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1 INTRODUCTION

a) Although much of the United Kingdom is covered by Class G (uncontrolled) airspace, around many aerodromes Controlled Airspace (CAS) has been established to provide an adequate level of safety for commercial air transport. Fortunately, general aviation pilots may fly in much of that controlled airspace, even in poor weather, provided they and their aircraft are properly qualified and equipped.

b) Flight in controlled airspace requires accurate flying, understanding, anticipation and clear thinking. It also requires confidence in using the radio and talking to controllers, which only comes with practice.

c) This leaflet is intended to give pilots without an instrument rating guidance on the use of CAS in the UK. It should be read in conjunction with the Aeronautical Information Publication (AIP), which contains specific procedures for each piece of CAS in the UK. Pilots should also consider obtaining the assistance of an instructor when entering CAS for the first time.

d) Further [guidance](#) for individual control zones and areas may be found on the 'Local Flight Guides', on the CAA website www.caa.co.uk/vfr.

2 **CONTROLLED AIRSPACE**

a) Class A airspace is prohibited to pilots without a valid instrument rating, unless they have been given special VFR clearance in a control zone (see paragraph 11).

b) Flight under Visual Flight Rules (VFR) is permitted in Class B airspace (none currently exists in the UK), provided the pilot is under air traffic control. Flight under Instrument Flight Rules (IFR) requires a valid instrument rating.

c) VFR flight is also allowed in Class C airspace, but in the UK this is all currently above Flight Level (FL) 195, where VFR flight is not normally permitted unless specifically authorised. Again, IFR flight requires a valid instrument rating.

d) In class D airspace, VFR flight is permitted with the specific permission of the air traffic controller. In UK airspace, IFR flight is permitted, under control, to holders of a PPL with valid UK IMC ratings (IMC ratings may not be added to an NPPL).

e) In class E airspace, IFR flight is again permitted, under control, to PPL holders with valid UK IMC ratings. Provided the pilot maintains the VMC applicable to controlled airspace, pilots may fly under VFR in Class E airspace without informing air traffic control. However, it is usually appreciated, and often advisable, to inform the controlling agency of your presence.

f) Class F airspace is not controlled airspace. It is advisory airspace in which an air traffic service is provided to participating IFR traffic. In the UK there is no need for pilots who are following VFR to obtain permission to enter Class F airspace, nor indeed to inform anyone that they are doing so. However,

since commercial operators may be using the airspace, we recommend that pilots inform the appropriate Air Traffic Service Unit (ATSU) of their presence whenever practicable. Flight under IFR in Class F airspace should take advantage of a Traffic or Deconfliction Service as described in SafetySense Leaflet [8](#), *Air Traffic Services Outside Controlled Airspace*.

3 **PRE-FLIGHT PREPARATION**

a) Before flight in CAS, you need to know the specific rules applying to flight in that particular airspace. Consult the en-route (ENR) section of the AIP, available on-line at www.ais.org.uk.

(i) [ENR 1.4](#) lists the airspace notified in each particular airspace classification, and notifies those with specific rules.

(ii) If intending to land at an aerodrome inside CAS, check the procedures published for the individual aerodrome, and for the controlling aerodrome if different, in the aerodromes ([AD](#)) section also.

(iii) Note down all the frequencies you may need, checking they are up-to-date on the "[VFR charts - charts update](#)" section of the AIS website. Check NOTAMs for frequency changes and other information.

b) You may wish to file a flight plan (see *paragraph 7*), and you must do so if flying under IFR.

(i) File it at least 60 minutes before taxiing, or three hours if your flight might be subject to 'flow control' through European controlled airspace.

