The Great War Air Rules

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Rule B17 — Basic Air Rules

Players should use the basic air rules until they are thoroughly familiar with the core ground rules (Rules 1-16). Once the core ground rules are assimilated, the advanced air rules should be used instead. If these basic air rules are used, do not use the advanced air rules (Rules A17-25).

A. Air Points.

When using the basic air rules, set aside all air units, zeppelin base markers, and balloon barrage markers; and ignore all mention of these counters in the Orders of Battle. These counters are not used; instead, their effect is simulated through the use of air points.

The number of air points a player has available for air missions each game turn is equal to the number of ARPs his air order of battle lists as available for that production cycle under the commands he controls. *Example: It is the May I 15 turn and the Central Powers player controls the West (France/West Germany) command. His air OB lists that command with 4 ARPs available for the production cycle beginning with the May I 15 turn. The Central Powers player, therefore, has 4 air points available during each of the May I 15, May II 15, Jun I 15, and Jun II 15 turns.*

B. Air Missions.

A player may assign each of his air points to one air mission each player turn. Air points are assigned to air missions during combat and reaction combat phases (only). The effects of these missions are determined as follows:

1. Air Superiority. Both players simultaneously assign their air points to this mission at the start of a phase before any air points are assigned to tactical recon, aerial bombardment, DAS, or GS. Each air point assigned to this mission in excess of the number the opposing player has assigned, allows the owning player to attempt to abort (cancel) the mission of any one air point of his opponent during that phase. *For example, if the Entente player assigns 6 air points to air superiority and the Central Powers player assigns 4 air points to the same mission, the Entente player may attempt to abort the missions of up to 2 Central Powers air points assigned to tactical recon, GS, DAS, or aerial bombardment missions that phase.* A player desirous of making an attempt to abort an enemy air point announces he will do so immediately after his opponent states the mission and target hex of the air point. For each attempt, roll a die and consult the Ground Success Table; if the attempt succeeds, the air point aborts its mission; if the attempt fails, it has no effect.

2. Tactical Reconnaissance. Only the attacking player may assign air points to this mission; he assigns air points to this mission before any air points are assigned to aerial bombardment, DAS, or GS. The target hex of this mission is any hex containing enemy units. For each tactical recon mission, roll a die, and consult the Ground Success Table once for each air point remaining in the hex after air superiority and AA fire (note

the list of die roll modifiers that apply to tactical recon attempts). If any of these attempts succeed, modify the die roll for the bombardment/combat by +1. Note that the die roll is never modified by more than +1, no matter how many attempts succeed. *Special:* If a tactical recon air mission succeeds in modifying the die roll for a bombardment in a hex by +1, it also automatically modifies the combat resolution die roll for any combat in the hex during the same phase by +1 as well.

3. Aerial Bombardment. Only the attacking player may assign air points to this mission; he assigns air points to this mission before any air points are assigned to DAS or GS. The target hex of this mission is any hex containing enemy units. Air points which survive air superiority and AA fire may bombard per Rule 12C4a.

4. Defensive Air Support. Only the defending player may assign air points to this mission; he assigns air points to this mission before any air points are assigned to GS. The target hex of this mission is any hex containing friendly units. Each air point remaining in the hex after air superiority and AA fire increases the total defense strength of that hex by 1/2 point.

5. Ground Support. Only the attacking player may assign air points to this mission. The target hex of this mission is any hex containing enemy units. Each air point remaining in the hex after air superiority and AA fire increases the strength of any attack directed against that hex by one point.

C. Antiaircraft (AA).

Some units have AA strengths printed in the upper left corner of their counters. (*Note:* In the case of artillery units, the number in the upper left corner of the counter can refer to either the unit's AA strength or its range. If the number is "1", it refers to the unit's AA strength; if the number is "2" or greater, it refers to the unit's range instead.) Some map items and counters have intrinsic AA strengths as listed on the Intrinsic AA Summary, if they are owned by the player. Air points undergo AA fire when flying missions to hexes containing enemy AA.

After resolving any air superiority attempts in a hex (per 17B1 above), determine the effects of any AA fire on air points flying missions in the hex. For each air point remaining in the hex, roll a die (modifying the die roll by +1 for every two AA strength points in the hex beyond the first point), and consult the Ground Success Table. If the AA fire attempt succeeds, the air point is aborted (has its mission canceled). If the AA fire attempt fails, it has no effect.

Rule A17 — Advanced Air Rules Introduction

If the advanced air rules (Rules A17-25) are used, do not use Rule B17 (Basic Air Rules).

A. Air Units.

Air units are illustrated on the Unit Identification Chart (UIC).

1. Types. There are five basic categories of air units: fighters, bombers, transports, airships, and balloons. Each category contains one or more specific air unit types, as shown on the UIC. *For example, the fighter category contains both fighters (type F) and reconnaissance (type R).*

Unless otherwise noted in the rules, rules about "fighter," "bomber," "transport," "airship," and "balloon" pertain to all air unit types within their respective categories. *For example, a rule describing the abilities of fighters applies to all fighter types.*

2. Prefixes. Air unit types may be prefixed by the letter N (for night) as shown on UIC. *For example, a type NF is a night fighter: type F (fighter) and prefix N (night).* A prefix modifies, but does not change, the category of an air unit. For instance, a night fighter is still a fighter. Unless indicated otherwise in the rules, any ability of a category in general or a type in specific includes all units of that category or type with the night prefix. *For example, a rule applying to type F air units applies to F and NF.*

3. Codes. Air units may have one or more codes, as listed on the unit identification chart. Codes define certain specific or special capabilities of air units. *For example, a type Z with a code M is an airship that carries anti-shipping missiles.*

B. Concepts.

1. Operational Status. An air unit may be at one of four operational statuses:

- *Operative:* The air unit is capable of flying a mission during the current player turn. An operative air unit will be "face up" (ratings side up) at an airbase.
- *Inoperative:* The air unit cannot fly a mission. It has flown a harassment mission in the previous player turn, has already flown a mission during the current player turn, or cannot fly a mission due to airbase capacity limits. An inoperative air unit will be "face down" (with "Inop." displayed) at an airbase. An inoperative air unit will usually become operative in the next initial phase.
- *Aborted:* The air unit has been aborted (due to damage from such causes as air combat or antiaircraft fire) and cannot become operative again until regrouped or repaired. An aborted air unit will be placed off-map in the aborted box of the appropriate game chart.
- *Eliminated:* The air unit has been eliminated (due to extensive damage from such causes as air combat or antiaircraft fire) and cannot become operative again until replaced. An eliminated air unit will be placed off-map in the eliminated box of the appropriate game chart.

2. Terms. The following general terms are used:

- *Target Hex:* The target hex of an air unit is the hex in which it is to perform its mission. *Example: The target hex of a bomber flying the port bombing mission is the hex containing the port to be bombed.*
- *Movement-Group:* A movement group consists of one or more air units flying missions to a target hex in an air operation.
- *Escort:* An escort is a fighter flying an escort mission.
- *Interceptor:* An interceptor is a fighter flying an interception mission.
- *Air Operation (Air Op):* An air op consists of one player flying one or more missions to a particular target hex, together with all activities that may occur when resolving the air op: patrol attacks and interception by the enemy player, air combat, antiaircraft fire, mission resolution, and air units returning to base.
- *Mission Force:* A mission force consists of all air units flying missions in a target hex other than those flying escort (the escorts) or interception (the interceptors).

3. Air Orders of Battle. The air OBs organize air units by

theater/command and nationality/contingent.

a. Theaters/Commands. The air OBs list air units by specific commands (see Rule 3F) within a theater. A player will use a particular OB based on the scenario being played, as listed in that scenario's instructions (Rule 42B).

b. Nationalities/Contingents. For each command, the air OBs list air units by nationality and contingent within that nationality (see Rule 3A5). The nationality of the air unit, and the contingent within that nationality it belongs to, affect how the air unit is used (as described in later rules); typically this affects air replacements (Rule 25).

4. Game Charts. The players use their various game charts to administer their air units. Each player typically has one game chart for each command he controls. Each of these game charts has an eliminated air units box and an aborted air units box, and may have one or more air unit garrison or holding boxes.

a. Eliminated Air Units Box. This holds the command's eliminated air units. *For example, Entente air units eliminated in the West (France/West Germany) command are placed in the eliminated air units box on the France game chart; while Central Powers air units eliminated in the same command are placed in the eliminated air units box on the Germany (West) game chart.*

b. Aborted Air Units Box. This holds the command's aborted air units.

c. Garrison and Holding Boxes. These boxes hold various air units while they are part of a required garrison or while based at off-map airbases.

C. Air Activities Phasing.

Air missions occur "on demand" in individual air ops. The air missions rule (Rule 20) lists, by individual mission, which missions are eligible to be flown in air ops that can occur in the various phases of the player turn.

Air ops occur in each player turn, as follows (this is also shown on the Master Sequence of Play Summary):

1. Initial Phase. The following occurs in the initial phase of each player turn, in this sequence:

1) The phasing player performs all air replacement actions: regrouping, reinforcements, withdrawals, and replacements (Rule 25).
2) All inoperative air units (of both players) become operative. *Exception:* Air units that flew harassment bombing missions in the previous player turn do not become operative; see Rule 20G2d.
3) For each airbase, the owning player checks its current capacity. If the number of air units present at the base exceeds its current capacity, the player immediately makes inoperative sufficient air units so that the base's capacity is not exceeded. *For example, if an airbase currently has a capacity of 2, and there are 3 air units there, the owning player makes 1 air unit there inoperative.*
4) Both players may fly CAP air ops. The non-phasing player may fly harassment bombing air ops. Both players may assign air units to naval patrol air ops.

2. Movement Phase. Players fly any eligible air ops during these phases "on demand:" at any time during the phase they wish.

3. Combat Phase. Before any bombardment is resolved, the following occurs in the combat phase, in this sequence:

1) The attacker flies tactical recon air ops.

Bombardment is resolved after all tactical reconnaissance air ops are initiated. The attacker flies aerial bombardment and carpet bombing air ops at any time during the bombardment segment of the combat phase.

Before any combat is resolved, the following occurs in the combat phase, in this sequence:

2) The defender flies DAS air ops.
3) The attacker flies GS air ops.

Ground combat is resolved after all DAS and GS air ops are initiated. As players resolve ground combat, GS, DAS, and tactical reconnaissance air units resolve their missions and return to base.

4. Reaction Movement Phase. Players fly any eligible air ops during these phases "on demand:" at any time during the phase they wish.

5. Reaction Combat Phase. Before ground combat is resolved, the following occurs in the reaction combat phase, in this sequence:

1) The attacker flies tactical recon air ops.
2) The defender flies DAS air ops.
3) The attacker flies GS air ops.

Ground combat is resolved after all DAS and GS air ops are initiated. As players resolve ground combat, GS, DAS, and tactical reconnaissance air units resolve their missions and return to base.

6. Exploitation Phase. Players fly any eligible air ops during this phase "on demand:" at any time during the phase they wish. At the end of this phase (which is the end of the player turn), both players return to base all of their fighters still flying CAP air ops.

D. Air Ops Sequence.

Unless otherwise stated for a particular mission, air ops are resolved as they are initiated, in the following air op sequence. In general, one player, the initiating player, initiates an air op and flies one or more missions to a target hex, and the other player, the responding player, will fly patrol attack and interception missions. The following general restrictions govern air ops:

- One player, the initiating player, announces that he is initiating a specific air op. The air op consists of the player flying one or more missions to a particular target hex. Until the initiating player's air units reach the target hex, the player is not required to reveal the target hex to the opposing player.
- The initiating player flies one or more missions to the air op's target hex and may fly escort missions for his movement groups. The player may not fly missions to any other target hex during this air op. The particular missions the player may fly in an air op are restricted by mission type and phase. *For example, in the combat phase, the phasing player may fly GS air ops.* In a GS air op, only air units flying the GS bombing mission and fighters flying the escort mission may fly.
- The other player, the responding player, may fly patrol attack and interception missions against the initiating

player's air units. The responding player may also have eligible fighters already flying CAP missions to patrol attack or intercept the initiating player's air units. The responding player may not fly any other missions during this air op.

