

The Battle of Britain—Again!

By Mike Crane

The Background

While in London on vacation seven years ago, I determined to play a game depicting the Battle of Britain when I came back to the USA. Due to unexpected travel expenses, my wife said we could not afford to buy any more “toys” (viz., airplane models) for at least six months. Well, that was too long to wait, so I made paper counters with black silhouettes of airplanes printed on them. That option was not esthetically pleasing, so I tried to think of something more realistic. Then the light bulb came on in my head and I visualized a small 3-D paper model. It took a while to get it right, but the idea really worked. Since then the computer has allowed me to acquire several inexpensive air armadas from WWI, WWII, and the Korean War; and I was able to carry the concept over to the sailing ships of the Napoleonic wars and futuristic space ships. The next important step was the addition of paper stands to the airplane models (I think that was in the **Migs and Sabres** game), and this game, **BoB-A**, will introduce another innovation—the long playing board.

The long playing board idea came about last spring while working on a Civil War game for ironclads called **Arkansas on the Yazoo**. I was using a blue poster board which had been divided into 2” squares as my playing board, but it wasn’t long enough to represent the river, so I added two more poster boards and taped them together lengthwise. The thought occurred that this board might work with the Battle of Britain game designed in 2000. The old BoB game had two major problems: it had to be played on a large table, or, in my case, on the floor; and it required the use of different sized rulers to determine the movement and firing distances of bombers and fighters. The new board solved both of these problems for me. First, the long playing board fit the length of our kitchen bar exactly; and, second, the squares meant no rulers would be needed. The game was speeded up considerably. Also, when the game was finished, the three boards could be folded conveniently into the size of one and slid under the bed.

At Bayou Wars last summer, Clay Cooper and another gamer (whose name I can’t remember) graciously agreed to play test one round of the earliest version of the **Battle of Britain—Again! (BoB-A)**. Both asked good questions and offered excellent advice for improvements. When I came home, I began to add even more new ideas. Unfortunately, the game became complicated and unwieldy. Disappointed and discouraged, I put it away. It is easy to make a game hard, but it is hard to make a game easy!

After the Christmas holidays, the box of models was pulled off the shelf for another go. Unfortunately, the notes for the rules were nowhere to be found, so I decided to write them again from memory. This time I left out everything that wasn’t essential to a smooth-flowing game, and the results have been very satisfying. I really like this game, and I don’t think it would be difficult to adapt it to other scenarios.

The Models

This article contains a page of black and white aircraft outlines that can be photocopied six times on cardstock paper to make all of the aircraft needed to play the game.

The airplanes should be colored before they are cut out of the cardstock. Although colored pencils will work, acrylic paint thinned down with water is much better. Inexpensive bottles of hobby craft acrylic paint can be found at Wal-Mart, Michael’s, or Hobby Lobby. All of the acrylics should be thinned down with water so the lines on the aircraft model show through the paint. Be careful, though; too much water may cause the model to warp.

The German splinter camouflage pattern can be reproduced using Hauser medium green and Hauser dark green. The British camouflage can be reproduced using Hauser medium green and raw sienna. The bellies and glasswork can be painted with a light turquoise blue. Leaving the outside panels of glass or the edge of the canopy white looks better than painting all of the glass blue.

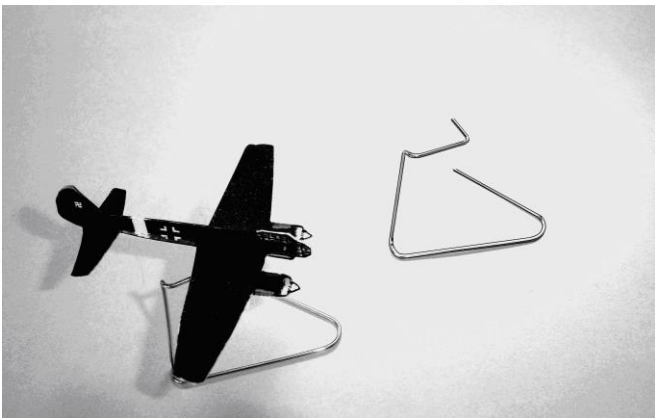
After the models have been painted, a dried-up ballpoint pen can be used to score along the fuselage where the wings and tail planes are attached. The Ju87 Stuka will also be scored where the wing bends to produce the gull wing shape. The He111 is different. The bend to be scored occurs within the fuselage from the nose to the tail.