(ii) For VFR flight in class D airspace there is no requirement for a written flight plan, the initial radio call will suffice. However, if the controller has plenty of warning of your intentions, it

should reduce the amount of time spent in radio communication.

c) Whether or not you have filed a flight plan, it may be worth writing down as much as possible of the initial calls you expect to make.

d) Even without a serviceable radio, you may be able to fly under VFR in certain Class D airspace which has been specifically notified at [ENR 1.4](#) for the purposes of Rule 31(4)(b) of the Rules of the Air regulations 2007. If that is possible, you must comply fully with that rule. You must obtain positive clearance from the controlling authority for the airspace, listed at [ENR 2.1](#). While in controlled airspace, you must maintain separation of at least 1,500 metres horizontally and 1,000 ft vertically from cloud in a flight visibility of 5 km at all times (8 km if above FL100).

e) If you plan to fly under IFR in CAS:

(i) ensure your communications and navigation equipment is serviceable;

(ii) you must carry sufficient approved equipment to comply with the requirements in Schedules 4 and 5 of the Air Navigation Order (ANO);

(iii) VOR and ILS equipment must be FM immune; and

(iv) remember to check the IFR NOTAMs as well as the VFR ones.

f) Even when not specifically required, carriage of a serviceable transponder with altitude reporting facility is strongly advised. Some air traffic control units rely exclusively on secondary radar, and most jet and turboprop aircraft carry airborne collision avoidance systems which can receive secondary radar transmissions and in some cases provide their crews with advisory avoiding action.

4 PRE-FLIGHT - CROSSING CAS

a) If planning to fly through CAS (except Class E airspace under VFR), you will need to obtain clearance to enter it, and will need to follow ATC instructions.

b) When planning your route, find prominent features on the 1:500,000 chart close to the points where your route enters and leaves CAS and work out what times you expect to cross the boundaries and what your range and bearing will be from the features. Visual Reference Points (VRPs) are ideal, but aim to pass near them, not over them. The same applies to navigation beacons. You will need to inform the controller of your estimated times for entering and leaving CAS; if you have planned it all before take-off it makes life much easier in the air.

c) Also select a feature at least ten minutes' flying time (but know exactly how long) before you enter CAS, so that you can make the initial call to the controller with confident ETAs. Study all the VRPs and prominent features around your route, because the controller may give you a clearance which requires you to fly to one of them. Be prepared to give ETAs to them also.

d) The initial prominent feature may also be a useful place from which to plan an alternative route in case circumstances mean the controller cannot give you clearance and tells you so immediately. You must also plan a route avoiding CAS from the point at which you intend to enter it, in case a hoped for clearance does not materialise, but an early alteration of course invariably uses less time and fuel.

7 THE FLIGHT PLAN

a) [CAP 694](#) and [ENR 1.10](#) describe the requirements and guidance for filing a flight plan. Much of the information contained in SafetySense Leaflet [20](#), 'VFR Flight Plans', is relevant even to IFR flight plans within controlled airspace. However, the flight rules ([Item 8](#)) may be "**I**" if IFR for the whole flight, or "**Y**" or "**Z**" as appropriate. If you file under the AFPEX system, selecting '**I**' will produce the necessary addresses in the address field.

b) If your flight plan covers a flight partly under IFR and partly under VFR, it must be addressed to your departure and arrival aerodromes and every FIR through which you will fly. Refer to the AIP [ENR 1.10.2.5](#).

c) In [Item 10](#), which lists the navigation and communication equipment carried, the letter "**S**" before the "/" means you carry a radio with all the required frequencies, and also ADF, VOR and ILS as navigation equipment, all of which must be serviceable (and approved if flying under IFR or at night). Otherwise, list the individual serviceable equipment you do carry, such as "**D**" for DME, "**F**" for ADF, "**L**" for ILS, "**O**" for VOR, and "**V**" for VHF RTF. "**N**" means you carry none. After the slash "/", insert "**A**" for SSR mode A, "**C**" if you have mode C also, and "**N**" if no SSR is carried. If you carry Mode S then "**S**" will usually apply.

d) In [Item 13](#), insert the designator of your departure aerodrome in the first box, then in the second box your Estimated "Off-Blocks" Time (EOBT). This is the time you expect to taxi; at major aerodromes, if you are ready at this time, any delay for air traffic reasons will have the flight plan delayed by ATC automatically.

e) In [Item 15](#), fill in the route you intend to follow within CAS and any other turning points you intend to use under IFR outside CAS.