- After the missions are resolved and air units return to base (see below), the air op is over. Once the air op is over, a player may initiate a new air op. (Note that the same player could initiate a new air op and could even select the same target hex as the previous air op.)
- Unless specifically stated otherwise in a rule below, the following conditions apply to air ops: 1) Only one air op can occur at the same time. 2) Once an air op is initiated, all other game activities are paused until the air op is resolved.

An air op is resolved in the following sequence.

1. Mission Movement Step. The initiating player initiates the air op and flies all air units that will fly missions in the air op. In general, these air units will fly to the air op's target hex. (Escorts do not necessarily fly all the way to the target hex, as explained in the escort mission, Rule 20B.) The responding player may fly patrol attack missions and resolve patrol attacks against the initiating player's air units.

2. Interceptor Movement Step. The responding player may fly interception missions to the air op's target hex.

3. Air Combat Resolution Step. Players resolve air combat between their air units.

4. AA Fire Step. The responding player resolves any antiaircraft (AA) fire against the initiating player's air units.

5. Mission Resolution Step. The initiating player resolves reconnaissance, bombing, and transport missions.

6. Air Unit Return Step. Both players return to base all air units flying missions. Air units returning to base immediately become inoperative (unless stated otherwise in the rules for specific missions).

Rule 18 — Airbases

Air units take off from and land at airbases. When not flying a mission, an air unit must be on the ground at a friendly-owned airbase.

Each hex (excepting mountain, forest, swamp, wooded swamp, or prohibited terrain), fortress, resource center, and point city is an airbase for air units. *Special:* Airships must use special airbases, represented by Zeppelin base markers (as shown on the Unit Identification Chart). Note that Airship air units may not use regular airbases and non-airship air units may not use zeppelin bases.

Designers' Note: WW I aircraft (with the exception of airships and a few types of late-war heavy bombers) could operate from almost anywhere: any stretch of level road or grassy field was a serviceable airfield.

A. Capacity.

The capacity of an airbase is the number of air units that may become operative at that airbase in each initial phase (see Rule 17C1). There is no limit to the number of operative air units that may take off from an airbase during a player turn. There is no

limit to the number of air units that may land or be present at an airbase.

Airbase capacities are shown on the Airbase Summary. The total airbase capacity of a hex is the sum of the capacities of all the airbase types in the hex. Note that the capacity of some types of airbases in the West theater (only) increase as time goes by. *For example, the airbase capacity of a clear terrain hex containing a fortress in the West theater is 2 in 1912-15, 3 in 1916-17, and 4 in 1918-20.*

When using the advanced naval rules, some naval units are also airbases for specific categories of air units. *For example, each CV (aircraft carrier) taskforce naval unit is an airbase for 1 code C (carrier-capable) air unit (as shown on the Unit Identification Chart).*

B. Air Unit Escape.

When an enemy ground unit gains ownership of an airbase hex, each air unit there (whether operative or inoperative) attempts to escape. Roll a die for each air unit attempting to escape:

- On a roll of 1 or 2, the air unit escapes, flying a transfer mission (see below).
- On a roll of 3 or 4 the air unit does not escape. The air unit is aborted, place it in the aborted box on the appropriate game chart.
- On a roll of 5 or 6 the air unit does not escape. The air unit is eliminated; place it in the eliminated box on the appropriate game chart.

Note: Subtract 1 from the die roll if the air unit attempting to escape is a fighter. Add 1 to the die roll if the air unit is an airship.

After rolling for all air units at the airbase, the owning player immediately conducts a series of air ops for the escaping air units. Each escaping air unit may have its own air op, or several may fly in the same air op (if they all have the same target hex). The air op follows the standard air op sequence (Rule 17D), with the escaping air units flying transfer missions (Rule 20A).

- An operative air unit which escapes becomes inoperative upon landing during the air return step.
- An inoperative air unit which escapes becomes aborted upon landing during the air return step; place it in the aborted box on the appropriate game chart.

If there is no friendly-owned airbase within transfer range, an escaping air unit is automatically eliminated.

C. Airbase Capture.

All enemy airbases (except zeppelin bases) may be captured and used. An enemy airbase is captured when a friendly ground unit gains ownership of the hex. A captured airbase immediately becomes a friendly airbase and may be used from its instant of capture.

A zeppelin base is immediately destroyed when an enemy unit gains ownership of its hex.

Rule 19 — Movement of Air Units

Air units fly to their target hexes using movement points. An air unit's movement rating is the basic number of MPs the air unit has. The air unit's movement rating may be modified,

depending on its mission. This modified movement rating is the air unit's *range* for the mission: the maximum number of MPs the air unit may use when flying to its target hex.

An air unit always spends 1 MP for each hex it enters.

Air units flying missions fly in movement groups. A group can consist of one or more air units. As a group moves to its target hex, other movement groups (which are flying missions to the same target hex) can merge with the group. In any hexes along the path to the target hex, movement groups may join with or split off from the movement group. All air units flying in a movement group move together as a stack. Air units may fly to their target hex in any number of movement groups; it is not required that all air units flying to the same target hex fly in a single group.

Note that air units may have spent differing amounts of MPs when they join a particular movement group. If necessary (although it should rarely be needed), use status markers to keep track of MPs for individual air units in a movement group.

Air units flying missions return to base during the air unit return step of the air mission sequence. Unless stated otherwise, an air unit has the same range (modified movement rating) when returning to base as it did when flying to its target hex. If for any reason there is no friendly-owned airbase within range when an air unit must return to base, the air unit is immediately eliminated.

Rule 20 — Air Missions

Operative air units may fly any of several missions, depending upon their air unit types. The missions are described in detail below. Each mission lists which air unit types may fly the mission, what their ranges are, when the mission may be flown, and what the effects of the mission are. An air unit may fly only one mission per player turn.

A player announces the mission of each of his air units when it takes off. For a bombing or transport mission, the player simply announces that the mission is bombing or transport; he does not have to announce (or even decide upon) the specific type of bombing or transport mission at this time. He decides (and announces) which specific bombing or transport mission is being flown as he resolves the air op.

A. Transfer.

Any air units may fly transfer missions during the movement, reaction movement, and exploitation phases. *Exception:* Balloon air units may not fly transfer missions. An air unit's transfer range is three times its printed movement rating.

An air transfer mission is flown in a series of legs from airbase to airbase, until the final destination is reached.

Each leg has its own target hex and is resolved using the air ops sequence (Rule 17D). The target hex of a leg is a friendly-owned airbase within transfer range. In the air return step of a leg, transferring air units land at the airbase in the target hex, and may immediately fly another leg. The air units continue to fly legs until the final destination is reached, whereupon the air units land there and become inoperative in the air return step.

Air units that fly transfer missions in which the total distance flown on all legs exceeds the air unit's printed movement rating may be damaged as a result of flying the mission. (Note that air units that transfer a distance less than or equal to their printed movement rating are never damaged.) *Exception:* Airships are never damaged when they transfer. Check for damage as follows: The owning player rolls a die roll for each affected air unit immediately upon completion of the transfer mission; if the roll is a 1, 2, or 3 no damage results; if the roll is a 4, 5, or 6 the air unit is damaged; place damaged air units in the aborted air units box on the applicable game chart.

Designers' Note: WW I aircraft were somewhat fragile and had high wastage rates when flown over long distances. For those who want the utmost in historicity, modify the damage roll so that damage occurs on a roll 3, 4, 5, or 6 during 1912-15 (the early-war aircraft were very fragile), and on a roll of 5 or 6 during 1918-20 (the late-war aircraft were usually of somewhat more robust construction).

B. Escort.

Fighters may fly escort missions during any air op initiated by their owning player. A fighter's escort range is its printed movement rating.

During an air op, the initiating player may fly escort missions. Escorts (fighters flying this mission) guard friendly air units flying other missions in the air op from patrol attack and interception.

An escort flies to any hex within its escort range. It may fly by itself or by joining a movement group. While flying with a movement group, it guards the group against patrol attacks.

An escort does not have to fly to the target hex of the air op (and the target hex may be outside its escort range). If it does not fly to the target hex, it immediately returns to base and becomes inoperative when it reaches the limit of its range. If it does flies to the target hex of the air op, it participates in the rest of the air op sequence, guarding friendly air units there.

C. Interception.

Fighters may fly interception missions during any air op initiated by the enemy player. A fighter's interception range varies by nationality and time period, as shown on the Air Technology Table. *Note:* On that chart "1/4 intercept" and "1/2 intercept" means that the air unit has an interception range equal to 1/4 or 1/2 its movement rating, respectively (round all fractions down). *For example, a German fighter with a movement rating of 5 may not fly interception at all during 1912-14, may intercept only in the hex where the fighter is based during 1915-16, may intercept anywhere within 1 hex of where the fighter is based during 1917-18 (as 1/4 of 5 is 1.25, which rounds down to 1), and may intercept anywhere within 2 hexes of where the fighter is based during 1919-20 (as 1/2 of 5 is 2.5, which rounds down to 2).*

During an air op, the responding player may fly interception missions. Interceptors (fighters flying this mission) fly to the air op's target hex, to engage enemy air units in air combat.

Designers' Note: Air forces were still new and untried (for the most part) in WW I and the doctrine to use them to the best effect took time to work out. The Air Technology Table is a simple mechanism to show this. In the case of interception, the limiting factor is how effective your early warning network of ground observers is (the earlier they report enemy aircraft in the air and where they are headed, the greater likelihood your

fighters can respond in time to intercept). At the beginning of the war (1912-14) most countries effectively have no network at all and thus cannot intercept. As time goes by, everyone develops some kind of observer network, and as this network gets more effective, interception range goes up.

D. Patrol Attack.

Fighters may fly patrol attack missions during any enemy air op. A fighter's patrol attack range varies by nationality and time period, as shown on the Air Technology Table. *For example, a German fighter may fly patrol attack only in the hex where the fighter is based during 1912-14, may patrol anywhere within 1 hex of where the fighter is based during 1915-16 (this is a patrol range of 1), may patrol anywhere within 2 hexes of where the fighter is based during 1917-18 (this is a patrol range of 2), and may patrol anywhere within 3 hexes of where the fighter is based during 1919-20 (this is a patrol range of 3).*

During an air op, the responding player may announce that he is making a patrol attack when an enemy movement group takes off from or enters any hex in patrol range of any of the responding player's operative fighters. The movement of the group is temporarily halted until the patrol attack is resolved. The responding player then flies one or more fighters on patrol attack missions to the hex.

Once all patrol attack fighters have flown to the hex, the players immediately resolve the patrol attack, as explained in Rule 21D.

After the patrol attack is resolved, the responding player's fighters immediately return to base (within their patrol attack range) and become inoperative. The movement group then resumes its movement. If the group subsequently enters another hex in patrol range of an operative fighter, the responding player may make another patrol attack against the group.

Designers' Note: Patrol attack represents fighters patrolling the airspace around their base. During the early-war period (1912-14), patrols were flown almost at random, and had corresponding little effect at any distance from the base. As time went by, airforces became more adept at patrol, with systematic coverage of airspace and ground observer information increasing the effective patrol range.

E. Combat Air Patrol (CAP).

Beginning with the Jan I 15 turn, fighters may fly CAP missions during any initial, movement, reaction movement, or exploitation phase. Note that the Air Technology Table also shows that no air units may fly CAP during 1912-14. A fighter's CAP range is its printed movement rating. The target hex of a CAP mission can be any hex within CAP range of the fighter.

For fighters flying CAP missions, follow the standard air op sequence (Rule 17D) until the mission resolution step is reached. At this time, the air op is suspended. The CAP fighter remains in its target hex, and the owning player may assign it to another air op later in the same player turn. During the mission movement step of a subsequent air op the owning player may (but is not required to):

- Switch the CAP fighter to the escort mission (Rule 20B), if the fighter's hex is the target hex of an air op by the owning player. *Example: During the initial phase of a player turn, the Entente player flies a CAP fighter to Maubeuge (GW2:0922), which is currently owned by the Central Powers player. During the exploitation phase of the same player turn, the Entente player initiates a bombing air op, with Maubeuge as the target hex. He may thus switch the fighter in Maubeuge's hex from CAP to escort.*
- Switch the CAP fighter to the interception mission (Rule 20C), if the fighter's hex is the target hex of an air op by the enemy player.
- Switch the CAP fighter to the patrol attack mission (Rule 20D), if during an air op by the enemy player an enemy movement group takes off in or enters the fighter's hex.