When scored, the models should be cut out and bent into shape. The parts should then be glued together with Elmer's white glue. Years ago I used rubber cement, but the cement dried out and the models had to be glued again with permanent glue. After re-gluing the halves together, I made templates of the complete wing shapes by tracing around the wings on pieces of index card. Then I cut the wing shapes out of the index card making the holes smaller than the actual drawings of the wings. These templates were used to draw wing shapes on scrap pieces of card stock. I cut out the shapes and glued them beneath the wings of the planes to keep the wings from drooping and losing their shape. I did the same for the tail planes.

The Stands

Two kinds of stands may be used for the models—wire and paper. I have designed a wire stand that is quick to make and reasonably stable. However practical it may be, the model is attached to the wire with masking tape and it cannot be considered a permanent stand. Also, the wires tend to get tangled together when the models are stored in a box. Although the paper stand takes longer to make, it is more permanent, easier to move, and easier to store.

Wire stands can be made quickly from large paper clips. Pull the inside loop straight up. The bottom loop of the clip can be spread out into a ^ shape to form a base. Next, take the end of the upright loop and bend it upward until it is horizontal and pointed toward the center of the ^ shape of the base. Use needle-nose pliers to bend the end of this extension into a smaller ^ shape which will hold the model. Use masking tape to attach the model to the small ^ shape. Some of the tape may have to be trimmed from around the wings.



There are two kinds of paper stands printed on the page in the article. The short, stout stands in the top two rows are for bombers, and the tall, thinner stands in the bottom two rows are for fighters. The paper stands should be printed on card stock, scored, cut, bent, and glued to the models with Elmer's white glue. Then the stands should be glued to a 1½" square base made from picture mat cardboard. The cardboard base gives the stand weight and stability. Also, the stand will last as long as the model, so it can be considered permanent. After the glue has dried, paint the base Hauser light green or light blue.

The Battle of Britain—Again!

The Rules

The purpose of this game is twofold: first, to provide a short campaign with a reasonable simulation of the first week of the Battle of Britain; and, second, to provide a game that is fast, fun, cheap, and easy.

Objectives

The game represents German attacks on British targets during the first 7 days of the Battle of Britain. A target is selected each day and two German bomber squadrons and two fighter squadrons are chosen to make a raid on the target. Two British fighter squadrons are selected to intercept them at a point represented by the playing board.

The German objective is to destroy the airfield and eliminate one of the two other targets (a radar installation or an important factory). The British objective is to shoot down enough German bombers to prevent the destruction of the airfield and the secondary target.

Equipment

The playing board is constructed by taping three poster boards together lengthwise. Using a pencil or pen, each poster board is divided into 2” squares.

All of the dice are D6. Six differently colored dice are used for determining the movement of individual fighters. These dice are colored to correspond to the aircraft identification colors: viz., red, white, blue; and, black, yellow, green. Two dice with numbers printed on them, one red and one white, are used for selecting the squadrons that will participate in a raid and for rolling the hit scores of attacking and defending aircraft.

The following aircraft models will be needed: Hurricanes (6), Spitfires (6), Me109s (4), Me110s (4), Ju87s (3), Ju88s (3), He111s (6), and, if used, Do17s (3). The same models will be used repeatedly to represent the squadrons on the board.

The Record Sheet should be used to record raids, plane losses, and damage to targets.

Organization

Each model represents many aircraft. The fighters and bombers are organized into “squadrons” containing two or three models. Table 1 lists the types and numbers of models in each squadron.

Table 1. Squadron Organization Chart (with the starting number of planes in parentheses)

German bombers	German fighters	British fighters
GB1: Ju87 (3)	GF1: Me110 (2)	BF1: Hurricanes (3)
GB2: He111 (3) / Do17 (3)	GF2: Me110 (2)	BF2: Hurricanes (3)
GB3: He111 (3)	GF3: Me109 (2)	BF3: Hurricanes (3)
GB4: He111 (3)	GF4: Me109 (2)	BF 4: Hurricanes (3)
GB5: He111 (3)	GF5: Me109 (2)	BF 5: Spitfires (3)
GB6: Ju88 (3)	GF6: Me109 (2)	BF 6: Spitfires (3)

Selection

The target of each daily raid is selected by rolling 1D6: 1,2 = radar; 3,4 = factory; 5,6 = airfield.

The red and white dice are rolled to determine which squadrons will participate in a raid. The numbers on the dice indicate the squadrons selected. Roll 2D6 three times—once for the German bombers, once for the German fighters, and once for the British interceptors.

Squadrons will often suffer losses during combat. These losses will not be made up during the week of the campaign. If a weakened squadron is chosen, it must make the mission with the number of planes it has left.

If the same number is rolled on both dice, that squadron alone will conduct the raid. Do not roll again for another squadron. (For example, if the number 2 appeared on both the red and white dice for the German bombers, only bomber squadron GB2 would participate in the raid.)

