TopTask - meteorological flight plans for gliding

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Regional Forecasts: Wind, PFD
Thermals: Lift, Altitude, Clouds

Stratiform Clouds
Cumulus Clouds

X-country conditions

Source: pc-met@DWD
Rates of Climb

X-country conditions

Source: pc-met@DWD
Temperature and Humidity

Source: pc-met@DWD
Climb Rates & Wind

Analysen & Konzepte • Dr. O. Liechti • CH-8404 Winterthur
Flight Polar

V₂ [m/s]

[m/s]

0 10 20 30 40 50

0 10 20 30 40 50

124 (1:53, 100 km/h)
114 (1:47, 96 km/h)
100 (1:39, 90 km/h)
84 (1:30, 80 km/h)
77 (1:27, 55 km/h)
51 (1:12, 48 km/h)
39 (1:5, 30 km/h)

Archaeopteryx
Hangglider
Paraglider
Gliders

Handicap
(BGR@speed)
X-country Speed

Climb Rate [m/s] in Thermals

<table>
<thead>
<tr>
<th>X-country speed [km/h]</th>
<th>Handicap (BGR)</th>
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</thead>
<tbody>
<tr>
<td>124 (1:53)</td>
<td>25 m</td>
</tr>
<tr>
<td>114 (1:47)</td>
<td>18 m</td>
</tr>
<tr>
<td>100 (1:39)</td>
<td>15 m</td>
</tr>
<tr>
<td>84 (1:30)</td>
<td>15 m old</td>
</tr>
<tr>
<td>77 (1:27)</td>
<td>Archaeopteryx</td>
</tr>
<tr>
<td>50 (1:12)</td>
<td>Hang-glider</td>
</tr>
<tr>
<td>38 (1: 5)</td>
<td>Para-glider</td>
</tr>
</tbody>
</table>
Flight Task

Source: SeeYou
TopTask: Flightplan 7.9.04
TopTask: Flightplan 29.5.04
Recorded Flight 29.5.04
Flight Simulation 29.5.04
Set Tasks in May 2004

187 km  351 km  263 km  RC
355 km  509 km  461 km  NC
328 km  289 km  531 km  NC
54 scored flights @ RC/NC Birrfeld 2004
(9 days with 3 tasks, 1. and 2. place)
Conclusion

- At gliding competitions the forecast TopTask speed is a good estimate of the winner’s speed.
- GPS-based flight records of gliding flights allow for a detailed verification of the regionalized forecasts of thermals.
- Meteorological planning for glider flights in thermals is available to pilots and task setters in useful quality.