(1.0) What is Storm of Steel

Take command of the legendary Stuka dive bomber on combat missions over the vast steppes of the Eastern Front!

Select and equip your Stuka Staffel with pilots and gunners. Lead your unit during the opening days of Operation Barbarossa targeting Soviet airfields, troop concentrations, rail lines, convoys, and tank formations. Attempt the final drive on Moscow during Operation Winter Storm. Continue your career to participate in Case Blue and the offensive on Stalingrad. Use the newly-converted Ju-87G Stuka tank killer during Operation Citadel to destroy enemy armor. Fly maritime missions to sink and disrupt the Red Navy on the Gulf of Finland and the Black Sea.

Avoid enemy fighters, and endure murderous anti-aircraft fire to deliver your deadly payload accurately on target. Log your missions, scores, gain experience for yourself and your unit. Manage replacements and repairs of your aircraft as well as your wounded and replacement crew. Balance mission assignments, crew, and aircraft to develop a long-term winning strategy.

Storm of Steel Ju-87 STUKA is a solitaire tactical air wargame where you take the role of a Staffelkapitän - Flight leader. Select, equip and fly your aircraft, lead a squadron of Stuka dive bombers and execute close air support missions along the Eastern Front from the opening day of Operation Barbarossa on June 22, 1941 up to the Kursk offensive in 1943. Lead a Staffel or Kette from Sturzkampfgeschwader (StG) 1, 2 or 77 as you fly missions deep into enemy territory. Avoid enemy fighters, and endure murderous anti-aircraft fire to deliver your deadly payload!

(2.0) Introduction to Game Play

2.1 Overview
Gameplay revolves around the execution of missions with a selection of aircraft and crew as well as the management of a Stuka 'Staffel' or (squadron's) aircraft and crew. You must also manage repairs and replacement of destroyed aircraft and crew casualties after each mission, while balancing assets to find a winning strategy. Using Mission Log sheets and a scoring system, players can calculate their level of achievement and promote surviving crewmembers in order to obtain better results as you progress in the game.

A few abbreviations used throughout the rulebook:
 • Sturzkampfgeschwader (StG) - Dive Bomber Wing
 • Staffel – A squadron of ten aircraft (See Designer's Notes for historical accuracy)
 • Kette – A two- or three- aircraft formation (a Rotte is abstracted-see Designer's notes)
 • Staffelkapitän – Captain or senior Lieutenant in command of a Staffel
 • WIA – Wounded in Action
 • KIA – Killed in Action
 • POW – Prisoner of War
 • 1D6 – One D6 dice
 • 2D6 – Two D6 dice
 • 1D10 – One D10 Dice
 • DRM – Dice Roll modifier
 • CS - Crew Stress
 • Mission – A single combat sortie carried out by the Staffel or Kette.
 • Operation - A series of missions played in two and/or three month segments
 • Campaign – A series of operations played sequentially spanning June 1941 to August 1943

2.2 Player Objectives
Player's objectives are measured against the success (scoring) of your overall operation or campaign and management of your assigned crew and aircraft. The primary objective of the game is to score high on missions and operations while maintaining an efficient operational readiness of your crew and aircraft.

2. 3 Flying Missions
Missions are assigned to the player according to the operation type and dates selected on **Table A1**, Operations and Missions Table. The Mission Track on the Air Operations playmat allows you to see where your aircraft formation is located in relation to your airfield and the objective which is located in one of the zones on the Mission Track. The Mission Track is divided into six sections numbered one though six. Players conduct enemy intercept attempts and draw one event card in each Mission Zone. At the designated objective zone players check for target visibility (**Table A4**), and anti-aircraft fire (**Table A6**) over the objective, which may impact aspects of your mission, aircraft, and/or crew. Fighter intercepts may occur with different levels of frequency depending on the operation and timeframes. Available fighter escort is also assessed depending on the location of the Staffel/Kette on the Mission Track and operation timeline.

The object of Missions is to inflict as much damage as possible on the assigned target while keeping casualties and aircraft damage to a minimum. The game ends when all the assigned missions from the selected operation are completed, or the player can no longer muster enough aircraft and/or crew on the flight line to complete the missions.

Players first select one of the three available operations; Barbarossa, Case Blue, or Citadel (Kursk). Once selected, players roll for mission assignment using **Table A1, Operation and Mission Table**. Fill in the Mission Log sheet with the appropriate data including crews for each starting or available aircraft. Players then select and place aircraft, mission ordnance, and crews on the Air Operations Playmat, and begin the mission by placing the target mission type on the appropriate Mission track area. Details on this later.

For now, I suggest you gather and familiarize yourself with the game components, lay them out, give the rulebook a quick read, and refer to the "How to Play" player aid. Select one mission in June 1941 column, and run one familiarization combat mission before starting operations in earnest.

2.4 Career and Maintenance

Storm of Steel Ju-87 STUKA requires you to prepare, fly and execute missions as well as maintain and administer your Stuka Staffel. Career progression and maintenance of aircraft, and flight rosters are an important part of success, and will affect scoring directly and indirectly. Equally important is the assignment of crew and aircraft for any mission observing, and carefully deciding which combination of crew and machine are optimal for mission success.

2.5 Scoring

There are five levels of scoring in the game: Individual Crew/Plane, Staffel/Kette Mission, Operational segment (two-month period), Operation(s), and Grand Campaign. Scoring for each individual Crew and plane is consolidated as a Mission score at the end of each Mission. Operational Segment and Operation scoring in turn is a consolidation of all Mission scores, and finally the Grand Campaign is scored after all three Operations have been completed. Crew promotions are awarded at the end of Operational Segments only when choosing those of "Regular" duration. Although scoring is conducted individually for each crew and aircraft, it's consolidated as a mission score at the end of each mission. (See 8.4)

(3.0) Game Components

- One 22" x 34" Air Operations Mat
- Two countersheets of 9/16" counters (330 total)
- Sixteen Aircraft Cards
- Twenty-four Event Cards
- Three Player Aid Cards
- One "How to Play" Card
- One Mission Logsheet Pad
- One ten-sided die
- Three six-sided dice

If any parts are damaged or missing please contact:

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Online game support is available. Visit us on the web: **https://www.compassgames.com**

You can also use the URL or QR code to reach Compass Games online:

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3.1 Air Operations Mat

The Air Operations mat is where you place individual aircraft cards, pilots, markers and play the game using the Mission Zone Track, Staffel position, Weather, Attacking Aircraft, Anti-Air and Attack Run markers. The Flying Circle area is where you place the Staffel/Kette marker as well as any attacking enemy interceptors, and their respective attack zone areas. The Air Operations Mat (shown below) also includes the Crew Casualty Track & Aircraft Repair/Replacement Chart and other frequently used tables and information.

3.2 Aircraft Cards

Aircraft cards are placed on the Aircraft Formation Area at the bottom of the Air Operations Mat with the Flight Leader in the top left position. The cards represent individual Ju-87 Stuka models, and provide space to place game markers in order to keep track of Crew location, experience, aircraft damage and crew stress.
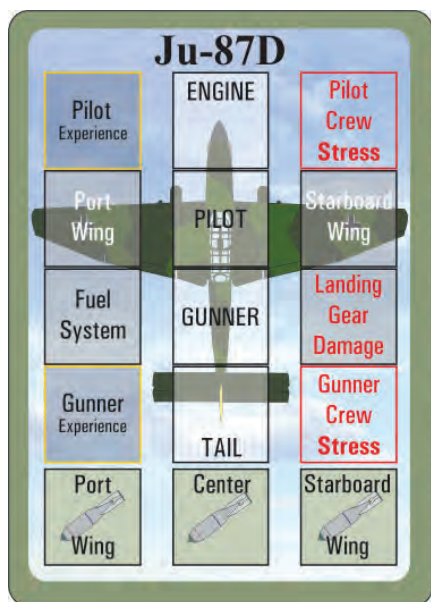
Aircraft Cards are placed on the Air Operations Mat from left to right starting with the Flight Leader or Staffelkapitän on the top left on the number "1" spot and working your way right filling positions in numerical order. An opaque cup includes the numbers 1 to 10 where the numbered counters represent the number of aircraft in play. Ensure the opaque cup reflects the number assignment, and to remove aircraft cards that may be shot down or otherwise removed from play. More on that in 5.0 "How to Play" section. Never move aircraft assignments after a mission has started, lost aircraft spots are not replaced.

> *Example:* if your #4 aircraft is shot down, do not move the #5 aircraft to the #4 aircraft card slot. Place the aircraft card (to be later logged as destroyed) in the "Damaged/Destroyed Aircraft Holding Area" in the Air Operations Mat. Remove the assigned aircraft number from the opaque cup.

3.3 Player Aids, Charts & Log

The game uses three Charts labeled Chart A, B and C, an Aircraft Repair/Replacement Tracker, a Crew Casualty Tracker and a Mission Log.