If the number of a fighter squadron that has lost all of its planes is rolled, the raid will continue without that squadron. Do not roll again. If the numbers of two German fighter squadrons that have been destroyed are rolled, the bombers will conduct the raid without fighter cover.

If the numbers of two eliminated German bomber squadrons are rolled, then the raid is scrubbed and the day is marked off on the record sheet.

If the numbers of two British fighter squadrons that have been destroyed are rolled, then all German bombers chosen to participate in the raid will roll immediately for damage inflicted on the selected target and the day is marked off.

Identification

There will never be more than six of any one type of airplane on the board. The types that have only three airplanes may be identified by painting red, white, and blue spinners or painting red, white, and blue dots on the base of the stands. The types that have six airplanes should identify the remaining aircraft with black, yellow, and green markings. (For example, if two squadrons of Hurricanes are selected to intercept, one would be represented by planes with red, white, and blue markings, and the second squadron would have black, yellow, and green markings.)

The movement of fighters is quickened by rolling a handful of colored dice corresponding to color markings on individual planes. Moving planes in the order of color will aid in remembering which planes have moved.

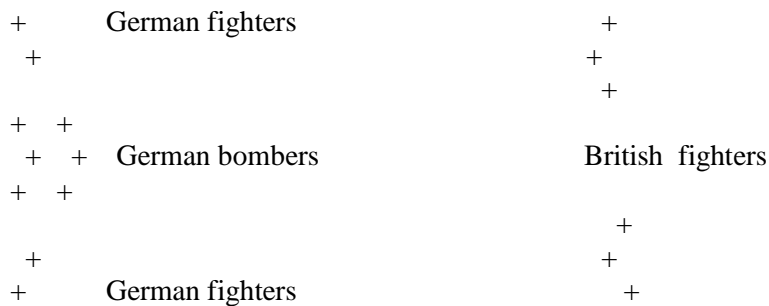
Placement

To start the raid, place the German fighter squadrons in the opposite corners at the end of the playing board. At the beginning of the game, each squadron has two planes which should be in an oblique formation with the leader of each squadron in the inside, forward position and the wingman on the outside position behind the leader.

Place the slowest moving bomber squadron in the center between the fighter squadrons at the end of the board. They should be placed in an inverted V, or “vic” formation with the leader in front. Place the leader of the second bomber squadron four squares ahead of the leader in the first squadron using the same formation.

Place each British fighter squadron in the opposite corners of the other end of the playing board. At the beginning of the game, each squadron has three planes and should be in an inverted V formation.

Figure 1. A schematic showing the initial placement of aircraft on the playing board



[Optional: On the first move of a raid, each fighter squadron may roll 1D6. If the number is even, add the number to the movement points (MPs) of each airplane to represent added speed from a dive. If the number is odd, the squadron will remain stationary on the first move to represent a climb.]

All fighters must remain on the playing board until shot down or until all of the bombers have been shot down or exited the board. Bombers must exit the board from the end opposite their entry.

Movement

The order of movement: German fighters move first; British fighters move second, and German bombers move last.

Planes must move the total number of spaces allowed by their movement points (MPs).

Bombers will try to keep a close “vic” formation for mutual protection, but the fighters will break their formations immediately as a result of the different die rolls.

Each bomber is assigned a number of MPs which will never vary.

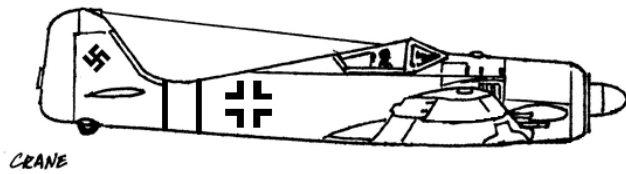
Movement points for fighters are determined by rolling 1D6 and adding the appropriate bonus points. Bonus points reflect the superior speed and maneuverability of the fighter type. The MPs for the fighters and bombers in this scenario are listed in Table 2.

Table 2. The movement points of bombers and fighters

Bombers	MPs	Fighters	MPs
Ju87	2	Me110	1D6 + 0
Do17	3	Me109	1D6 + 2
He111	3	Hurricane	1D6 + 1
Ju88	4	Spitfire	1D6 + 2

Maneuver

Movement points allow the fighters and bombers to maneuver on the playing board. The direction of movement determines the number of MPs expended. Moving into the square directly ahead costs 1 MP; movement into a diagonal square costs 2 MPs; and, movement into a lateral square costs 3 MPs. (See Figure 2.) The process continues until all available MPs are used.



2 ↖	1 ↑	↗ 2
3 ←	+	→ 3

Figure 2. Movement point costs

A plane must face the same direction it was in when it entered the square. A plane cannot change its diagonal or horizontal facing without moving into an adjacent square. (In other words, it can't spin around inside a square.)

