

# Wing and a Prayer Design Document

## Chapter 5: Our History and Background



### September 1940: The Battle of Britain

In the summer of 1940, the British, French and Belgian armies retreated across France in the face of German panzer divisions. The Battle of France ended in July in the famous evacuation from the beaches of Dunkirk. Since then, the German Luftwaffe has been trying to destroy the Royal Air Force to allow a German invasion of Britain. A stalwart defence by RAF Fighter Command has mostly managed to hold them off. The Battle of Britain is a short but critical chapter in British history, often remembered in the words of Winston Churchill's speech; "...never in the course of human history has so much been owed, by so many, to so few." With mounting losses of pilots and aircraft, the Luftwaffe has begun to switch tactics away from daytime attacks on airfields to the night bombing of cities - primarily London - in an attempt to break the British people's will to fight. Truth be told, the Battle of Britain has taken a terrible toll on Fighter Command, and this switch may have just saved them from total destruction. But even with the pressure taken off them slightly, Fighter Command is still stretched almost to breaking point defending Britain from the daily and nightly waves of Luftwaffe bombers and their fighter escorts.

# Aircraft

You really don't need to know any detailed information about aircraft, or even their names. However, the different aircraft in play fall into a few broad categories, and it will be useful to have a general understanding of what those different categories are and what they mean. There's a summary at the end.

If you are playing a pilot or a WAAF officer, you should probably pay at least some attention to this section. **If you are playing a junior WAAF and don't think you'd have much interest in aeroplanes you can safely skip it.**

## SINGLE SEAT FIGHTERS

The British Hurricane and Spitfire and the German Messerschmitt Me-109 (sometimes called the Bf-109) are broadly similar. They are all single seat, single engine fighters armed with forward firing guns and designed to destroy other aircraft in flight. Due to their speed and performance at high altitude, lone fighters are also used for photo-reconnaissance, taking aerial photographs to assess the damage caused by bombing raids.

Fighters tend to fly at about 600 km/h (the Hurricane being a little slower at 550) - this is considerably faster than bombers can manage. Spitfires and 109s operate most effectively at about 20,000 feet of altitude. This is especially important for German fighters, who are operating at the edge of their fuel endurance and will therefore operate at the efficient altitude unless they have a good reason not to. (Hurricanes are most effective at 10,000 - 15,000 feet.)

## BOMBERS

The Luftwaffe operates a number of different types of bomber, but they have similar general characteristics. For the purposes of *Wing and a Prayer*, the main types are the Dornier Do-17, the Heinkel He-111 and the Junkers Ju-88. All have twin engines and crews of 4-5. They each carry between one and two tonnes of bombs. All types of bomber fly at between 300 and 400 km/h. Bombers tend to fly between 10,000 and 15,000 feet.

## HEAVY FIGHTERS

Heavy fighters are the size of bombers - and twin-engined - but intended to function as fighters. They are long ranged but tend to be slower and less manoeuvrable than single engine fighters, and are falling out of favour. The Luftwaffe still operates the Messerschmitt Me-110 (also called the Bf-110) but it performs badly against modern fighters. The Me-110 flies at fighter speeds, if a little slower than the Me-109 at 550 km/h. Like most single-engine fighters, it is most effective at 20,000 feet.

## NIGHT FIGHTERS

Fighters are reliant on the pilot visually spotting targets before they can be attacked and are almost useless at night. The RAF operates specialist night fighters, which carry the new and secret Mk I Air Intercept Radar, allowing them to detect enemy aircraft at a distance of several miles in the dark.

The Defiant is a single-engined night fighter with a crew of two and a gun turret. After performing poorly in daytime it has been re-rolled as a night fighter. The Blenheim is a heavy night fighter - a converted twin-engined bomber. Blenheims fly at bomber speed - 400 km/h. Defiants fly at 500km/h, faster than a bomber but slower than other fighters.

## SUMMARY

1. Bombers fly at about 400 km/h, fighters fly at about 600 km/h.
2. Bombers typically fly at 10,000 to 15,000 feet, while enemy fighters typically fly at 20,000 feet.
3. Spitfires are more effective around 20,000 feet; Hurricanes at 10-15,000 feet.

Therefore, if the plot shows a group of unknown aircraft approaching at 600km/h and 20,000 feet, they're probably fighters. 400km/h and 15,000 feet, they're probably bombers. A group at 15,000 feet with another group at 20,000 feet above it is probably a bomber group escorted by fighters. If you had Hurricanes and Spitfires available to intercept, you'd be better sending the Spitfires up against the escort and leaving the bombers to the Hurricanes.