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- Chart A – Operations and Mission (**Table A1**), Bombing Attack Accuracy & Scoring (**Table A2**), Ordnance Availability (**Table A3**), Visibility (**Table A4**), Operation & Campaign Scoring (**Table A5**) and Anti-Air (Table A6).
- Chart B – Fighter Intercept (**Table B1**), Escort (Table B2), and Approach/Attack (**Table B3**)
- Chart C – Aircraft Damage (**Table C1**), Crew Stress (**Table C2**), Bail Out (**Table C3**) & (**Table C4**) and various Landing, Crew Survival, damage, Recovery and Damage repair time (**Table C5**) through (**Table C10**)
- Mission Log Sheet – Permission is given to reproduce as required.
- How to Play

3.4 Game Markers and Pieces

The game includes 312 counters which are placed on the aircraft cards and Air Operations Mat. Markers are used to track mission progress, scoring, DRM, aircraft, ordnance and crew status as well as other game data. The game also includes two white and one red D6 dice and one D10 required for play.

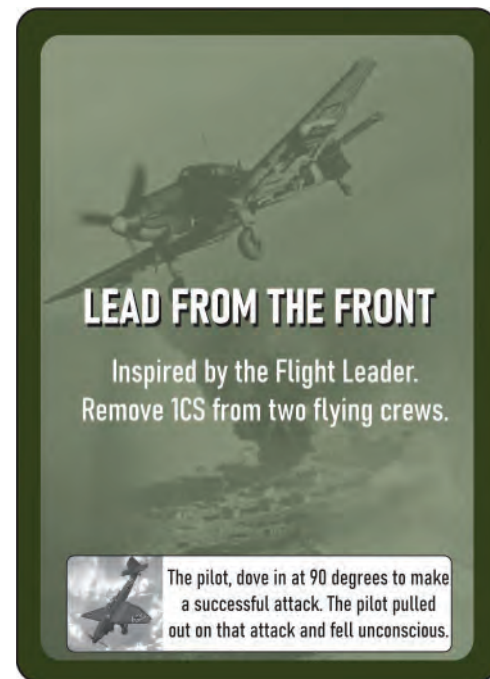|			
DAMAGE	Damage Marker	SCORE	Score Marker
CREW STRESS	Stress Marker	Wounded ✚ NO DRMs	Wounded Marker
TARGET ⊕ Aircraft	Target Aircraft Marker	PILOT Green	Pilot Marker
MISSION TIMER Damaged Aircraft	Mission Timer Damaged Aircraft	GUNNER Veteran	Gunner Marker
MISSION TIMER Destroyed Aircraft	Mission Timer Destroyed Aircraft	PILOT HERO	Hero Pilot Marker
Enemy Fighter	Enemy Fighter	Destroyed	Destroyed Aircraft
MISSION Airfield	Mission Marker	Otto	Pilot Personage
AP-1000	Ordnance Marker	DRM	Die Roll Modifier Marker

3.5 Mission Logsheet

The Mission Logsheet is used to record missions, crew, aircraft, scoring, flight, target and other information used to determine mission and operation status.

3.6 Crew & Aircraft Management Chart

The Crew Casualty Track & Aircraft Repair/Replacement Chart is used to keep track of KIA, POW and WIA crew as well as aircraft repair and replacement tracking. (See 6.0)

3.7 Event Cards

There's a total of 24 Event Cards. Event cards simulate unforeseen events your crew may encounter while flying missions. One event card is drawn and resolved each time the Staffel/Kette enters a mission zone. Event cards apply only to the formation while in-mission, and never to aircraft or crew on the ground. Event Cards are re-shuffled, and placed in the Event Card area of the Air Operations Mat at the end of each mission. Do not draw an event card at the Airfield or Mission Target zone.

LEAD FROM THE FRONT

Inspired by the Flight Leader.
Remove 1CS from two flying crews.

The pilot, dove in at 90 degrees to make a successful attack. The pilot pulled out on that attack and fell unconscious.

(4.0) Setup

4.1 Aircraft & Crew

Your Ju-87 Stuka crew consists of one pilot and one gunner per aircraft. The Pilot is the commander of the aircraft and responsible for flying the aircraft, bombing, and attacks. The Gunner/Observer (herein referred to as Gunner) is responsible for defending against enemy fighter attacks, and operates the defensive rear facing

machine gun of the Stuka. The maximum range for Stukas is 12 Mission Zones, six to and from.

For each aircraft on the mission, aircraft cards are placed on the aircraft area of the mat, with the spot on the top left designated for the Staffel/Kette Flight Leader. The Stuka Aircraft is represented by cards which include two spaces where crew counters are placed in the square marked Pilot and Gunner. Crew quality Markers are placed in the top left corner for the Pilot and bottom left for the Gunner. Other squares on the Aircraft are used to place ordnance, record Damage and Crew Stress. When an area or a system on the aircraft is hit in combat, whether from enemy fighters or Anti-Aircraft fire, you place a Damage marker on that system with the exception of General Damage. If a second hit to a damaged system occurs (with the exception of General Damage, Bombs and Landing Gear), the aircraft is destroyed, and the crew in some instances may bail out, even over enemy territory where capture and return to fly again. (**Table C4**)
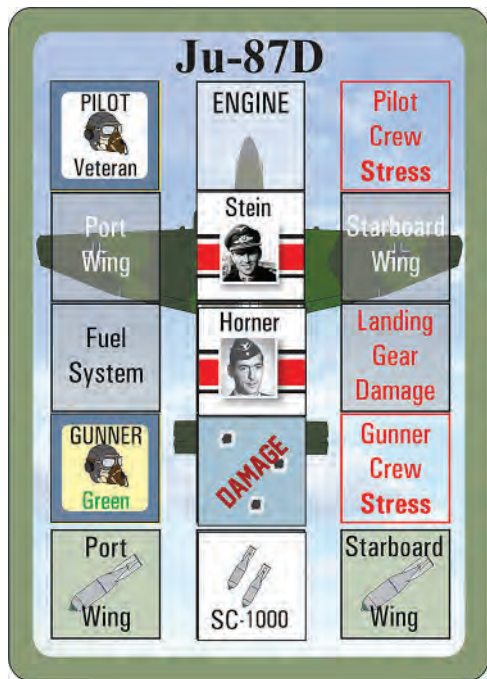
Example: Here is a Ju-87D showing the Pilot, Stein, who is a veteran and the Gunner, Horner, who is Green. They carry one SC-1000 bomb and have had there tail section damaged.

The aircraft slot on the top left of the aircraft area is designated for the Flight Leader. If the Flight Leader is shot down or otherwise removed from the formation, the Flight Leader designation must be re-assigned to another pilot by moving the Flight Leader counter to the selected aircraft.

4.2 Flight Leader

The Flight Leader (Staffelkapitän) is the leader of the Staffel/Kette while flying missions. The designation of Flight Leader is made by placing the selected pilot (usually but not necessarily the player's pilot) with gunner in aircraft position number "1" in the Air Operations mat. Add the "Flight Leader" counter to the aircraft. The Flight Leader provides the Staffel or Kette with the ability to remove one Crew Stress marker from any flying crew at any time once during the mission as long as the Flight Leader is a Veteran or above. If a "Green" Flight Leader is selected to lead the Staffel/Kette during an attack run, he assigns one Crew Stress counter to one randomly selected crew as soon as he becomes the Flight Leader. Make the random selection by pulling a number chit from the opaque container. If the Flight Leader is shot down, killed or otherwise removed from the formation, the player may designate any available pilot in the current mission as Flight Leader. A Flight Leader may not relinquish his Flight Leader status at any time unless shot down, killed or otherwise removed from the formation.

4.3 Formations

There are two types of formations in Storm of Steel Ju-87 Stuka, the Staffel and Kette. For game purposes, a Staffel consist of no more than 10, and no less than 4 aircraft. Both the Staffel and Kette have a Flight Leader (usually a Captain or Major) assigned/played by you. The Sturzkampfgeschwader (StG) counters for StG 1, 2 & 77 are provided for placement in the "Staffel Kette" box on the "Flying Circle" area of the Air Operations Mat. They represent the three StG wings which operated on the Eastern Front. (See Designer's Notes).

4.3.1 Staffel - The Staffel is the game's regular Luftwaffe tactical formation for missions and administrative purposes. Historically, a typical Luftwaffe Stuka Staffel consisted of nine to 12 aircraft. The game uses 10 aircraft as the base number for the Staffel.

4.3.2 Kette - Kette or "Chain" consisted of three aircraft and translated to the game as such. The Kette primarily used in the game during Operation Citadel (Kursk) (See 4.5.3) or at any time the number of serviceable aircraft and/or crew fall below the requirements of a Staffel. All Kette Mission Zone results of six results are treated as five (5) and qualifies for the "Lucky Dog" designation.

Select one aircraft from the Kette and place the "Lucky Dog" counter on the aircraft card. For the duration of

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the mission, and only during the attack/bombing run, the "Lucky Dog" ignores anti-aircraft fire hits. When flying a Kette (Two or Three aircraft), remove the "Return to Base" card from Event deck.

