

AIR TRAFFIC SERVICES HELP NOTES No2 THE OVERHEAD JOIN

NOT TO BE USED FOR REAL WORLD AVIATION

Version 3.0

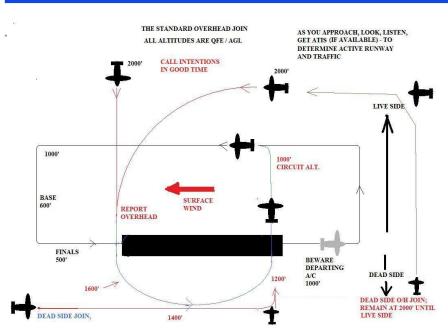
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Prepared by

Neville Munro,

Air Traffic Services Manager,

CIX VFR CLUB.



The **Standard Overhead Join** is one of the most used and often most feared procedures the VFR pilot will need to master.

Looking at an overview of the procedure (left) can be both confusing and daunting, especially with graphic interpretation added. However, by breaking the procedure down into stages and understanding each stage, it becomes much easier to master.

THE STAGES:-

THE APPROACH

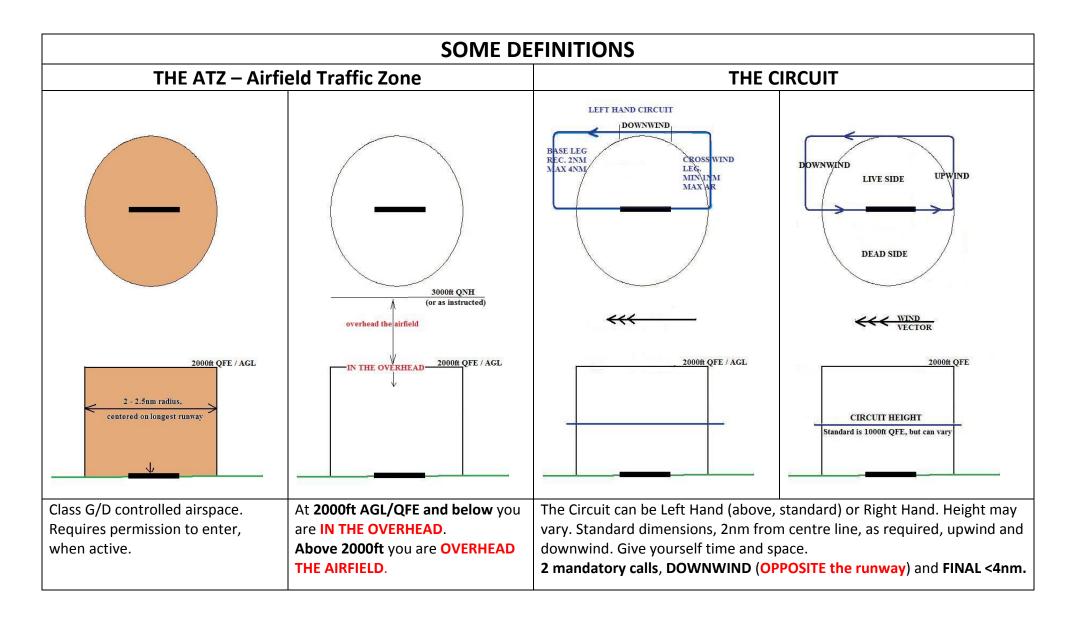
Simply, inbound to the airfield (NDB).

THE JOIN and HOLD IN THE OVERHEAD. & OVERHEAD THE AIRFIELD.

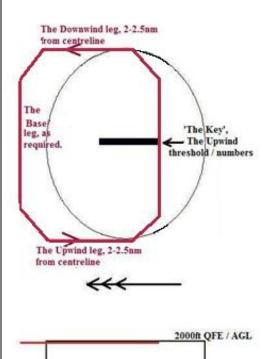
Join the HOLD. Make it easy. Stay there until safe to descend.

THE DESCENT INTO THE CIRCUIT.

Easy down, give yourself space and time.



THE HOLD (IN the OVERHEAD) – what it is and how to fly it.



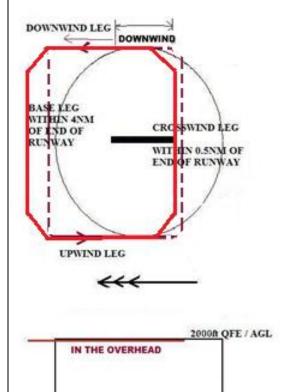
The Hold is a 'racetrack' pattern with rate 1 turns.
DO NOT TRY AND MAKE IT AN 'EXTENDED ORBIT' WITH STEEP TURNS AT THE CORNERS.

