Air Law and Operational Procedures

Version 1.1, 26th Jan 2020:

- Slide 9 & 28 amended to reflect 15th Jan 2020 published Exemption OSR4 No.1339 Gliders and SLMGs – Secondary Surveillance Radar Transponders at and above FL 100 up to FL 195 in Designated Areas
- Slide 8, wording change to clarify Rule of Air are additions and variations to SERA whilst Official Record Series (ORS) contain Exemptions
What are we going to cover?

- Exam stuff
  - Air Law basis, Op Regs, sources, and documentation
  - Rules of the air
  - Airspace and Altimetry
  - VMC/VFR

- Some non exam stuff
  - EASA Progress – current position and remaining battles
  - BGA Role
  - EASA LAPL(S)/SPL

- Note Overlap with other presentations:
  - Airspace (charts and navigation)
  - Basic altimetry – navigation and airspace
Approach

- Is to support your study…but will take aim at exam level information

Further Reading:
- *Bronze and Beyond* of course...
- *Aeronautical Knowledge: Air Law (2016)*, Jeremy M Pratt (from AFE)
- *BGA Laws and Rules* – BGA web site and esp. the *Operational Regulations*
- *BGA Managing Flying Risk* (contains collision avoidance info.)

Documents Pack:
- Includes current BGA Laws and Rules download
- Read the BGA ‘Rules of the Air cover note’
- Additional Docs from EASA/CAA
Possible Urban Myth… (starting point for AFE Air Law book!)
- 1st ever piece of air law was invented within days of the Montgolfier Brothers balloon flight in 1783
- It banned hot air ballooning on a Sunday
- Our ballooning brethren continue to cause us grief to this day….

Chicago Convention - 1944
- No prizes for working out where the conference was held
- The Convention of International Civil Aviation – developed 40 articles
- Key articles – sovereignty, CoA certificates, crew certificates
- Created the International Civil Aviation Organisation – ICAO

ICAO
- Part of the UN with 191 member states
- Standards and Recommended Practices (SARPs) contained in 19 Annexes
- Annex 2 – Rules of the Air
- ICAO doesn’t create Law – but all countries laws/rules closely follow the SARPs
European Aviation Safety Agency (EASA)
- Created 2002
- 32 member states

Creates and monitors European wide standards
- Aircraft Certification
- Flight Crew Licencing (FCL)
- Aircraft Operation
- Air Traffic Management
- Airports

EU Regulations:
- Implementing Regulations – these are the legal requirements
- Acceptable Means of Compliance & Guidance – explanations, further detail and guidance

SERA – Standardised European Rules of the Air based on ICAO Annex 2 (Imp Regulation)
UK Exit From The EU

24th January 2020

Following agreement between the UK and the EU, the UK will leave the EU at the end of January 2020. The UK has agreed to abide by EU rules during a transition period until the end of the year.

Therefore following its departure from the EU, the UK will have to continue to apply EU aviation regulation including the EASA Basic Regulation and the Implementing Rules made under it.

Therefore we can expect the timetable for EASA sailplane rules and their application in the UK to continue as previously published.
EASA Medical Requirements: Issue

- Qualified Glider Pilots flying EASA sailplanes will be required by law to hold an EASA pilots licence and medical certificate from **8 April 2021**
  - Medical – LAPL or Class 2 Medical

- CAA Medical Self Declaration: BGA/GA requesting use of this in place of Class 2

- To support the BGA/GA request, please go and complete the CAA self declaration on the CAA web site
National Aviation Authorities (NAA)

- A NAA is the organisation that enforces aviation regulations in a state; both EASA and State
- NAAs are sometimes referred to as the ‘competent authority’

- The UK NAA is the **CAA** – the Civil Aviation Authority ([https://www.caa.co.uk/home/](https://www.caa.co.uk/home/))

