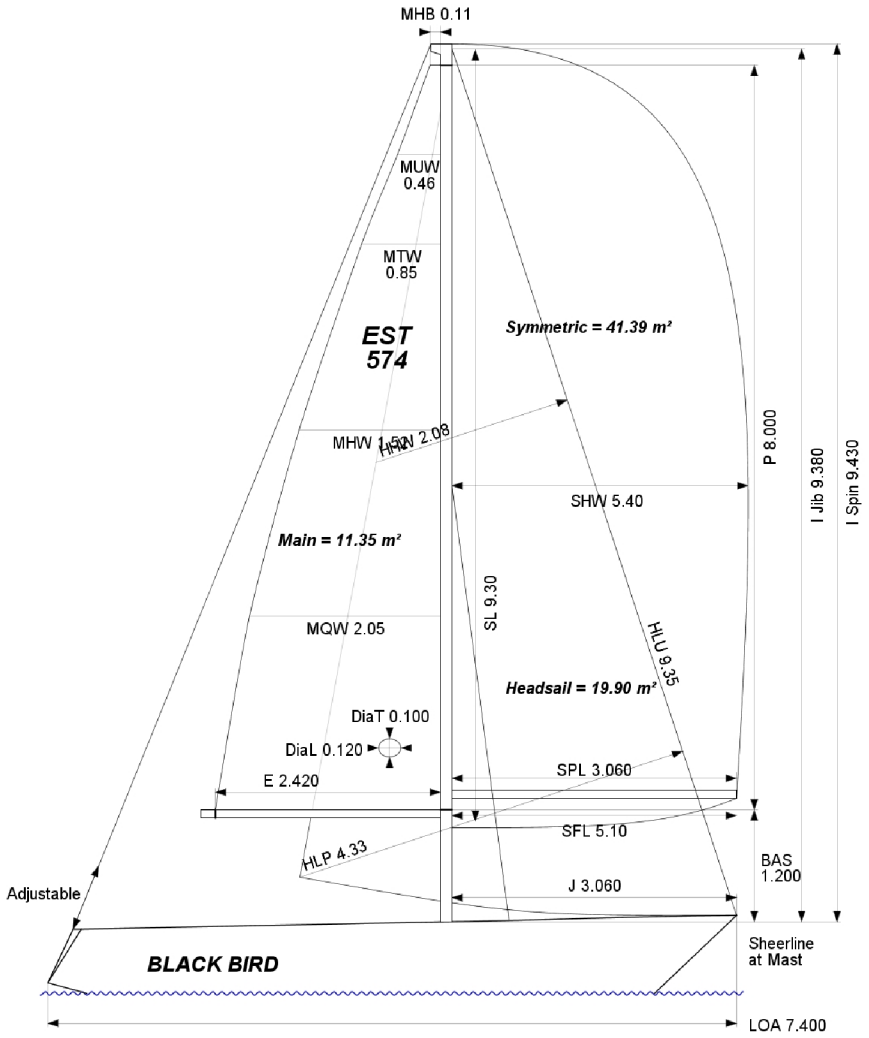


ORC
Offshore Racing Congress
World leader in rating technology

2020
ORC Club Certificate

**Rating Office**
Estonian Yachting Union
Purje 8, maja 3
11911 Tallinn
Estonia

ESTONIAN YACHTING UNION

**Certificate**
Number **029/20**
Issued On **05/06/2020**
ORC Ref **03880000K11**
VPP Ver. **2020 1.02**
Valid until **31/12/2020**

**Crew Weight**

| | |
|---|---|
| Default | 339kg |
| Maximum | **310kg** |
| Minimum* | **225kg** |

*when applied by the NoR and SI*
Non Manual Pwr **No**

**Special Scoring**

| | ToD | ToT |
|---|---|---|
| Non Spin GPH | **821.1** | **0.7307** |
| Non Spin OSN | **794.6** | **0.7551** |

**Sails Limitations**
Headsails **5** Spinnakers **4**
**Woven Polyester**

**Spinnaker configuration**
Symmetric: **Yes** **41.38**
Asymmetric: **No**
Flying H/S: **No**
Spin. Pole: **Yes**

**Class Division Length**
CDL = **5.662**

**Stability (Estimated)**
Limit Positive Stab.: **113.2°**
Stability Index: **111.4**

**BOAT**
Name **BLACK BIRD**
Sail Nr **EST-574**

**GPH**
**786.0**

**CLASS**

| | |
|---|---|
| Class | **BIRDIE 24** |
| Designer | **Harry Becker** |
| Builder | |
| Series | **01/1976** |
| Age Date | **01/1976** |
| Age Allowance | **0.487%** |