You will spend far too much time concentrating on flying the aircraft, rather than knowing what is going on around you.

Keep it simple and safe. 2nm either side of the C/L means you have time and space for easily controlled flight, allowing you to concentrate, as needed, on other traffic.

'Key' the crosswind leg on the upwind (take off end) of the runway. The base leg can be extended up to 6nm before any conflict with landing traffic.

However, under normal circumstances, a maximum of 3-4nm downwind is suggested, or you could lose sight of the A/F.



You should always TRY to remain WITHIN the ATZ at the 'KEY' end of the hold. At the other end, as the Tower Controller will only be issuing further 'reporting requests' or traffic information, it is not essential.

This is because:THE AVOIDANCE OF OTHER
TRAFFIC IS SOLELY THE
RESPONSIBILITY OF THE
VFR PILOT.

You must ensure that you always cross the C/L OVER the upwind end/numbers of the runway. (You could have a departing A/C below you). - The 'KEY' of the hold.

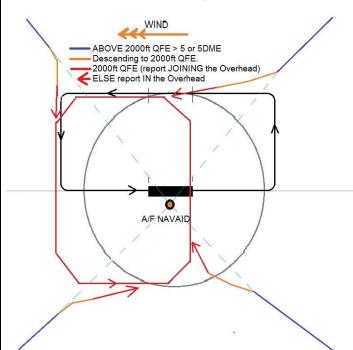
If following traffic in the hold (or circuit), you should 'match' his flight path. It is easier to remain behind him,

UNLESS HE IS CLOSER IN AND/OR UNSAFE.

ABOVE 2000ft QFE you are OVERHEAD THE AIRFIELD.

JOINING THE HOLD - IN the overhead

THE APPROACH - DIRECT/standard



Fly inbound to the airfield using NAVAIDS, VFR references or directions from the Approach Controller.

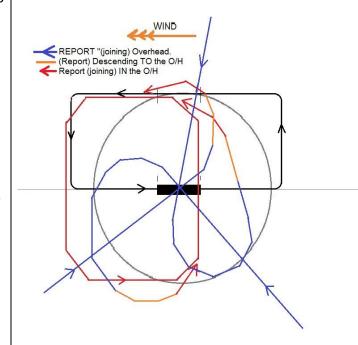
The Tower, (if no App is on), will ask you to report at about 3-4nm.

At a range that you decide (2-3nm) manoeuvre to 'feed into' the hold at 2000ft (or as defined for that airfield). Once you have 'reported IN THE OVERHEAD', YOU REMAIN HOLDING at 2000' UNTIL INSTRUCTED TO DESCEND.

At an AFISO/AGO or unmanned airfield, HOLD UNTIL YOU DECIDE it is SAFE for YOU to DESCEND TO THE CIRCUIT.

IF YOU WISH TO JOIN THE OVERHEAD BY FLYING OVER THE AIRFIELD. YOU MUST DO SO ABOVE THE ATZ.

YOU WILL BE 'OVERHEAD THE Airfield'.



This is the preferred join if there are more than two A/C IN THE OVERHEAD (AT 2000ft QFE).

If there are A/C joining / holding OVERHEAD the A/F (above the ATZ), you should manoeuvre to pass overhead, ABOVE the other traffic.

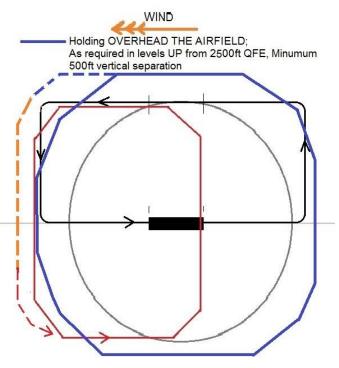
(Remaining OCAS - Outside Controlled AirSpace).

You should hold **OVERHEAD THE AIRFIELD** until you are told to report **IN THE OVERHEAD** (2000ft QFE) or you see it is safe to do so.

NEVER TURN/DESCEND TO A HOLD INSIDE THE HOLD. YOU WON'T SEE THE other a/c HOLDING — the one that will hit you!