4.4 Ordnance & Selection

There is a wide variety of ordnance which the Stuka historically carried. In Storm of Steel ordnance selection is similar to some historical bombloads, and care was taken to account for availability and usage in the eastern front, and ordnance selection and assignment is dependent on the mission type and Stuka model. When you are playing the game, you will know what your target is, before selecting your bomb load configuration. The player selects one type of ordnance/bombload to be carried by the entire Staffel/Kette each mission with the exception of the SC-1000 and SC-1800 specialized bombs. Bombloads are represented by a track located on the Air Ops Mat. The standard game bombload configurations for the Ju-87 D and G Model Stukas are:

Choose one Loadout:

One SC500 carried on the center fuselage pylon, and four SC50 bombs; two of them carried under each wing's bomb pylons. This configuration provides a -1 DRM accuracy for all target types and sizes.

One SC500 carried on the center fuselage pylon, and four 50C Cluster bombs (two of them carried under each wing's bomb pylons) is primarily used against Troops and Artillery bombs. This configuration provides a -2 DRM accuracy when attacking Troops and Artillery Mission targets only.

Choose one Special Loadout:

The SC1000 bomb may be assigned and carried by two aircraft in the Staffel/Kette per mission. The bomb provides a -2 DRM against Small and Medium targets, -3 DRM against Large targets and Ships. Aircraft equipped with the 1000 may not carry wing mounted ordnance.

The SC1800 may be assigned and carried by one aircraft in the Staffel/Kette per mission. Aircraft equipped with the SC1800 may not carry a gunner, nor wing mounted ordnance. The SC1800 provides a -4 DRM against all size targets. Only available *starting* 8/41.

Operation Citadel (Kursk) only. The Ju-87G is equipped *only* with two 37mm autocannons under each wing weapon pylon. The autocannon provides a -3 DRM against armor targets. The model D may not carry this ordnance.

• Machineguns. Two wing mounted machine guns allow for any Stuka (with the exception of the Ju-87G model) that has suffered damage to it bombs systems to conduct a strafing run attack on targets. Machineguns receive a +4 DRM against Maritime/Small targets, +5 DRM against Medium targets and +6 DRM against Large targets. Note the DRMs for strafing are positive. **Table A3**.

4.5 Operation Selection

Select the operation and length (Regular or Short) you wish to play. Consult **Table A1, Operation & Mission Table**. Individual missions are assigned by random dice rolls. You may play all three operations as part of the Eastern Front Campaign or individually.

Select aircraft from the Aircraft card deck corresponding to the operation selected (See 4.5.1,2 & 3). Place the aircraft cards on the Air Operations Mat with the Staffelkapitän (the Player's plane) on the leftmost (Number "1" slot). Place the "Flight Leader" counter with him. Select and place the crew (Pilot and Gunner) from the counter selection on each of the aircraft in their designated boxes. Place the experience level of crew (Green, Veteran, Ace, Elite or Hero) on the designated box in the aircraft card.

Aircraft attrition and maintenance schedules may force the player to fly missions with a less than optimal number of aircraft. When desired, the player may fly missions with no less than a three plane Kette for Operation Barbarossa and Case Blue. (See 4.5.3 and 4.3.2 for Operation Citadel (Kursk). When flying a Kette, ignore and discard the "Return to Base" event card and move any "6" mission zone result to Mission Zone number "5", and you may also assign the "Lucky Dog" counter to one aircraft which denies all anti-aircraft fire hits for the lucky crew.

At the end of each Operation, do NOT clear the mat and restart with new planes, pilots, and gunners. Instead, remove all Crew Stress, return AC to operation, and release crew from the hospital, replacing any KIA/MIA crew with GREEN crew.

When the game is played as the Grand Campaign, start on the June/July 1941 Segment and continue all the way through Operation Citadel.

4.5.1 Barbarossa. Operation Barbarossa was the Axis invasion of the Soviet Union and the largest land warfare campaign in history. You can recreate the operation from the perspective of a Stuka pilot and squadron commander, flying missions subdivided into three distinct periods. Beginning with the surprise attack at dawn on June 22, 1941 all the way to the attempted drive on Moscow in December 1941. Choose ten Ju-87D model, 10x Veteran pilots, 10x Veteran gunners, and 1x Green pilot and gunner (Green crew are reserves which you may use at any time). Start missions on June/July 1941 operational segment of **Table A1**.

4.5.2 Case Blue. Case Blue (Fall Blau) was Germany's 1942 strategic summer offensive in southern Russia in an attempt to achieve a swift victory on the Eastern Front. The Luftwaffe conducted an extensive bombing campaign which culminated in a colossal struggle in the city of Stalingrad. Choose ten Ju-87D model, 8x Veteran pilots, 8x Veteran gunners, and 2x Ace Pilots and Gunners. Start missions on August/October 1942 operational segment of **Table A1**.

4.5.3 Citadel (Kursk). Operation Citadel was Germany's last major offensive in the East and the largest clash of armor in history. The now outdated Stuka had been given a new purpose; Tank Hunter, fitted with twin 37mm autocannons, the G model converted the legendary dive bomber into a tank destroying machine. In the hands of skilled pilots, the Stuka Ju-87G proved to be a formidable anti-tank attack aircraft. Discard 'RTB-Return to Base' event card. Choose six (6) Ju-87G model, 5x Veteran pilots, 5x Veteran gunners, and 1x Elite Pilot and Gunner. Start missions on August/October 1942 operational segment of **Table A1**. All Operation Citadel Missions are flown under the "Kette" aircraft limit of no more than 3 planes per mission (See 4.3.2). Additional serviceable aircraft, and crew are treated as reserves for the duration of Operation Citadel.

4.6 Mission Assignment

Using **Table A1**, select missions by rolling two white and one color D6 dice. Adding the result of the two-white dice, match the result on **Table A1** Cross referencing the result with the current Operation column, and time period. Compare the colored D6 with the far-right column on **Table A1** to determine the Mission Zone Track to place the target in on the Air Operations Mat.

> *Example:* you are playing Operation Barbarossa Jun/Jul 1941 segment and roll a total of 5 on the 2D6 roll and a 4 on the color die. Place an Airfield Mission marker on Zone 4 of the Mission Zone Track.

Missions vary in target types and are divided into three general size categories; large, medium and small. The size of the Mission target may also impact, and have a direct relationship with the type of Mission ordnance selected. Missions reflect common target types during specific time periods throughout the campaign.

4.6.1 No-Fly Mission

A result of a "No-Fly" mission assignment on **Table A1** represents that due to unforeseen circumstances like weather, fuel shortage, etc. the squadron cannot fly. The mission is recorded with a score of zero (0), and mission timers are moved as if a mission had been flown as per Sec. 8.8. Crew Stress counters are removed as per Sec. 7.11.

4.7 Maritime Missions

The maritime component of Operation Barbarossa Air operations took place in both, Baltic and Black Seas. Most notably was the sinking of the Soviet Battleship Marat by Luftwaffe ace Hans Rudel. In the game, the player has the opportunity to fly some of those missions as part of their regular mission selection during Operation Barbarossa. If the Mission roll assigns a "Maritime" mission re-roll 1D10 and check the "Maritime" column of **Table A1** and place the maritime mission marker on the Mission Zone Track of the color die result. (See 7.6). Note that Maritime missions have a +1DRM on the Anti Air fire. of **Table A6**. Maritime Missions use the Maritime column on **Table B1**.

4.8 Mission Zone Track

In Storm of Steel Ju-87 Stuka the map is abstracted and represented by the Mission Zones Track located on the Air Operations Mat. These tracks are numbered one (1) through six (6) with the airfield at the start below zone one. Zone one represents a short range/duration mission and Zone 6 representing a typical full range of the Ju-87 of around 800 kilometers on average for a D model.

4.9 Single Missions

The player is free to fly any number of missions including but not limited to single missions. Although flying a single mission can be quick and fun, keep in mind the length and scoring in the game is based on playing operations and the grand campaign, and within the "Regular and Short" timeframes.

(5.0) How to Play

5.1 How to Play

This section covers gameplay in a step-by-step method. Details of individual steps are covered throughout the manual, and should be referenced when needed. An abbreviated version of this section is also available as a player aid.

5.1.1 Mission Selection and Planning

1. Select Campaign [Barbarossa, Case Blue, or Citadel] and duration; Regular or Short. Record on Mission Logsheet. See 4.5.

2. Select formation (Staffel or Kette) counter, Aircraft, Crew and armament. See 4.4, 4.5, and **Table A3** for Mission Ordnance selection, and availability.

3. Roll for Mission on **Table A1, Campaign and Mission Table**. Roll 2, WHITE D6 and 1, COLOR D6, add the result of the White dice and apply result to the *LEFT* column of **Table A1** and select the assigned mission (2 through 12). Cross reference the result of the COLOR D6 to the *RIGHT* of **Table A1** Mission Zone corresponding to the ZONE in which the assigned Mission counter is placed. See 4.6.