- UK Law and Variations:
  - The Rules of the Air Regulation – significantly *different/additional* to SERA (i.e. aerobatics over towns)
  - Air Navigation Order (ANO) 2016: UK specific airworthiness certificates & pilot licencing
  - UK Rules of the Air variations to SERA – Official Record Series Exemptions (ORS):
    - ORS4 No.1174 Exceptions to the Minimum Height Requirements – glider hill soaring exemption
    - OSR4 No.1339 Gliders and SLMGs – Secondary Surveillance Radar (SSR) Transponders at and above FL 100 up to FL 195 in Designated Areas – **Non-SSR Gliding Area (NSGA) exemption**
  - Consolidation of SERA, Rules of the Air Regs and ANO…..
<table>
<thead>
<tr>
<th>Reg (EU) 923/2012 (as amended), plus supporting AMC and GM</th>
<th>UK AltMOC/GM to SERA</th>
<th>The Air Navigation Order 2016 (as amended)</th>
<th>Rules of the Air 2015 (as amended)</th>
<th>UK General Permissions or General Exemptions</th>
</tr>
</thead>
</table>

**UK GM1 to SERA.3135(d) Formation Flights**

For the purposes of SERA.3135(d) military aircraft flying in formation should be flown at a distance not exceeding 1 nautical mile laterally and longitudinally and 30 metres (100 feet) vertically from the leading aircraft in the formation.

**SERA.3140 Unmanned Free Balloons**

An unmanned free balloon shall be operated in such a manner as to minimize hazards to persons, property or other aircraft and in accordance with the conditions specified in Appendix 2.

**SERA.3145 Prohibited Areas and Restricted Areas**

Aircraft shall not be flown in a prohibited area, or in a restricted area, the particulars of which have been duly published, except in accordance with the conditions of the restrictions or by permission of the Member State over whose territory the areas are established.

**Air Navigation Order 2016**

239 Power to prohibit or restrict flying

(1) If the Secretary of State decides it is necessary in the public interest to restrict or prohibit flying by reason of—

(a) the intended gathering or movement of a large number of persons;
(b) the intended holding of an aircraft race or contest or of a flying display; or
(c) national defence or any other reason affecting the public interest,

the Secretary of State may make regulations prohibiting, restricting or imposing conditions on flights by aircraft specified in paragraph (2) flying in the circumstances specified in paragraph (2).

(2) The aircraft and circumstances are—

(a) aircraft, whether or not they are registered in the United Kingdom, in any airspace over the United Kingdom or in the neighbourhood of an offshore installation; and
(b) aircraft which are registered in the United Kingdom, in any other airspace, being airspace for which the United Kingdom has, under international arrangements, undertaken to provide navigation services for aircraft.

(3) Regulations made under this article may apply either generally or in relation to any class of aircraft.

(4) It is an offence to contravene, permit the contravention of or fail to comply with any regulations made under this article.

(5) If the pilot in command of an aircraft becomes aware that the aircraft is flying in contravention of any regulations which have been made for any reason referred to in paragraph (1)(c) the pilot in command must, unless otherwise instructed under paragraph (6), cause the aircraft to leave the area to which the regulations relate by flying to the least possible extent over such area and the aircraft must not begin to descend while over such an area.

(6) The pilot in command of an aircraft flying either within an area for which regulations have been made for any reason referred to in paragraph (1)(c) or within airspace notified as a Danger Area must immediately comply with instructions given by radio by the appropriate air traffic control unit or by, or on behalf of, the person responsible for safety within the relevant airspace.

**RULES OF THE AIR REGULATIONS 2015**

**SECTION 3 GENERAL RULES, COLLISION AVOIDANCE AND PROTECTION OF PERSONS AND PROPERTY**

- OSR4 No.1339 Transponders in Gliders NSGAs
- CAA Consolidation Nov 2019
- Rules of the Air Regs 2015
- SERA Imp Reg 2016
- Easy Access Rules for SERA
- ORS4 No.1174 SERA UK Exceptions to Min Height
- Guidance-for-SPL-and-LAPLs-holders
- Instructors
- Introductory-and-passage-flight
- Medical Requirements
- Radio
- Airworthiness
- Managing-Flying-Risk-v12
- BGA RULES OF THE AIR Cover Note Jan 2020
- NATS UK AIRSPACE CLASSES diagram Jan 2019
- Gliding-certificate-and-endorsements
- Sporting-badges-and-diplomas-v1.2
- Gliding-aerobatics-badge
- Examining-and-assessing-pilots-and-instructors
- Cross-country-and-airspace
- Competitions
- Accident-reporting
- Trailers-Guidance
- BGA-Operational-Regulations
NAA Key Publications