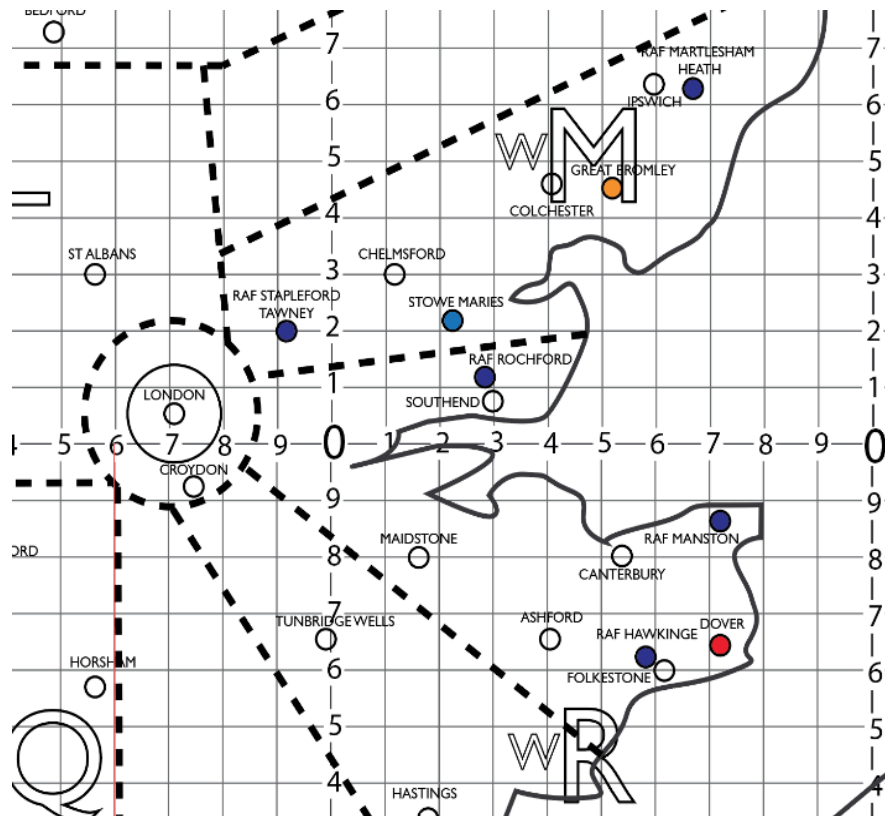
Day fighters are almost useless at night. Night fighters can't be used in the day (you need to hold them back for use at night). Heavy fighters are generally a bit rubbish.

# The RAF & Fighter Command

The RAF is divided into Commands, responsible for coordinating Fighter, Bomber and Coastal activities. This game is primarily concerned with Fighter Command.

Fighter Command is divided into Groups, each with responsibility for defending specific areas of Britain. We focus on 11 Group, covering the South East, including the eastern approaches to London. 10 Group covered the South West (including the southern approaches to London) while 12 Group covered the midlands and north of England, with 13 and 14 Groups covering Scotland.

11 Group's area of responsibility was divided into Sectors, as shown on the map below. Each Sector normally had one primary airfield (the Sector Station) and one or two smaller and more simply equipped airfields (Satellite Stations.) Each Sector normally had three squadrons of fighters assigned to it, with approximately twelve aircraft per squadron. The three squadrons would all be based at the Sector Station, taking turns to deploy to the Satellite Stations on a temporary basis.



*Wing and a Prayer* concentrates on C & D Sectors (from Folkestone to Ipswich), and the six squadrons of fighters deployed there. Due to our departure from history (explained in the section below) these aircraft are controlled from (and partially based at) RAF Stow Maries, rather than the Sector Stations of RAF Hornchurch and RAF North Weald.

Most of Fighter Command's aircraft are single seat fighters, fast and agile, and suited for quick interceptions of enemy bombers in daytime. There are a few specialised squadrons of night fighters, equipped with experimental airborne radar sets to help them find enemy bombers at night.

While Fighter Command has few aircraft, trained pilots are the more precious resource - and harder to replace. RAF aircrew are all young men and nearly all are junior officers although recently some non-commissioned personnel have been allowed to fly. Most are British but there are a significant number of pilots from Commonwealth nations and from Poland.

RAF players in *Wing and a Prayer* represent these young men: members of six different RAF squadrons from 11 Group, thrown together on the same base by circumstance. They will spend some of the event on the ground waiting for the scramble call, and some of it in the air. It is almost certain that some RAF characters will be injured, lost and killed during the event.