4. Record on Mission Logsheet.

5. Place the Mission (Airfield, Troops, Armor etc.) counter on the Zone number corresponding to the color D6 result on the Mission Zone tracker of the Air Operations Mat.

6. Place a Staffel or Kette counter (depending on the number of aircraft you have chosen for the mission, min. 2 for Citadel) on the Airfield of the Mission Zone track. Place the representative StG Counter on the Flying Circle.

7. Place Aircraft cards, crew and Flight Leader counters on Air Operations Mat from top left to right starting with the Flight Leader.

8. Shuffle Event cards and place face down on the Event Cards space in the Air Operations Mat. Re-shuffle after each mission. See 3.7.

9. Select the appropriate Mission Payload, and any Specialized Ordnance. **Table A3** and Sec. 4.4.

10. Place the numbered counters corresponding to the number of aircraft in your Mission formation into an opaque cup.

11. Fill the Mission Logsheet with your Staffel/Kette information (Crew names, aircraft etc.)

5.1.2 Mission. Move the formation counter on the map from the Airfield to the next Zone (Zone 1 initially). Draw and resolve one Event Card per mission zone. (Discard after use) Do not draw an Event card on the Target Zone or your airfield. See 7.2.

Roll 1D10 on **Table B1** for the encounter (if any) and 1D6, **Table B2, Luftwaffe Escorts Table** for each zone entered.

If "No contact" continue to the next zone and repeat. If enemy fighters are present, they will attempt interception.

Example: On Table B1, roll X1D10 and the result is an 8 which says X1 I-16. This is a Russian Fighter type I-16 fighter which attacks your formation.

A. Using the D6 result from the encounter roll check **Table B2, Luftwaffe Escort Table** and cross reference the D6 result to the Mission Zone the formation is currently in. Each Zone has a range of numbers from 1 to 6 which reference the D6 results for a specific zone and timeframe. The red numbers correspond to the number of enemy fighters that are removed (if any). Some results can be Full Cover (no attacks) or No-Cover which results in an enemy attack.

B. If applicable remove the stated number of fighter(s) on a successful escort roll for the date range column.

Example: Following from the above example, you attempt to block the Russian I-16 fighter from attacking your formation. Refer to **Table B2**. A D6 result of 5 on Zone 4 during June/July 1941, is 0. This means your escorts have been ineffective and the I-16 gets through to your formation. Had the die roll been a 2, then 1 enemy fighter would be removed. As there is only one attacking, with one fighter being removed, the interception attack would end at that point.

If enemy Fighters remain in the Mission Zone after Luftwaffe Escort resolution:

A. Roll 2D6 (One Color and One White). Lookup **Table B3, Enemy Fighter Approach Table** for EACH Fighter not intercepted by Escorts.

B. Place Enemy Fighter(s) counter(s) on the Flying Circle of the Air Operation Mat corresponding to **Table B3**, Approach box - Above, Port, Starboard, Rear, Below and/or Front.

C. Individually, and for each enemy fighter, draw the indicated number of counters (Planes) hit in the Fighter Attack column from the opaque container. Place a Target Plane counter on on the attacked Plane(s) card(s) and check for Damage using **Table C1** (applying any applicable DRMs to the d6 roll only).Remove Target Plane counters and return the drawn counters to the opaque container.

Example: Refer to **Table B3** for the Attack Approach. Roll 2D6, one White and one Colored. The White D6 result of "4" marked for a Rear attack. The Colored D6 roll is "5" which results in one of your Stukas being attacked and taking 2 hit/damage roll on **Table C1**. Be sure to apply the "-2" DRM on the D6 Damage Roll for both rolls (This DRM is a Rear Gunner defensive advantage for rear attacks).

Place an Enemy Plane counter one on the Stuka flying circle box marked Rear. Draw a chit from the opaque container, drawing a 3. Aircraft #3 in your formation is being attacked from the rear by a Russian fighter.

Next, check for Damage by referring to **Table C1**. You roll 1D10 and 1D6 twice, once for each of two attacks applying the -2 DRM to the 1D6 rolls.

The first roll is 1D10 is a 4 giving a Starboard Wing hit, while the 1D6 roll is a 5 which, with -2 DRM gives a result of 3. Cross references the 1D10 and the 1D6 modified roll resulting an additional +2 Crew Stress result. Place a Damage counter the Starboard Wing hit on the #3 Aircraft card, and two Crew Stress markers on the #3 Aircraft card.

The second roll is 1D10 is a 9 which is a Tail hit, while the 1D6 roll is a 2 which, with -2 DRM results in a 1 (you can't go any lower on the chart) for a result "no effect" You ignore the tail hit. See image below:
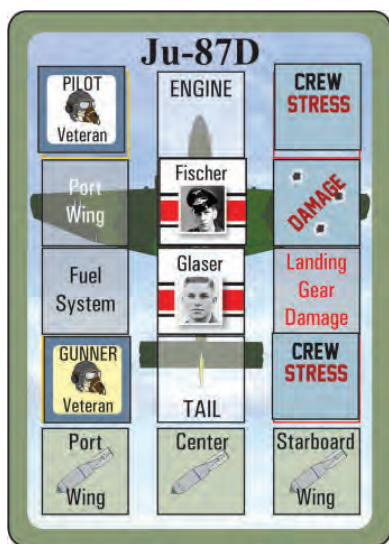
Note: If you have a Hero or Elite Pilot in your formation, see 7.3 for an optional maneuver.

Repeat in all zones until the Staffel reaches the Target Zone. Do not check for enemy fighters on/over the target zone.

5.1.3 Bombing/Attack Run. Do not draw an Event Card or roll for interception on Target zone. If the mission objective is in zone 1, there is no Event Card drawn, and no check for fighters as you are immediately over the target. It's essentially a "milk run" with the exception of Anti-Air fire.

A. When the target is reached, roll 1D6 on **Table A4, Target Visibility** and place marker in the corresponding Good-Medium-Low visibility box. Note that visibility Event Cards override the target visibility roll.

B. Roll 1D10 on **Table A6, Anti-Air**. Place AA marker counter on the appropriate Light-Medium-Heavy box. Roll for Damage on selected aircraft on **Table C1**. Details regarding completing this step are explained in 7.5 Aircraft Damage and Crew Wounds. (See 7.10)

Starting with your Flight Leader or the aircraft in position 1, proceed in numerical order, skipping any missing aircraft. Repeat the following steps 3 and 4 for each attacking aircraft.

C. Begin Attack. For Bomb/Attack Damage results refer to **Table A2**, roll 1D10 for all target sizes. **Table A1, Operations and Missions** determines the target type and size. Apply DRMs (Pilot, Crew Stress, Rudel Gamble, Visibility and/or Ordnance - **Tables A3, A4 C2**) to these rolls.

D. Lookup **Table A2, Bombing and/Attack Accuracy & Scoring Table** for target type, and log the result using a Score counter on the Score track located to the right of the aircraft card on the Air Operations mat. Repeat for all aircraft.

5.1.4 Egress, Return to Base and Landing

A. Egress from target area by moving the Formation counter to the next zone in reverse.

B. Draw and resolve Event Card (Discard after use).

C. Check for Enemy Fighters and Friendly escorts. **Tables B1** and **B2**.

D. Upon reaching the Airfield: From left to right; make a landing roll for each aircraft by rolling 1D10 using **Table C5, Landing Table**. Apply DRM(s) as required.

5.1.5 Post Mission. Log Mission score in Mission Logsheet by adding all individual scores and dividing the total by the number of aircraft which completed an attack on the target. For example; if 10 aircraft started the mission but 1 was shot down and another returned to base before attacking, only eight aircraft completed their attack (including 0 scores). Then the total is divided by 8. Log K.I.A./W.I.A./POW crew, and destroyed/damaged aircraft on the Pilot Recovery and Aircraft Maintenance Charts. (See 6.0)

(6.0) Crew & Aircraft Management Chart

6.1 Destroyed Aircraft
When an aircraft is destroyed while flying a mission, place a "Destroyed" counter on the aircraft as a reminder of the aircraft status while you finish the mission. Roll 1D6, **Table C8, Destroyed Aircraft Replacement Table** for each Aircraft lost. Add a Destroyed Aircraft Mission Timer counter on the Mission Timer track on the corresponding space numbered 1 through 7. Starting with the end of the next mission the Staffel/Kette completes, the mission timer mark is moved -1 or one space (and every mission thereafter (Including No-Fly missions) until it reaches "Available" whereby the aircraft is ready to be flown.