- Each NAA produces key publications:
  - Aeronautical Information Publication – **AIP**
  - Notices to Airmen (**NOTAMs**) (/\textcolor{red}{\underline{NOTAM}}s)
  - Aeronautical Information Circulars – **AIC** (monthly and colour coded)
  - In UK published by the Aeronautical Information Service – **AIS** ([http://www.ais.org.uk/](http://www.ais.org.uk/))
Bringing it all together: Organisations

ICAO

EASA

NAA – UK CAA

SARPs in Annexes
(Standards and Recommended Practices)

SERA
(Standardised European Rules of the Air)

Rules of the Air Regs,
ANO and ORS’s
UK Gliding...

- British Gliding Association (BGA) Supports the CAA

- Is now a Declared Training Organisation (DTO):
  - Flight Instructor (Sailplanes) Rating Revalidation seminars
  - Examiners Revalidation
  - Glider Towing Rating

- BGA Laws and Rules applies to members clubs

- Specifically the BGA Operational Regulations – 44 items
<table>
<thead>
<tr>
<th>Section</th>
<th>Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td><strong>Insurance.</strong> Aircraft and gliders operating from BGA club aerodrome shall comply with The Civil Aviation (Aviation Insurance) Regulations and BGA Operating Regulations. The Civil Aviation (Aviation Insurance) Regulations require that aircraft and gliders to be covered by third party insurance for the liability of the pilot while flying or otherwise operating the glider. All gliders shall be covered by insurance to include the liability of the pilot while flying or otherwise operating the glider. Individual members of the insured club / syndicate to whom a policy is issued on behalf of the club / syndicate are deemed to be the minimum combined liability insurance shall be in force.</td>
</tr>
<tr>
<td>7</td>
<td><strong>Membership - Requirement.</strong> A person may not be a member of a BGA club unless they become a member of that club.</td>
</tr>
<tr>
<td>8</td>
<td><strong>Thermal Circling Direction.</strong> A glider joining another glider in a thermal shall circle in the direction as that established by the first.</td>
</tr>
<tr>
<td>9</td>
<td><strong>Parachutes.</strong> No glider shall enter cloud unless all its occupants have been instructed in their use.</td>
</tr>
<tr>
<td>10</td>
<td><strong>Cloud Flying - Proximity to Gliding Site.</strong> No glider shall enter cloud unless the pilot has announced that intention by radio, or permits that to be known by his actions. No glider shall approach a gliding site within a radius of 10 nautical miles of a gliding site, except from at least 2000 ft above cloud unless the pilot has announced that intention by radio, or permits that to be known by his actions.</td>
</tr>
<tr>
<td>11</td>
<td><strong>Reporting Defects/Heavy Landings.</strong> Pilots must report any landing greater than 5ft and any glider which is damaged, on landing, to their instructor or a qualified aircraft inspector before the glider is returned to normal service.</td>
</tr>
</tbody>
</table>

“**It’s called ‘reading’. It’s how people install new software into their brains**”
Coffee and Tea!
Now for some detail...

- Rules Of The Air
- Collision Avoidance
- Low Flying
- Dropping Objects From Gliders
- Ground Manoeuvres
- Paperwork Inc. Accidents
Rules of the Air

- Pilot in Command
  - Responsible for the safe conduct of the flight
  - Who might that be?

- Right of Way

Order of Precedence in Converging flight:
- Balloons (brethren again!)
- Gliders
- Airships
- Towing aircraft
- Power
Gliding Collision Avoidance


- Look before Turning:
  - Just before...
  - Then back...
  - Check during the turn...
  - Before coming out of the turn....