A plane may move through an occupied square, but it cannot stop on an occupied square.

A bomber must break formation to avoid landing on an occupied square.

Whenever a fighter with one MP left successfully attacks a target, the fighter will move into the square vacated by the destroyed plane. If the attack is unsuccessful, however, the fighter will move straight ahead and stop in the square immediately beyond the target. If the fighter with one MP makes an unsuccessful head-on attack or attack from the rear against a bomber, the fighter will take fire each time it stops. If the attacker has extra MPs, it must move into the vacated square or the square beyond before making a turn.

Combat

A fighter fires only during its move. A fighter must move at least 1 square before it can fire.

Fighters may stop to fire at a target before finishing a move. A marker should be placed at the expected end of the move. It is possible, but very unusual, for a fighter to have enough MPs to shoot at two targets in one move.

In order to fire, a fighter must be facing the target from an adjacent square. A fighter that makes a head-on attack against a fighter or bomber will receive simultaneous defensive fire from the forward guns of the target. Roll a red die for the attacker and a white die for the defender. Fighters roll 4, 5, or 6 to hit and bombers roll 6 to hit.

When an airplane is hit by an attacking or defending plane, it is destroyed and is immediately removed from play.

The effectiveness of a fighter's fire depends upon the angle of attack and the roll of 1D6. An attack from the front requires a roll of 4,5, or 6; a diagonal attack from the front or back requires 5 or 6; a side attack requires a 6; and, a rear attack requires a 3,4,5, or 6. (See Figure 3.)

5, 6 ↘	4, 5, 6 ↓	↙ 5, 6
6 →	+	← 6
↗ 5, 6	3, 4, 5, 6 ↑	↖ 5, 6

Figure 3. Fighter hit chart

Bombers may defend themselves whenever a fighter stops within range of its guns. (For example, a fighter making a head-on attack would stop to fire and would simultaneously receive defensive fire from the bomber's nose gun. If the fighter ended its move directly behind the bomber, it would receive another round of fire from the bomber's tail gun.)

When a bomber defends itself, a white D6 is rolled and the target is hit and destroyed on a roll of 6. If the bomber is defending itself while being attacked by a fighter, the red and white dice are rolled simultaneously. It is possible for both planes to be shot down at the same time.

A bomber's area of defensive fire is limited to the square directly ahead of the nose and the three squares behind and adjacent to the tail. (See Figure 4.)

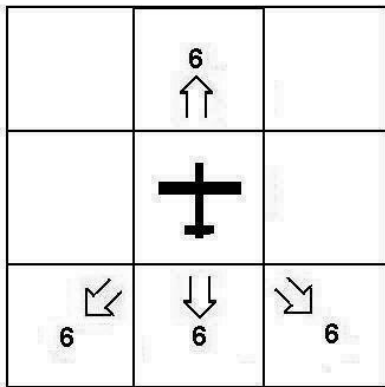


Figure 4. Bomber hit chart

Bombing

The target of the bombers is determined at the beginning of the raid by the roll of 1D6: 1,2 = radar; 3,4 = factory; 5,6 = airfield. When one target has been eliminated, the remaining targets will be determined by a roll of 1,2,3 and 4,5,6. When only one target remains, it will be automatically selected.

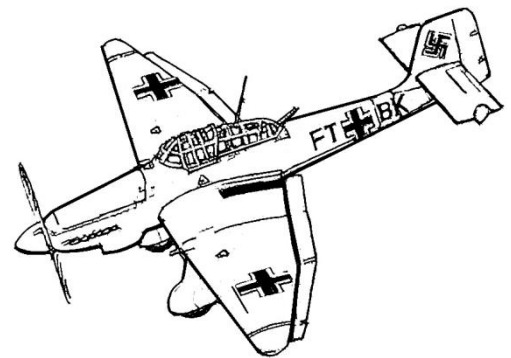
In order to bomb a target, the bomber must cross the length of the playing board and exit the opposite side. Bombers that survive and cross the edge of the board will roll 1D6 for each engine (Ju87s have only one engine). The numbers on the dice will be totaled and noted on the record sheet. Hits in subsequent raids will be added to this number, and, when the total equals 30 or more points, the target will be destroyed. The number of hits exceeding 30 cannot be transferred to another target.

Victory

The Germans will achieve victory by destroying the airfield and one secondary target in a campaign of seven days.

The British will achieve victory by preventing the destruction of the airfield and a secondary target.

Addenda: The Ju87 Stuka is considered a bomber and the forward guns require a roll of 6 to hit. The Me110 is considered a fighter and the forward guns fire like a fighter while the rear gun requires a 6 to hit.



Battle of Britain—Again!

