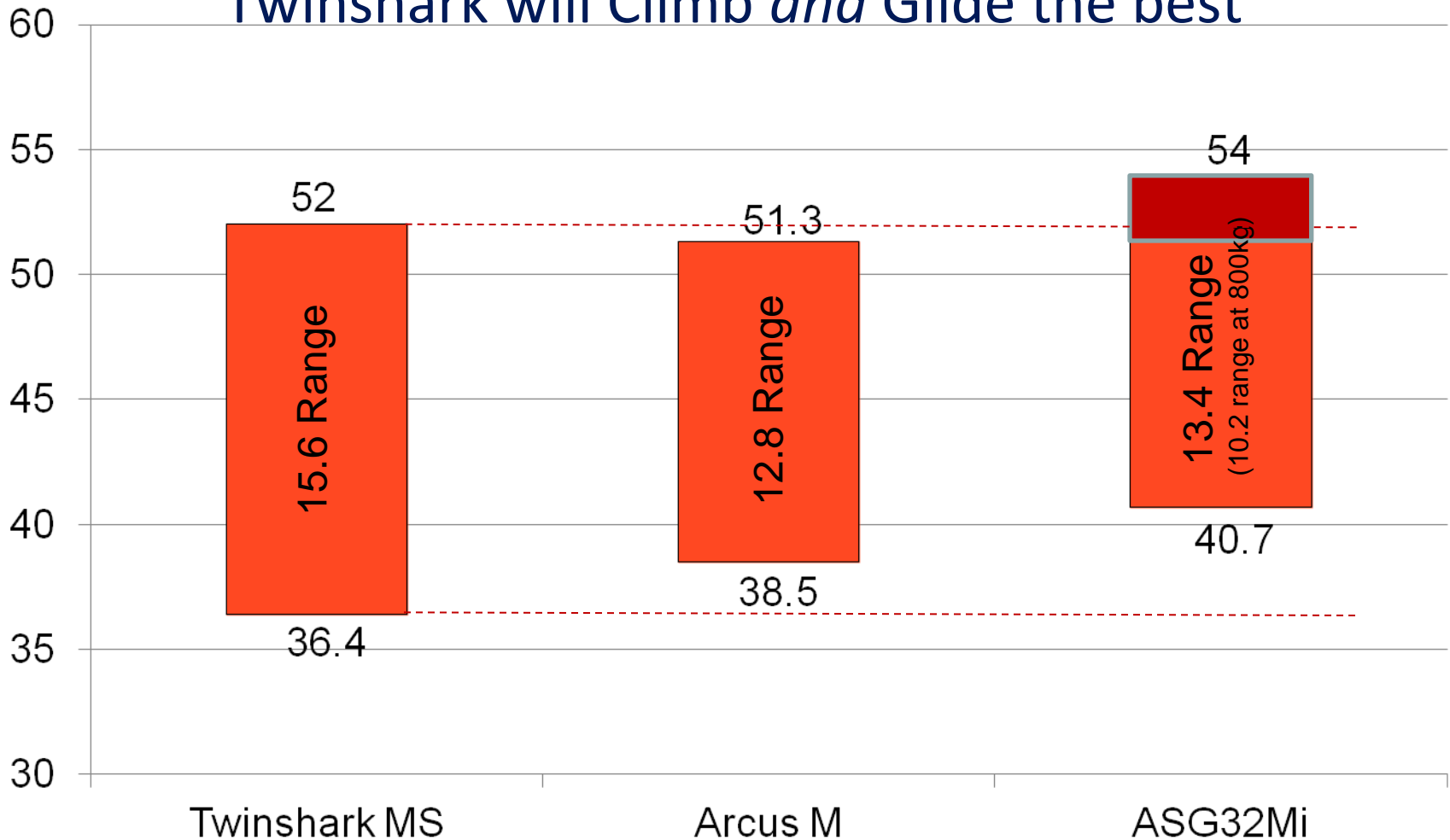
- The aerodynamic performance builds on our Shark experience and is the result of extensive aerodynamic studies and wind-tunnel tests.
- The wing area of 15.38 and the aspect ratio of 26.5 deliver a class-leading performance, whilst advanced manufacturing techniques still deliver wing-loadings as low as 36 kg/m²; with a mass of 800 kg, the wing-loading is 52 kg/m².
- Optimal curved leading edge and the well-known Shark winglets are maintained
- Reflex negative winglets on tailplane mimic the Shark silhouette and extract further performance gains.
- Wing split is re-positioned to make the inner panels slightly shorter and lighter for easier rigging



Calculated performance leads the 20m flapped class

Range of Wing Loadings

Twinshark will Climb *and* Glide the best



Despite having the highest *Aspect ratio*, Twinshark has the *lowest wing loading*

TwinShark has over 21% better wing loading *range* than Arcus and 53% better than ASG32 at FAI Max weight of 800kg

TwinShark cockpit

- The spacious cockpit easily accomodates tall pilots, and those of generous build
- Single piece, side opening canopy and extended reflex over wing delivers outstanding visibility for both pilots.
 - Hoop used on some other 2-seaters is avoided for better safety & visibility
- The key cockpit features which have made the Shark cockpit popular have been maintained in the TwinShark
- The cockpit ventilation system, in addition to the canopy vent, helps keeping comfortable temperatures
- The cockpit is where you live – make it a comfortable experience!