- Look out in Thermals:
  - Monitor in and those joining the thermal
  - Circle in same direction...established glider has right of way
  - Join at a tangent
  - Stay opposite if at same height
  - Look out outside the turn before leaving
Rules of the Air: Collision Avoidance

- Following a linear feature, keep to the right
- Head on (inc. approx) both aircraft Alter Course to the right
- Converging – on the right, in the right
- Overtaking
  - The aircraft being overtaken has right of way
  - Gliders can overtake on either side
  - Power only overtakes on the right
- So what about on a ridge?
  - Turns?
  - Head on during a ridge beat?
  - Overtaking?
Rules of the Air: Circuits

- Lower aircraft has precedence, but:
  - May not cut in front of another on finals
  - May not overtake an aircraft on finals

- If aware that another aircraft in circuit has an emergency you must give way

- Watch for gliders on opposite circuits
  - Especially on base leg
  - Also check for those on long finals
Low Flying (Minimal Heights)

- Aircraft cannot fly within 500’ (150m) of a person, vessel, vehicle or structure, except for:
  - Normal take off and landings
  - Life saving
  - Gliders Hill Soaring…(Per ORS4 No. 1174)

- The 1000’ Rule:
  - Unless taking off or landing…
  - When flying over a **congested area** or open air gathering of +1000 then…
  - May not fly lower than 1,000’ above the highest object within 600m of the aircraft
  - AND must be high enough to land clear

- Aerobatics may not be performed over a congested area *(UK Rules of the Air Regs)*

- Prior to aerobatics, spins or stalls, perform a HASSLL check
Don’t Drop Objects Except:

- Persons by parachute in an emergency
- Articles for life saving
- Ballast – fine sand or water
- Tow ropes at an aerodrome
On the Ground

- (Power) Conventions:
  - Land to the right of other aircraft:
  - Depart runway (turn) to left
  - Most gliding sites have local procedures

- Give way to aircraft taking off or landing

- Non towing vehicles give way to aircraft
Accidents and Incident Reporting

- **Serious Accidents:**
  - Resulting in death, serious injury or substantial damage to an aircraft (major repair/effect)
  - Report to Police and DoT Air Accident Investigation Board (AAIB) as soon as possible
  - Aircraft not to be moved without AAIB permission – apart from extracting people and valuables or to avoid damage by fire or danger to others
  - Also report to the BGA within 24 hours

- **Accidents & incidents:**
  - Accident: Any damage from getting in to getting out
  - Incidents: Accidents that almost happened or damage with no one on board
  - Report to BGA on the BGA accident form within 1 month
Glider Certification & Paperwork

- **Airworthiness:**
  - EU process Part M
  - For EASA gliders overseen by the BGA as a Continuing Airworthiness Management Organisation (CAMO)

- **Certificates:**
  - Non expiring EASA Certificate of Airworthiness (CoA)
  - BGA Annual revalidation with Airworthiness Review Certificate (ARC)
  - Part M – ARC to be carried in aircraft if flying to another destination

- All gliders are subject to a Daily Inspection (DI) by a qualified pilot

- Pre flight checks - ABCD
Airspace and Altimetry

BRIEFLY!!!
Altimetry Taster

- Pressure Settings

- QFE
  - Height above a specific point

- QNH
  - Altitude
  - Above Mean Sea Level

- Flight Levels (FL)
  - Standard Pressure Setting of 1013hPa
  - Pressure Altitude
Airspace Taster: Classifications

- **Class A:**
  - Airways and Terminal Manoeuvring Areas (TMA)
  - Gliders can only enter if a specific agreement exists i.e. Letter of Agreement LOA

- **Class C:**
  - Above FL195
  - Temporary Reserved Areas for Gliding TRA (G) – if activated. Wave Boxes.

- **Class D:**
  - Control zones
  - Entry with ATC clearance

- **Class E:**
  - Control areas
  - Permission via ATC required, but ATC instructions must be complied with

- **Class G:**
  - Uncontrolled airspace

**Charts Presentation to Follow...**
Airspace Taster: Areas, Zones, NSGAs

- **ATZ:**
  - Entry only with permission from ATC
  - 2000’ AGL, Radius 2.5nm (diameter 5nm)

- **Control Areas and Zones:**
  - Class D and A (TMA)

- **RMZ:**
  - Carriage and operation of RT is mandatory
  - Call before entry, remain on freq. and notify leaving

- **TMZ:**
  - Pressure altitude reporting transponder (Mode A, C or S)
  - Some TMZs specify Mode S (i.e. Stansted)

- FL100 Plus: Mode S Transponder is required (ANO)

- Non-SSR Gliding Areas (NSGA) FL100 to 195, ‘Wave Boxes’:
  - Gliders and SLMG are exempt from using Transponders within NSGAs (OSR4 No.1339)
  - Must have ATC permission
Visual Flight Rules (VFR)