REMEMBER, AVOIDANCE OF OTHER TRAFFIC IS THE RESPONSIBLITY OF THE VFR PILOT AT ALL TIMES.

Holding OVERHEAD the A/F and DESCENDING TO/INTO the O/H



REMEMBER,

If you have to hold OVERHEAD THE A/F, it will be because there is a lot of traffic about, so BE AWARE of the OTHER TRAFFIC. Holding OUTSIDE the ATZ will give you an excellent view of all that is happening below you.

WHEN
INSTRUCTED by
APP/ADVISED by

TWR or YOU DECIDE IT IS SAFE (AFISO/AGO). The recomended descent is as shown above.

Extend the **downwind leg** (max 6nm), **descend to 2000ft on the base leg** so that you have full view of the OVERHEAD, then **(report) JOINing the overhead on the upwind leg.**

This method will give you the maximum space/time to ensure you can remain clear of other traffic.

APP/TOWER/AFISO / AGO / UNMANNED Airfields general notes

APPROACH. You will be vectored in and handed off.

You just do as you are instructed, **KEEPING A GOOD LOOKOUT.**

TOWER ONLY. GIVE YOURSELF TIME AND SPACE. AT LEAST 10nm out Listen/look at the situation. **Decide** whether you will join

- (a) OVERHEAD THE AIRFIELD ABOVE ANY TRAFFIC (2300'+). or join
- (b) IN THE OVERHEAD (AT 2000' QFE).

When you have decided, contact Tower and tell him, or do it 'his way'. **YOUR decision, UNLESS HE DOES NOT/CANNOT APPROVE**.

a) GTC to join/report OVERHEAD THE A/F AT 2500ft QFE.

When advised, report descending to hold in/into the overhead.

GTC Report (descending to hold) IN the OVERHEAD (2000ft QFE xxxx)

Give youself space to see other traffic INSIDE your descending turn, or

b) GTC to report IN THE OVERHEAD at 2000' QFE. GTC Roger, traffic is...

AFISO/AGO. As above, BUT ALL DECISIONS ARE YOURS, Make sure that you are aware of any traffic and give yourself TIME and SPACE.

MOST IMPORTANT tell the controller/other traffic what you are doing.

GTC Joining overhead the A/F at 2400', left hand for Runway 27.
Holding Overhead at 2300' GTC.

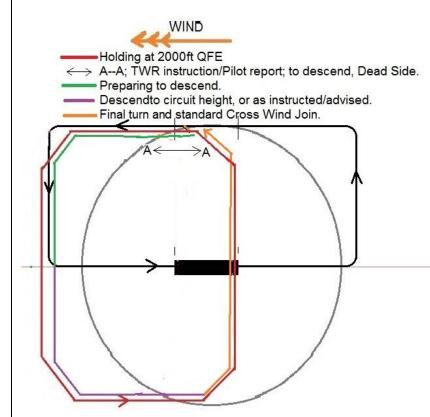
Descending into the overhead for 27 LH, GTC. Descending dead side 27 left hand GTC. etc.

Plus any other BRIEF calls you feel are required for safety

UNMANNED. As for AFISO/AGO A/Fs EXCEPT that you will ONLY receive A/F information **FROM OTHER PILOTS** and you should address **ALL** calls to **(POPHAM) TRAFFIC, GTC.....**

DESCENDING TO THE CIRCUIT, from THE OVERHEAD

WITH TOWER. Normally, at DOWNWIND/late downwind (A<--->A), the TWR will instruct you,



for the 'idiot' - probably not listening.

GTC Descend (and report) DEADSIDE (at circuit height, xxxx)

NOTE. **DO NOT REPORT** when on the DEADSIDE, **UNLESS INSTRUCTED**, or you see a conflict.

Acknowledge/readback **BUT DO NOT DESCEND UNTIL you have crossed the runway centreline. You can make an early BASE turn.**

Then you descend to CIRCUIT HEIGHT (or as instructed).

You then perform the standard **CROSSWIND join, into the circuit**.

CAUTION. As you will be crossing **the RUNWAY AT THE DEPARTURE END** and joining the circuit with DOWNWIND, **GIVE YOURSELF PLENTY OF ROOM** (a 2nm wide 'circuit/descent')

AVOID HAVING TO DO A STEEP TURN at low level.

If there is a **potential conflict** (inbound to land) you may (be required) to cross the runway at **CIRCUIT HEIGH PLUS 500ft**.