HPH TwinShark delivers class-leading cockpit environment

TwinShark MS

the powerful self-launcher

- Utilises the proven Binder 2625-02 engine system based around the Solo motor (62 hp)
- The 19-litre fuselage tank capacity can be supplemented with wing tanks for additional range
- Motor extension and starter are operated by Lithium-Manganese batteries which offer substantial weight saving capability
- ILEC engine control system

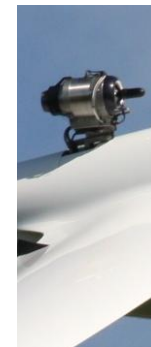
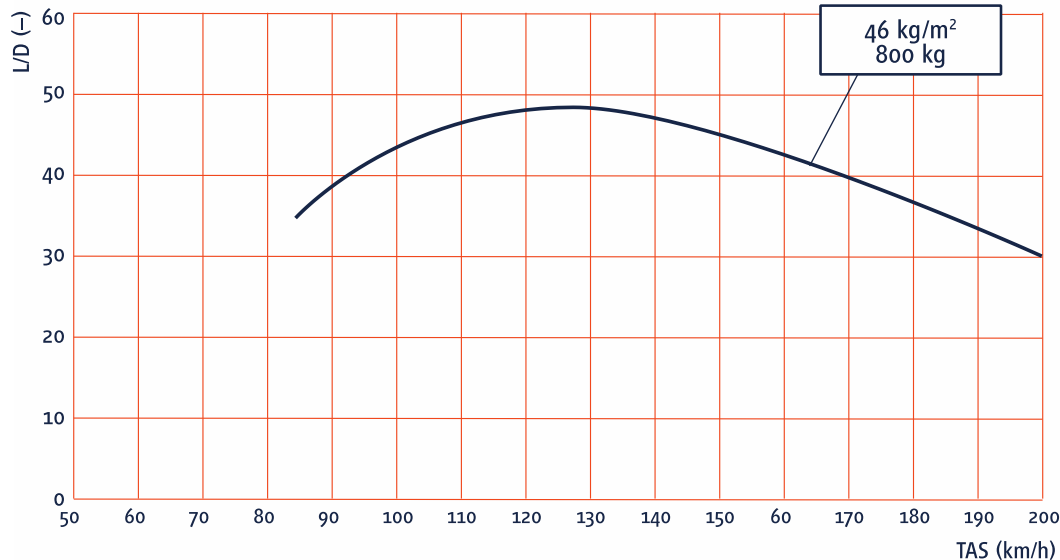


Utilises industry-standard components for high reliability / maturity

TwinShark 20m specs



wing span	20 m
wing surface	15.38 m ²
aspect ratio	26.5
length	8.95 m
empty mass	480 kg
max mass	800 kg
min wing loading	36 kg/m ²
max wing loading	52 kg/m ²
min speed	68 km/h
max speed	275 km/h
best glide ratio	49 @ 128 km/h
lowest rate of sink	0.72 m/s @ 92 km/h
flaperons + ailerons, SH type airbrakes	
selflauncher with Binder Solo system	



SJ



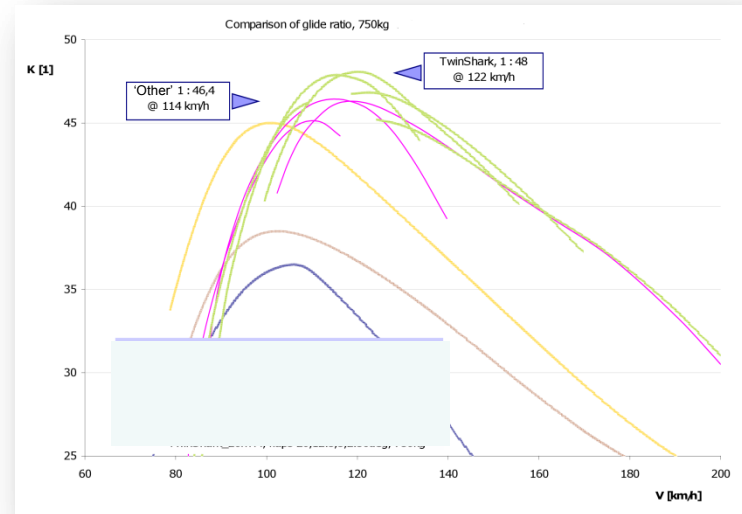
MS

TwinShark shows remarkable performance data



TwinShark Details

- Uses Latest technology wing sections with excellent lift properties
- Optimum wing planform and blended section transitions
- Advantages over current offerings
 - Reduced wing chord
 - Higher aspect ratio
 - Excellent wing-loading maintained through very low empty weight
- HPH employing new technology fabrication techniques to achieve empty weight



This is very much a technology enabled project

Twinshark – From CAD to Reality



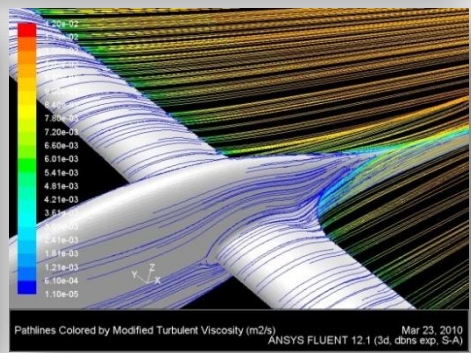
A Twinshark Fuselage



Tailplane test



Rigging Check



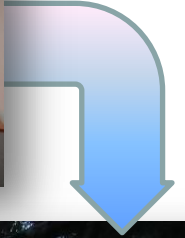
Pathlines Colored by Modified Turbulent Viscosity (m2/s) Mar 23, 2010 ANSYS FLUENT 12.1 (3d, dms exp, S-A)



Successful Wing-break test

Twinshark will fly in 2017

Infrastructure Investments



Previous Factory could not support Multiple Product Lines

Laminating Shop



Very Different to the place where the first HPH 304 was made

HPH 2017 Campus



Probably the most modern sailplane factory ??



Twin Shark 304 TS