6.2 Damaged Aircraft Repairs
For damaged aircraft, place the Damaged Aircraft Mission Timer counter on the Aircraft Damage/Repair Replace track of the Crew Casualty Track & Aircraft Repair/Replacement Chart. Lookup **Table C10, Aircraft Repair Times Table** and add the number corresponding to the system(s) damaged and place a Damaged Aircraft Mission Timer counter on the Mission Timer track on the corresponding space numbered 1 through 8. If the accumulated damage is more than 8, place the counter on the 8th space. Starting with the end of the next mission the Staffel completes, the mission timer mark is moved -1 or one space (and every mission thereafter (Including No-Fly missions) until it reaches "Available" whereby the aircraft is ready to be flown.

6.3 W.I.A. Crew
For wounded crews, roll 1D6 (**Table C9**) and place the wounded crewmember (remove all Crew Stress) on the D6 number result slot in the Hospital (Pilot or Gunner)

section of the Crew Casualty Track & Aircraft Repair/ Replacement Chart. Repeat for additional WIA. Starting with the end of the next mission the Staffel/Kette completes, the mission timer mark is moved -1 or one space. You do this every mission thereafter (Including No-Fly missions) until it reaches Available, whereby the crewmember returns to service.

6.4 K.I.A./P.O.W. Crew Replacement
For KIA/POW crew replacements, roll 1D10 (**Table C9**), select and place a new Green crew counter on the D10 number result slot in the Replacement Crew (Pilot or Gunner) section of the Crew Casualty Track & Aircraft Repair/Replacement Chart. Repeat for additional KIA/POW. Starting with the end of the next mission the Staffel/Kette completes, the mission timer mark is moved -1 or one space. You do this every mission thereafter (Including No-Fly missions) until it reaches Available, whereby the new GREEN experience crewmember is placed in service.

(7.0) Combat Missions

7.1 Overview

Missions begin with the Staffel/Kette taking off from the Airfield box in the Mission Zone tracker in the Air Ops Mat. The Staffel/Kette is moved up the track as it progresses towards the objective area determined by the Mission Table roll and selection. *Note: If at any time an individual aircraft leaves the formation for any reason during a mission, they do not draw separate event cards or roll for interception. They must immediately return to the Airbase and roll to land on **Table C5**.*

LOST KAMERADEN

The loss of an old Kameraden weighs heavy.
Randomly assign 1CS.

By 31 January 1945 and the Soviet drive towards Berlin, only 104 Ju 87s remained operational with their units.

7.2 Event Cards

Event cards are used to generate random events during the mission. There is a total of 24 events, one card is drawn for each Mission Zone entered to and from the target area. An Event card is drawn every time the Staffel/Kette moves into a new zone, to or from the objective zone before an interception roll. Event cards are not drawn at the Airfield or objective zones. Event cards are discarded individually after use, and placed in the Discarded Event Cards area in the Air Operations Mat. Event Cards are re-shuffled before the beginning of a new mission. Events are only applicable to the Staffel/Kette flying a mission.

7.3 Interception

After drawing an event card, you must roll for Interception in each of the zones entered; to and from the objective zone. Do not roll for intercept on the Objective Zone. Roll 1D10 (Enemy presence) and 1D6 (Luftwaffe Escort), check the Fighter Intercept Table (Table B1) and look up the number corresponding to the D10 result with the appropriate operation and date for the mission you're conducting. If the result is No Contact, move on to the next zone. If there's contact, the B1 result will describe the type and number of enemy fighters encountered. Consult the Luftwaffe Escort Table B2 for your D6 result. If the result is Full Cover, discard all enemy fighters and continue to the next zone. Otherwise, your B2 result will specify the number of enemy fighters removed from the

attacking force according to the appropriate timeframe and zone.

Resolving a successful enemy intercept/attack:

1. Roll one white, and one color D6 and check **Table B3, Enemy Fighter Approach/Attack Table**. The white D6 result corresponds to the enemy fighter Approach column while the color D6 corresponds to the type of attack.

2. Place the enemy fighter marker on the Flying Circle area of the Air Operations Mat in the corresponding box; Above, Port, Starboard, Rear, Below or Front. If the D6 die roll equals one, the Staffel is not attacked. Any other roll, check the Fighter Attack column of **Table B3**, and resolve using **Damage Table C1**.

Example: a 1D10 roll of "3" and a 1D6 roll of "5" during the June/July '41 segment of Operation Barbarossa, results in two MiG-3 enemy fighters on an intercept path. If the Staffel is currently in Zone 3 (outside of "Full Cover") your D6 result of "5" (or "6") removes one MiG-3. A lone MiG-3 advances to attack the Staffel.

Damage, whether it's from Intercept or Anti-Air, is resolved in the same manner. Using the **Damage Table C1** roll 1D10 and 1D6. The D10 result corresponds to the vertical column which represents aircraft systems and crew. The D6 represents the horizontal column and determines the type of damage to the aircraft and/or crew. Apply damage effects to the aircraft card. See Section 5.1 for extended examples.

7.3.1 Attempt Air-to-Air Kill (Hero/Elite Only).

Although extremely rare (and as a game abstraction), a Hero or Elite pilot may attempt to shoot down one enemy fighter. If after the escort roll enemy fighter(s) are attacking the Staffel/Kette, a Hero or Elite pilot may attempt an air-to-air kill. Assign one of the random attack numbers to the Stuka with the Elite or Hero pilot. In case your intercept roll calls for multiple attacking enemy fighters, assign the first randomly drawn number to the Elite or Hero Stuka. Roll 1D6 if the result is 1 or 2 you have successfully shot down one enemy fighter. Add 10 points to your total mission score.

crew on the targeted aircraft. Then cross-reference the D6 result to the top of **Table C1** to allocate the described damage. Apply any applicable DRM such as the rear gunner's defensive fire. DRMs on damage rolls are applied to the D6 roll only.

The aircraft can also take damage to the ordnance and/or release/firing mechanisms being carried which might result in failure to drop, fire, or catastrophic detonation with the loss of aircraft and crew. Engine and Fuel hits might reduce the range of the aircraft and impact its ability to return to base. A Fuel System hit might also cause a fire or explosion.

Each plane has eight critical systems; Engine, Port wing, Starboard wing, Tail, Fuel, Bombs, and the two crew compartments (Pilot and Gunner). Two hits on any one critical system destroys that system, and causes the aircraft to crash (Check **Bailout for non-explosions, Table C1**). Additionally, a result of 6 on a D6 Damage roll for a hit on the Engine, Port Wing, Starboard Wing, and Fuel System destroys the aircraft. A 6 on the Damage roll for a Crew Compartment, the pilot is KIA. General Damage, which is not tracked on the aircraft card, is abstracted with Crew Stress and regarded as damage sustained by the aircraft which, although not system specific, (for example small shrapnel hit from Anti-Air fire) is enough to cause Crew Stress.

Engine and Fuel related damage may affect an aircraft's range. If a range subtraction damage occurs, mark the damaged aircraft with the appropriate "-1, -2 or -3" zone markers and subtract the zones from the aircraft 12 zone total range or the 10-zone total for Operation Citadel (Kursk).

If a crew is wounded, place the wounded marker on top of the crew affected. Do not use any of the wounded crew's DRMs such a landing, bombing, stress or bail out. A second wound kills the crewmember. If the pilot is KIA, the gunner must add one Crew Stress, and roll for bailout immediately.

Hero Pilots and Gunners half (rounded up) their DRM numbers if wounded.

7.11 Crew Stress. Crew Stress is a game mechanic which simulates the abstraction of various factors as they relate to combat which may affect your crew's performance during

bombing and/or landing (**Table C2**). Crew Stress is part of the "Damage" effects located on **Table C1**. Stress may be added for aircraft damage sustained, an unforeseen event, being attacked by enemy aircraft or Anti-Aircraft fire. Crew Stress may impact bombing accuracy, landing, and bail out attempts. Crew Stress markers are placed on the aircraft card's Pilot and Gunner's Crew Stress slots. While on a mission, Crew Stress is applied equally to both pilot and gunner. Pilots and gunners may also have different levels of stress when assigning and mix-matching crews.

Any hits taken as damage noted on **Table C1** as a "+ X CS" adds Crew Stress to both members of the affected aircraft crew. Place Crew Stress markers on the aircraft card up to a total of six (6) at which point the affected crewmember must roll for Bailout (**Table C3**). If the Pilot rolls for bailout the Gunner must also attempt bailout. There is no negative Crew Stress, you cannot remove/account further Crew Stress from a crew that does not have Crew Stress.

At the conclusion of any mission, even a "No-Fly", the player may remove one (1) crew stress marker from each pilot and gunner who did not fly on the mission. This includes all crew who are on the Available Crew Holding Area. Crews mainly recover stress by not flying but stress may be reduced by certain events and/or the Flight Leader. Crew Stress is carried from mission to mission unless the crew rests one mission per Crew Stress removed.

It's important to note that the Pilot's Crew Stress is the only Crew Stress that applies to attacks and landing DRMs.