**COMMENTS**

**HULL**

| | | | |
|---|---|---|---|
| Data File | **EST574** | LOA | **7.400m** |
| Offset File | **BIRDIE24.off** | MB | **2.412m** |
| Displacement | **1,910kg** | Draft | **1.246m** |

| | | | |
|---|---|---|---|
| IMS Division | **Cruiser/Racer** | Dynamic All. | **0.429%** |
| Plan Review | | Construction | **Solid** |
| Fiber Rigging | **No** | Aramid Core | **No** |
| Crew Arm Ex | | Carbon Rudder | **No** |
| | | Light Stanchions | **No** |

| | | | | | |
|---|---|---|---|---|---|
| IMSL | **6.171m** | VCGD | **-0.050m** | Sink | **9.03kg/mm** |
| RL | **5.160m** | VCGM | **-0.034m** | WS | **12.90m²** |

LSM0 **6.085m** Displacement/Length ratio

Water Ballast Trim Tab **No**
BLR Index **0.0000**

**PROPELLER**
Type **No Propeller**

**CENTERBOARD**
**N/A**

**SCORING OPTIONS**

| | COASTAL / LONG DISTANCE | | | WINDWARD / LEEWARD | | |
|---|---|---|---|---|---|---|
| Time on Distance | **764.0** | | | **847.4** | | |
| Time on Time | **0.7853** | | | **0.7966** | | |
| Triple Number | Low | Medium | High | Low | Medium | High |
| Time on Distance | **895.9** | **698.3** | **623.5** | **1148.9** | **852.7** | **741.3** |
| Time on Time | **0.7534** | **0.9666** | **1.0826** | **0.5875** | **0.7916** | **0.9106** |

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## BOAT

| | | | |
|---|---|---|---|
| Name | **BLACK BIRD** | Sail Nr | **EST-574** |
| File | **EST574** | Data in | **meters/kilograms** |

## RIG

| | | | |
|---|---|---|---|
| Forestay Tension | **Aft** | Spreaders | **0** |
| Inner Stay | **Fixed** | Runners/Checkstays | **0** |
| Carbon Mast | **No** | Jib Furler | **No** |
| Fiber Rigging | **No** | Main Furler | **No** |
| Non-Circular Rigging | **No** | | |
| Articulated Bowsprit | **No** | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| P | **8.000** | E | **2.420** | MDT1 | **0.100** | MW |
| IG | **9.380** | J | **3.060** | MDL1 | **0.120** | GO |
| ISP | **9.430** | SFJ | | MDT2 | | BD |
| BAS | **1.200** | SPL | **3.060** | MDL2 | | MWT |
| FSD | | TPS | | TL | **-3.000** | MCG |

## INCLINING TEST AND FREEBOARDS

Inclining Test **Enter VCG directly**

| | | | |
|---|---|---|---|
| Flotation date | **05/06/2020** | SG | **1.0270** |
| VCGDe | **-0.050** | | |

| | | | | | |
|---|---|---|---|---|---|
| FFM | **0.832** | FF | **0.832** | SFFP | **0.483** |
| FAM | **0.676** | FA | **0.676** | SAFP | **7.036** |

| | |
|---|---|
| LCF from stem on CL / on sheer | **4.166 / 4.328** |
| Maximum beam station from stem | **4.343** |
| RM Measured | **36.4kg·m** |
| RM Default | **32.3kg·m** |
| Limit of positive stability / Stab.Index | **113.2° / 111.4** |
| Freeboard at mast at 3.060 | **0.774** |

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2020
Measurements
Datasheet

## MIZZEN RIG AND SAILS

**N/A**

## PROPELLER

Type **No Propeller**

## Certificate

Number **029/20**
ORC Ref **03880000K11**
Issued On **05/06/2020**
VPP Ver. **2020 1.02**
Valid until **31/12/2020**

## COMMENTS

## MOVABLE BALLAST

**N/A**

## CENTERBOARD

**N/A**

EJL
ESTONIAN YACHTING UNION

## SAILS INVENTORY

### MAINSAIL (1)

| Id | MHB | MUW | MTW | MHW | MQW | Area | Measurer | Meas.Date | Manufacture | Material | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.11 | 0.46 | 0.85 | 1.52 | 2.05 | 11.35 | | | | | |

### HEADSAILS (2)

| Id | HHB | HUW | HTW | HHW | HQW | HLP | HLU | Ovrlp | Area | Btn | Flying | Measurer | Meas.Date | Manufacture | Material | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 0.06 | 0.55 | 1.05 | 2.08 | 3.17 | 4.33 | 9.35 | 142% | 19.90 | | No | | | | | |
| 1 | 0.08 | 0.45 | 0.85 | 1.82 | 2.99 | 4.17 | 9.24 | 136% | 18.10 | | No | | | | | |

