# MICRO MART

# USERS MANUAL



### LOADING INSTRUCTIONS

Please follow the loading instruction in your Computer Manual.

- Connect the ear socket of the Spectrum to the ear socket of your cassette recorder.
- 2. Make sure that the tape is wound to the beginning.
- 3. Set the volume control to a suitable level.
- 4. Set maximum treble, minimum bass on the tone controls.
- 5. Type LOAD ""
- 6. Press ENTER.
- 7. Start the cassette recorder.
- 8. The program will RUN itself once loaded and will provide instructions.

If the program does not load correctly try a different volume level.

### BACKGROUND

The game realistically simulates the attack profile of a "strike attack" aircraft en route to its target.

As "pilot" of the strike-attack aircraft you will be presented with all the information that you would have obtained either by instrumentation or by visual means, including information of imminent attack. It is then up to you to manoeuvre your aircraft on a basis of priority to:-

- a. Stay alive b. Achieve your task
- c. Negate the threats

### THE SCENE

You are flying at 10000 feet, 90% rpm (revs. per minute – throttle setting), 400 knots, heading  $090^{\circ}$ . The target will be set up at random in one of 3 relative positions, at a range of 70 nm.

# PLEASE READ THIS MANUAL IF YOU VALUE YOUR LIFE AND IF YOU VALUE YOUR COMMISSION.

### **TYPE OF THREAT**

Within 50nm of the target, no enemy fighters will be allowed, so the only threat is from the ground forces. You will be attacked at random by Anti-Aircraft Artillery (AAA or Triple A) or Surface-to-Air Missiles (SAMs). (You're in the MEZ) see fig. 1.

Beyond 50nm you will be attacked only by fighters. (You're in the FEZ) see fig. 1.

a. AAA At random, the attack will come from 11 o/clock, 12 o/clock or 1 o/clock.

# M E Z = MISSILE ENGAGEMENT ZONE FEZ = FIGHTER ENGAGEMENT ZONE





b. SAM At random, the attack will come from 11 o/clock, 12 o/clock or 1 o/clock. If the attack is from 12 o/clock then a missile will also be fired and a message of "Missile In the Air" will be displayed. If your height is ≥,8000 ft then you will get a missile fired from 11 o/clock and 1 o/clock also, otherwise there is a 20% chance of a missile being fired from an 11 o/clock or 1 o/clock attack.

c. FIGHTERS Again at random, the attack will come from 7 o/clock, 6 o/clock or 5 o/clock. If the attack is from 6 o/clock then a missile will also be fired at you with a caption "MISSILE IN THE AIR" being displayed. There is a 20% chance of a missile in the air call if the attack is from 7 o/clock or 5 o/clock.

### TERMINOLOGY:

a. CLOCK CODE: Consider the nose of your aircraft to be the 12 o/clock position on the clock face. All positions called are horizontally relative to the clock face. Therefore, 5 o/clock, for example, is behind and right. See fig. 2. 12



- b. PHRASEOLOGY: All phrases used, with the exception of witty comments, are exactly as those used by Royal Air Force and other NATO air forces' fighter crews. The meaning of some of the words are as follows: --
  - (1) TALLY "You are in visual contact with an enemy fighter.
  - (2) SINGLETON -- One fighter on its own.
  - (3) BREAK a hard turn at 4G or 6G.
  - (4) G The force of gravity (4 times or 6 times)
  - (5) STEADY Roll wings level and stop turning
  - (6) MISSILE-IN-THE-AIR A missile is being fired at you.
  - (7) Fpm feet per minute rate of climb or descent.
  - (8) Ft feet
  - (9) K Knots nautical miles per hour.
  - (10) HEADING The compass direction of movement of your aircraft.
  - (11) PORT Left
  - (12) STARBOARD Right
  - (13) RANGE (RNG) Distance to go to the target.
  - (14) BEARING (BRG) Compass direction of the target.
  - (15) A/B After burner Burning of fuel and unburnt gasses at engine exhaust to double the thrust.

### THE COMMANDS AND FUNCTIONS

- DOWN Letter N decrease the rate of climb/descent by 1 unit. i.e. it will reduce the setting by one unit. Then same as above.
- c. BANK RIGHT ] increase the bank setting starboard by 1 and then maintain the new setting.
- d. BANK LEFT Has above but port

The settings are as follows:

90° port;  $45^{\circ}$  port; level;  $45^{\circ}$  starboard; 90° starboard Hdg changes --9° --5° ذ + 5° + 9° per cycle

e. 4G BREAK POR	4G BREAK PORT – S					
Bank / Hdg Change per cycle Speed Sp 7/ 450 Changes Sp 7/ 350/ /450 per Sp 7/ 350 cycle	90 <sup>0</sup> port 15 <sup>0</sup> 8kts 12 k 15 k					



### g. THROTTLES UP – Q

Increases throttle setting by 1 unit providing Q/Z not selected during preceeding 3 cycles.  $- \max = "Full A/B" = Full after$ burner.

EFFECT: Fuel flow increases immediately.

Speed increases after 3 cycles. (see Fig 3)

h. THROTTLES DOWN – Z

Decreases throttle setting by 1 unit provided Z/Q not selected during preceeding 3 cycles. -min = 80% rpm.