Example: a crew receives 3 stress markers during a mission. Upon their return they can fly the next mission with the 3 stress markers, or remain in the "Available Crew Holding Area". Each receives 3 Stress markers as a reminder. Once the current mission is completed the player removes one stress marker from each only if they did not fly. A Crew does not remove any prior or added Crew Stress if they remain flying missions.

Elite crews disregard the first Crew Stress placement. Hero Crews disregard all Crew Stress results. If the Gunner is Elite or Hero, and the pilot is neither, Crew Stress applies normally.

7.12 Mission Abort. The player may choose to abort a mission or order any aircraft to return to base at any time. If the abort occurs in the Airfield there is no further action. Mark your mission log as a "No-Fly." The aborted mission counts towards your operational total, and receive a score of zero. If you decide to abort mid-mission (Mission Zone 1 and onward) you must continue to conduct event card draws, intercept checks until the Staffel reaches the airfield, at which point landing rolls are made.. If you opt not to fly a mission at all (few aircraft crew, stress etc.) mark the Mission Log as "No-Fly". Remember to move Crew Stress and Mission Timer markers as you would at the end of a completed mission.

(8.0) Return to Base

8.1 Landing

Landing occurs only upon return to the Airbase after mission completion, aborts or returns to the airbase for any reason. The Landing order is the same as for attack runs, start with the Flight Leader on the Number 1 spot and continue sequentially. Roll 1D10 for each aircraft. Check **Table C5, Landing Table**. Apply DRM(s) if any. If a forced landing occurs, roll 1D10 and consult **Table C6, Airfield Crash Wreck Survival Table**. If the aircraft is destroyed during a forced landing roll 1D6 and check **Table C7, Individual Crew Survival Table** and apply the results.

Any individual aircraft which leave formation either voluntarily, as a mission abort, due to damage or an event card, does not draw separate event cards nor rolls for interception. It must make a landing roll procedure immediately.

8.2 End of Mission and Mission Logsheet

Missions are logged individually on the Mission Logsheet. The Logsheet serves as permanent record for the Staffel/Kette and their progression, score and promotions throughout the game.

At the end of each mission the player:

1. Tally the score for the mission, and logs it on the Mission Logsheet

2. Subtract one space from all the Aircraft and Crew Mission Timers (Do not subtract Mission Timers from any of the damaged/destroyed aircraft or crew casualties from the current completed mission)

3. Place any K.I.A. and/or W.I.A. Crew on the Crew Casualty Track & Aircraft Repair/Replacement Chart. (sec. 5.5 and 5.6)

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4. Place Damaged and/or Destroyed aircraft counter on the appropriate box in the Crew Casualty Track & Aircraft Repair/Replacement Chart. Aircraft Damage Repair/Replace track (Sec. 5.3,4)

5. Remove one Crew Stress counter from crews in the Available Crew Holding Area.

6. If this is the end of a two-month Operational Segment, promote all surviving crews who have completed at least three missions in this segment to the next available level (8.9).

8.3 End of Two Month Operational Segment or Operation

1. Add all individual Mission Scores and divide total by number of missions. Add any zero score, un-flown mission or otherwise to the division. This is your operational score.

2. Remove Crew Stress counters from all crews.

3. Return to service all W.I.A. crew and aircraft.

4. Promote to all surviving crew to the next available experience level.

5. Remove and replace all crew in the K.I.A./P.O.W. Crew Casualty Track & Aircraft Repair/Replacement Chart with Green crew.

8.4 Scoring

Scoring is directly related to bombing efficiency as a squadron, and not necessarily accuracy and post-bombing damage assessment. The game uses a system of percentages tied to type of ordnance carried, crew experience, and other factors which provide the player with an average score per mission. Although it is possible to score a 100 (perfect) mission using a single aircraft, it is highly unlikely, and not a practical approach to develop a successful long-term strategy in the game.

Storm of Steel Ju-87 STUKA uses a combination of five scoring tiers; individual, mission, operational segments (two/three-month periods), operation and grand campaign. Players first score missions by individual crew/aircraft. Individual scores are then added for the Staffel/Kette mission to receive a mission score. Mission scores are then calculated for the total or segment of operational score. If playing multiple operations as part of the Eastern Front Campaign, operational scores are taken into account.

Scoring is calculated and recorded after each individual aircraft completes its attack run by placing a score counter on the result in the Score Track located to the right of each aircraft card. After your Staffel/Kette lands, log your results on the Mission Logsheet for the attacking crew. Repeat for all aircraft. Depending on the target type, and referring to Table A2, Bombing/Attack Accuracy and Scoring Table record the number obtained on the Mission Logsheet for the attacking aircraft/crew. Once the Staffel/ Kette have completed their attack run on their designated target, add the results then divide the result by the number of aircraft that participated in the mission.

Example: a six aircraft Staffel completes a mission scoring; 100, 40, 55, 20, 15, and 90 corresponding to each aircraft who participated in the attack. Add all the results which equal 320 which is divided by 6 for a total score of 53.3 rounded to 53-Marginally Successful for that Mission. The Staffel then completes a two-month segment of an operation. You add all Missions scores (say the November/ February 1943 Case Blue SHORT -6 missions- segment) 90, 65, 75, 80, 0, and 85 which gives you a total of 65.8 rounded up to 66-Victorious.

Add any applicable scoring modifiers (Sec. 8.5) and log the result on the Mission Logsheet below the last individual score. This will become your Mission score which will be used later to score your Operation scores.

8.5 Scoring Modifiers

Scoring modifiers are applied at the end of a Mission, Operation and/or Grand Campaign. They represent bonus points primarily for survival of crew and aircraft. Refer to **Table A5** to determine your level of victory. The first two modifiers in each segment represent different levels of success. You can only apply the highest bonus you have achieved, not both.

8.5.1 Mission. Upon completion of a mission if any of the below listed requirements are met, you may add the indicated number of points to your mission total score if the requirements are met.

+4 - Aircraft and Crew return to base with no more than one casualty and damage to no more than one aircraft.

+3 - Aircraft and Crew return to base with no more than two casualties and damage to no more than two aircraft.

+2 – Aircraft and Crew return to base with no more than four combined Crew Stress markers.

8.5.2 Operations. Each Operational Segment is scored as an average of the missions completed during that segment. Operations are scored by adding individual Operational Segment scores and dividing those by the number of segments executed. Upon completion of an Operation, you may add the indicated number of points to your mission total score if the requirements are met.

+7 – Completed the operation with a total of less than 5 aircraft destroyed and less than five crew K.I.A.

+5 - Completed the operation with a total of less than 8 aircraft destroyed and less than seven crew K.I.A.

+3 – Completed the operation with a total of less than 6 "No-Fly" missions recorded.

8.5.3 Grand Campaign. The Grand Campaign is scored by adding all three Operation scores, and dividing by three. Upon completion of Operation Citadel, you may add the indicated number of points to your mission total score if the requirements are met.

+15 – Completed the Campaign with a total of less than 15 aircraft destroyed and less than 15 crew K.I.A.

+10 – Completed the Campaign with a total of less than 20 aircraft destroyed and less than 20 crew K.I.A.

+8 – Completed the operation with a total of less than 15 "No-Fly" missions recorded.

8.6 Maritime Scoring

Maritime mission scoring is handled differently than land missions. The Staffel/Kette engages all ships using the Small target column. All Maritime targets provide the defender with a +1 on the Anti-Aircraft fire table's D10 AA roll. A Battleship, Cruiser, Destroyer, and/ or Submarine is considered sunk if one plane scores a 100 hit, whereby the mission is automatically scored at 100, and the scoring crew (Only) is promoted to the next available experience level. If a single plane scores a 100% then and only then the mission is scored as 100% (Because the ship has been sunk), otherwise, the mission is scored normally.

8.7 The Mission Logsheet

One of the most important aspects of **Storm of Steel Ju-87 STUKA** is the ability to manage your crew and aircraft before, during, and after each mission. A Mission Logsheet is included to log Missions and keep track of scoring, the status of Crew and aircraft, and other Mission details, which is key to recording your success in the game.

8.8 Crew and Aircraft Management Chart

Crew Availability, replacement, recovery, Aircraft Recovery, Repair and Replacement Chart is used to manage crews and aircraft. The numbered counter slots or "Mission Timer" are provided to keep track by using a countdown method to visually alert the player when a crew or aircraft is available for operational service again.

8.8.1 Crew Casualty Track. The Replacement Crew and Hospital areas are where you keep track of your KIA/POW (Killed in Action/Prisoner of War) and WIA (Wounded in Action) Crews, respectively.

- **Killed in Action and Prisoner of War (KIA & POW)** – For each KIA/POW crewmember roll 1D10 select and place a new GREEN crew counter on the D10 number result slot in the Replacement Crew (Pilot or Gunner) section of the Crew and Aircraft Management Chart. Repeat for additional KIA/POW. Note there is a track for Pilots and another for Gunners.

- **Wounded in Action (WIA)** – For each WIA crewmember roll 1D6 and place the crewmember counter on any of the slot corresponding to the D6 roll result in the Hospital section. Note there is a track for Pilots and another for Gunners.