(i) After your cruising TAS and intended cruising altitude or Flight Level, insert either the ATS route designator (e.g. "**P18**") if you intend and are able to fly along an airway, or the first and subsequent points at which a change of track, speed or cruising level is intended.

(ii) Insert points at least every 30 minutes' flying time, and use either latitude and longitude or, better, bearing and distance from ground navigation aids.

(iii) Insert "**DCT**" between points unless the designated ATS route runs between them.

(iv) Although you will have to follow the published IFR departure or arrival procedures, do not include them here.

f) If you are unable to make your EOBT, and expect to be more than 30 minutes late, you must inform ATC. If your flight is likely to be subject to flow control (see *AIC 70/2005, Yellow 174, 'Aircraft Operator/Pilots Responsibilities with Regard to ATFCM'*) make sure you are familiar with the AIC and the AIP [ENR 1.10](#).

g) An IFR FPL cannot be regarded as filed until an "ACK"(nowledgement) message has been received from the IFPS in Brussels. If the ACK message is a long one, it means IFPS has changed something – check it carefully!

h) Further information about flight plans can be found in [CAP 694](#) 'UK Flight Planning Guide', available for free download from the CAA website www.caa.co.uk/cap694.

FLIGHT PLAN

PRIORITY

<<≡ FF →

ADDRESSEE(S)

 _____ <<≡

FILING TIME

ORIGINATOR

_____ <<≡

SPECIFIC IDENTIFICATION OF ADDRESSEE(S) AND/OR ORIGINATOR

3 MESSAGE TYPE

<<≡ (FPL

7 AIRCRAFT IDENTIFICATION

- _____

8 FLIGHT RULES

-

TYPE OF FLIGHT

<<≡

9 NUMBER

- _____

TYPE OF AIRCRAFT

WAKE TURBULENCE CAT

/

10 EQUIPMENT

- _____ / _____ <<≡

13 DEPARTURE AERODROME

- _____

TIME

_____ <<≡

15 CRUISING SPEED

- _____

LEVEL

_____ →

ROUTE

_____ <<≡

16 DESTINATION AERODROME

- _____

TOTAL EET
HR. MIN

ALTN AERODROME

→ _____

2ND ALTN AERODROME

→ _____ <<≡

18 OTHER INFORMATION

 _____) <<≡

SUPPLEMENTARY INFORMATION (NOT TO BE TRANSMITTED IN FPL MESSAGES)

19 ENDURANCE

HR MIN

- E / _____

PERSONS ON BOARD

→ P / _____

EMERGENCY RADIO

→ R / U V E

SURVIVAL
EQUIPMENT

→ S / P

DESERT

D

MARITIME

M

JUNGLE

J

JACKETS

→ J / L

LIGHT

FLUORES

F

UHF

U

VHF

V

DINGHIES

NUMBER

→ D / _____

CAPACITY

→ _____

COVER

→ C

COLOUR

→ _____ <<≡

AIRCRAFT COLOUR AND MARKINGS

A / _____

REMARKS

→ N / _____ <<≡

PILOT IN COMMAND

C / _____) <<≡

FILED BY

SPACE RESERVED FOR ADDITIONAL REQUIREMENTS

Please provide a telephone number so our operators can contact you if needed

8 **IN FLIGHT - BEFORE ENTERING**

a) At least ten minutes before entering CAS, prepare yourself to write down your clearance, then make an initial call to the controlling authority, for example:

“East Midlands Approach, Golf Alpha Bravo Charlie Delta, request Basic Service and Airspace transit”.

