

Formation flights



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“There is nothing harder to beat than a well trained two ship element that makes no mistakes”

These words were spoken by an US Army general during the latter days of the first World War and are still valid today.

All of today’s air-to-air or air-to-ground tactics are based on this formation.

Even when part of a larger formation, the different elements will split up prior engaging a target.

A formation is considered as a single aircraft when all aircraft are within radius of 1Nm and on the same level.

In exceptional circumstances, this can be extended to 3Nm and/or 1000ft.

During initial contact, the leader will announce the number of aircraft and the type of formation.

for example. “Beauvechain approach, Mace 41, two ships, at initial approach fix”

In a close formation only the leader will squawk the assigned code.



In an extended formation the leader will squawk the assigned code, the last aircraft will squawk the first 2 digits of the leaders code followed by 00.

All other aircraft will squawk ‘standby’.








For example Leader 1465 Trailer 1400

Blue aircraft need to squawk assigned code – **Green** aircraft squawk trailer code.

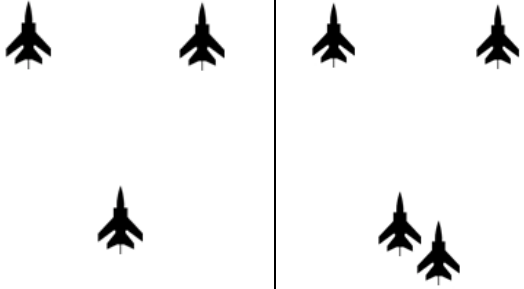
Remark: **Green** will not squawk when in close formation.

<p><u>2 SHIP ELEMENT</u></p> <ul style="list-style-type: none"> • By far one of the most common formations • Turn as one ship, as opposed to an echelon turn • Same level or stepped down by 50 feet • Leader is known as lead or “1”. Lead is ALWAYS number 1. • Number 2 is on the right wing of the leader • Also called FIGHTING WING when extended. 	
<p><u>TRAIL FORMATION OR LADDER</u></p> <p>Mostly used immediately after takeoff.</p> <ul style="list-style-type: none"> • Is fun and easy to fly since the aircraft in front of you is a giant ADI. Just match his wings and keep your separation • Keep your nose on the plane in front of you when not turning • Keep your nose on the outside wingtip of the plane in front of you when turning • Remain stepped down by 50-100 feet for safety and clearance (Avoid jet wash when close). • When flown with a 2 ship, called LEAD-TRAIL 	

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<p><u>FINGER FOUR FORMATION</u></p> <ul style="list-style-type: none"> • Common squadron formation • Turn as one ship, as opposed to an echelon turn • Level or stepped down by 50 feet <p>A flight of 4 planes, Finger-Four (as the four fingers of your right hand) has 4 positions. Lead is known as lead or "1". Lead is ALWAYS number 1. Number 2 is on the right wing of the leader. Number 3 is on the left wing of the leader Number 4 flies on number 3's left wing</p>		
<p><u>ECHELON FORMATION – RIGHT OR LEFT</u></p> <ul style="list-style-type: none"> • Common formation for visual approach prior the 'break' • Formation with planes left or right behind each other <p>- REMEMBER THIS: NEVER TURN INSIDE AN ECHELON OR BAD THINGS WILL HAPPEN</p> <ul style="list-style-type: none"> • MAKE SURE you Say "Left" or "Right" 	<p style="text-align: center;"><u>left</u></p> 	<p style="text-align: center;"><u>right</u></p> 
<p><u>DIAMOND FORMATION</u></p> <ul style="list-style-type: none"> • Forms a diamond shape with slots 2 and 3 on either side of the lead. <p>The fourth aircraft will be in line with the lead and behind slot 2 and 3</p> <ul style="list-style-type: none"> • Difficult to maintain • Number 4 aircraft to watch slot 2 and 3 aircraft <p>Used primarily for air demonstration purposes</p> <ul style="list-style-type: none"> • 2 and 3 level with the lead, 4 below 		
<p><u>BOX FORMATION</u></p> <ul style="list-style-type: none"> • 4 aircraft form a square • Lead left top, 2 right top, 3 left bottom, 4 right bottom • 1 and 2 level, 3 and 4 stepped down when close. • Usually consisting of 2 elements in extended formation. Number 3 being the lead for element 2. • Close formation only for demonstration purposes. 		
<p><u>LINE ABREAST</u></p> <ul style="list-style-type: none"> • Usually flown as a 2 ship formation • Can consist of multiple elements • Ships within the same element will fly at the same level • Different elements can be staggered 		
<p><u>CONCORDE</u></p> <ul style="list-style-type: none"> • For demonstration purposes only • Close formation only • N°2 will fly 50ft below N°1 • N°3 and N°4 will fly 50ft below N°2 		

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<p><u>CHAMPAGNE</u></p> <ul style="list-style-type: none"> • Tactical formation only • Can consist of 3 or 4 ships • Used to draw response from hostile aircraft • Lead element acts as decoy and will split up to draw hostile aircraft away from a designated target • Trailer or trailing element will engage designated target ahead 	
<p><u>AIR DEFENCE INTERROGATION</u></p> <ul style="list-style-type: none"> • Used to identify unknown aircraft (QRA) • Do not get closer than 600ft/200m in VMC and 1500ft/500m in IMC • NEVER intercept civilian aircraft without the specific request of civilian ATC • VID (Visual ID) procedures can be trained with military cargo planes upon request • Lead will position in view of the cockpit at the same level • Trail will fly 50-100ft lower to avoid jet wash • Civilian ATC should be aware that, if requested, QRA has full priority. 	