Game Notes

This article is written from the notes made on the record sheet used during my last play of the **Battle of Britain—Again** rules.



[Note: The player represents the British. The objective of the game probably favors the Germans, so it is imperative that the British shoot down enough bombers to keep them from reaching their targets. The German fighters will automatically attack the British fighters, but the player must decide whether the British fighters attack the German bombers or fighters.]

Day 1

Target Selection: (2) Radar installation

Participating squadrons: German bomber squadrons GB4, GB5; German fighter squadrons GF4, GF4; British fighter squadrons BF3, BF4

Aircraft losses: GB4 (-2), GB5 (-1); GF4 (-2); BF3 (-1), BF4 (-3x)

Target damage: -25

Time of play: 30 minutes

A roll of 2 on 1d6 selected the radar installation as the target. The numbered red and white dice selected German bomber squadrons GB4 and GB5 for the mission. Each bomber squadron has three planes. Another roll to select the German fighter squadrons turned up 4 on both dice. This meant only one fighter squadron, GF4, would be sent up to protect the bombers. The German fighters have only two planes per squadron. The next roll selected the British fighter squadrons BF3 and BF4 to oppose the German planes. The British squadrons have three fighters each. Theoretically, two fighters can hold off the two German fighters while one gets after the bombers. Or, the Brits can gang up on the German fighters in the hope that they can destroy the bombers' protection early.

The first day's raid resulted in the loss of three German bombers, one German fighter, and four British fighters. Hurricane squadron BF4 was destroyed and would no longer be deployed when its number was rolled in the remainder of the game.

The three surviving bombers rolled 2D6 each and scored 25 damage points on the radar installation. Only 5 additional points would be needed to destroy this secondary target of the German objective. The total time taken to play out this raid was 30 minutes.

Day 2

Target Selection: (4) Vital Factory
Participating squadrons: GB5, GB6; GF1, GF4; BF4(x), BF5
Aircraft losses: GB5 (-2x); GB6 (-1); GF1 (-0); GF4 (-0); BF5 (-3x)
Target damage: -16
Time of play: 30 minutes

Two German squadrons, GB5 with two He111s and GB6 with three Ju88s, were selected to attack a vital British factory with fighter squadrons GF1 and GF4 flying escort. GF1 had two Me110s and GF4 had one Me109. British fighters from squadrons BF4 and BF5 were diced to oppose the raiders. Since BF4 was destroyed on Day 1, the factory would be defended by the three Spitfires of BF5.

The battle was furious. Two He111s of GB5 were destroyed and one Ju88 was downed. No German fighters were lost, but all three of the Spitfires of BF5 were destroyed.

The two surviving Ju88s rolled 4D6 and scored 16 points against the factory—more than half the points needed to destroy the target.

Day 3

Target Selection: (6) Airfield
Participating squadrons: GB5(x), GB6; GF4, GF5; BF4(x), BF6
Aircraft losses: GB 6(-0); GF4 (-0), GF5 (-1); BF6 (-3x)
Target damage: -9
Time of play: 8 minutes

A roll of 6 on 1D6 designated the airfield as the target. The He111s of GB5 and GB6 were selected by a roll of 2D6. Since GB5 was destroyed on Day 2, the raid was carried out by two Ju88s from GB6. GF4 and GF5 were chosen to provide fighter escort. GF4 had one Me109 and GF5 had two. British squadrons BF4 and BF6 were chosen to defend. The Hurricanes of BF4 had been destroyed on Day 1, but BF6 had three Spitfires.

The Germans made short work of the British defenders and won the battle in the sky. No bombers were lost, but one Me109 from GF5 was shot down. On the British side, BF6 was destroyed when all three Spitfires were shot down. The British fighters were shot down quickly and the game lasted only 8 minutes.

The two Ju88s rolled 4D6 and, incredibly, scored only 9 points bombing the airfield.

Day 4

Target Selection: (6) Airfield
Participating squadrons: GB3, GB3; GF 3, GF4; BF1, GF4(x)
Aircraft losses: GB3 (-2); GF3 (-1); BF1 (-2)
Target damage: -8
Time of play: 24 minutes

Once again, a roll of 6 selected the airfield as the target. Two D6s were rolled for the bombers and both came up with a 3. Three He111s from GB3 raided the airfield escorted by two Me109s from GF3 and one Me109 from GF4. The British dice roll called for BF1 and BF4 to defend. BF1 had three Hurricanes, but BF4 had already been eliminated.

In the ensuing battle, GB3 lost two bombers and GF3 lost one fighter. BF1 lost two Hurricanes.

The surviving bomber rolled 2D6 and inflicted 8 more damage points to the airfield. Added to the previous attack score, the total of 17 hits was only 13 points away from the primary objective's destruction. The turn took 24 minutes.