# The WAAF & The Dowding System

With Fighter Command at such a numerical disadvantage, an effective command and control system made the difference between victory and defeat. There was nothing like enough fighter aircraft to keep patrols in the air at all times. Instead, fighters were scrambled when necessary and positioned to intercept bomber raids - a much more efficient use of aeroplanes but requiring early detection of enemy bombers and an information handling system to allow quick, well-informed decision-making.

Air Chief Marshall Hugh "Stuff" Dowding was the architect of this system, which was named after him. His system took information from the Radio Direction Finding (early radar) stations and Royal Observer Corps volunteer lookouts, starting when bombers were still a considerable distance from their targets. It processed this information into a single clear picture of the sky and presented it to decision-makers fast enough to allow fighters to be scrambled and moved to an intercept position only when they would be needed.

The Dowding System required a large number of people to operate; many of them were drawn from the Women's Auxiliary Air Force, or WAAF. While most WAAFs served as cooks, clerks or drivers, those identified as particularly bright, quick thinking or mathematically minded were assigned as RDF Operators or as Clerks (Special Duties) and brought, under those vague titles, into the Dowding System's RDF Stations and Operations Rooms.

The Dowding System had three main functions:

1. **Reporting.** The Chain Home RDF stations and the Royal Observer Corps produce reports of observed aircraft, which are centrally collected.
2. **Filtering.** Observations of the same aircraft from multiple RDF stations are compared to remove errors and determine a more precise location.
3. **Operations.** The air picture is monitored, tactical decisions are made, and fighter aircraft are launched and positioned to make intercepts.

The WAAF players in *Wing and a Prayer* will undertake all of these functions, explained in more detail in the later chapter "The Wargame - How to Do Your Duty." Between them they will produce a picture of the sky over Britain, decide which fighters to launch and when, and which raids to prioritise. The decisions made by these players will have life and death consequences: perhaps for innocent townsfolk in the path of bombing raids; perhaps for pilots you know personally.

## Our Alternate History

We have made some deliberate changes from the historical situation in the interests of making a more dramatic game experience. Historically, while the Luftwaffe repeatedly attacked RAF Uxbridge, RAF North Weald and RAF Hornchurch, no station was ever out of action for very long. In our storyline, a few days prior to the game, bombing raids have damaged all three stations badly enough that other locations are having to handle their work while repairs are made. While in most sectors, the Sector Control Rooms will have taken on much of this additional responsibility, C and D Sectors have lost their SCRs with the destruction of their Sector Stations (Hornchurch and North Weald).

In reality, the Dowding System was split over many different locations: the Chain Home RDF stations, the Filter Room at Bentley Priory, the 11 Group Operations Room at RAF Uxbridge and the Sector Control Rooms at various airfields. We have brought all of those functions, and RAF pilots, into a single location. In our game, the nearby RDF station which history has at Canewdon, is at Stow Maries instead. The squadrons stationed in C and D Sectors have been dispersed across their Satellite Stations, and the airfield at Stow Maries has been pressed into service as an overflow field. Stow Maries is also hosting a temporary Operations Room since the necessary telephone lines are already in place. That facility has been built in a hurried couple of days and staffed by WAAF personnel called in from wherever they were available. It's not quite what anybody is used to, but we must all do our best. There is a war on, after all.

We've also taken some small liberties with the introduction of air intercept radar on Defiants slightly earlier than happened in real life, in order to accentuate the difference in capabilities between day and night fighters. We hope that you will forgive us.

# Command At Our Stow Maries

As members of a military organisation, WAAF and RAF personnel are organised into a hierarchy. Within this hierarchy, personnel were expected to obey the orders of those above them. In our game, we'd expect you to roleplay being polite and respectful to people above you, at least when they are present, and obey their reasonable instructions. We'd hope both those in charge and those below them would use "Do It On Monday" to cover duties which are too onerous to be enjoyable.

Everyone serving in the RAF or WAAF is either an officer or enlisted - with enlisted making up the vast majority. Officers are those placed in positions of authority, by the authority of a commission from the King. Experienced enlisted personnel may be promoted into supervisory roles which are referred to as non-commissioned officers (NCOs), although even the most senior NCO officer ranks below the most junior officer.