You may be told to “*Stand by*”, which means “wait, I will call you”. In that case, say nothing and stay outside controlled airspace. However, the controller may reply immediately with “pass your message”. Having been asked to “pass your message”, make your full call, for example:

“East Midlands Approach, Golf Alpha Bravo Charlie Delta is a PA twenty eight,

From Wickenby to Gloucester,

One five miles East of Nottingham Tollerton,

Three thousand feet on one zero one one,

VMC,

Estimate Tollerton at two zero,

Request Basic Service and transit your airspace VFR from Tollerton to Swadlincote”.

b) Listen to the reply, which may again be “*Stand by*” with the same meaning as before, or may just be an acknowledgement of your call, in which case you must wait for your clearance before entering controlled airspace.

c) If the reply is your clearance, write it down as you receive it, maintaining a good look-out all the while. If you miss something, ask the controller to “***say again***” before attempting to read it back.

d) If the clearance is different to your intended route or altitude, make sure you can follow it safely. Remember that a controller does not know for example how many engines you have, so may offer you a route which takes you over a congested area at a height from which you cannot glide clear. In that case, use the phrase “unable comply” and explain why.



e) If you have not been given the words “*cleared to enter controlled airspace*”, do not enter. Either revert to your alternative route outside CAS, or if you have fuel to hold, do so, but remember the wind will drift you so allow for it if you fly one or more orbit.

f) Advise ATC if you no longer wish to enter CAS.

g) If you think the controller has forgotten you, it is acceptable to call in a suitable gap “Golf Charlie Delta standing by” as a reminder. However, do not badger the controller, there may be a lot of activity on another frequency or on telephone lines.



h) You must not only stay outside CAS until you have received and read back a formal ATC clearance, but you must also understand that clearance, and follow it. The clearance will include an altitude or Flight Level at, below or above which you must fly.

j) Ensure you and the controller have the same datum, so if you are flying below the local transition altitude and have not been given the QNH ask for it and set it.

k) If circumstances dictate that you cannot follow your clearance, you must inform ATC immediately, and if you forget what you were cleared for, do not hesitate – ask for confirmation!

9 VFR FLIGHT IN CAS

a) Pilots without instrument qualifications may and do fly under VFR in Class E airspace without informing air traffic control. They may also fly under VFR in class D airspace, provided they obtain clearance from the responsible ATSU and continually listen for instructions and information on the allocated frequency.

b) VFR flight is also possible in airspace classes B (under control) and C, although in the UK such airspace is at high altitudes and VFR cruising in Class C airspace above FL195 is not permitted.

c) The VFR pilot has the privilege to travel through Class D airspace, but also the responsibility to obey ATC instructions. That means that no matter what the pilot initially asked to do, he or she must follow the route allocated by ATC, following any altitude or Flight Level instructions given by the controller.

d) Again, be sure you have the same altimeter setting as everyone else in the airspace, and concentrate on maintaining your allocated altitude (if you are not confident you can keep within 200 feet of a given altitude under normal circumstances, consider some remedial instruction – it is a skill which must be practised).

e) If you are required to change altitude or level, do not allow yourself to continue climbing or descending beyond your cleared level – such ‘level busts’ create a serious hazard to others.

f) The VFR pilot may have the privilege of some collision protection, although that will be limited even if your transponder is transmitting a designated code. The controller may use the words “radar control” – although technically that terminology may be accurate, he is not actively controlling you. Apart from remaining on whatever track at whatever altitude for which you have been cleared, and listening attentively at all times for any changes to these instructions, you have the further responsibility to avoid other traffic.

g) Although the controller will pass information to you on the general position of other traffic, in Class D airspace he is not responsible for keeping you away from that other traffic. Even in Class C airspace, the controller is only responsible for keeping VFR traffic away from IFR traffic; a VFR pilot is responsible for maintaining separation from other VFR traffic.

h) The previous sub-paragraph implies a further responsibility. You cannot avoid what you cannot see! Visual Flight Rules for aeroplane pilots in Class C, D and E airspace include:

- (i) Remain in a flight visibility of 5 km (8 km above FL100) at all times.
- (ii) You must also remain 1,000 ft vertically and 1,500 metres horizontally away from cloud unless you are in radio communication with the controlling authority, and are flying at 140 kt or less below 3,000 ft altitude, clear of cloud and in sight of the surface.