Finally, When you turn **into the Circuit** you will **ALREADY BE DOWNWIND**, so call it **TURNING DOWNWIND**, **GTC**.

You should be the only A/C in this phase of the procedure, so you should be able to concentrate more on your flying. BUT keep an eye out

AFISO/AGO. Keep it the same (but you must 'CALL IT'). At A<-->A CALL (To) descend/descending DEADSIDE, GTC. Then make position calls as required to keep AFISO/AGO AND OTHER TRAFFIC informed of your position/intentions - DEPENDANT ON TRAFFIC DENSITY. If a lot of traffic, KEEP YOUR CALLS BRIEF.

CAUTIONARY NOTES/ADVICE - especially for AFISO/AGO/UNMANNED A/Fs

If the circuit/overhead join is very busy, you can either hold at 4-5nm (over a VRP) or join/hold OVERHEAD THE AIRFIELD, minimum 500ft ABOVE the ATZ or any other traffic. GTC Holding OVERHEAD THE AIRFIELD at 2500ft QFE.

If you PREFER to JOIN a standard OHJ by flying OVER THE RUNWAY (no longer the recommended join) You should fly OVERHEAD THE RUNWAY NOT lower than 2300ft QFE, Turn in the direction of the circuit and manoeuvre to JOIN IN THE OVERHEAD at 2000ft FROM THE OUTSIDE OF THE HOLD.

If you need to HOLD (stay) IN THE OVERHEAD, announce it. HOLDING IN THE OVERHEAD, GTC. or GTC REMAINING IN THE HOLD at 2000ftQFE.

When YOU DECIDE IT IS SAFE for you to descend to the circuit, as you approach your base turn on the downwind leg of the hold, announce it. GTC DESCENDING/TO DESCEND DEAD SIDE (LEFT HAND) RUNWAY 27.

DO NOT COMMENCE YOUR DESCENT UNTIL YOU CROSS THE C/L and are ON the dead side. IDEALLY, you should cross the downwind (LANDING Threshold) numbers. HOWEVER, with a very SHORT runway, your base leg can be extended downwind, within the ATZ. More than that and you may lose sight of the airfield and conflict with circuit traffic. Your deciding factor should be 'How tight will I need to turn'.

If the circuit is busy you may decide to announce GTC DEAD SIDE 27 (at xxxft/circuit height) and/or GTC CROSSWIND 27 and/or GTC Turning base/base leg 27.

YOU MUST ALWAYS ANNOUNCE DOWNWIND and FINAL.. You may need to call TURNING DOWNWIND

Do not forget, FINAL is within 4nm of the runway. MORE than 4nm, you are LONG FINAL, unless using the ILS, when you call ESTABLISHED.

If you are in a stream of traffic in the HOLD or CIRCUIT, MAINTAIN YOUR PLACE, FOLLOW THE A/C AHEAD. DO NOT 'jump the queue.'

Your speed in the hold should be 80-90kts. On the downwind leg of the hold you will be told GTC, Descend (and report) dead side. (To) Descend (and report) dead side GTC.

DO NOT START YOUR DESCENT UNTIL YOU ARE ON THE DEAD SIDE

If you reduce to 80kts as you commence your base leg, going out to 2nm, descending at 500ft/min., (after the centre-line) you will need about 0.75nm to descend to circuit height. This is another reason for a standard 4nm wide Hold.

If the circuit is busy, you should report 'DEAD SIDE' on reaching circuit height. You then cross the downwind (landing) numbers, if able, to complete a CROSSWIND JOIN.

Yes I know, I have said that before, BUT IT IS THAT IMPORTANT

If landing on a short runway, you can extend downwind, in order to maintain good control of your flight, **BUT WATCH OUT FOR ARRIVING TRAFFIC. UNLESS UNAVOIDABLE, NEVER execute a steep turn in the circuit, EXCEPT an ORBIT AWAY from** the runway, for separation, or an **EMERGENCY**.

NOW WE WILL FLY IT, WITH THE RADIO CALLS

THE APPROACH – AIRFIELD HAS A TOWER CONTROLLER – EGKA SHOREHAM



The Airfield can be approached to **JOIN THE OVERHEAD (AT 2000ft QFE)**, or join **OVERHEAD THE AIRFIELD (ABOVE 2300'QFE)**, from any DIRECTION.