	<b>WAAF</b>	<b>RAF</b>
Officers	Wing Officer (Wg Off)	Wing Commander (Wg Cdr)
	Squadron Officer (Sqdn Off)	Squadron Leader (Sqdn Ldr)
	Flight Officer (Flt Off)	Flight Lieutenant (Flt Lt)
	Section Officer (Sec Off)	Flying Officer (Flg Off)
	Ass't Section Officer (ASec Off)	Pilot Officer (Plt Off)
Noncommissioned Officers (NCOs)	Sergeant (Sgt)	Sergeant (Sgt)
	Corporal (Cpl)	Corporal (Cpl)
Other Ranks	Aircraftswoman (ACW)	Aircraftsman (ACM)

While military formalities were not always as rigidly adhered to in the WAAF as in other services, it's normal to address to officers outranking you as Ma'am or [Rank] [Surname], and NCOs outranking you as either [Rank] or [Rank] [Surname]. Personnel of your rank or below would normally be addressed by their surname (or first name if you were on close terms with them.)

The RAF were similar (substituting Sir for Ma'am) although nicknames were very common.

Our Stow Maries is commanded by an RAF Wing Commander as station commander.

The WAAF station supervisor (a Sqdn Off) reports to the station commander, and under her are the three watch supervisors (Flt Offs) who each have responsibility for their watches. The situation is fluid, and unexpected staff changes may occur.

The Squadron Leaders of the RAF presence are administratively under the RAF station commander, but in combat they follow the instructions of the WAAF running the Operations Room.

# The WAAF At Our Stow Maries

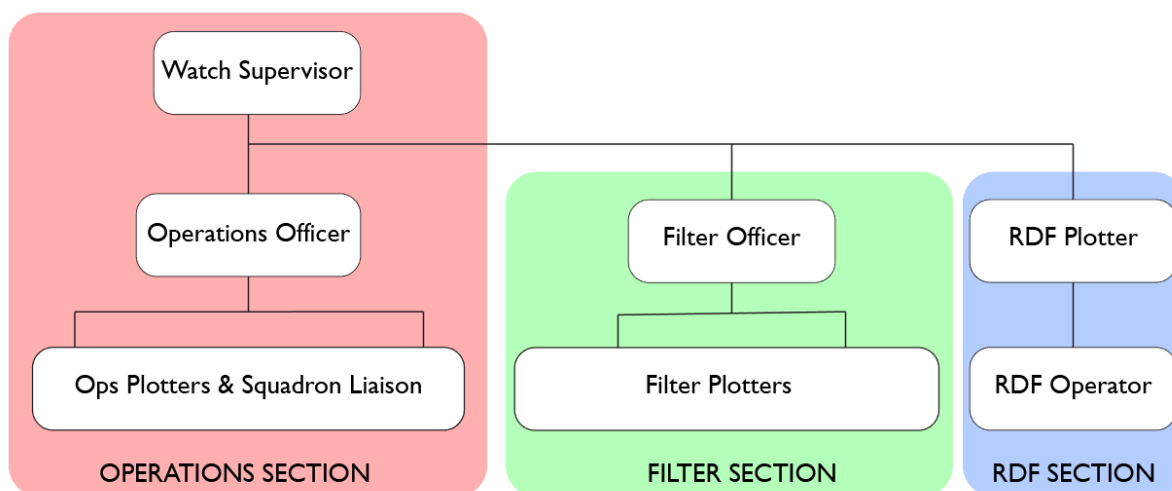
The station's WAAF personnel are divided into three watches: Apple, Beer & Charlie, each containing between ten and thirteen WAAFs. A single watch is enough people to run the Operations Room when things are quiet, with a second watch coming to help them if things get busy.

The day is divided into hour-long shifts. During each shift;

1. The Duty watch run the Ops Room (with the Duty Watch Supervisor responsible for everything that happens in the Ops Room during her shift.)
2. The Standby Watch must remain available (usually in the Mess). The Duty Watch Supervisor can call them in if she feels she needs them.
3. The Free Watch will not be needed in the Ops Room and can do as they please.

Each Watch is divided into three Sections, as shown below. Each Section is responsible for running one of the three areas of the Ops Room:

1. The RDF Station - which has the Chain Home RDF (radar) terminals
2. The Filter Table - which compiles RDF data into a single picture
3. The Operations Table - from where the senior officers control the fighter squadrons



- Watch Supervisor - responsible for the entire Ops Room on her duty watches
- Operations Officer - controls fighter squadrons to intercept enemy raids
- Ops Plotters - communicate with Filter Officer, ROC and Pipsqueak to plot aircraft
- Squadron Liaison - talks to airfields and tracks status of RAF squadrons
- Filter Officer - combines information from several RDF stations to remove errors
- Filter Plotters - plot information from several different RDF stations
- RDF Operators - operate a Chain Home and Chain Home Low terminal
- RDF Plotter - converts RDF range and bearing into plots for the Filter Section

# The RAF At Our Stow Maries

There are six RAF fighter squadrons assigned to C and D sectors. Four are day fighter squadrons, operating Hurricanes or Spitfires. (While there are small differences between these two aircraft, they are both fast and agile single-seat, single-engine fighters armed with eight machine guns in the wings.)