If your cleared track and altitude would lead you outside these Visual Meteorological Conditions (VMC), or would cause you to contravene the low flying prohibitions of Rule 5 of the Rules of the Air Regulations 2007, you must inform ATC and seek a revised clearance.

i) You may fly under VFR in Class E airspace without advising ATC. However, you should consider informing the ATSU nominated on the chart, or the controlling ATC unit, of your intentions and asking for a service.

j) For flight in CAS pilots should also refer to the advice given in paragraphs 10(b)-10(d), since visual navigation features may be less easily identifiable and clearances are likely to be given in relation to radio aids.

10 IFR FLIGHT IN CAS

a) The IMC rating or IR(R) allows a PPL holder to fly under IFR in controlled airspace of Classes D and E when circumstances require him to do so.

b) IFR clearances will be given in relation to radio navigation aids, which is one reason why aircraft equipment must be adequate for the purpose.

c) CAA VFR charts show all the radio aids in the UK and are usually adequate for IFR flight at low altitudes (and you may need to refer to them), although a dedicated IFR chart produced by a commercial publisher may be easier to use if you are flying out of sight of the ground. Ensure it (and any database in your navigation system) is current.

d) A typical clearance may be to follow a VOR radial to a point designated by a DME range, although it is possible for the controller to ask you to fly direct to a point designated by radial and range from a co-located VOR/DME station. Ensure you have practised (or obtain instruction in) that procedure before attempting to fly under IFR in CAS. Again, accurate altitude keeping is important. Fortunately, not all IFR flight is by sole reference to instruments.

e) Although the controller is responsible for separating IFR traffic from each other, in Class D and E airspace VFR traffic is expected to remain clear of IFR traffic. That means if you choose to fly IFR when others consider they are flying in VMC, you are relying on their look-out. You may receive traffic information about other aircraft known to the controller, but it is best to keep a good look-out yourself, or at least have one or more well-briefed passengers do so.

11 **SPECIAL VFR FLIGHT**

a) If a pilot wishes to fly in a Control Zone but is not able to comply with the IFR, and at the same time cannot comply with the VFR, it may be possible for him to obtain a clearance to fly under 'Special VFR (SVFR)', even in Class A airspace.

b) It is important to realise this is **not** a VFR clearance; consider it an IFR clearance in conditions which allow a pilot to navigate visually.

c) Controllers will treat SVFR aircraft in a similar way to IFR aircraft, but having lower priority. They are normally required to provide separation from other aircraft, which may mean that clearance is delayed or perhaps even impossible.

d) However, there are certain routes and areas within Class A airspace which are notified in the AIP and in which ATC has no responsibility to separate SVFR traffic from each other.

e) In some cases, the altitude specified in an SVFR clearance may suggest you should fly less than 1,000 ft above a congested area. You can only accept a clearance to fly over a congested area if you will be able to alight clear of the congested area in the event of an engine failure.

f) In the AD section of the AIP, most aerodromes specify their requirements for SVFR flight, including the specific weather minima (usually as reported by the aerodrome met observer).

g) In addition to the weather minima for SVFR flight laid down by individual aerodromes, a pilot's licence privileges and restrictions also apply:

(i) A pilot with an IMC rating or IR(R) may not fly under SVFR unless flight visibility is greater than 3,000 m.

(ii) An aeroplane pilot without a valid IMC rating or IR(R) must maintain a flight visibility of 10 km under SVFR, unless on a route or in an Aerodrome Traffic Zone (ATZ) specifically notified in the AIP (at [ENR 1.4](#)) as allowing flight in a lower (specified) minimum flight visibility, with an absolute minimum of 3,000 m.