Once a CAP fighter switches missions (per above), it participates in the rest of the air op using the appropriate mission rules. *Exception:* When returning to base, the fighter uses its CAP range.

If a CAP fighter is in the target hex of an air op, and the owning player does not switch it to escort or interception (per above), then the CAP fighter is ignored for all purposes for the rest of the air op.

At the end of each player turn, the players return to base all of their fighters still flying CAP missions.

Designers' Note: CAP missions are simple in concept: you fly to a hex in the hope your opponent will try to fly through the same hex while your fighters are there. Ensuring that you have fighters on station over the hex throughout the turn, however, is a major coordination problem; one that is beyond the capabilities of any of the WWI airforces before 1915.

F. Reconnaissance (Recon).

Type R (Reconnaissance) and Type O (Observation Balloon) air units are recon air units. Recon air units (only) may fly recon missions. Air units may fly recon missions as follows:

- During their phasing player's movement and exploitation phases, and during reaction movement phases when their player is reacting: strategic recon.
- During combat and reaction combat phases when their player is the attacker: tactical recon.

An air unit's recon range is its printed movement rating. The target hex of a recon mission is any hex within recon range that contains a recon target. Recon targets vary by recon mission, as explained below.

Use the Ground Success Table to resolve recon missions. Roll a die, modify the number rolled with the appropriate modifiers, and consult the table. There are two results: success or failure. If the mission fails, it has no effect; if the mission succeeds, implement the results described under each type of recon mission.

1. Strategic Recon. Recon air units may fly strategic recon missions to attempt to determine the contents of unknown enemy corps headquarters (HQs). The target hex of this mission is the hex containing the unknown enemy corps HQs the player wants to examine.

Consult the Ground Success Table (per above) once for each surviving recon air unit in the hex. If any of these attempts succeed, the enemy player must truthfully state: 1) the total number of divisional units assigned to the corps HQs, and 2) the total number of non-divisional units assigned to the corps HQs.

Designers' Note: Historical hindsight shows that aerial recon was accurate more often than not in WW I; but this does not change the fact that many army commanders of the day did not fully trust it, and often disregarded the recon information their airforces provided. Based strictly on the historical accuracy rate, the base chance of success for this mission probably should be 4/6; but distrust (however unjustified) of its accuracy reduces this to 2/6.

2. Tactical Recon. Recon air units may fly tactical recon missions to increase the effectiveness of bombardments and attacks made by friendly ground units. The target hex of this mission is the hex containing the enemy units the player intends to bombard or attack.

The attacking player initiates and flies tactical recon air ops in his combat or reaction combat phase, before any DAS or GS air ops are flown (these are described in 20G2b/c below), and before ground combat is resolved. Each tactical recon air op follows the standard air op sequence (Rule 17D), until the mission resolution step is reached. At this point, the air op is suspended until the bombardment or ground combat in the hex is resolved.

When the players are to resolve bombardment or ground combat in a hex containing a tactical recon air op, the remainder of the air op occurs in conjunction with the bombardment or ground combat, in this sequence:

1) When ready to resolve the bombardment/combat, the attacking player declares the bombardment/ attack, indicating the bombarding/attacking units.

2) The tactical recon mission resolution step occurs. Determine if the mission succeeds or fails. The player may consult the Ground Success Table (per above) once for each surviving recon air unit in the hex. If any of these attempts succeed, modify the die roll for the bombardment/combat by +1. Note that the die roll is never modified by more than +1, no matter how many recon air units succeed. *Special:* If a tactical recon air mission succeeds in modifying the die roll for a bombardment in a hex by +1, it also automatically modifies the combat resolution die roll for any combat in the hex during the same phase by +1 as well.

It is possible that a player may fly a tactical recon air op to a hex, intending to bombard or attack the units there, and then subsequently decide to neither bombard nor attack. In this case, the air units in the tactical recon air op return to base at the end of the combat or reaction phase in which they flew the mission.

Designers' Note: Tactical recon primarily represents the increased effectiveness that attacking artillery has if the fall of shot is controlled and adjusted from on high. By WW II this has become so routine that it can be ignored (as everyone is doing it all the time), but in WW I the doctrine is new; and, although its use becomes more prevalent as the time goes by, it does not become universal until almost the end of the war. Note that the probability of success increases each year: 1/6 in 1912-14, 2/6 in 1915, 3/6 in 1916, 4/6 in 1917, and 5/6 in 1918-20.

G. Bombing.

Any air unit with a bombing strength greater than 0 may fly bombing missions. Air units may fly bombing missions as follows:

- During the enemy player's initial phase: harassment bombing missions.
- During their phasing player's movement and exploitation phases and during reaction movement phases when their player is reacting: any bombing mission except ground support (GS), defensive air support (DAS), harassment, or aerial bombardment.
- During combat and reaction combat phases when their player is the attacker: GS bombing missions.
- During combat and reaction combat phases when their player is the defender: DAS bombing missions.
- During combat phases, whether their player is attacking or defending: aerial bombardment bombing missions.
- During combat phases when their player is the attacker: carpet bombing missions.

Unless stated otherwise, an air unit's bombing range is its printed movement rating.

The target hex of a bombing mission is any hex within bombing range that contains a bombing target. Bombing targets vary by bombing mission, as explained below.

Air units bombing a target in a hex may bomb it individually, or some (up to all) may combine their bombing strengths to make a single bombing attack. Exceptions to this general case are given in the specific bombing missions.

Unless otherwise stated below, bombing missions are resolved during the mission resolution step, after air combat and antiaircraft fire in the hex is resolved. Immediately before resolving each bombing attack, the phasing player announces the specific bombing mission, specifying the target and bombing air unit (or air units). Note that a player announces bombing attacks in a hex one at a time as they are resolved, and is not required to announce all his attacks before resolving any.

Several bombing missions require the use of the Bombing Table to resolve bombing attacks. For each such attack, use the bombing strength column that most closely matches (without exceeding) the bombing strength of the attacking air units. (If the bombing strength is less than 2, the attack automatically misses.) *For example, a bombing attack with a strength of 12 points would use the 8 column.*

Roll one die and modify the number rolled with the appropriate modifiers on the Bombing Table. Cross-index the bombing strength column with the modified die roll to obtain a result. There are two possible results: M (miss) and H (hit). A miss has no effect on the target. A hit affects the target, as described in each bombing mission.

Weather (Rule 36), terrain, and bombing mission type may affect bombing strengths. In mud, winter, and snow weather, air units bombing land targets have their bombing strengths (tactical & strategic) halved. In rough and stormy sea conditions, air units bombing naval targets have their bombing strengths (tactical & strategic) halved.

1. Strategic Bombing. The following missions may be flown by air units with strategic bombing strengths greater than 0.

a. Rail Marshaling Yards. The target of this mission is an enemy-owned rail marshaling yard (rail marshaling yards are defined in Rule 7A).

Consult the Bombing Table for each bombing attack made

against the target. Each hit reduces by 2 the rail capacity of the enemy rail net containing the yard, for the enemy player's next player turn. Also, a hit on a yard breaks the rail line in the hex, if it is not already broken.

The rail-capacity decrease is only for the enemy player's next player turn; it is not permanent. The rail break, however, is permanent until repaired (Rule 13A3).

Only 1 hit is allowed per yard in a player turn. Hits in excess of 1 on a yard have no effect.

b. Ports. The target of this mission is any enemy-owned port. Consult the Bombing Table for each bombing attack made against the target. Each hit damages the port. Mark each hit achieved on the port with a port hit marker. (Ports are covered in detail in Rule 30A.)

c. Terror Bombing. Air units may fly bombing missions against enemy cities to terrorize civilian populations. The target of this mission is any enemy-owned major city hex. Consult the Bombing Table for each bombing attack made against the target. Each hit reduces by 1 point the morale of the country in which the bombed city is located (but note that a country cannot lose more than 2 morale points per turn due to terror bombing). (Morale is covered in Rule 40.)

Terror bombing hits on certain cities may also trigger mandatory increases to various air defense garrisons as listed in the appropriate section of the nation-specific rules (Rule 41).

d. Factories. The target of this mission is any enemy-owned factory. Consult the Bombing Table for each bombing attack made against the target. Each hit damages the factory. Mark each hit achieved on a factory with a hit marker. (Factories and the effects of hits on them are covered in Rule 37B).

e. Carpet Bombing (Optional Rule). Beginning with the Feb I 19 turn, the Entente player (only) may fly carpet bombing missions. The target hex of this mission is any hex containing Central Powers units. *Exception:* Due to humanitarian concerns, the target hex cannot contain a major city or Entente units.

The Entente player flies carpet bombing air ops in the bombardment segment of his combat phase. Air units which survive air combat and AA fire may carpet bomb. Carpet bombing is the same as bombardment (Rule 12C), with each air unit treated as if it were an artillery unit except: 1) their bombardment strength is one half their strategic bombing strength, and 2) they do not require combat supply.

Each time the Entente player rolls on the Bombardment Table to resolve a carpet-bombing attack, and at least one disruption hit results, the Central Powers player checks to see if short bombing occurs. Check for short bombing as follows: roll a die; if the result is a 1, 2, 3, or 4, no short bombing occurs; if the result if a 5 or 6, short bombing does occur. If short bombing occurs, the target hex of the carpet bombing shifts to any adjacent hex containing Entente units (Central Powers player's choice of which hex). Note that the target hex the carpet bombing shifts to can contain a major city and/or Entente units and that such a shift may incur morale point losses to the Entente (see the war atrocities section of Rule 40A).

If short bombing occurs during a carpet bombing mission, the Entente player may not fly another carpet bombing mission for the remainder of the game turn. Additionally, once short bombing occurs five times in a game, the Entente player may not

fly carpet bombing missions for the rest of the game.

Due to the devastation caused by carpet bombing, units that advance after combat into a carpet-bombed hex are automatically disrupted. Further, the MP cost to enter the hex during the next phase following the combat is tripled.

Designers' Note: Entente plans for 1919 included several thousand Handley-Page bombers (each with a 4,000 lb bombload) making massed bombing attacks on enemy trenches. This probably would have had much the same effect as WW II style carpet bombing.

2. Tactical Bombing. The following missions may be flown by air units with tactical bombing strengths greater than 0.

a. Air Units. The target of this mission is any enemy-owned airbase containing an air unit. A fighter's tactical bombing strength is increased by 1 (prior to any other modifications) when flying this mission. *For example, a fighter with a tactical bombing strength of 0 would have a strength of 1 when flying this mission.*

Consult the Bombing Table for each bombing attack made against the target. Each hit aborts one air unit (bombing player's choice) on the ground there. Place aborted air units in the aborted air units box on the appropriate game chart.

b. Ground Support (GS). Air units may fly GS bombing missions to aid attacks made by friendly ground units. The target of this mission is the hex containing the enemy units the player intends to attack.

The attacking player initiates and flies GS air ops in his combat and reaction combat phases, after the enemy player flies DAS missions and before any ground combat is resolved. Each GS air op follows the standard air op sequence, until the mission resolution step is reached. At this point, the air op is suspended until the players resolve the ground combat in the hex.

When the players are to resolve ground combat in a hex containing a GS air op, the remainder of the air op occurs in conjunction with the ground combat, in this sequence:

1) When ready to resolve the combat, the attacking player declares the attack, indicating the attacking units.
2) The GS mission resolution step occurs. Total the bombing strength delivered to the target hex by effective GS bombing (see below). GS bombing strengths may be modified due to terrain or fortifications, as shown on the terrain effects chart and the fortifications effects chart. (If there is a DAS air operation in the hex, the DAS mission resolution step also occurs at this time.)
3) Resolve the ground combat, adding the modified GS bombing strength to the total attack strength in the combat. Implement the combat result.
4) The air return step occurs. All air units involved in the GS air op return to base. (If there is a DAS air op also in the hex, the DAS air return step occurs first.)

Only a limited number of air units may effectively provide GS bombing in a combat. For every "X" REs of attacking units, excluding artillery, one air unit (owning player's choice) may provide GS bombing. "X" varies by year as follows:

- *During 1912-14:* 6.
- *During 1915:* 5.
- *During 1916:* 4.
- *During 1917:* 3.