### SYMMETRIC SPINNAKERS (1)

| Id | SLU | SLE | SL | SHW | SFL | Area | Measurer | Meas.Date | Manufacture | Material | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.30 | 9.30 | 9.30 | 5.40 | 5.10 | 41.39 | | | | | |

### ASYMMETRIC SPINNAKERS (0)

| Id | SLU | SLE | SL | SHW | SFL | Area | Kind | Measurer | Meas.Date | Manufacture | Material | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

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# 2020
# ORC Club Certificate Appendix

| BOAT | | | |
|---|---|---|---|
| Name | **BLACK BIRD** | Certificate Number | **029/20** |
| Sail Nr | **EST-574** | Issued On | **05/06/2020** |

| TIME ALLOWANCES | | | | | | | |
|---|---|---|---|---|---|---|---|
| Wind Velocity | 6 kt | 8 kt | 10 kt | 12 kt | 14 kt | 16 kt | 20 kt |
| Beat VMG | **1339.1** | **1140.2** | **1012.0** | **929.6** | **889.1** | **876.9** | **883.9** |
| 52° | **875.6** | **746.1** | **677.2** | **644.8** | **627.1** | **619.8** | **618.2** |
| 60° | **826.9** | **706.4** | **654.9** | **629.4** | **612.0** | **601.7** | **597.6** |
| 75° | **794.9** | **682.3** | **639.0** | **615.5** | **596.4** | **579.6** | **562.1** |
| 90° | **802.8** | **674.3** | **622.9** | **596.5** | **582.7** | **571.4** | **540.0** |
| 110° | **787.1** | **660.8** | **614.5** | **583.2** | **554.5** | **532.8** | **511.8** |
| 120° | **808.4** | **672.2** | **620.0** | **587.9** | **557.8** | **531.3** | **495.0** |
| 135° | **881.2** | **723.5** | **642.5** | **606.8** | **576.9** | **547.9** | **500.9** |
| 150° | **1017.1** | **817.0** | **698.9** | **636.3** | **604.9** | **577.4** | **526.8** |
| Run VMG | **1174.5** | **942.0** | **800.5** | **703.6** | **644.0** | **611.6** | **558.9** |
| **Selected Courses** | | | | | | | |
| Windward / Leeward | **1256.8** | **1041.1** | **906.2** | **816.6** | **766.5** | **744.2** | **721.4** |
| Circular Random | **1075.9** | **872.4** | **763.3** | **699.6** | **660.6** | **635.7** | **606.4** |
| Coastal / Long Distance | **1248.5** | **976.4** | **818.4** | **722.1** | **671.1** | **635.4** | **578.1** |
| Non Spinnaker | **1137.9** | **916.6** | **796.4** | **725.6** | **682.0** | **654.1** | **621.4** |

| Velocity Prediction in Knots for True Wind Speeds | | | | | | | |
|---|---|---|---|---|---|---|---|
| Wind Velocity | 6 kt | 8 kt | 10 kt | 12 kt | 14 kt | 16 kt | 20 kt |
| Beat Angles | **42.8°** | **43.5°** | **42.4°** | **41.1°** | **39.9°** | **39.8°** | **40.5°** |
| Beat VMG | **2.69** | **3.16** | **3.56** | **3.87** | **4.05** | **4.11** | **4.07** |
| 52° | **4.11** | **4.82** | **5.32** | **5.58** | **5.74** | **5.81** | **5.82** |
| 60° | **4.35** | **5.10** | **5.50** | **5.72** | **5.88** | **5.98** | **6.02** |
| 75° | **4.53** | **5.28** | **5.63** | **5.85** | **6.04** | **6.21** | **6.40** |
| 90° | **4.48** | **5.34** | **5.78** | **6.04** | **6.18** | **6.30** | **6.67** |
| 110° | **4.57** | **5.45** | **5.86** | **6.17** | **6.49** | **6.76** | **7.03** |
| 120° | **4.45** | **5.36** | **5.81** | **6.12** | **6.45** | **6.78** | **7.27** |
| 135° | **4.09** | **4.98** | **5.60** | **5.93** | **6.24** | **6.57** | **7.19** |
| 150° | **3.54** | **4.41** | **5.15** | **5.66** | **5.95** | **6.24** | **6.83** |
| Run VMG | **3.07** | **3.82** | **4.50** | **5.12** | **5.59** | **5.89** | **6.44** |
| Gybe Angles | **149.0°** | **152.0°** | **154.0°** | **172.0°** | **180.0°** | **180.0°** | **180.0°** |

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