Day 5

Target Selection: (5) Airfield

Participating squadrons: GB3, GB5; GF2, GF3; BF1, BF2

Aircraft losses: GB3 (-0), GB5 (-0); GF2 (-2), GF3 (-1); BF1 (-0), BF2 (-2)

Target damage: -9

Time of play: 30 minutes

Fortunately for the Germans, a roll of 5 designated the airfield as the target once again. The German objective was to destroy the airfield and one other secondary target. This was the perfect opportunity to take out the airfield.

The dice selected GB3 and GB5 as the bomber squadrons. GB3 had only one He111 left and GB5 had none. GF2 and GF3 were selected to escort the bombers. GF2 had two Me110s and GF3 had one Me109. BF1 and BF2 were rolled to defend the airfield. BF1 had one Hurricane and BF2 had three.

Although the bomber survived the attack of the Hurricanes, all of the German fighters were destroyed. The Germans carried two BF2 Hurricanes down with them, however.

The lone German bomber rolled 2D6 and scored 9 points against the airfield. The Germans had scored a total of 26 points and needed only 4 more points to destroy the primary objective. The raid took 30 minutes to play.

Day 6

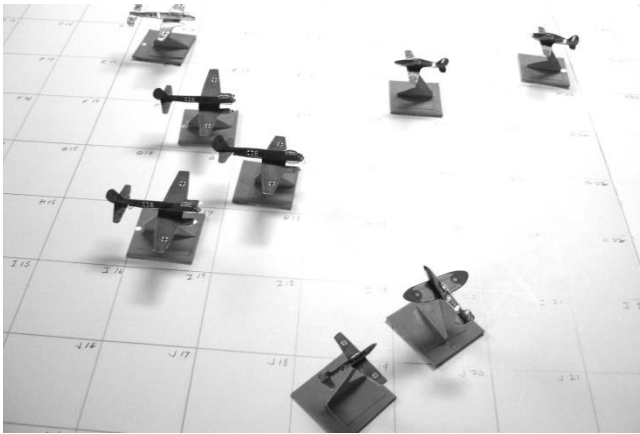
Target Selection: (2) Radar installation

Participating squadrons: GB3, GB4; GF3, GF4; BF1, BF3

Aircraft losses: GB3 (-1x), GB4 (-1x); GF3 (-1x), GF4 (-1x); BF1 (-1x), BF3 (-1)

Target damage: -9

Time of play: 15 minutes



The radar installation was selected as the target with a roll of 2. The Germans need only 5 points to destroy the target and achieve half of their objective for victory.

He111 squadrons GB3 and GB4 were selected by the dice roll. Each squadron contained one bomber. GF3 and GF4 were selected to defend the bombers. GF3 had no planes and GF4 had one fighter left. BF1 and BF3 were selected to oppose the raid. BF1 had one Hurricane and BF3 had two.

All of the German planes were shot down in the aerial melee and BF3 lost one Hurricane.

No hits were scored against the radar station. The turn took 15 minutes.

Day 7 (Game ended)

The game ended after Day 6 because it was impossible for the Germans to destroy both the primary target and a secondary target in the last turn. Since the Germans were unable to reach their objective, the British were the victors in the first week's campaign.

Battle of Britain—Again Record Sheet

Date _____

Target (# of Hits Needed to Destroy the Target) [# of Hits on the Target]

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1,2 = Radar (30)	[]	[]	[]	[]	[]	[]	[]
3,4 = Factory (30)	[]	[]	[]	[]	[]	[]	[]
5,6 = Airfield (30)	[]	[]	[]	[]	[]	[]	[]

Aircraft (# of MPs) # of Aircraft [# of Aircraft Destroyed]