• *During 1918-20:* 2.

GS air units in excess of this limit have no effect; ignore their bombing strengths. *For example, if 20 REs, including 4 REs of artillery, are attacking a hex, the number of GS air units effective in the attack is: 2 in 1912-14 (20 attacking REs minus 4 REs of artillery = 16 (this is "X") divided by 6 = 2.6, which rounds down to 2), 3 in 1915, 4 in 1916, 5 in 1917, and 8 in 1918-20.*

It is possible that a player may fly a GS air op to a hex, intending to attack the units there, and then subsequently decide not to make the attack. In this case, the GS air units do not bomb, and the air units in the GS air op return to base at the end of the combat or reaction phase in which they flew the mission.

c. Defensive Air Support (DAS). Air units may fly DAS missions to aid friendly units that may be attacked. The standard bombing range is used for the flying air units, except for types B, T, and Z. The DAS bombing range of a type B, T, or Z air unit is one half its printed movement rating (round fractions down).

The target hex of the mission is any hex containing friendly ground units which the enemy player might attack in the combat phase. (Note that when the player flies DAS, he will not know which, if any, of his units the enemy player will attack.)

The defending player initiates and flies DAS air ops in the attacking player's combat or reaction combat phase, before the attacking player flies GS missions and before any ground combat is resolved. Each DAS air op follows the standard air op sequence, until the AA fire step is reached. At this point, the air op is suspended until the players are to resolve the ground combat in the hex.

When the players are to resolve ground combat in a hex containing a DAS air op, the remainder of the air op occurs in conjunction with the ground combat, in this sequence:

1) When ready to resolve the combat, the attacking player declares the attack, indicating the attacking units.
2) The AA fire step occurs, per Rule 22B1.
3) The DAS mission resolution step occurs. Total the bombing strength delivered to the target hex by effective DAS bombing (see below). *The tactical bombing strengths of all air units flying DAS are halved. Unlike GS, however, terrain and fortifications do not further modify DAS bombing strengths.* (If there is a GS air op in the hex, the GS mission resolution step also occurs at this time.)
4) Resolve the ground combat, adding the modified DAS bombing strength to the total defense strength in the combat. Implement the combat result.
5) The air return step occurs. All air units involved in the DAS air op return to base. (If there is a GS air op also in the hex, the DAS air return step occurs first.)

Only a limited number of air units may effectively provide DAS bombing in a combat. The number of air units that may provide DAS bombing is calculated (and varies over time) in the same manner as for GS bombing, except that defending units are used instead of attacking units. *For example, in 1912-14 for every 6 REs of defending units, excluding artillery, one air unit (owning player's choice) may provide DAS bombing.* DAS air units in excess of this limit have no effect; ignore their bombing

strengths.

It is possible that a player may fly a DAS air op to a hex which is not attacked. In this case, the DAS air units do not bomb, and the air units in the DAS air op return to base at the end of the combat or reaction phase in which they flew the mission.

d. Harassment. The target hex of a harassment bombing mission is any land hex. A player flies harassment missions during the enemy player's initial phase.

During the mission resolution step, determine the effects of the mission by totaling the number of bombing points delivered in the hex for harassment bombing:

• *Less than 2 bombing points:* No effect.
• *At least 2, but less than 4:* Place a level-1 harassment hit marker in the hex; the hex has one harassment hit.
• *At least 4:* Prior to Feb I 18 treat this the same as "at least 2, but less than 4" per above. On or after Feb I 18, place a level-2 harassment hit marker in the hex; the hex has two harassment hits.

A player marks the harassment hits his air units achieve as they achieve them. The harassment hits last until the start of the player's next initial phase; the markers are removed from the map at this time.

A hex can have a maximum of 2 harassment hits; ignore any hits in excess of 2. Harassment hits affect the movement of enemy ground units during the enemy player's movement and exploitation phases and during the friendly player's reaction phase:

• Each unit using regular, accel, or operational rail movement to leave a hex with harassment hits must spend 1 MP for each harassment hit in the hex.
• Each enemy ground unit that starts a phase in hex with harassment hits and does not move from that hex also must spend 1 MP for each harassment hit in the hex. (Note that this can affect actions various units can take, such as spending MPs to break a rail line in the hex.)
• Each enemy ground unit using strategic rail movement to leave a hex with harassment hits loses 20 hexes of its rail movement ability for each harassment hit in the hex.
• Each enemy "R" movement unit using operational rail movement to leave a hex with harassment hits loses 7 hexes of its rail movement allowance for each harassment hit in the hex.

An air unit which flies a harassment mission during a player turn does not become operative at the start of the next player turn (and thus cannot fly a mission in that player turn). Place a marker of your choice on such an air unit when it returns to base at the end of its harassment air op. During the next player turn when air units become operative, remove the marker from the air unit but do not flip the air unit to its operative side.

e. Rail Lines. The target of this mission is any enemy-owned rail line hex. Consult the Bombing Table for each bombing attack on the target. A hit breaks the line in the target hex. Once a rail line in a hex is broken, any further rail line hits in the hex are ignored.

f. Ports. The target of this mission is any enemy-owned port. Consult the Bombing Table for each bombing attack made against the target. Each hit damages the port. Mark each hit

achieved on the port with a port hit marker. (Ports are covered in detail in Rule 30A.)

g. Naval Units in Port. The target hex of this mission is any hex containing enemy naval units in port (but not naval units at sea). The actual bombing targets are the enemy naval units in port in the hex (any naval units at sea in the same hex are ignored). *Note:* For purposes of this rule, water-only units (Rule 14B2) are also naval units and may be bombed.

For each bombing attack, consult the Bombing Table. Each hit does one hit of damage to a naval unit in port in the hex. If the naval unit is also a water-only unit, the first hit of damage on the unit disrupts it (per Rule 3A5) and a second hit of damage on the same unit eliminates it.

For each air op, resolve all bombing attacks of air units flying this mission before applying any hits achieved. (Keep track of the total number of hits achieved.) Apply the hits after all air units on this mission have finished bombing. Since several naval concepts are used when applying hits, the method of applying hits and the effects of the hits are described in the naval rules (see Rule 26 if using the basic naval rules or Rule 27A5 if using the advanced naval rules).

h. Naval Patrol. The target of this mission is any hex containing enemy naval units at sea (but not naval units in port). *Special:* In some cases naval units may occupy hexsides instead of hexes (such as when a naval unit moves along a river to an inland port); in these cases the target hex of a naval patrol bombing mission is either hex adjacent to the hexside the naval units occupy. *Note:* For purposes of this rule, water-only units (Rule 14B2) are also naval units and may be bombed.

In each initial phase, both players may assign air units to naval patrol missions. Air units are assigned this mission at this time, but do not actually fly the mission until later, if at all. Once assigned, they may not fly any other mission in the player turn, even if they do not fly the naval patrol mission. Indicate air units assigned to this mission by placing a naval patrol marker on top of them.

An air unit assigned to this mission has a naval patrol zone, which covers every all-sea and partial-sea hex within the air unit's bombing range. *For example, a Short 184 (movement rating of 12) assigned to this mission has a naval patrol zone extending out to 12 hexes.*

When an enemy naval group (naval groups are covered in Rule 26 - basic naval rules, or Rule 27B2 - advanced naval rules) begins a naval movement step in, or enters, any hex within an air unit's naval patrol zone the owning player may announce an air op against the enemy naval group. The movement of the naval group is temporarily suspended while the air op is resolved.

The air op consists of one or more air units, all taking off from the same airbase, flying the naval patrol mission in a single movement group to the naval group (the target hex). Operative fighters from the same airbase may fly escort missions in the air op. Friendly air units at other airbases cannot participate in this air op.

Upon reaching the target hex during the mission movement step, the movement group attempts to contact the enemy naval group. Consult the Naval Success Table for the contact attempt; roll one die, modify the roll as appropriate, and find the result.

Only one attack force from any given airbase may attempt contact per hex. *Note*: Attack forces from different airbases may attempt contact in the same hex (i.e. separate operations). One die is rolled for each attack force and the success table is consulted. Results are:

- *Failure:* The movement group fails to contact the enemy naval group. The air op immediately proceeds to the air return step, with air units returning to base and becoming inoperative.
- *Success:* The movement group contacts the enemy naval group. The air op sequence continues as normal.

During the mission resolution step, air units on this mission bomb the naval units in the enemy naval group. Bombing is resolved the same as for bombing naval units in port (Rule 20G2g above).

At the end of a naval patrol air op, the player may immediately initiate another naval patrol air op against the same enemy naval group in the same hex, if he has any naval patrol air units capable of doing so. Once the player stops initiating these naval patrol air ops, the enemy naval group resumes its movement.

i. Coast Defenses. The target hex of this mission is any hex containing enemy coast defenses. Due to the hardened nature of most coast defense sites, the tactical bombing strength of an air unit flying this mission is halved. Consult the Bombing Table for each coast defense bombing attack. For every two bombing hits which result, mark the hex with a coast defenses hit marker. (Coast defenses and the effects of hits on them are covered in Rule 33B.)

j. Aerial Bombardment. The target hex of this mission is any hex containing enemy units.

The player flies aerial bombardment air ops in the bombardment segment of the combat phase. Air units which survive air combat and AA fire may bombard per Rule 12C, with each air unit treated the same as an artillery unit except: 1) their bombardment strength is one half their tactical bombing strength (round fractions down), and 2) they do not require combat supply.

k. Resource Points. The target hex of this mission is any hex containing enemy resource points. Halve the bombing strengths of air units performing this mission. Consult the Bombing Table for each bombing attack made against the target. Each hit eliminates one resource point.

Special: When a resource point is eliminated by bombing in a hex containing multiple resource points, check to see if the elimination of the first resource point sets off a chain reaction eliminating other resource points in the hex as well. Roll a die: if a 6 results, a second resource point is eliminated; if a 1 through 5 results, there is no effect. If a second resource point is eliminated, check to see if a third resource point is eliminated but now modify the die roll by +1. Repeat this process, adding an additional +1 for each resource point eliminated, until either no effect is rolled or all resource points in the hex are eliminated.

Designer's Note: Aerial bombing raids against enemy supply dumps were a common occurrence during the war. Due to the spread out nature of most dumps, losses due to air attack were usually low, but on at least two occasions raids were

spectacularly successful. One raid on a British dump in 1917, in particular, destroyed nearly 8,000,000 artillery shells, resulting in the shutting down of British offensive operations for nearly two months.

H. Transport.

Transport air units may fly transport missions during their phasing player's movement and exploitation phases and during reaction movement phases when their player is reacting. *Exception:* The air drop transport mission may only be flown during friendly movement phases.

An air unit's transport range is its printed movement rating.

Transports may carry units, logistics items, and man-power points as their cargo. Transports cannot, however, carry any ground unit which has heavy equipment. Each transport has a cargo capacity of 2 REs.

Weather (Rule 36) affects transports' cargo capacities. When flying in mud, winter, or snow weather, a transport has its cargo capacity halved.

The cargo to be carried must be present at the transport's airbase when the transport mission is initiated.

Since transport missions can occur in the movement and reaction movement phase, note that the cargo may move to the airbase prior to its air transport in that phase. Once an item of cargo is air transported in a phase, however, it may not move for the remainder of that phase.

All air combat, patrol attacks, and antiaircraft fire that affects a transport also affect its cargo. If a transport is eliminated, its cargo also is eliminated. If a transport is aborted or turned back, its cargo returns to base with the transport.

Two or more transports may combine to carry an item of cargo. When doing so, a result to any one of the transports also affects the cargo. Always use the most severe result to the transports as the effect upon the cargo. *For example, if one transport is turned back and the other eliminated, then the cargo is eliminated.*

There are two types of transport missions.

1. Regular Transport. The target hex of a regular transport mission can be any friendly-owned airbase within transport range. The mission is resolved per the standard air op sequence. The transport lands its cargo at the target hex during the mission resolution step. It returns to base in the air return step, and cannot carry cargo at this time.

Alternately, a transport may fly a one-way regular transport mission, with a range twice its printed movement rating. In this case, the target hex of the mission can be any friendly-owned airbase within the one-way transport range. During the mission resolution step, the transport ends its mission at the airbase, landing there with its cargo. It cannot fly during the air return step.