8.8.2 Mission Timer. The Mission Timer corresponds to the number of missions the Staffel/Kette must fly (or "No-Fly") in order to receive a replacement. Note that the mission timer subtraction starts at the end of the next mission flown by the Staffel/Kette.

Once the timer reaches Available place a new Green crew if KIA/POW, or return to service if in the Hospital by placing the crew in the Available Crew Holding Area. An individually named crew that is KIA/POW is removed from play for the duration of the selected operation/campaign.

8.8.3 The Aircraft Repair/Replacement Track. Players keep track of aircraft repair and replacement by placing a 'Damage' or 'Destroyed' Mission Timer counter on the Aircraft Damage Repair track.

Destroyed Aircraft - Roll one D10 for each destroyed aircraft and place the 'Destroyed Aircraft' mission timer counter on the corresponding number result.

Damaged Aircraft – **Table C10** provides Mission Timer information for individual aircraft systems. Damage is cumulative but never more than eight 8 on the Mission Timer. Once a Mission timer reaches Available return the repaired/replaced aircraft cards to service.

8.9 Careers and Promotions

There are a total of 78 Pilots and Gunners to choose from (many of them historical Stuka crews) and an additional 13 counters which may be used to write in your own names. Bonuses are summarized on counter backs. Note: The base Gunner Defensive DRM is -2. Any modifiers listed on the counter backs are in addition to this.

The player is the Staffelkapitan, and rank is abstracted in *Storm of Steel Ju-87 STUKA*. The game uses an experienced based promotion system. There are four experience levels, with each one having unique modifiers which may affect mission execution and results:

Green – New crew with no die roll modifiers. There is no limit to the amount of Green crew you can have operationally ready to replace KIA/POWs. Additionally, Green crews receive a +1 DRM on **Table C4**.

Veteran – Experienced in combat, Veteran pilots receive -1 DRM on bailout and -1 DRM on landing rolls. Veteran Gunners receive a -1 DRM on Bailout attempts. Additionally, the crew receives a -1 DRM on **Table C4**. There is no limit on how many Veteran crew you may have on your Staffel and missions provided they are originally ranked as Veteran or receive a promotion after the completion of an operation.

Ace – Seasoned crews, and limited to four pilots and four gunners per mission. Additional ace crews may be promoted and kept in the Available Crew Holding Area for immediate replacement if needed. Ace Pilots receive a -1 DRM on

attacks in addition to -1 DRMs on bailout, and -1 DRM on landing rolls. Ace Gunners receive an additional -2 DRM (Total of -4) on defensive fire against interceptor attacks from the rear and above, and a -1 DRM for bailout attempts. Additionally, the crew receives a -2 DRM on **Table C4**.

Elite – A crack crew with extensive combat experience. Elite crews are limited to two pilots and two gunners per mission. Additional Elite crews may be promoted and kept in the Available Crew Holding Area for immediate replacement if needed. Elite Pilots receive a -2 DRM on attacks in addition to -2 DRM on bailout and -2 DRM on landing rolls. Elite Gunners receive a -3 DRM (Total -5) on defensive fire against interceptor attacks from the rear and above and a -2 DRM on bailout attempts. Crew ignores one (each) Crew Stress result. An Elite pilot may attempt an air-to-air kill of one incoming interceptor. Additionally, the crew receives a -3 DRM on **Table C4**.

Hero – A unique crew with great abilities and experience. Hero crews are limited to one pilot and one gunner per mission. Additional Hero crews may be promoted, and kept in the Available Crew Holding Area for immediate replacement if needed. Hero Pilots receive a -3 DRM on attacks in addition to -3 DRMs on bailout, and -3 DRM on landing rolls. Hero Gunners receive a -3 DRM (Total -5) on defensive fire against interceptor attacks from the rear and above, and a -2 DRM on bailout attempts. Crew ignores any Crew Stress results. Hero crews receive a -4 DRM on **Table C4**. Additionally, any Hero pilot may attempt an air-to-air kill of one incoming interceptor.

If played as a continuous progressive career (from Barbarossa to Case Blue to Citadel) begin on June 1941 with the entire Staffel as Veteran with the exception of the additional Green replacement Pilot and Gunner you receive on the Jun/Jul 1941 segment only.

Award a promotion to the next available level to crews that survive each two-month segments of operations. Crews must complete at least three missions per two-month Operational segment to be eligible for promotion.

Example: during the Barbarossa campaign a pilot or gunner who survive the June/July segment of Barbarossa are eligible for promotion, and awarded the next level. Crews must complete at least three missions per two-month Operational segment to be eligible for promotion. If a Veteran crew who started on June 1941, and survived until the start of the next segment in Aug/Sept 1941 it becomes eligible for promotion to Ace.

If playing only individual segments of Operation Barbarossa, Case Blue, Citadel or single missions, assign Veteran crew to the Staffel/Kette.

	Green	Veteran	Ace	Elite	Hero
Pilot					
Attack	0	0	-1	-2	-3
Bail Out	0	-1	-1	-2	-3
Landing	0	-1	-1	-2	-3
Gunner					
Defensive	0	-1	-2	-3	-3
Bail Out	0	-1	-1	-2	-2
Bail Out over Enemy	+1	-1	-2	-3	-4

Designer's Notes

The Ju-87 Stuka is one of the most recognizable planes from WWII. Even as a child, when I understood little about the war, the image of the Stuka with the gull wings and screeching siren struck me with awe. Years later, as I became a student of history, I realized the uniqueness and importance of the Stuka, especially during the blitzkrieg. Although an interesting topic in itself, the early war western front did not provide the unique perspective I was looking to make a Stuka game and portray the uniqueness of its pilots and crew. This by no means implies it's not an interesting and challenging theatre in its own right.

I wanted to design a game that brought the Stuka to life, both as an aircraft and a narrative experience where the player could play the role of a Staffelkapitan (squadron leader) and pilot while experiencing both; flying missions and the challenges of leading and managing a Sturzkampfgeschwader. My goal was to make the game fun, engaging, challenging, and as historically accurate as possible without compromising the enjoyability of gaming. Although there is a significant amount of abstraction in the game, I believe there's a balance

of equal parts wargame and a quantified measure of historical accuracy. For example, the average Stuka pilot flew 500 missions throughout Operation Barbarossa alone. Attempting to recreate this and make the game playable would be bold, to say the least. (If any of you fine pilots try and survive, please contact me!)

There seems to be a misconception that Stukas were largely irrelevant by 1941 after the disastrous Battle of Britain, where British pilots would refer to shooting down Ju-87s formations as "Stuka Parties." In reality, the Luftwaffe did not have, nor did it ever develop another. The Stuka fulfilled a specific role within close air support and precision bombing. Its combination of payload and accuracy made it relevant until 1943, when it was fitted with two under-wings mounted Bordkanone BK 3,7 autocannons, each loaded with two six-round magazines of armor-piercing tungsten carbide cored ammunition. This new configuration gave the Stuka a new lease on life in the Ju-87G Kanonenvogel or Cannon Bird form.

The Stuka remained in service throughout the war and was the preferred aircraft of Hans Rudel, arguably the best combat pilot of WWII. As the only recipient of the Knight's Cross of the Iron Cross with Golden Oak Leaves, Swords, and Diamonds, Rudel managed to achieve; the destruction of 519 tanks, sinking the Soviet battleship Marat, a Soviet cruiser, and destroyer as well as some 70 landing craft. Rudel also claimed to have destroyed more than 800 vehicles of all types, over 150 artillery, anti-tank, or anti-aircraft pieces and positions, 4 armored trains, numerous bridges, supply lines, as well as killing hundreds - if not thousands of enemy personnel. Rudel was also credited with 51 aerial victories, 42 of which were fighter aircraft and seven Ilyushin IL-2s. He was shot down or forced to land 30 times due to anti-aircraft fire, was wounded five times, and rescued six stranded aircrew from the enemy-held territory. He managed to land safely after severe damage to his leg, which later had to be amputated-he continued to fly afterward and survive the war. Rudel's combat record has been compared to that of one entire German army infantry division. Rudel flew a total of approximately 2,530 combat missions.

Players may notice differences in specific aircraft models, ordnance types and availability, and other peripheral factors that are either nominally or significantly abstracted or purposefully designed to enhance gameplay. The first one is the aircraft themselves. The game uses the Ju-87D model to account for all the variations available

during the eastern front campaign except for the G model. A typical bomb load ranged from 500-1,200 kg. Likewise, the availability of specialty payloads like the PC1000 and SC1800 addresses game balancing. Regarding a detailed operational, functional map. This detracted and added a level of complication to the point that it would have been more of a burden than a welcomed addition. Airfields moved all the time, so attempting to assign an airfield to each corresponding squadron at a particular place and time became a chore with little added value to the design and significantly took away from the game's flow and pleasure.