Bomber Squadrons

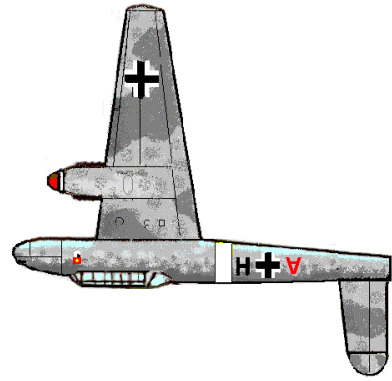
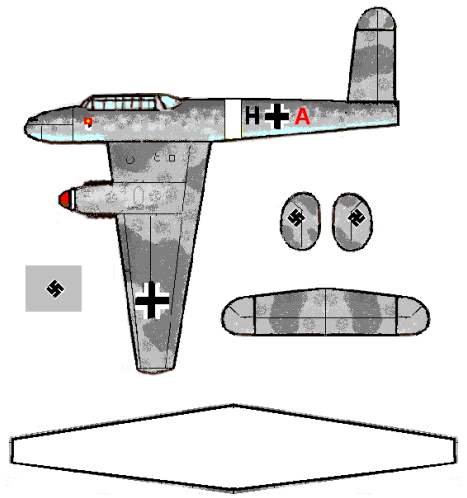
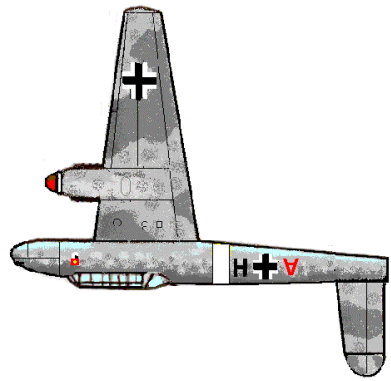
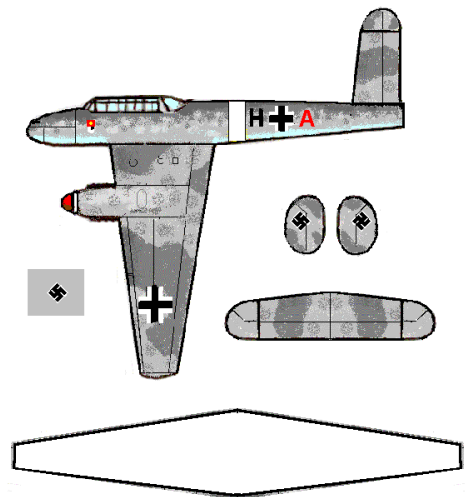
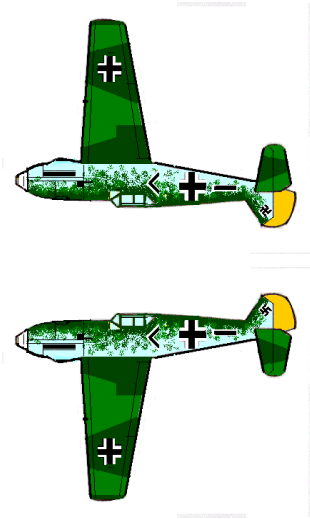
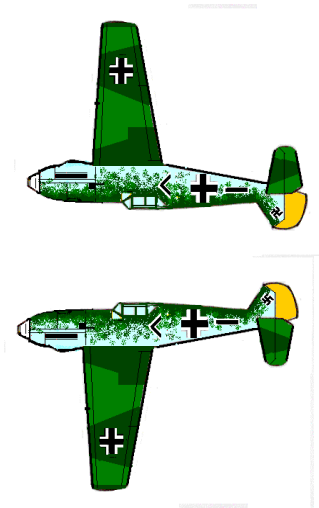
GB1 = Ju 87 (2)	3	[]	[]	[]	[]	[]	[]
GB2 = He 111-Do 17z (3)	3	[]	[]	[]	[]	[]	[]
GB3 = He 111 (3)	3	[]	[]	[]	[]	[]	[]
GB4 = He 111 (3)	3	[]	[]	[]	[]	[]	[]
GB5 = He 111 (3)	3	[]	[]	[]	[]	[]	[]
GB6 = Ju 88 (4)	3	[]	[]	[]	[]	[]	[]