(iii) Pilots with instrument ratings have no licence restriction.

h) A flight plan should be filed for SVFR flight, although in individual zones a telephone call to ATC is likely to be sufficient.

i) The flight plan form requires the pilot to decide at item 8 whether he is flying under VFR (**V**) or IFR (**I**) or combinations of the two. There is no letter for 'Special VFR'. Consider the SVFR portion of your flight as IFR for this purpose, and if you do not have the requisite ratings or equipment for IFR flight in controlled airspace, write in item 18: '**RMK/SVFR in controlled airspace**'.

12 LEAVING CAS AND POST-FLIGHT

a) If you are flying under VFR, the controller may appear to pay no further attention to your flight after you have received clearance to enter. You must, however, not leave the frequency without informing the controller, nor must you leave the frequency while still inside CAS unless the controller has specifically given permission (for example to inform an aerodrome of your approach).

b) Before finally leaving the frequency, ensure you are actually outside CAS both horizontally and vertically, and remember to change the transponder code from the one you were allocated for flight in the CAS, to 7000 unless another code is allocated

c) If a flight plan was filed, cancel it once it is no longer required. If landing at an aerodrome with an ATSU inside CAS, the ATSU will cancel the flight plan for you; otherwise you can ask another ATSU (perhaps even the controller of the CAS you have crossed) to do it for you, or telephone the parent ATSU as listed in SafetySense Leaflet [20](#), GETMET, and AIP [ENR 1.10.3](#) after landing.

d) If you wish to cancel an IFR flight plan but continue VFR through airspace in which a flight plan is not required, you may call an ATSU and do so using the words "Cancel IFR flight plan".

e) VFR flight plans for flight within UK airspace should not be formally cancelled: they are assumed to end safely unless a 'responsible person' informs the parent ATSU otherwise – see SafetySense Leaflet [20](#).

13 FLIGHT ADJACENT TO CAS

a) We have emphasised the need to remain outside CAS if you have not received a positive clearance. If intending to fly near CAS, pilots must plan their trip especially carefully and pay close attention to their navigation to ensure they do not inadvertently infringe it (see *SafetySense Leaflet 5 'VFR Navigation'*).

b) Ensure you plan and fly the trip with reference to the latest charts, and have consulted NOTAMs for any changes to CAS since the chart publication date.

c) When in the vicinity of CAS, inform the controlling ATC unit of your presence if you can, or select the allocated frequency monitoring SSR code while listening on the control frequency. If not, use the Lower Airspace Radar Service if it is available. Keep your transponder ON (code 7000 if no other code has been allocated) with Mode C (ALT) selected if you have it – an infringement by an aircraft visible to the radar controller is much less dangerous than an infringement by an aircraft he cannot see! If you are listening on the controlling frequency, always be ready for the controller to contact you. Deselect the allocated SSR code before you leave the frequency.

d) If at any time you become unsure of your position and think you might be close to CAS, ask for help. If you are talking to an ATC unit with radar, ask for navigation assistance. If not, select 121.5 MHz and make an urgency call ("PAN PAN") to the Distress and Diversion Cell of the appropriate Air Traffic Control Centre.

14 **SUMMARY**

- Ensure you can fly and navigate accurately by keeping in practice.
- Study and prepare procedures, frequencies and approach minima before flight. Carry appropriate charts.
- Check the aircraft and its communication and navigation equipment is adequate and serviceable.
- Select ground features to relate your position to, and plan an alternative route avoiding, controlled airspace.
- Consider filing a flight plan. You must do so if IFR.
- Prepare radio calls, and make them in plenty of time. Be ready to copy and read back clearances.
- Stay outside CAS unless you have positive clearance.
- If in doubt about a clearance – confirm with ATC.
- In CAS, listen out at all times, and follow instructions. If VFR, keep a good look-out and maintain VMC.
- Cancel any flight plan when it is no longer required.
- If uncertain of your position close to CAS, call for help.