Blue Max Analysis

Blue Max is a classic isometric aircraft themed shoot 'em up game released for the Commodore 64 platform in 1983. The game is set in World War 1, also known as the great war, the player is tasked to fly and fight controlling a biplane of the era. Like defined before the game utilizes an isometric camera and scrolls in diagonal axis where the movement direction is towards top right of the screen. The game also carries problems depicted with isometric games of the era yet has some clever solutions to them to make it more user accessible.

Player Aircraft:

The aircraft the player controls is a biplane coloured in white with a black fuselage. The player aircraft hosts some of the core mechanics of the game. Movement is simplistic via altitude and speed controls where aircraft will go a max speed of 200 mph. In terms of altitude the aircraft can reach a maximum of 91 feet.

- **Gravity:** Displayed at the start menu, it is an option to open gravity for our aircraft where it will slowly descend if no upward input is given to the aircraft.

- **Fuel Mechanic:** There exists a fuel mechanic where max fuel is 200 and the plane will slowly use its fuel as it flies. If all of the fuel is used the plane will glide for some time where the player should land at fits airfield spotted.

- **Guns:** The gun ammunition is unlimited so if need be players can shoot when they see fit. Can be used to shoot down enemy aircraft and if the aircraft is close enough to the ground the player can destroy ground assets.

- **Bombs:** The players plane can carry a load of 30 bombs at a time and player can drop them over enemy assets. There exists a mechanic where the player has to be diving to release a bomb. Bombs are the only way to destroy enemy ground assets and ships. The player has to be careful when dropping the bombs because if the player is too low in altitude the dropped bombs' explosion can be inflicted to the player damaging the plane.

- **Basic Damage Model:** The player aircraft has a simple damage model where different parts of the aircraft can get damaged and the damage received correlates to negative side effects

on the usage of the aircraft. Some examples of this are; if the fuel is damaged then aircraft will loose fuel. This damage is done if the aircraft is hit with flak where 4 hits will damage the components one by one and 5th hit will take the aircraft down.

Component:	Effect:	Letter:
Guns	Become more unreliable.	G
Bombs	Become more unreliable.	B
Manoeuvrability	Delays input and worse response.	M
Fuel Tank	Loses fuel overtime.	F

The damage taken will be indicated via letters coloured in yellow in the UI section. Example if fuel tank is damaged a Capitalized yellow 'F'.

- **Rearm, Repair and Refuel:** players can rearm refuel and repair their aircraft via landing and waiting at an airfield. After landing at an airfield aircraft will first get repaired then will take on fuel and ammunition. Rearming won't happen if corresponding module is damaged. When landed aircraft will not use fuel if engine wasn't started but aircraft will start consuming fuel as soon as engine start even if the aircraft is not moving. Thus, one should move as soon as repair and rearm is done. One thing to keep in mind is that when landed enemy aircraft will try to bomb player aircraft so one should land when needed to exert unnecessary risks.

Isometric view and Controls:

As stated before the game utilizes an isometric camera where the forward direction is towards the top right of the screen. This creates a problem that is prominent in most isometric games where the controls do not align with the game view. This specific problem can be solved by turning the controller about 45 degrees in the direction of movement.

Other problem exists in the way of default controls where joystick is 'up to go up' and 'down to go down' which does not correlate with real world controls schemes. This latter problem is only noticeable if the player have familiarity with aircraft flight focused games.

The last prominent problem this game has again comes from the fact that it is utilizing an isometric camera which is the difficulty in aligning with vertical axis and to a lesser degree horizontal aligning of our plane with enemy aircraft or ground assets. One can solve this issue using the shadow fixing the horizontal axis problem and

Enemies:

There exists a very large variety of enemies ranging from trucks to tanks. There also emplacement that are buildings, flak, bridges etc. There are ships sailing in the river which unlike tanks yet similar to trucks move this makes them hardest to hit as unlike trucks they do not have an apparent road that tells the player where it is moving towards. Hence, to bomb trucks and ships the players need to release the bomb leading the target. Also making ships harder is as the bomb hits the water it will not explode which unlike trucks if a bomb hits close enough the explosion will take it out this will not happen to ships.

A large aspect is the enemy aircraft they can only be shot down with guns and only be shot while at the same altitude as player aircraft. The way to understand the alignment in an isometric game is to look for scale however this is very difficult hence, the game in need of user usability chooses to indicate this to the player. This is done via an asterisk which tell the enemy plane is above the player and blue flashing UI to tell player plane is vertically lined up with the enemy plane.