Regarding rank and experience, there is also a significant abstraction, or instead, replacement of traditional Luftwaffe ranks with increasing experience levels. For example, the "Hero" would represent a once-in-a-lifetime pilot like Rudel. Again, it came down to playability and avoiding burdening the player with minutia that did not add to the experience while keeping a playable career progression and record.

The Stuka could and did linger over the battlefield continuing close air support, attacking targets of opportunity, or conducting multiple ordnance drops and/or strafing. The game does not address this for practical game design issues, which affected mission flow and complicated the game significantly without adding substantially to the experience.

The game uses the term Staffel/Kette interchangeably with Squadron; however, Luftwaffe Squadrons included fewer aircraft than their Allied counterparts. A typical Stuka Staffel consisted of nine to twelve aircraft and flown in various formations. A Kette was a three aircraft formation that was usually part of the Staffel. Furthermore, Germans used the Rotte, or a two aircraft formation consisting of a leader and wingman. In the game, a Staffel consists of anywhere from four to ten aircraft and a Kette of two to three aircraft. Again, this was a part of the game design, which allows for a simpler administration of various aspects of gameplay and game flow.

I took advantage of 1X Game Studio's "IL-2 Sturmovik©" flight simulator to fly several hundred hours of Stuka missions over the Eastern Front using virtual reality technology, which provided me with an added perspective for the design, and convinced me the Eastern Front provided the widest array and unique mix of missions for the players to experience. I hope that all the

efforts put forth in the design come together to bring you an enjoyable and memorable wargaming experience.

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EXAMPLE OF PLAY

PRE-FLIGHT

After rolling (one D10 and 1 D6) for mission assignment on the Nov/Dec segment of Operation Barbarossa (**Chart A1**). The D10 roll results in a seven which corresponds to a Buildings (large target) bombing mission. The D6 rolls results in 3 which corresponds to Zone 3 as the target area. Place the "Airfield" mission counter on Zone 3 on the Air Operations Mat.

The player has selected a Staffel of five available Ju-87D aircraft with crew from the available aircraft/crews and places them on their corresponding areas

on the Air Operations Mat. He then selects the Staffel ordnance as SC-500/4xSC-50 by placing a counter on the corresponding Mission Ordnance box on the Air Operations Mat. Aircraft number 1 (Flight Leader) and number 4 of the Staffel have been assigned an SC1000 bomb as special ordnance. An SC1000 bomb marker is placed on the Special Ordnance box below each of the aircraft cards.

After placing the Staffel (STG 1) marker on the Airfield square and the Staffel counter on the Staffel/Kette box on the Flying Circle area of the Air Operations Mat, the player moves the STG 1 marker to Zone 1.

MISSION

Upon entering Zone 1, the player then draws an event card. The player draws "Waypoint Reached" and the event is resolved immediately, this event has "No Effect". The player then checks for enemy interceptors (**Chart B1**) and friendly escorts (**Chart B2**). Zone 1 is at the selected mission period of Nov/Dec 1941 under full Luftwaffe cover so no rolls or checks for enemy fighters are necessary.

The player then moved the Staffel marker to Zone 2, draws the Lost Rabbit's Foot Event Card and resolves event immediately by drawing a random marker (#3) from

the opaque cup and assigning two Crew Stress to aircraft number 3. One stress marker to the pilot and one to the gunner. Since two Crew Stress affects the bombing and landing DRM's, place a DRM counter on the +1 DRM track of aircraft number 3 area on the Air Operations Mat.

After the Event Card draw the player checks for enemy interceptors (**Chart B1**) and friendly escorts (**Chart B2** for Zone 2 by rolling one D10 and one D6 for the selected mission period time of Nov/Dec 1941. The result is 4 on the D10 roll "No Contact". The Staffel does not encounter enemy interceptors so the Escort D6 roll is discarded. The Staffel marker is now moved to Zone 3, the Mission Zone. There are no fighter intercept rolls or event card draws at

There are no fighter intercept rolls or event card draws at the mission zone.

Player checks for visibility by rolling one D6 with a result of 4 (**Chart A4**) corresponding to medium visibility and marked with the Visibility counter on the visibility area box corresponding to Medium Visibility on the Air Operations Mat. Move all aircraft DRM markers plus 1.

The player then checks Anti-Aircraft fire intensity by rolling one D10 resulting in 3 (**Chart A6**) which corresponds to Light Intensity targeting one aircraft.

Place the "AA" marker on the corresponding box. The player then randomly selects a token from the opaque container designating the targeted aircraft. The number "4" is selected aircraft and a Target marker is placed on the aircraft card.

Using **Chart C1**, the player rolls one D6 and one D10 corresponding to the level of damage and system damaged accordingly. A D10 result of 10 Crew Compartment and a D6 result of 6 results in Pilot KIA. Since the pilot has been killed, the gunner rolls one D6 for

immediate bailout (**Chart C3**). A result of 3 +1 DRM (which accounts for the pilot KIA result) ends in a successful bailout. Now the player checks for bailout over enemy territory (**Chart C4**). The player rolls one D10 and gets a 4 (needed a 6 or lower), resulting in Evasion Successful, Crew Wounded, +3 CS. Move the Score marker to Miss on the Attack Score track to the right of the aircraft. Remove the number 4 marker from the opaque cup.

Aircraft One attacks, the player rolls one D10 and scores 60. Aircraft 2 scores 50. Aircraft 3 carries the assigned Mission Payload rolls a 6, a +1 DRM for visibility and -1 for payload provides a net score of 40. Move the Score marker on the Attack Score track to the right of the aircraft to the number 40. Aircraft 5 carries the assigned Mission Payload and decides to conduct Rudel Gamble.

Moves the DRM from 0 to -2 DRM. Player rolls one D10 with a result of 4 (-2) which provides a net score of 80. Move the Score marker on the Attack Score track to the right of the aircraft to the number 80. The player rolls 1D6 after ordnance is dropped a Result of 1 or 6 the aircraft crashes and crew are KIA. Score normally with the applied additional -2 DRM whether the crew survives or crashes. The player rolls a 5 and survives Rudel's Gamble.

EGRESS AND RETURN TO AIRFIELD

The attack run is now complete and the Staffel commences to flight back to their Airfield. Player move the Staffel counter to Zone 2 and draws an Event Card revealing Heard the One About... and removes one stress marker from the Pilot of aircraft number 3. The player then checks for enemy interceptors (**Chart B1**) and friendly escorts (**Chart B2**) for Zone 2 by rolling one D10 and one D6 for the selected mission period time of

Nov/Dec 1941. The result is 9 on the D10 roll (one LaGG-3) and 6 on the D6 roll (a result of 6 does not remove any attacking aircraft). A LaGG-3 counter is placed in the Attacking Aircraft box in the Flying Circle area. The player now draws a random counter from the opaque container revealing the number 2, and places a Target counter on the aircraft card number 2. Checking **Table B3**, the player rolls two D6 (one white and one color) with a result of 4 on the D6 (white) which corresponds to a Rear attack by the LaGG-3. (**Chart B3**) and a 4 on the colored D6, resulting in 1 hit. The player then rolls a D10 and a D6 to determine the result of the hit. A 9 is rolled on the D10 and a 1 on the D6. Cross referencing the two rolls on **Chart C1, Aircraft Damage Table** shows No Effect on the Tail.

Move the Staffel counter to Zone 1 and draws the Spots in the Distance Event Card revealing No Effect. The player then checks for enemy interceptors (**Chart B1**) and friendly escorts (**Chart B2**) for Zone 1 by rolling one D10 and one D6 for the selected mission period time of Nov/Dec 1941. The result is 9 on the D10 roll (1xLaGG-3) and 2 on the D6 Escort Table (-1 plane), which effectively neutralizes the interceptor threat.

Player then moves the Staffel counter to the Airfield and commence landing procedures by rolling a D10 for each aircraft (**Chart C5**).

Aircrafts 1, 2 and 3 roll a 7, 5 and 8 respectively and land Safely. Aircraft 4 was shot down by AA fi re. Roll one D6 (**Chart C8**) resulting in 4. Place a Mission Timer: Destroyed Aircraft counter on the numbered box 5 of the Damaged Aircraft and Replace track on the Air Operations Mat.

Aircraft 5 rolls a 10 corresponding to Forced Landing. Conduct an aircraft roll (**Chart C6**). Player rolls a 6, the aircraft is damaged with a 3 Aircraft Repair Timer and Crew OK. Place a Mission Timer Damaged Aircraft counter on the Damaged Mission Timer track on the Air Operations Mat, and remove aircraft card from the available aircraft until repairs are completed

Complete mission log by filling out the corresponding spaces; scoring the mission at 46 (60+50+40+80, divided by 5 participating aircraft), removing prior Crew Stress markers when appropriate and advancing all repair, hospital and replacement markers.

Storm of Steel

Sheet 1 (back)

Storm of Steel

Sheet 1 (front)

Storm of Steel

Sheet 2 (back)

Storm of Steel

Sheet 2 (front)

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