2. Air Drop. Transports may air drop general supply points and air-droppable units (air-droppable units and airborne landings in general are covered in Rule 24). *Note:* Resource points/manpower points cannot be air dropped.

The target hex of an air drop involving a ground unit may be any hex within transport range except for the following terrain types: prohibited terrain, mountain, wooded-swamp, or forest. The target hex may be in enemy ZOCs or occupied by enemy units.

The target hex of an air drop involving general supply points may be any hex within transport range except all-sea or all-lake hexes.

Ground units, but not general supply points, count at double their RE size for this mission. Thus, two transport air units are required to carry a 2-RE unit on an air drop.

A transport air unit drops its cargo during the mission resolution step of the air operations sequence.

Designers' Note: Both sides made limited use of air transport to move supplies during WW I. This was used most often on the eastern front; but was also used to some extent by the Entente in the west during 1918 to supply their advanced spearheads. And, of course, the British made several attempts to air drop supplies in 1916 to their troops at Kut in Mesopotamia.

Air transport of units was mostly a matter of theoretical potential. Both sides advanced plans at various times to do this, but the essentially static nature of the fighting made it unnecessary to use them. The largest actual operation we have been able to document was an airdrop by one platoon, followed up by regular air transport of one battalion during the German occupation of the Estonian off-shore islands in 1918. Although, had the war gone on into 1919, some Entente plans featured the air drop of an entire division!

Rule 21 — Air Combat

Air combat occurs when fighters fly interception missions to hexes containing enemy air units flying missions. (Patrol attacks, which are similar to air combat, are described at the end of this rule.)

In each air op, air combat in the target hex is resolved during the air combat resolution step. There are two stages to air combat: preparation and resolution.

Air combat is resolved using the Air Combat Results Table (Air CRT). (*Note:* There are two Air CRTs, one of which is labeled optional; follow section B below to resolve air combat if the standard Air CRT is used; follow section C below to resolve air combat if the Optional Air CRT is used.)

A. Preparation.

Follow these steps to prepare for air combat:

1. Mission Force and Screen Preparation. The initiating player separates his air units into two groupings: the escort screen and the mission force. All escorts are placed in the screen. Fighters flying bombing missions may jettison their bombs at this point but remain as part of the mission force.

2. Interceptor Preparation. The responding player then separates his air units into two groupings: those that will attack the screen (the engaging group) and those that will try to bypass the screen to attack the mission force (the bypassing group). The player divides his interceptors between these two groups as he wishes.

B. Resolution (Standard Air CRT).

In air combat using the standard Air CRT, air units in opposing air groupings fire upon one another individually. An air unit with a printed air attack strength of 0, however, may never fire in air combat.

1. Sequence. Follow these steps to resolve air combat using the standard Air CRT.

a. Screen Allocation Step. Interceptors allocated to attack the escort screen engage the screen in air combat. (Ignore all other air units in the hex during this step.) The intercepting player randomly selects one escort in the screen and randomly allocates one interceptor against it. ("Randomly selects" and "randomly allocates" do indeed mean the player chooses at random, such as putting the air units in a cup and drawing them out without looking.) Repeat this procedure, allocating an interceptor against each escort, to the extent possible.

If one side has more air units than the other, the owning player allocates these extra air units against enemy air units, distributing them as evenly as possible. (For example, no enemy air unit can have three air units allocated against it until each enemy air unit has two air units allocated against it.) To allocate extra air units, the owning player chooses (not at random) one enemy air unit and then randomly selects one of his extra air units, allocating it against the enemy air unit. Repeat this procedure until all extra air units are allocated.

If there are more escorts than interceptors, the owning player need not allocate them against the interceptors attacking the screen. Instead, he may have these unengaged escorts attack the bypassing group of interceptors (step c below).

b. Firing Step. Resolve air combat between the allocated air units.

When one air unit is allocated against one air unit, each air unit fires once upon the other air unit. Implement the combat results after both air units have fired.

When several air units engage a single air unit, the engagement is conducted in a series of firing rounds. Randomly select the order in which the several air units, one per round, engage the single air unit. Resolve each round in order; the two air units in the round fire upon one another. Implement the combat results after both air units have fired. The owner of the several air units may voluntarily end an engagement at the end of any firing round. The engagement automatically ends when:

- The first combat result (return, abort, or elimination) is achieved against the single air unit, even if all the several air units have not fired.
- All of the several air units have engaged the single air unit.

Example: Three interceptors engage one escort. The first interceptor fires on the escort, for a result of no effect; the escort returns fire against the first interceptor and achieves an eliminated result against it. The owner of the interceptors elects to continue the engagement. The second interceptor fires on the escort and achieves an abort result against it; the escort returns fire but to no effect. The engagement automatically ends at this point, before the third interceptor fires. In the engagement, one interceptor was eliminated, and the escort was aborted.

When this firing step is completed, all air units involved in air combat during this step have finished air combat and are ignored for the rest of the air combat resolution in the hex.

c. Bypass Allocation Step. Resolve air combat between the unengaged escorts and the interceptors attempting to bypass the screen. The owning player randomly allocates his escorts against the interceptors as in step a.

d. Firing Step. Resolve air combat as in step b, except the interceptors may not fire. Interceptors that survive this step

attack the mission force. *Example: Three interceptors attempt to bypass the screen, and there are two unengaged escorts. The owning player randomly allocates his escorts against the interceptors. Each escort attacks, one turning back an interceptor and the other achieving no effect. The interceptors may not attack the escorts. One interceptor is turned back and two get through.*

e. Mission Force Allocation Step. Interceptors successfully bypassing the escort screen attack the mission force. The owning player randomly allocates his interceptors against air units in the mission force as in step a. Mission force air units not attacked by interceptors are ignored; they neither attack nor are attacked.

f. Firing Step. Resolve air combat as in step b. *Exception:* When several interceptors are allocated against one air unit of the mission force, follow the procedure in step b. However, the air unit of the mission force may only fire once during the engagement; if the air unit has not fired at the start of a round, the owning player decides whether or not it will fire in the round.

2. Combat Results. When using the Standard Air CRT, air combat results are as follows:

- **–: No Effect.** The fire had no effect.
- **R: Return.** A returned air unit immediately returns to base and becomes inoperative.
- **A: Abort.** An aborted air unit immediately returns to base and then becomes aborted; remove the air unit from play and place it in the aborted box on its air chart.
- **K: Eliminated.** An eliminated air unit is immediately removed from play. Place it in the eliminated box on its air chart.

Air units returning to base due to combat results follow the same procedure as returning to base in the air return step.

3. Differentials. When an air unit fires on an opposing air unit, calculate the attack differential by subtracting the air defense strength of the air unit being fired upon from the air attack strength of the firing unit. *Example: In an exchange of fire between a FE 2b (5F5) and a Fok E3 (4F3), the FE 2b would have an attack differential of +2 (the FE 2b's 5 attack strength minus the Fok E3's 3 defense strength) and the Fok E3 would have an attack differential of -1.* The attack differential determines the column used on the Standard Air CRT; but note that the column used may be shifted as explained on the table. *For example, all air units have their attack differential shifted one column to the left (lower) during 1912-16.* For each attack, roll two dice and modify the roll as indicated on the table. Cross-index the modified roll with the correct column to obtain the air combat result.

Air Combat Example (standard Air CRT): During daylight in 1916, one German Alb C5 fighter (4R5) and one German Halb D1 fighter (5F4) intercept a French force of two Sal 1 bombers (3B4) escorted by one Nie 11 fighter (3F3), one DD 8 fighter (3R5), and one Nie 17 fighter (5F5).

Step a: The Central Powers player allocates the Alb C5 against one of the French fighters; it is randomly allocated against the Nie 11. The Halb D1 tries to bypass the screen. The Entente player elects to send both remaining escorts against the bypassing Halb D1.

Step b: The Nie 11 fires with a differential of -1, but this is

modified to -2 (as it is 1916); a 9 is rolled and modified to a 8 (due to type F attacking type R), for no effect. The Alb C5 fires at +1 (note that the column shifts to the right for the air unit being German and to the left for it being 1916 cancel each other out); a 5 is rolled and modified to a 6 (due to type R attacking type F), aborting the Nie 11.

Step c: The Entente player randomly selects the order in which his unengaged escorts will engage the bypassing interceptor. The first escort to engage is the DD 8.

Step d: In the first round, the DD 8 attacks the bypassing Halb D1. The differential is -1, but this is modified to -2 (as it is 1916); a 7 is rolled and modified to a 8 (due to type R attacking type F), for no effect. (The Halb D1 may not fire.) Since there was no result from the first round, the Nie 17 fires, in the second round. The differential is +1, but this is modified to 0 (as it is 1916); an 8 is rolled for no effect. (As before, the Halb D1 may not fire.)

Step e: The Central Powers player randomly allocates the successfully bypassing Halb D1 against one of the Sal 1s in the mission force. The other Sal 1 is ignored.

Step f: The Halb D1 fires at +1 (note that the column shifts to the right for the air unit being German and to the left for it being 1916 cancel each other out); a 4 is rolled, eliminating the Sal 1. The Sal 1 fires at -1, but this is modified to -2 (as it is 1916); an 8 is rolled, for a no effect result.

Designers' Note: The column shifts listed on the Standard Air CRT account for three major factors: 1) it took a long time for the various nations to develop effective fighter tactics, but some nations were consistently ahead (or behind) of the learning curve; 2) early-war air combat (1912-16) was often ineffective due to the ad hoc nature of the weaponry involved (one pilot became an ace exclusively through the use of a grappling hook!) or its unreliable nature (most early-war machineguns were extremely prone to jamming); and 3) night combat was very much a chance affair in the days before radar and aerial radios came into use (although both sides put a lot of effort into trying, and some searchlight/nightfighter teams were modestly successful).

The various die roll modifiers show: 1) although type R aircraft performance-wise are not much different from type F, their crews are observers first, and fighter pilots second; 2) only during the closing days of the war did advances in fighter performance (speed) and heavier weaponry begin to overshadow the bomber's advantage of more robust construction; and 3) Zeppelins not only were exceptionally bad at attacking other aircraft (they were slow & had huge blind spots their defensive machineguns could not cover), but, surprisingly, they were also quite difficult to shoot down (they flew higher than most fighters could reach (at least until later in the war), and they could absorb a huge amount of punishment so long as they did not catch fire).

C. Resolution (Optional Air CRT).

In air combat using the Optional Air CRT, opposing air groupings fire upon one another. Note that all air units in a specific grouping combine to make a single fire when the Optional Air CRT is used (as opposed to firing as individual air units as is the case when using the standard Air CRT).

1. Sequence. Follow these steps to resolve air combat using the Optional Air CRT.

a. Interceptor vs Screen Step. Interceptors allocated to the engaging group attack the escort screen. Note that interceptors allocated to the bypassing group may not attack at this time. Fighters allocated to the escort screen attack the enemy interceptors (both those in the engaging and bypassing groups). (Ignore all other air units in the hex during this step.) Both players simultaneously resolve air combat as described in section 21C2 below.

b. Interceptor vs Mission Force Step. For each bypassing interceptor which survives air combat in step a above, randomly pick one air unit from the mission force. Surviving bypassing interceptors and the picked mission force air units then attack each other. (Ignore all other air units in the hex during this step.) Both players simultaneously resolve air combat as described in section 21C2 below.

2. Procedure. Follow this procedure to resolve air combat using the Optional Air CRT:

1) Total the air attack strengths of the attacking air units. Note that the air attack strength of an air unit may be modified as listed at the bottom center of the Optional Air CRT. *For example, a type R air unit attacking in this step has its air attack strength reduced by 1.*

2) Determine the air-to-air effectiveness line which applies to the attack. *Note:* Air-to-air effectiveness is expressed as a letter code ranging from "W" to "Z", with "W" being the best, and "Z" being the worse; it varies by nationality and by year as shown at the lower left of the Optional Air CRT. When a player's force includes air units of two or more nationalities, use the worse air-to-air effectiveness that applies to an air unit in the force. *For example, in a mixed force of German and Austro-Hungarian air units in 1916, the German air-to-air effectiveness is "X", while the Austro-Hungarian air-to-air effectiveness is "Y"; as "Y" is worse than "X", the combined force has an air-to-air effectiveness of "Y".*

3) Reading across the air-to-air effectiveness line which applies to the attack, use the air attack strength column which most closely matches, without exceeding, the modified air attack strength. *Exception:* If the air attack strength is less than the smallest number listed for the air-to-air effectiveness line, use the leftmost column on the table. *For example, a force with an air-to-air effectiveness of "W" and a modified air attack strength of 6 would use the third column from the left (the one with a 4 in the "W" section) on the Optional Air CRT.* Note that the column used may be shifted to the left (downwards) under certain conditions as listed at the bottom right of the table.