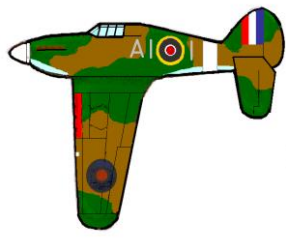
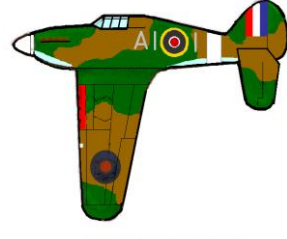
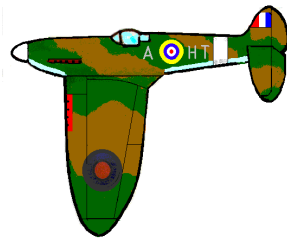
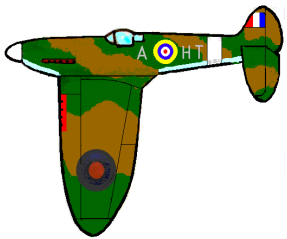
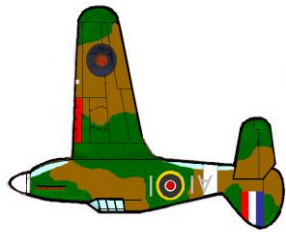
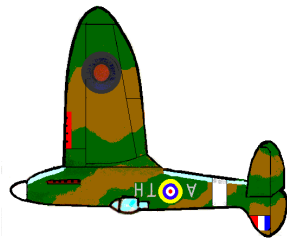
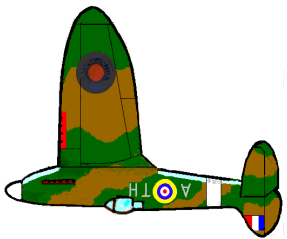
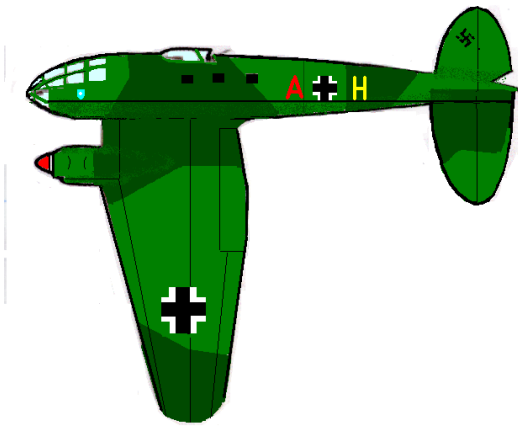
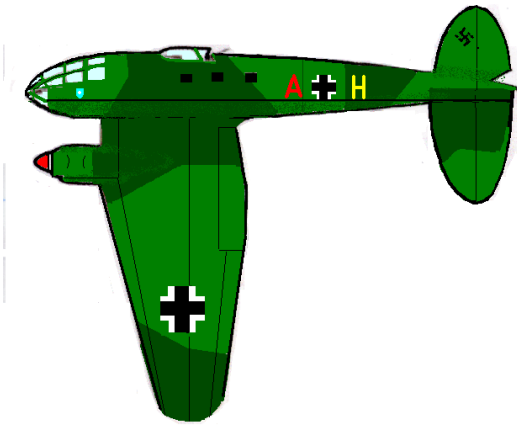
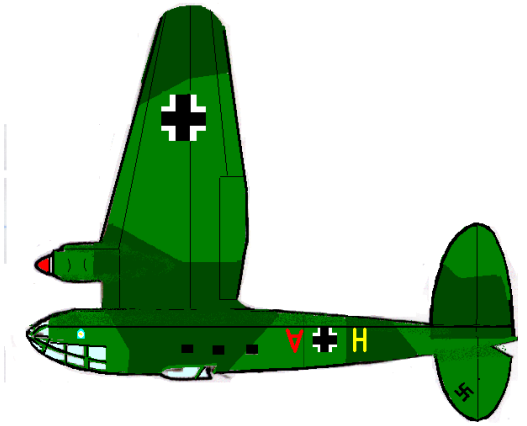
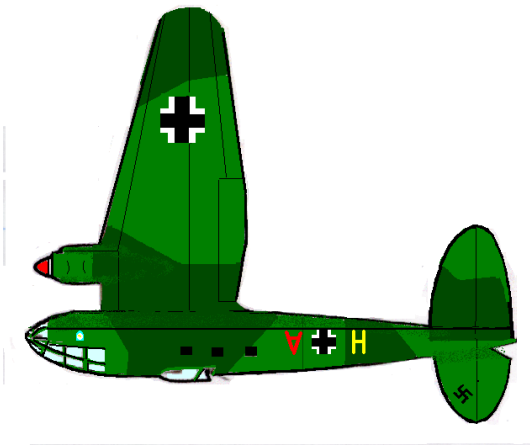
German Fighter Squadrons

GF1 = Me110 (1d6)	2	[]	[]	[]	[]	[]	[]
GF2 = Me110 (1d6)	2	[]	[]	[]	[]	[]	[]
GF3 = Me109 (1d6+2)	2	[]	[]	[]	[]	[]	[]
GF4 = Me109 (1d6+2)	2	[]	[]	[]	[]	[]	[]
GF5 = Me109 (1d6+2)	2	[]	[]	[]	[]	[]	[]
GF6 = Me109 (1d6+2)	2	[]	[]	[]	[]	[]	[]

British Fighter Squadrons

BF1 = Hurricane (1d6+1)	3	[]	[]	[]	[]	[]	[]
BF2 = Hurricane (1d6+1)	3	[]	[]	[]	[]	[]	[]
BF3 = Hurricane (1d6+1)	3	[]	[]	[]	[]	[]	[]
BF4 = Hurricane (1d6+1)	3	[]	[]	[]	[]	[]	[]
BF5 = Spitfire (1d6+2)	3	[]	[]	[]	[]	[]	[]
BF6 = Spitfire (1d6+2)	3	[]	[]	[]	[]	[]	[]





Bomber and Fighter Stands

Fold on the gray lines and cut on the black.

