The **standard minimum distance** for the **BRONZE** task is **100NM**, unless you have a slower aircraft, in which case there is an accommodation for this.

The requirement is:
1. Take off from airfield A to waypoint B must be no less than 20NM.
2. Land at airfield B.
3. Take off from airfield B to waypoint C must be no less than 20NM.
4. Land back at airfield A.
5. Total distance must be 100NM or more OR as calculated minimum for your declared cruise speed *(see notes for more detail)*.

**EXAMPLE ROUTE**

The route below is an example of a route suitable for the **BRONZE** navigation exercise:
NOTE: this route crosses Brize class D airspace and a clearance would be needed to complete the flight at the 2000ft level indicated on the following PLOG.

EXAMPLE PLOG

<table>
<thead>
<tr>
<th>Membury - Membury</th>
<th>Startup</th>
<th>Brakes Off</th>
<th>Fuel Required</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>33.5 ltr</td>
</tr>
<tr>
<td></td>
<td>Takeoff</td>
<td>Landing</td>
<td>Planned Fuel</td>
</tr>
<tr>
<td></td>
<td>Brakes On</td>
<td>Shutdown</td>
<td>Endurance</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 hr 21 m</td>
</tr>
</tbody>
</table>

Elevation 667 ft (24 hPa)
SR 05:23 Z, MCT 04:49 Z

- Membury
  - Charbury (EGVN)
  - EGBP Kemble

- EGBP Kemble
  - Old Severn Bridge (M48) (EGGD)

- Old Severn Bridge (M48) (EGGD)
  - Membury

Elevation 667 ft (24 hPa)
SS 18:52 Z, ECT 19:27 Z

<table>
<thead>
<tr>
<th>Level</th>
<th>IAS</th>
<th>TrkT</th>
<th>Wind</th>
<th>HdgM</th>
<th>GS</th>
<th>Dist</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>75</td>
<td>007</td>
<td>000/00</td>
<td>007</td>
<td>75</td>
<td>24</td>
<td>19</td>
</tr>
<tr>
<td>2000</td>
<td>75</td>
<td>240</td>
<td>000/00</td>
<td>240</td>
<td>77</td>
<td>25</td>
<td>19</td>
</tr>
<tr>
<td>2000</td>
<td>75</td>
<td>261</td>
<td>000/00</td>
<td>262</td>
<td>77</td>
<td>22</td>
<td>17</td>
</tr>
<tr>
<td>2000</td>
<td>75</td>
<td>101</td>
<td>000/00</td>
<td>101</td>
<td>76</td>
<td>41</td>
<td>33</td>
</tr>
</tbody>
</table>

112 1:27

EXAMPLE DETAIL

The standard minimum distance for the BRONZE task is 100NM, unless you have a slower aircraft, in which case there is an accommodation for this. (See the main Bronze Navigation document for details of how to adjust for slower aircraft)

The requirement is:

1. Take off from airfield A to waypoint B must be no less than 20NM.
   In this case we flew from departure point at Membury to a waypoint at Charbury which is a VRP and very easy to identify from the air. This is 24NM from the departure point.
2. Land at airfield B. There is no min, distance from the waypoint to this airfield.
   In this case we landed at Kemble.
3. Take off from airfield B to waypoint C must be no less than 20NM in this case we left from Kemble to the VRP at the Severn Bridge, again very easy to identify. The distance for this leg is 22NM.
4. Land back at airfield A.
   We landed back at Membury. There is no min, distance for this leg.
5. Total mileage declared must be 100NM or more OR as calculated minimum for your cruise speed.
   The total distance of 112NM met the requirement for this aircraft with a cruise speed of 75kts which is 100NM.
NOTES: This task was planned using SkyDemon. Others have used stopwatch and chart methods for the same task. The only difference is that GPS logs can be submitted as evidence if used whereas you need to have the flight verified by an observer using chart/stopwatch methods. The observer can be any BMAA member and they don’t need to fly with you (although they can if you’d enjoy their company!) In both cases the proposed route, timings and estimated fuel burn must be submitted in advance either by email to the BMAA prior to departure or a copy of your plan left with your observer.

If your aircraft cruises at 60 knots or faster, the minimum distance for the BRONZE navigation task is 100 NM. If you fly an aircraft with a lower cruise speed, then you may use a lower minimum distance for the flight. This figure is the cruise air speed that you choose multiplied by five then the result divided by three to give a distance in nautical miles.

**Example**

<table>
<thead>
<tr>
<th>Cruise speed (kts)</th>
<th>X 5</th>
<th>/ 3</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 kts</td>
<td>250</td>
<td>83.3</td>
<td>83 NM</td>
</tr>
</tbody>
</table>

If the result of this calculation is less than **58 NM**, you must use the figure of **58 NM**.