4) Roll two dice and cross-index the number rolled with the appropriate air attack strength column to obtain a result, which will either be an air combat loss (a numbered result), or a miss (a "-").

3. Combat Results. If an air combat results in an air combat loss, the number result is the number of air defense strength points (ADS) affected by the air combat. Total the ADS of all attacked air units (this total ADS will be used later).

From the enemy air units which were attacked, randomly select one air unit and subtract its ADS from the air combat loss number. Repeat this procedure until an air unit is selected with an ADS that reduces the air combat loss number to 0 or less. Apply results to the selected air units:

- If the original air combat loss number is less than the total ADS, then each odd-numbered air unit selected (1st, 3rd, etc.) is turned back, and each even-numbered air unit selected (2nd, 4th, etc.) is aborted.
- If the original air combat loss number at least equals the total ADS, then each odd-numbered air unit selected is aborted, and each even-numbered air unit selected is turned back.

Special: Each time an air unit is selected that normally would be aborted (per above), and the air combat loss number remaining after this air unit is selected equals or exceeds the ADS of the selected air unit, the attacking player may (at his option) declare the selected air unit killed instead of aborted. If the attacker exercises this option, the ADS of the selected air unit is subtracted a second time from the air combat loss number.

Example: An air combat results in an air combat loss number of 9. The total ADS is determined to be 10. As the air combat loss number (9) is less than the total ADS (10), each odd-numbered air unit selected will be turned back, and each even-numbered air unit selected will be aborted. The first air unit is selected; it has an ADS of 2 and the air combat loss number is reduced to 7 (9 - 2 = 7). This air unit is turned back. A second air unit is selected; it has an ADS of 3 and the air combat loss number is reduced to 4 (7 - 3 = 4). This air unit would normally be aborted; but at this point the attacking player decides to exercise his option to have it killed instead. Exercising this option further reduces the air combat loss number, to 1 (4 - 3 = 1). A third air unit is selected; it has an ADS of 4 and the air combat loss number is reduced to -3 (1 - 4 = -3). This last air unit is turned back as well. Implementation of air combat results ends at this point as the air combat loss number has been reduced to 0 or less.

Designers' Note: The Optional Air CRT gives approximately the same effects as the Standard Air CRT, while decreasing the time required to resolve air combat, as well as allowing a better representation of how high-quality, but out-numbered air units can occasionally shoot up their more numerous opponents.

D. Patrol Attacks.

Fighters fly patrol attack missions, as covered in Rule 20D. Patrolling fighters make patrol attacks against the initiating player's air units, in a procedure similar to air combat. Unlike air combat, however, the initiating player's air units do not attack the patrolling fighters.

When resolving patrol attacks made by the patrolling fighters in a hex, follow this procedure:

The initiating player prepares for the patrol attack as for air combat (Rule 21A above), forming the escort screen and mission force. The reacting player, however, does not form an engaging or bypassing group. Instead, the reacting player allocates his patrolling fighters as follows:

1) Randomly select one fighter from the screen, and then randomly allocate one patrolling fighter against it. Repeat this step, until each fighter in the screen has a patrolling fighter allocated against it, or until either player runs out of air units to allocate.

2) If the reacting player has any unallocated fighters remaining, randomly select one air unit from the mission force, and randomly allocate one patrolling fighter against it. Repeat this step, until each air unit in the mission force has a patrolling fighter allocated against it, or until either player runs out of air units to allocate.

3) If the reacting player has any unallocated fighters remaining, he allocates these extra fighters against any enemy air units, distributing them as evenly as possible. *For example, no enemy air unit can have three fighters allocated against it until each enemy air unit has two fighters allocated against it.* To allocate extra fighters, the reacting player chooses (not at random) one enemy air unit and then randomly selects one of his extra fighters, allocating it against the enemy air unit. Repeat this procedure until all extra fighters are allocated.

The reacting player resolves the individual patrol attacks. Calculate the attack differential (per Rule 21B3, above), of the patrolling fighter against its target. Roll one die and consult the Patrol Attack Table for a result. Results are identical to those of air combat (per Rule 21B2) and are implemented immediately.

Example: A Fok E1 fighter (4F2) patrol attacks a Cau G3 (1B2) . The attack differential is +2, the responding player rolls a 5, turning back the MF 7.

Rule 22 — Antiaircraft

Air units may undergo enemy antiaircraft (AA) fire when they fly certain missions. Various ground units, naval units, and map features have AA strengths.

There are two types of AA: heavy and light. This distinction is used for AA purposes, as detailed in the rules and on the charts. (Also, heavy AA combat units have ATEC; light AA combat units do not.)

A. Capabilities.

1. Ground Units with AA. Ground units with AA have their AA strength printed in the upper left corner of its counter as illustrated on the unit identification chart. (*Note:* In the case of artillery units, the number in the upper left corner of the counter can refer to either the unit's AA strength or its range. If the number is "1", it refers to the unit's AA strength; if the number is "2" or greater it refers to the unit's range instead.) Light antiaircraft (Lt AA) units have light AA strengths, all other ground units with AA have heavy AA strengths.

2. Naval Units with AA. Naval units have light AA strengths as printed on their counters.

3. Intrinsic AA. Various map items and counters have intrinsic AA strengths, as listed on the Intrinsic AA Summary, if they are owned by the player. Note that the AA strength intrinsic to a certain map item, counter, or marker varies depending on the theater in which it is located, and may change over time. For *example, an army headquarters in the west theater has no AA on or before Dec II 14, has 1 point of AA from Jan I 15 to Dec II 16, has 2 points of AA from Jan I 17 to Dec II 17, and has 3 points of AA from Jan I 18 on.*

All intrinsic AA strengths are heavy AA. *Exception:* The AA

intrinsic to a supported division or machinegun unit is light AA.

The intrinsic AA strength of a hex is the sum of the features with intrinsic AA in it. *Exception:* No matter how many supported divisions (whether self- or fully-supported) or machinegun units are in a hex, the AA strength they add to the total is always a maximum of 1 point.

B. Resolution.

1. Restrictions. During the AA fire step of an air operation, the responding player may fire AA against enemy air units flying reconnaissance, bombing, and air transport missions in the operation's target hex. The player may not fire AA against enemy air units flying any other missions. *For example, a player may not fire AA against enemy fighters flying escort missions.*

In general, all AA strength in a hex, except that of naval units, may fire upon the appropriate air units. The exceptions are:

- *Against air units flying DAS bombing missions:* Ground units attacking an enemy hex may fire AA against enemy air units flying DAS in the hex. Only ground units participating in the attack on the hex may fire. Total the AA strengths of the attacking units and divide this total by the number of hexes containing units attacking the hex. The resulting number is the strength of the AA fire. *Example: Central Powers air units are flying DAS over a hex. The Entente player is attacking Central Powers units in the hex with units in three hexes: these units have 4 AA strength points in one hex, 0 in the second hex, and 2 in the third. The Entente player's total of 6 AA strength points is divided by 3 (since the attacking units occupy 3 hexes); thus the Entente player fires on the DAS air units with an AA strength of 2.*

- *Against air units flying the port bombing mission:* All non-naval unit AA in the hex may fire, and the naval unit in port with the highest AA strength may fire. No other naval unit may fire AA.

- *Against air units flying the naval-unit-in-port bombing mission:* All non-naval unit AA in the hex may fire, and the naval unit in port with the highest AA strength may fire. No other naval unit may fire AA. *For example, if Entente air units fly a naval-unit-in-port bombing mission against an Austrian port containing 3 points of position AA, and several taskforces (AA of 2 each) in port, the position AA and one taskforce may fire, for a total of 5 AA strength points.*

- *Against air units flying the naval patrol bombing mission:* Only the naval unit at sea in the hex with the highest AA strength may fire. No other AA in the hex may fire. *For example, if German air units fly a naval patrol bombing mission against an Entente naval group consisting of one taskforce with an AA strength of 2 and two taskforces with AA strengths of 1, only the taskforce with an AA strength of 2 fires AA.*

Each AA strength point in a hex may fire upon each enemy air unit it is eligible to attack. *Example: Four Entente type B air units are bombing a hex containing a German heavy AA battalion with an AA strength of 2. The AA may fire four times, making a 2-point attack upon each air unit.*

2. Procedure. For each AA attack, follow this procedure to resolve AA fire:

1) Total the AA strength eligible to fire at the target air unit.
2) Find the appropriate AA strength column on the Antiaircraft Fire Table. Use the column that most closely matches (without exceeding) the strength of the AA attack. For example, 9 points of AA firing would use the 7 column. Note: If the firing AA strength is less than 1, the AA fire automatically has no effect.
3) Roll two dice and modify the dice roll with the modifiers given on the antiaircraft fire table.
4) Cross-index the modified dice roll with the AA strength column to obtain a result. Results are identical to those of air combat (per Rule 21B2) and are implemented immediately.

Designers' Note: The various dice roll modifiers to the AA Fire Table show the effects of altitude. In general, the higher the altitude an air unit flies at, the less effective the AA fire is against it. Airships (type Z) and bombers (type B) can effectively bomb area targets from higher altitudes than other air units and are correspondingly harder to hit with AA when performing such missions. Due to their larger size and formation flying, however, these same types of air units are much more vulnerable to AA when flying at the low altitudes needed to engage point targets (like GS, DAS, etc.). Both fighters and attack bombers normally bomb from low altitude, but are not penalized for doing so, as in both cases, special characteristics lessen their vulnerability to AA: speed and maneuverability in the case of fighters; and armor plating and pilot training in the use of terrain and sky conditions to mask their approach in the case of attack bombers.

Rule 23 — Special Air Rules

A. Staging.

During the mission movement step of an air op, the initiating player's fighter, bomber, and transport air units may stage before flying their missions. An air unit stages by flying a 1-leg air transfer mission (per Rule 20A). (It may be patrol attacked while staging.) Upon arriving at its staging airbase (and after rolling for possible damage per Rule 20A), the air unit then starts flying its mission. *For example, the initiating player intends to fly a fighter on an escort mission. He first stages it to an airbase within transfer range. From that staging airbase, he then starts the escort mission.* Note that: 1) a transport cannot carry cargo while staging (since it has not started its transport mission yet); 2) air units only stage in the mission movement step, and never in the interceptor movement or air return steps.

Balloons may never stage. An air unit may not stage if it is to fly a strategic bombing, DAS, or naval patrol bombing mission.

B. Extended Range.

Air units may fly at extended range on various missions:

- Bomber and transport air units may fly most bombing missions at extended range by carrying reduced bomb loads. DAS bombing missions, however, may not be flown at extended range. A bomber or transport flying an extended range bombing mission has its mission range doubled, but its bombing strength is reduced by 2/3rds. *Example: A bomber with bombing strengths of 3-6*

would have its tactical strength reduced to 1 and its strategic strength reduced to 2.

- Transports may fly extended-range transport missions. A transport flying an extended range regular transport or air drop mission has its mission range doubled, but its cargo capacity is halved.

    Alternatively, a transport may fly a one-way regular transport mission at extended range, with a range three times its printed movement rating, but its cargo capacity is halved.

Note that fighters and balloons cannot fly at extended range; and that airships may fly at extended range an unlimited distance as detailed in Rule 23F (Airships).

An air unit flying at extended range may also return to base using its extended range.

Designers' Note: Fighters cannot fly at extended range as the drop tank technology needed to do so did not exist during WW I.

C. Night Air Operations.

An air op occurs either during daytime or at night. (The preceding rules describe daytime air ops.) At the start of an air op, the initiating player declares whether it is a day or night air op.