If the A/C is with an APPROACH CONTROLLER (or above) they will be vectored towards the A/F, usually via VRPs, until handed-off to the TOWER Controller.

If the **Circuit** AND **the Overhead** are busy, **HOLD OVERHEAD the Airfield** until safe to descend **into the Overhead** (or as instructed, if App. is on).

Findon Valley

Clapham

OCK28

Durrington

Broadwater

Recommended hold

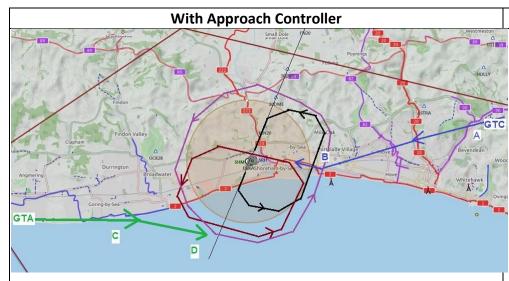
IN THE OVERHEAD

(2000ft QFE). Allows you time and space to see other traffic.

Whether HOLDING OVERHEAD THE AIRFIELD or HOLDING IN THE OVERHEAD, using the full 2nm diameter of the ATZ will enable you to see what is going on and have time to plan and execute a controlled flight.

I certainly would **NOT** recommend reducing **either HOLD** or THE CIRCUIT to less than 1.5nm from the Runway centreline. You could easily find yourself having to execute a steep turn, at low level, with flaps, to line up on final. - VERY DANGEROUS.

If Approach is not on and you decide to hold OVERHEAD THE AIRFIELD, let Tower know what you are doing and ensure you join ABOVE any other traffic in either hold or the circuit, IT IS YOUR RESPONSIBILTY TO MAINTAIN SEPARATION.



A/C with EGKA Approach Controller. Getting busy.

App will probably vector the A/C via LEWES VRP then inbound [A]. The A/C will be handed to TOWER at 2000' as reqested by TWR, enabling the A/C to join the O/H, Crosswind at [B].

GTC, Contact tower on 125.40. Tower on 125.40 GTC.

If the Circuit is busy, the A/C will be kept **above 2000'**. App. will maintain control of the A/C **OVERHEAD** the A/F [D], HOLDING OVERHEAD until TOWER can accept him.

App. Will then issue the instruction [D] GTA Descend and report in the Overhead left hand, contact Tower on 125.40, caution other traffic IN THE OVERHEAD.

Descend to and report in the Overhead, contact Tower on 125.40, have the traffic, GTA.....

Shoreham Tower, GTA in the Overhead.

Tower only (same scenario and chart)

[A] Shoreham Tower. G-GATC Cessna 172, inbound from Lewes VRP, 2300ft on 1022, 13miles to run, request Overhead join.

Who, what, where, how and service request.

G-GATC. Shoreham tower, report 4DME expect overhead join, (or Report joining the Overhead) runway 20, Left Hand at 2000ft QNH 1024.

Expect overhead join(Report joininging) at 2000ft 1024, runway 20 Left Hand, report 4DME, G-GATC.

GTC Correct. Confirms readback and changes callsign.

[B] (4DME, GTC. GTC,(Roger) join and report in the Overhed. Join and report in the Overhead, GTC.)
GTC In the Overhead.

G-BGTA Shoreham Tower, G-BGTA, 172, inbound from Bembridge 3000ft on 1024, request join.

G-BGTA, Shoreham Tower, Expect to hold OVERHEAD THE AIRFIELD, Left Hand, not below 2500ft on the QNH. Report Worthing pier.

G-BGTA, expect to hold OVERHEAD, Left Hand, not below 2300ft, to report Worthing Pier.

GTA Correct. Coming Worthing Pier, GTA. [C]

GTA, Report Joining and Holding overhead, not below 2500ft.

To report joining and holding overhead, GTA.

[D] GTA Holding overhead at 2500 (on the QNH) (GTA Roger)
GTA Descend and report IN THE OVERHEAD at 2000ft, for Runway 20
Left Hand

Descend and report IN THE OVERHEAD, Left hand, 20, GTA (expect to hold) GTA (holding) IN THE OVERHEAD.

If you **LISTEN, THINK, PLAN AHEAD and KEEP A SHARP LOOKOUT**, so that you are aware of where all the traffic ahead is, JOINING an OHJ is not difficult.