UI and Game Screen:

UI is basic where the game screen is above the UI bar and all of the ordeal is happening there. In the UI bar there exists the parameters of the aircraft and score. Some information regarding the game is also given here to the player. One must agree that this game is very far away from a universally understandable approach for example the bomb fuel etc. are represented via their starting letters in English not as a self-explanatory sprite. Even when playing through the game, I had to resort to looking documentation up to understand the meaning that is present in UI.

TAKEOFF

Press (START or F7) on the computer console. Your plane will automatically taxi. When the speed reaches 100 miles per hour, press **forward** on the joystick. Your plane will lift off the runway and you may proceed with your mission at your desired altitude. Subsequent takeoffs will begin automatically when repairs have been made, or you can abort repairs with a press of the joystick button. Again your speed must be at least 100 mph to successfully lift off.

TARGETS

These include all bridges, buildings, enemy planes, tanks, anti-aircraft batteries, vehicles, and ships. From time to time some targets will be specially marked as follows:

● Buildings and bridges with flashing red-white bullseye
● Flashing blue enemy planes
● Flashing blue cars
● Red ships

These are primary targets and a certain number must be destroyed in order to gain entry to the next level.

STRAFING

Air-to-ground strafing can be accomplished by reducing your altitude to 21-25 feet, (the command bar will show a steady brown color) and pressing your fire button. Left and right movement will improve strafing results. Attempting to bomb will most likely cause a crash.

BOMBING

Bombing is accomplished by pressing the fire button and pulling back on the joystick. You will descend during a bombing run, so be sure that your aircraft is high enough.

LANDING

When a friendly runway approaches, a tone will be heard and a green "R" will appear on the command bar. Press the fire button to lower the landing gear, and the "R" will change to "L". When you are over the runway, descend and land. Repair work will begin automatically and you can watch progress on your command bar. If you wish to abort the repair work, press the fire button. As with all takeoffs, your speed must reach 100 mph before liftoff.

CONTROL DISPLAY

F = Fuel left   B = Bombs left   ALT = Altitude
SPD = Speed
W = Wind Factor   P = enemy plane approaching
Red asterisk (top of command bar) = Enemy plane above
Runway "R" or Land gear "L" flashing = Must land (enemy city approaching).

DAMAGE DISPLAY

Anti-aircraft fire as well as enemy planes can damage your aircraft. When hit, the command bar runs red briefly. Damage is shown along the top right of the command bar as follows:

F = Fuel leak   B = Bomb gear damaged (intermittent bombing)
M = Decreased maneuverability
G = Machine gun damage (intermittent firing)

When all the above are lit, the next anti-aircraft hit causes a crash.

COMMAND BAR COLORS

Red = hit by enemy gun or anti-aircraft.
Blue = at same altitude as enemy plane – can now be destroyed.
Brown = strafing altitude.
Flashing Yellow = flying too low – a crash is imminent!
Flashing Green = mission complete!! – and land and receive award.

OPTIONS

Press (OPTION or F3) for option menu. Press (OPTION or F3) again to move the asterisk to your choice. Press (SELECT or F5) to change your selection, and (START or F7) to start the game.

Normal CTRL = push joystick forward to climb, back to descend.
Reverse CTRL = pull back to climb, push forward to descend.
Gravity = plane will drop when joystick is released.
No Gravity = plane will not drop when joystick is released.

PAUSE

Press the space bar to pause the game. There is no time penalty for pausing the game.

Even tough the game is lacking in affordance there is one expect to be appreciated which is the direct change and flashing in different colours of the UI each colour meaning a different thing.

These colours are:

Red	Whole screen turns red when player aircraft is damaged.
Blue	This indicates when the player is at the same altitude as the enemy plane.
Brown	When the player is at the altitude where their guns can shoot the enemy ground assets.
Yellow (Flashing)	The player is too close to the ground.
Green (Flashing)	Mission Complete.

End Game Scenario:

There also exists an end game scenario which involves the player aircraft to assault an enemy city where flak is going to be very heavy yet thankfully just before and after the mission are there are airfields. In this scenario the player has to destroy white building which are enemy headquarters. There are three to destroy only after that the endgame is reached.