- VFR Flight:
  - Can only occur in Visual Metrological Conditions (VMC)
  - VMC is defined in terms of $\geq$:
    - Visibility
    - Horizontal and vertical distance to cloud
  - VMC Minima varies by Class of Airspace, Altitude (>FL100) and Speed (you are unlikely to be faster than the 140knot limit and still one piece)

- If you are not flying VFR then you must be IFR (Instrument Flight Rules)
  - IFR flight is in Instrument Metrological Conditions (IMC)
  - Unable to comply with VFR
  - Gliders are not required to fly VFR in Class G – hence we can enter cloud
  - NB EASA Licence holders require a cloud flying endorsement
Visual Flight Rules (VFR)

- In controlled airspace:
  - Glider flight is normally VFR
  - ATC Clearance for IMC is required

- Below 3,000’ AMSL in Class D for example this means:
  - Clear of Cloud
  - In sight of the surface (ability to control attitude without instruments)
  - 5km visibility

- Above 3,000’ AMSL in Class D:
  - Clear of cloud by 1,000’ vertically and 1,500m horizontally
  - 5km visibility
UKATS AIRSPACE CLASSIFICATIONS

**IFR**

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<thead>
<tr>
<th>A</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATC SEPARATION PROVIDED</strong></td>
<td>IFR</td>
<td></td>
<td>IFR</td>
<td>UK FLIGHT INFORMATION SERVICES</td>
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<tr>
<td><strong>TRAFFIC INFORMATION PROVIDED</strong></td>
<td>IFR</td>
<td></td>
<td>IFR</td>
<td>Procedural, Deconfliction</td>
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<td></td>
<td>IFR</td>
<td></td>
<td>IFR</td>
<td>Traffic, Basic</td>
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<tr>
<td><strong>SPEED LIMITATION</strong></td>
<td>Not applicable (unless notified for ATC purposes)</td>
<td>below FL100</td>
<td>below FL100</td>
<td>below FL100</td>
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<tr>
<td><strong>RADIO</strong></td>
<td></td>
<td>below 250 KIAS</td>
<td>below 250 KIAS</td>
<td>below 250 KIAS</td>
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<tr>
<td><strong>ATC CLEARANCE REQUIRED?</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
</tr>
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</table>

**VFR**

<table>
<thead>
<tr>
<th>F</th>
<th>G</th>
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<tbody>
<tr>
<td><strong>ATC SEPARATION PROVIDED</strong></td>
<td>VFR FLIGHT NOT PERMITTED</td>
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<td><strong>TRAFFIC INFORMATION PROVIDED</strong></td>
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<tr>
<td><strong>VMC MINIMA</strong></td>
<td>5NM FL100 1500M 1000FT 1000FT</td>
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<tr>
<td></td>
<td>5NM FL100 1200M 1000FT 1000FT</td>
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<td><strong>SPEED LIMITATION</strong></td>
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<td><strong>RADIO</strong></td>
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<tr>
<td><strong>ATC CLEARANCE REQUIRED?</strong></td>
<td>YES</td>
</tr>
<tr>
<td><strong>Not required</strong></td>
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</tbody>
</table>

* Aircraft (except helicopters) at 140KIAS or less, clear of cloud with the surface in sight in a flight visibility of at least 1500 metres. Helicopters at a speed which, having regard to the visibility to reasonable clear of cloud with the surface in sight in a flight visibility of at least 1500 metres.

NOTE: Air Navigation Order 2009 Schedule 7 UK license privileges apply.
Flight in Cloud

- Legal as we have seen – note Cloud Flying Endorsement for LAPL(S) or SPL
- Training is essential
- Bases of Clouds – especially cloud streets
- BGA Procedures:
  - Within radius of 5nm of any site must enter from 200' below
  - Must wear a parachute
  - Use 130.405 MHz – call sign, height, position, updates and leaving
- Accidental Entry
  - Classically wave flight closing slot or orographic
  - Time for any instruments to spool up – so turn on if you think it is a risk…!!
  - Fly away from the big lumps and open your airbrakes – fly straight & monitor speed
  - On ridge fly at 90° or into wind if off set – increase speed
The End!

PLEASE NUDGE ANYONE AT THE BACK WHO IS ASLEEP.....