Tower controlled A/F

THE DESCENT TO THE CIRCUIT

General notes

DO NOT FORGET, EVEN UNDER A TOWER CONTROLLER, IF YOU DECIDE IT IS NOT SAFE FOR YOU TO DESCEND, DO NOT. YOUR FLIGHT, YOUR A/C.



When at circuit height on, you call: GTC, DEAD SIDE. If asked or needed (by you), insert 'descending' if still doing so. Turn onto crosswind. The call, if needed, is,

(Turning) Crosswind, GTC.

You are now on a crosswind join. If possible, cross the downwind (landing) numbers.

If your turn was not steep enough (keep it SAFE – for you), or the runway is very short, then cross the centre line within about 1nm of the numbers, as at B, KEEPING A SHARP LOOKOUT. Once on the live side, you join the downwind leg of the circuit, calling: (Turning) Downwind, GTC. when you are opposite the runway. If you managed to cross the threshold numbers, a good idea to call: Turning downwind, GTC instead, as you join the downwind leg.

Normally, as you are on the downwind leg (live side), Tower will instruct you to descend into the circuit.

Thus giving you time and space to prepare (reduce speed/plan ahead)

GTC Descend (and report) dead side. Descend (and report) dead side, GTC.

Maintain 2000ft until crossing the centre line, continue out, descending to circuit height.

DO NOT report 'DEAD SIDE GTC' unless you were asked to or need to (traffic)

Otherwise, by the time you have sorted yourself out, you may already be LATE downwind. Also, by announcing 'turning downwind', the Controller will know EXACTLY where you are.

Finally, give yourself plenty of space for Final approach. Too close in on downwind and you will overshoot the C/L, too short a final and you will not have a controlled descent/approach.

REMEMBER, You call (turning)downwind; Final and any other position requested by Tower, As well as any position with information, to update tower about traffic in the circuit, ESPECIALLY if it is/will cause you a conflict/hazard.

EGHR Goodw	ood AFISO/AGO/no ATC		
THE APPROACH	Aircraft/Pilot		AFISO/AGO
The main differences between an AFISO /AGO airfield and a TOWER Airfield are:- a) The Tower controller has a 'response range' of about 25nm. The AFISO /AGO about 10nm. No Information until then .	a) Pilot calls in at 30nm, for an Overhead join. G-GATC, PA28 leaving Mayfield VOR, inbound from the NE for join. G-GATC will report Washington VRP.		G-GATC, Goodwood Information, report Washington VRP (= no reply)
 However, you can report in, giving your distance. b) The AFISO/AGO is NOT required to request position reports from pilots. IT IS THE RESPONSIBILITY of the PILOT to report his actions/intentions. 	We will assume that the circuit is busy. GBC In the overhead, right hand for runway 32. GBC Roger, Holding in the Overhead.		GBC, Roger, Traffic information, there are 2 A/C in the circuit, one on touch and goes.
At an AFISO /AGO Airfield, the Controller WILL ONLY REQUEST	Good lad, waiting until HE is happy it is safe for HIM to descend.		r HIM to descend.
A REPORT from an A/C IF HE THINKS THERE IS A DANGEROUS SITUATION DEVELOPING. The AFISO, If within the ATZ, The AGO, by 'guesswork'. Or, if too far out, when you make your first contact, you will receive a 'position request', a DME or VRP, where you will be passed initial A/F information and traffic. The AFISO / AGO can ONLY PASS TRAFFIC INFORMATION, DERIVED FROM REPORTS PASSED BY PILOTS. Therefore, Pilots MUST pass position/action/intention reports to the Controller.	GTC Washington VRP. NOTE the surface wind will normally be passed this far out ONLY if significant for Pilot 'runway choice'. E.g. 'I strongly recommend that' Runway 32, QFE 1007, copy the traffic, GTC. GCA final to land Runway 32. Landing (Runway) 32 GCA. GBB descending dead side to land, Runway 32. An abbreviated reply is OK, AS LONG A	GTC, A/F information, runway 32 in use, Right hand, surface wind 300 at 09knts, QFE 1007. Traffic information, the circuit is busy with a 172 last reported holding in the Overhead. GCA Runway 32 land at your discretion, surface wind 300 at 09knts. No reported traffic (to affect you). GBB Roger, Traffic is a 172 last reported landing runway 32	
How many and when should be determined by the PILOT in relation to the traffic situation in the area / affecting his flight.	GBB Visual (with) the traffic.	-	