The other two squadrons are equipped with specialised night fighters; Defiants and Blenheims. While these types look very different from each other, they have some similarities. They are heavier, slower and less agile than day fighters, and they have multiple crew per plane. Most importantly though, they are equipped with Air Interception Radar, making them much more effective at locating enemy bombers in the dark.

In game, a few overflow planes from these squadrons are based at Stow Maries. Others are based elsewhere and crewed by NPCs. RAF players may choose which of their characters they're playing at any given time. Night fighter characters will probably have a greater level of operational responsibility at night, while during the day the single-seat fighters will spend more of their time in the air.

Each squadron is divided into two flights, A and B, each of six aircraft. Each flight is divided into two sections of three aircraft: Red and Yellow section form A Flight, while B Flight is made up of Green section and Blue section.

Each squadron is led by a Squadron Leader, who probably also leads A flight as Red 1, with a Flight Lieutenant leading B flight as Green 1 and ready to take over should anything happen to them. Other pilots are ranked as either Flying Officer, Pilot Officer or Flight Sergeant. In multi-crewed aircraft, they are supported by navigators and/or gunners who are variously Flight Sergeants, Corporals or Aircraftsmen.

## **46 Squadron - Hurricanes**

46 Squadron started the war in shipping protection before taking its Hurricanes to Norway on the aircraft carrier HMS Glorious. The squadron had a highly successful tour of duty there until Glorious was sunk while bringing them home in June 1940. There were only a handful of survivors, and the reconstituted squadron is largely untested since moving to a nominal base of RAF North Weald last month. It is currently based out of RAF Stapleford Tawney.

## **303 "Kościuszko" Squadron - Hurricanes**

303 Squadron became operational only last month as part of an agreement between the Polish Government in Exile and the United Kingdom. Its pilots are mostly long-serving Polish veteran airmen, benefiting from years of extensive and rigorous pre-war training and eager to take revenge on the Nazis for the fall of their homeland. The squadron has just been moved from RAF Northolt to RAF Manston.

## **222 Squadron - Spitfires**

222 Squadron was deployed in a shipping protection role flying long-ranged Blenheim heavy fighters, until March 1940 when they were refitted with Spitfires before fighting over France to cover the Dunkirk evacuation. Having fought through the Battle of Britain, most of their pilots are now experienced veterans, although there are always a few new arrivals replacing combat losses. Nominally based at Hornchurch, the bombing of that airfield has seen them temporarily deployed to RAF Martlesham Heath.

## **603 (City of Edinburgh) Squadron - Spitfires**

603 Squadron is newly arrived in the south east, having been assigned to defensive duties in Scotland until last month - primarily protecting the fleet anchorage at Scapa Flow. They've been in Spitfires since before the war broke out, so they're comfortable and experienced in the aircraft. 603 has the distinction of the first RAF victory of the war, having downed a Ju-88 bomber that was attempting to mine the Firth of Forth on 16th October '39. With the destruction of RAF Hornchurch, they are currently sharing RAF Rochford with 600 Squadron's Blenheims.

## **264 (Night Fighter) Squadron - Defiants**

264 Squadron's Defiants started the war in a convoy protection role, scoring some impressive initial successes with their turreted guns until the Luftwaffe realised their vulnerability to frontal attacks. Heavy losses followed, and in May 1940 the squadron was withdrawn from day fighting operations to train in the night fighter role. With their training largely complete, the squadron is on active duty once more. Their Defiants have been fitted with experimental Airborne Intercept Radar sets to improve their night

performance. The squadron has been moved between bases a lot and is currently based at RAF Hawkinge.

### **600 (City of London) (Night Fighter) Squadron - Blenheims**

600 Squadron is a long-standing Volunteer Reserve squadron, whose pilots are expected to have paid for their own training. Initially conceived as a heavy day fighter squadron, the Blenheim's poor performance against modern enemy fighters saw it relegated to the night fighter role, but the squadron is to be refitted with new Bristol Beaufighter heavy fighters next month. 600 Sqn provided the initial testbed aircraft for the development of Airborne Intercept Radar; its aircrew are experienced with electronic systems and the squadron has a close relationship with the Telecommunications Research Establishment (TRE). The squadron is currently based out of RAF Rochford, alongside 603 (Edinburgh) Squadron's Spitfires.

A Live Action Roleplaying Game  
produced by Allied Games

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