EFFECT: Full flow decreases immediately.

Speed decreases after 3 cycles (See fig. 3)

	Throttle %	80	85	90	95	100	A/B
Fig. 3	Speed K	300	350	400	450	500	550
	Fuel Flow lb/min	60	70	80	90	100	200

AIRBREAK NOUT V

İ. Operation of Airbreak reverses the previous setting of the airbreak - either in to out or out to in.

EFFECT: OUT: Speed reduces by 5 kts per cycle

Height reduces by 20ft per cycle

IN: Nil effect.

BOMBS AWAY TRIGGER В k.

Releases the weapons carried, and then works out a score related to height, heading/bearing, speed, range, bank, and rate of climb or descent.

Ideal release point:

210 ft. - height 500 kts – speed 600 vds - release range 0° difference between heading & bearing 0 Bank

0 fpm rcds (rate of climb and descent)

NOTE: – If the heading is < 60 or > 120 or the bearing is< 50 or > 130 then there will be "no score"

\*\*NOTE: If bombs dropped at range > 3 nm then NO-SCORE

CHANCES OF BEING ATTACKED.

Cannot be attacked when range  $\leq 5$  nm. a.

- b. If height  $\geq$  8000 ft. then 40%
- If height  $\geq$  2000 ft. but < 8000 then 20% c.
- If height < 2000 ft. then 10% d.

1. STEADY - Y

Reduces any break or bank to zero or wing-level flight while maintaining the rate of climb or descent. Also instantly restores the speed to the given throttle setting (after loss or gain of speed from breaks or rcds.)

m. RIGHT  $2^{\circ} - 0$ EFFECT --- No Bank No Speed Change, Just 1 x heading change of  $+ 2^{\circ}$  (right)  $LEFT 2^{\circ} - R$ n.

As above but -- 2° (left)

### HOW TO DEFEAT AN ATTACK

### Fighter Attack

### a. <u>5 o/Clock</u>

You must 4G-Break starboard within 2 cycles, then continue to break until "Evasion Successful". If missile fired then you must increase break to 6G Starboard within 3 cycles. If speed falls to less than 300k after 6 cycles of start of attack then you will be killed. (Note and subsequent cycles after 6).

### b. <u>6 q/Clock</u> – MISSILE-IN-THE-AIR

You must 6G-Break port or starboard within 2 cycles and continue to break 6G until "Evasion Successful". If speed < 300 k after 6 cycles of start of attack you will be killed. (NOTE: & subsequent cycles)

c. <u>7 o/clock</u>

You must 4 G Break Port within 2 cycles and continue to break until "Evasion Successful". If missile fired then you must increase the break to 6G Port within 3 cycles. If speed drops below 300 k within 6 cycles of start of attack then you will be killed (NOTE: & subsequent cycles)

All three attacks will be completed after 8 cycles.

<u>AAA (Triple A) Attack</u>: If height / 8000 ft then no threat - continue to target.

a. <u>11</u>0/<u>Clock</u>

You must break starboard (4G) within 2 cycles and maintain until attack complete.

b. <u>12</u> o/<u>cloc</u>k

You must break 4G port or starboard within 2 cycles and maintain until attack complete.

c. <u>1 o/Clock</u>

You must break post (4G) within 2 cycles and maintain until attack complete.

### Further requirements

If Height 2000ft then a height change from the beginning of attack, of 700 ft. min is required by Cycle 6 and subsequent cycles. If height  $\leq 2000$  ft. then a height change of 250 ft. min is required.

Note: If speed -500k then no height changes are required.

# SAM ATTACK

a. <u>11 o/clock</u>

You must 4 G Break starboard within 2 cycles and maintain until complete.

If missile fired then you must increase the break to 6G-Starboard within 3 cycles of missile.

b. 12 o/clock — Missile in the Air

You must break 6G Port or Starboard within 2 cycles and maintain until attack completed.

c. <u>1 o/clock</u>

As (a) but PORT

<u>NOTE</u> that if height  $\geq$  8000 ft then missile fired on initial attack on 11 o/clock and 1 o/clock as well.

FURTHER REQUIREMENTS:

If speed falls below 350 k after 6 cycles and subsequent cycles then you will be killed.

Attack will be completed after 7 cycles.

# NOTE HOW TO INTERPRET THE DATA

If Hdg is less than Bearing then you need to come starboard to make the Hdg = Bearing. However if Bearing is greater than 090 then you have to come further starboard to cut down the "displacement" (based on a datum heading of  $090^{\circ}$ ) See fig. 4

# FURTHER TECHNICAL NOTES

There are 2000 yds in a nautical mile. Therefore when range = .3nm then range = 600 yds. (Range = 3nm - = 6000 yards)

### RWR stands for Radar Warning Receiver

This is an instrument that warns a modern STRIKE-ATTACK aircraft's crew of a ground or airborne radar that is illuminating their own aircraft. Nowadays most ground-to-air launched weapons (including AAA) are radar directed, and so are most air-to-air weapons. The RWR adds an element of genuine realism in an air-combat world in which technological advances play an ever increasing role.