EGHR Good	wood AFISO/AGO/no ATC		
THE JOIN/ HOLD and DESCENT	Aircraft/Pilot	AFISO/AGO	
ALWAYS be aware of any traffic close to you and if you think it necessary, REPORT your position and/or the conflicting traffic, especially if you think the traffic has not noticed you and might not 'give way' to your flight.	GZM, Downwind touch and go. Looking Have the traffic, GZM. GTC In the overhead (right hand) for Runwa 32, have the traffic descending dead side.	GZM, Roger, traffic is a 172 reported descending (on the) dead side, to land. GTC Roger (thanks) further traffic is a 172 in the circuit, last reported downwind T&G.	
DO NOT try to work out who has right of way within 'RULES of the AIR'. BE SAFE, MAKE YOUR OWN JUDGEMENT, report your (new) actions/intentions.	Descending dead side Runway 32 to land GTC.	-	
This advice applies even more at an uncontrolled airfield, with	Cross wind, have the traffic turning base, GBB.	GBB Roger/thanks, No other traffic to affect you.	
other traffic in the area, and no Controller to coordinate. DO NOT FORGET the AFISO/AGO can ONLY report an aircraft's LAST REPORTED POSITION. So, if your last call was 'on final touch and go', UNTIL your next report, that is the information he will pass to other traffic about your aircraft. If there is a lot of traffic, then call, to keep ALL pilots and controller informed when you are:- 'climbing away'; 'crosswind'; 'turning downwind'; 'turning/on base', as you judge is good airmanship. Do NOT forget that the DOWNWIND and FINAL calls are MANDATORY (every time).	GCA vacated Runway 32, holding 10 thresh for taxi.	old GCA Taxi to parking via (Runway)10 and taxiway, report shutting down.	
	Taxi to parking via 10 and taxiway, report shut down GCA.	(GCA Roger).	
	OK for AFISO but NOT for AGO. – AGO CANNOT pass taxi INSTRUCTIONS.		
	Final 32, GZM.	GZM Runway 32 touch and go at your discretion, surface wind 300 at 09kts. Traffic is a 172 last reported crosswind and a 172 last reported descending dead side.	
	Downwind to land GBB.	GBB, Roger Traffic is a 172, last reported final 32 T&G.	
	Visual (the traffic), GBB.	-	
	GTC Turning crosswind, have the traffic downwind and departing the runway.	GTC Roger.	

THE JOIN	Aircraft/Pilot	AFISO/AGO	
In the remainder of this scenario, you can see	Turning crosswind, GZM.	GZM Roger, Traffic is a 172 last reported turning crosswind from the dead side.	
that if each pilot makes a sensible judgement of the situation around him, there will be no	GZM has the traffic, turning downwind."	GZM Roger.	
problems for anyone.	Downwind to land 32 GTC."	GTC traffic, 172 last reported downwind.	
The key, for pilots arriving in the overhead, is	Have the traffic, GTC.	-	
ALWAYS try to be aware of the traffic situation, ESPECIALLY TRAFFIC CLOSE TO YOU. Then make	Final 32 to land GBB.	GBB, Runway 32, land at your discretion, surface wind 300 at 09kts.	
sensible, safe judgements (for your flight) and	Cleared to land 32 GBB.	GBB Negative, land at your discretion.	
keep the Controller informed of your actions/	My discretion GBB.	-	
ntentions. Finally, if you see traffic that has not been	Extending downwind for separation, GTC. (GTC is aware GZM is likely to be close behind him.)	GTC Roger.	
reported by the AFISO, you report it. SAFETY	Downwind to land GZM, to remain No.3.	GZM (thanks) Roger.	
FIRST.	On Base to land 32, have the A/C on the runway, GTC."	GTC Roger.	

Hopefully, this document has helped destroy the myth that The Standard Overhead Join is difficult to master. It does need practice and **WILL test your flying and airmanship skills**. Practice and ENJOY!

NEVER FORGET, EVEN WHEN UNDER A TOWER or RADAR CONTROLLER, <u>AVOIDANCE OF OTHER TRAFFIC IS YOUR RESPONSIBILITY</u>.

The CIX VFR CLUB hopes this document will help you to enjoy flying with CIX at ALL Airfields. If you need help, talk to me on TeamSpeak or PM me.

Neville Munro, Manager, CIX VFR CLUB, Air Traffic Services.