For the purposes of this rule, a night air unit is any airship and any air unit with an "N" prefix before its air unit type letter (such as NB or NF); all other air units are day air units. The presence of the N prefix does not change the general abilities of an air unit. *For example, a type NB air unit is treated the same as a type B air unit in air combat and for AA fire.* Night air units are not restricted to night air ops and may participate in day air ops without penalty. Day air units may participate in night air ops, but day air units are penalized when operating at night.

 The following missions may be flown at night:

- Air units may fly transfer/transport missions at night.
- Air units may fly strategic bombing missions at night. In general, air units may not fly tactical bombing missions at night. *Exceptions:* Night attack (NA) air units (only) may fly air unit, port, and aerial bombardment tactical bombing missions (only) at night, but have their tactical bombing strengths reduced by 2/3s when doing so.
- Fighters may fly patrol attack missions at night.
- Fighters may fly CAP missions at night. Air units flying night CAP may not interact with air units on day air operations. Air units flying day CAP may not interact with air units on night air operations.
- Although no fighters may initiate escort or interception missions at night, fighters flying night CAP may have their mission switched to escort or interception at night per the normal CAP rules.
- *Note:* No air units may fly recon missions at night.

 Day air units are penalized when flying at night:

- A day air unit has its air attack strength halved at night (round fractions down).
- A day air unit has its bombing strength halved when flying a night bombing mission.
- A day air unit flying at night may crash-land when it lands at an airbase. Roll one die and consult the success table. A *success* result means the air unit lands safely. A

failure result means the air unit crashes on landing and immediately becomes aborted—remove the air unit from play and place it in the aborted box on the appropriate game chart.

Designers' Note: After 1915, French bombers and German zeppelins both mostly switched to night bombing of strategic targets. Both sides' day fighters flew night patrols on numerous occasions with occasional success, but only the specialized night fighter/searchlight teams could really be termed effective in this role.

D. Fighter Capabilities.

1. Fighters as Bombers. A fighter air unit flying a bombing mission has its air attack strength reduced by 2 (but never below 1). *For example, a Nie 17 fighter (5F5) flying a bombing mission would have an air attack strength of 3 (its air defense strength remains unmodified at 5).*

In the air combat step, a fighter flying a bombing mission may jettison its bomb load during air combat preparation, at the option of the owning player. If this is done, the fighter reverts to its printed air attack strength, but has its bombing strength reduced by 2/3rds for the rest of the air op. (Note that a fighter jettisoning its bomb load retains a minimal bombing strength, representing its strafing ability.)

2. Scramble. If an airbase is in the target hex of an air op, the responding player's fighters at that airbase may scramble during the interceptor movement step of the air op. Both operative and inoperative fighters at the base may scramble.

A scrambling fighter flies a 1-leg air transfer mission (per Rule 20A). (It cannot be patrol attacked while scrambling.) Upon arriving at its destination airbase, the air unit becomes inoperative.

E. Bombers as Transports.

The various nation specific rules (Rule 41) may specify that certain type B air units may be used as transport air units, at the owning player's option.

When used as a transport, the air unit has its air attack and air defense strengths each reduced by 2 (but never below 1), and is considered to be a type T for air combat and AA fire. In addition, bombers used as transports:

- May not air drop units (although they may drop general supply points).
- Treat ground units (but not general supply points) as double their RE size for transport purposes.

F. Airships.

Airships (type Z air units) are rigid balloons (dirigibles) filled with hydrogen gas that are capable of powered flight. Airships operate differently from other air units as described below:

- All airships are also transport air units.
- Airships may only base at zeppelin bases; they may not use regular airbases.
- A player may not include both airships and non-airship air units in the same air op.
- Airships are never damaged when they fly transfer missions.
- Airships may fly at extended range an unlimited distance. When flying at extended range, an airship's abilities and ratings are unaffected.

- Due to the vagaries of wind, weather, etc., an airship flying a mission may not always reach its target hex. (As a reminder of this, airships have asterisked movement ratings.) Check for this as follows: 1) Each time an airship flies a mission, break its flight into any number of legs, but no one leg may exceed the airship's movement rating. 2) Upon completion of each flight leg, check to see if the airship can continue moving to the target hex or if it is turned back. 3) Make this check by rolling a die; if the result is 1 or less the airship is turned back and immediately returns to base and becomes inoperative there (when returning to base it must fly to the closest zeppelin base, but may fly an unlimited distance in doing so); if the result is 2 or greater, the airship may continue moving.
- All airships are also night air units.
- Balloon barrages (Rule 23I) do not affect airships flying missions other than GS, DAS, harassment, or airdrop.
- Airships flying GS, DAS, harassment, or air drop missions are much *more* vulnerable to AA fire than other air units. Conversely, airships flying any other types of missions are much *less* vulnerable to AA fire. (See the AA Fire Table.)
- Airships participating in air combat are both harder to shoot down than other air units, and themselves have a harder than normal time shooting down other air units. (See the Air CRT.)
- The abilities of airships are affected by weather. During cold weather turns, subtract 1 from every airship movement check die roll. During warm weather, reduce the bombing strengths of airships by 1/3. (Warm/cold weather is covered in Rule 36.)

Designers' Note: Their large lift capacity and all-but-unlimited theoretical range made Zeppelins the heavy bombers of their day. Their complicated launch and recovery method necessitated operation from special bases. The lift provided by their hydrogen gas made it possible for them to stay aloft for extremely long periods of time, but the effect of wind and rain on their large surface area often meant they were blown off course or failed to find their assigned targets when they flew long distances. As they normally flew and bombed from higher altitudes than other aircraft, they usually were affected less by flak. Although their hydrogen gas made them extremely vulnerable to fire, it was surprisingly hard to set one on fire, even when incendiary bullets were used (unless the incendiary hit a metal support strut, they often passed completely through the balloon envelope without setting off a spark).

Many of the most extraordinary air missions of the war were carried out by zeppelins. The most effective bombing raid of the entire war was a zeppelin attack on the London docks (it caused over $200,000,000 dollars of damage in 1915 dollars). Zeppelins were used to make the first para drop of the war (on the eastern front in 1918). The longest mission flown during the war was an attempt by a zeppelin flying from Bulgaria to transport supplies to the German East African garrison in 1917. And, had the war continued a few days longer in Nov 1918, the zeppelins prepping for the planned raid on New York City would have launched.

G. Observation Balloons.

Type O air units do not use airbase capacity like other air units. Instead, one (and only one) type O air unit may base in each hex in addition to any regular air units that may base there. Note that a type O air unit may base in a hex even if the hex has no airbase capacity. *Note that as type O air units do not use airbase capacity, they are ignored for purposes of Rule 17C1-3.*

Type O air units may only fly tactical reconnaissance missions. Note that they cannot fly any other type of mission, not even transfer.

Operative type O air units may rebase during friendly movement phases. A type O air unit rebases to another hex either by moving by strategic rail movement, or by moving overland or by operational rail movement as if it were a c/m unit with a movement rating of 5. (For purposes of strategic rail movement, each type O air unit is 1 RE in size.) Upon completion of this movement it immediately becomes inoperative.

Designers' Note: Observation balloons don't fly per se at all. Instead, the mechanic of 'flying' actually represents the balloon rising on its tether in the hex, at which point it can now observe and control artillery fire in its hex and surrounding hexes, but also becomes vulnerable to AA fire and attacking fighters. The flying analogy doesn't stretch to cover transfer, however, as balloons normally rebased by motor transport or rail, and thus should not be vulnerable to enemy patrol attack or interception.

H. Air Unit Codes.

Air units may have one or more codes, as listed on the Unit Identification Chart. Codes define certain specific or special capabilities of air units, and these capabilities often modify the bombing or AA fire die rolls, as listed on the appropriate table. In addition, air units with codes have the following abilities.

1. C: Carrier Capable. Code C air units are equipped and trained to operate from aircraft carriers. Code C air units (only) may base at and fly missions from aircraft carrier taskforces (TFs) (TFs are covered in Rule 27A). A code C air unit is not required to base at an aircraft carrier TF; it may use any airbase except a seaplane carrier TF.

2. E: Elite. Code E air units have a significant percentage of high quality pilots. Code E air units have a better than normal chance at shooting down enemy air units, and are harder to shoot down in return than other air units, as shown by the dice roll modifiers to the Air Combat Results Table.

3. F: Float-plane/Flying Boat. Code F air units are composed of float-planes or flying boats. A code F air unit must base at an airbase in a partial-sea or partial lake hex or at a seaplane carrier taskforce (TF) (TFs are covered in Rule 27A); it may not use any other airbase. Note that code F air units are the only air units that may base at and fly missions from seaplane carrier TFs.

A code F air unit may not fly missions while based at a seaplane carrier taskforce in an all-sea hex.

4. H: High Altitude. Code H air units can fly missions at altitudes much higher than the norm (generally over 20,000 feet). When flying any mission other than airdrop, GS, DAS, harassment, naval units in port, or naval patrol, a code H air unit can be intercepted or patrol attacked only by a code H fighter, and is less vulnerable to AA fire as shown by the dice roll

modifier on the AA Fire Table.

Note that when flying airdrop, GS, DAS, harassment, naval units in port, or naval patrol missions, code H air units must fly at lower altitude to be effective and thus derive no benefit from their high altitude flying ability.

5. L: Low Altitude. Code L designates type B air units which normally bomb from low altitude, but which do not have the armor protection or pilot training to qualify as attack bombers. As code L air units fly all missions at lower altitudes than is normal for type B, they are more vulnerable to AA fire as shown by the dice roll modifiers on the AA Fire Table.

Code L air units are also recon air units, and thus may fly recon missions (per Rule 20F).

6. M: Anti-Shipping Missiles. Code M air units carry anti-shipping missiles to attack naval units. Code M air units have special abilities when flying the naval-units-in-port or naval patrol bombing mission, as follows:

- Naval AA may not fire at Code M air units flying these missions.
- Code M air units flying these missions have their tactical bombing strength doubled, and the bombing attack uses the code M modifier on the Aerial Bombing Table.

Designers' Note: The first anti-shipping missile (launched from a zeppelin) entered service at the end of 1916 with the German navy. Although quite successful in trials, it failed to impress the high command, and so saw only occasional service during the war.

7. S: Anti-Shipping Capable. Code S air units are trained and specialized to attack naval units, as shown in the modifiers to the Aerial Bombing Table.

8. T: Antitank Capable. Code T air units are equipped with special antitank weaponry. When flying the DAS mission in a hex, count each point of tactical bombing strength of a code T air unit as one RE of full ATEC for purposes of special combat effects capability.

Designers' Note: By 1918, several attack bomber aircraft types mounted one or more 20mm cannon (or even heavier armament) firing downward from the aircraft's fuselage. Germany in particular pushed development of this type as a potential counter to the hordes of tanks the Entente was expected to have by 1919.

9. V: Anti-Shipping Torpedoes. Code V air units are specially trained to attack naval units, as shown in the modifiers to the Aerial Bombing Table. When a code V air unit flies a naval patrol bombing mission, it may:

- Carry a standard bomb load, operating as a code S air unit.
- Carry torpedoes, with its tactical bombing strength doubled.

Due to port defenses (such as anti-torpedo nets), a code V air unit flying the naval-units-in-port bombing mission does not carry torpedoes. Instead, it carries a standard bomb load, operating as a code S air unit.

I. Balloon Barrages.

Balloon barrages are shown by the presence of balloon barrage markers (see the Unit Identification Chart). Each player receives balloon barrage markers as shown on his order of battle. *(Note:* The historical location of each balloon barrage is listed in the OB when the barrage is received, but players may deploy the barrage as listed below.) During the initial phase in the which a balloon barrage is received, or any subsequent initial phase, the owning player may:

- Place the marker, level 1 side up, in any friendly-owned hex in general supply; or
- Flip any one existing friendly-owned level 1 balloon barrage marker over to its level 2 side.

Once placed on the map, the balloon barrage marker may never be moved; and if its placement hex ever becomes enemy-owned it is immediately removed from play.

Each balloon barrage marker on the map has an operational area. The operational area of a level 1 balloon barrage consists of the hex is occupies only. The operational area of a level 2 balloon barrage consists of the hex it occupies and all adjacent hexes.

Bombing and air drop missions made against targets in the operational area of one or more balloon barrages are affected as follows:

- Halve the bombing strengths of air units flying the GS, DAS, and harassment air missions.
- Subtract 1 from the die roll when using the Aerial Bombing Table.
- Subtract 1 from the die roll when using the Air Drop Disruption Table.

Balloon barrages have no other effects.

Note that airships flying missions other than GS, DAS, harassment, or air drop are not affected by balloon barrages.

Designers' Note: Balloon barrages are static barrier defenses consisting of multiple lines of balloons, tethered at various altitudes and often trailing various metal lines or nets to make flying through their air space hazardous. These historically formed part of the air defenses of London, Paris, the Lorraine mining complex, and the Ruhr. Their net affect was to usually make enemy aircraft fly at (and bomb from) higher altitudes, thus lessening bombing effectiveness.

J. Groups.

Air units in *The Great War* normally represent 100 fixed-wing aircraft, 16 observation balloons, or 6 zeppelins. This scale works well in the western theater (where the vast majority of the air units historically operated), but breaks down in other theaters where aircraft were much fewer in number, but still had a significant impact on operations. To handle air operations in the subsidiary theaters, therefore, the concept of groups (half-strength air units) is used. A group air unit is distinguished from a normal air unit in that the group has the air unit's model name underlined while a normal air unit does not. *For example, a Fok D3 is a normal air unit, while a Fok D3 is a group.* In general, groups operate the same as normal air units except that the bombing strengths and cargo capacity of a group are always halved.

Within each individual game in *The Great War* series, all air units in the west theater are normal air units, and all air units in other theaters are groups. This only becomes a problem when playing grand campaign games linking two or more theaters where players have transferred air units around so that groups and normal air units end up present in the same theater at the same time, and even then only affects air combat. When this

occurs, use the following:

- **Standard Air CRT:** When a group fires on a normal air unit downgrade any result one category; that is, a kill becomes an abort, an abort becomes a return, and a return becomes a no effect. When a normal air unit fires on a group, the normal air unit fires twice against the group (implement the result after both fires, with a combination of two aborts becoming a kill).
- **Optional Air CRT:** Halve the air attack and air defense strengths of all groups.

Rule 24 — Airborne Landings

The airdrop mission (Rule 20H2) details how general supply points and air-droppable units are transported to and dropped in target hexes. Parachute machinegun and zeppelin landing units are air-droppable units. *Special:* Zeppelin landing units may only be air-dropped by airships.

Units and general supply points may air drop in any land hexes (except those prohibited by Rule 20H2), including hexes occupied by enemy units.

Designers' Note: Germany made two airdrops in 1918, one against the Baltic Islands off Estonia and one in the Caucasus. In both instances zeppelins were used to drop a small (platoon or company) force to secure a landing site, which was then followed up by air transport of roughly a battalion. Accordingly, in *Bloody Eagles* Germany receives two zeppelin landing battalions.

Although the Entente never actually made an airdrop during the war, they had planned to do so had the war continued on into 1919. Billy Mitchell proposed on 25 Oct 1918 that the US establish a division of paratroops (actually a division of parachute machinegunners as the unit was to be structured almost entirely around 10-man MG teams), and this proposal was approved by General Pershing. The original plan was to drop the division directly on the great fortress of Metz, but this was later changed to a drop behind the Argonne sector line to disrupt the movement of German reserves during the crucial breakthrough attack. Accordingly, in *Over There* the Americans get two parachute machinegun brigades.

A. Disruption.

An air-droppable unit may suffer disruption when making an air drop. A general supply point may be scattered when air dropped. During the mission resolution step, roll one die for each unit or general supply point making an air drop and consult the Air Drop Disruption Table. Modify the die roll as indicated on the table, find the result, and immediately implement it. Results are:

- **No Effect:** The unit or supply point lands safely.
- **Scattered:** The supply point is hopelessly scattered and is removed from play.
- **Disrupted:** The unit is disrupted (per Rule 3A5).
- **Badly Disrupted:** The unit is disrupted, plus has its attack strength reduced to zero.
- **Eliminated:** The unit is immediately eliminated.

A unit that becomes disrupted remains so until the start of its next friendly initial phase. *For example, an Entente parachute unit disrupted during the Entente player turn would remain disrupted during the Entente player turn and throughout the entire following Central Powers player turn.*

B. Ground Operations.

1. Hex Ownership. An undisrupted airborne unit gains immediate ownership of the hex it dropped in, if the hex is not occupied by enemy units. A disrupted airborne unit cannot gain ownership of a hex. *Example: An Entente parachute unit air drops in an unoccupied Central Powers-owned hex that contains an airbase. The unit becomes disrupted when dropping in the hex. Therefore, it does not gain ownership of the hex, and the Entente player is unable to use the airbase there.*

2. Airborne Overrun. Units dropping in an enemy-occupied hex may overrun enemy units there, if the dropping units achieve overrun conditions (per Rule 6F, ignoring all MP costs). The overrun occurs in the mission resolution step of the air operation, after all units dropping in the air operation have landed. Only units dropping in that air operation may participate in the airborne overrun of the hex; other friendly units may not join in this overrun.

3. Combat. Units dropping in an enemy-occupied hex must attack the enemy units there during the combat phase, if both sides still occupy the hex at this time. Friendly units in other hexes may also join in the attack, per the standard combat rules.

If dropping units are badly disrupted (attack strength of 0) but are required to attack, and there is no ground unit in the attack with an attack strength greater than zero, the attacking units are automatically eliminated. (Note that this occurs even if there is ground support or naval gunfire support available for the attacking units.)

When both sides occupy the same hex, combat is resolved as normal except for AS results. On an AS result, the units which dropped in the enemy-occupied hex treat the result as an AR. All other units treat the result as an AS.

Due to the surprise an airdrop in WW I would probably achieve, an airborne unit making an airdrop is automatic-ally in combat supply during the player turn of the drop.

Retreating units are subject to the effects of all ZOCs they enter, including the ZOCs of enemy units in the hex from which the retreat is conducted. *Example: A parachute regiment drops in a hex occupied by an enemy division. During the combat phase, the parachute regiment must attack, and the combat result requires it to retreat. Since any hex it can enter is in the ZOC of the division in the drop hex, the parachute regiment is eliminated.*

4. General Supply Points. A general supply point may be dropped in an enemy owned hex in a player turn. However, if the hex is enemy owned at the end of that player turn, the supply point there is removed from play.

C. Planning and Preparation.

Airborne landings involving units (but not general supply points) must be planned in advance: the target hex of an air drop mission and the unit to be dropped there must be planned at least one turn in advance.

During the player's initial phase at least one game turn prior to an air drop operation, the player writes down the identity of the unit involved in the operation and the target hex of the operation. A unit may have only one operation planned for it at a

time. Once planned, an operation may be canceled at the player's option in a subsequent friendly initial phase, and a new operation for the unit may be planned at that time. A player may also cancel an operation during the phase in which it is to occur.

During an initial phase, an operation may not be planned for a unit that is in an enemy ZOC at that time. Once an operation is planned for a unit, it must be canceled if the unit is in an enemy ZOC, attacks, or is attacked at any time between the planning and the execution of the operation. If for any reason the unit is not able to participate in the operation during the phase in which it is to take place, the operation must be canceled. An air drop operation may be planned in advance to occur for a unit on the turn it arrives as a reinforcement.

Rule 25 — Air Replacement System

During the course of the game, players regroup air units, receive reinforcements and replacements, and must withdraw air units. A player performs these air replacement activities within the framework of the air replacement cycle. A player's air replacement cycle consists of four consecutive game turns beginning with his I player turn of each odd-numbered month (Jan I, Mar I, May I, Jul I, Sep I, Nov I). All air replacement activities are performed during the player's initial phase. The air OBs list the reinforcements and replacements in the game.

The various activities occur as detailed below. Each player follows these procedures separately for each of his nationalities (per Rule 17B3b).

A. Regrouping.

During the initial phase, the phasing player may regroup pairs of aborted air units. For each pair, the air units must have identical model, type, codes, and ratings. *Examples: A pair of 5F5 FE 2b 2/4) may regroup. However, the following pairs could not regroup: a 2A3 Voi 4 2/7 with a 2NB3 1-1/L/7 (different types); a 3R5 Alb C3 2/8 with a 4R5 Alb C5 2/7 (different models); or a 6F5 Fok D3 0/E/4 with a 6F5 Fok D3 0/4 (different codes).*

For each pair that is regrouped, place one in the eliminated box on the appropriate air chart and receive the other one as a reinforcement (Rule 25C below).

A player is not required to regroup any air units. Regrouping does not require the expenditure of air replacement points (ARPs; Rule 25D below).

B. Withdrawals.

The air orders of battle occasionally require the players to withdraw air units from play. Withdraw any air unit that meets the OB's specification, as follows:

- If at all possible, withdraw an air unit in play (either operative or inoperative).
- If none are in play, withdraw an aborted air unit, if possible. If an aborted air unit is withdrawn, the owning player must spend ARPs sufficient to repair it.
- If no aborted air unit is available, withdraw an eliminated air unit. If an eliminated air unit is withdrawn, the owning player must spend ARPs sufficient to replace it.

When spending ARPs as required above, the player must spend them before spending ARPs for any other purposes. If a player has insufficient ARPs, he keeps track of his ARP obligation. When he receives ARPs subsequently, he must spend them to meet this obligation.

C. Reinforcements.

Players receive air reinforcements during the game. A player places his reinforcements on the map during his initial phase, as operative air units at any friendly-owned, unisolated airbase with a capacity of 1 or more.

If a player has both reinforcements and withdrawals of the same air unit type in the same turn, follow this procedure: For each air unit in play that is withdrawn, place one reinforcement of the same type (if any is available) as an operative air unit at the airbase of the withdrawing air unit. *Example: In the initial phase of an Entente player turn, the Entente player receives five type R air units (two MF 11, two BE 2c, and one F 40) as reinforcements and is required to withdraw three type R air units (three Ble 11). Accordingly, for each of the three withdrawing Ble 11s, the Entente player must place a reinforcing type R at the Ble 11s airbase. The remaining two type R reinforcements may be placed at the Entente player's discretion.*

Air reinforcements unable to enter play for any reason are eliminated instead.

D. Replacements.

Players receive air replacement points (ARPs) in the initial phases at the start of each air cycle. The player uses ARPs to replace eliminated air units and to repair aborted air units.

Within each command, a player may spend or accumulate ARPs as follows:

- *If the player's ARP allowance for the current air cycle is 2 or more:* In an initial phase, the phasing player may spend up to half his ARP allowance for the current air cycle, if he has sufficient ARPs remaining. *Example: A player receives 7 ARPs at the start of an air cycle. He may spend no more than 3.5 ARPs (half of 7) in any of his initial phases in that air cycle.*
- *If the player's ARP allowance for the current air cycle is less than 2:* In an initial phase, the phasing player may spend up to all of his ARP allowance for the current air cycle, if he has sufficient ARPs remaining.
- If a player has any unspent ARPs at the end of an air cycle, he may accumulate up to 2 ARPs for use during the next air cycle. He loses all unspent ARPs in excess of 2.

1. Replacement. A player may spend two ARPs to replace an air unit in an eliminated air units box. Place the replaced air unit on the map during the initial phase, as an operative air unit at any friendly-owned, unisolated airbase in the air unit's command. *For example, an air unit replaced from the eliminated air units box on the British Isles Game Chart would be placed at any friendly-owned, unisolated airbase in the West (British Isles) command.*

2. Repair. A player may spend one ARP to repair an aborted air unit. Place the repaired air unit on the map during the initial phase, as an operative air unit at any friendly-owned, unisolated airbase in the air unit's command.

3. Repair/Replacement of Groups. The repair and

replacement costs listed above are for normal air units. The cost to repair or replace a group is half that of a normal air unit. *For example, it costs 0.5 ARP to repair an aborted group.*

4. Repair/Replacement of Airships. The cost to repair an aborted airship is double that of a non-airship air unit. *For example, it costs 1 ARP to repair an aborted group-size airship air unit and 2 ARPs to repair an aborted normal-size airship air unit.* Eliminated airships may not be replaced.