COSMI

SUPER **HUEY II**

Created by Paul Norman

IBM® PC /TANDY®
AND COMPATIBLES
—MINIMUM 256K—
Supports CGA (4 colors) and
EGA (16 colors).

HELICOPTER FLIGHT SIMULATOR
- COMBAT
- POW MISSION
- GULF OF TERROR
- BERMUDA TRIANGLE
- ARCTIC RESCUE
- OIL BLAZE

COSMI
Tomorrow's Reality...Today

by Paul Norman
IBM Conversion by
Ron Paludan

LOADING INSTRUCTIONS:

1. Insert your DOS disk in Drive A, close drive door and turn on computer. After DOS is loaded, remove DOS disk.

2. Insert Super Huey II disk in drive A with label facing up. Close drive door.

3. At the A> prompt type:
   SH2 and press ENTER key.

4. You will be asked if you have a joystick. Answer "Y" for yes or "N" for no.

5. Select graphics mode that your computer uses.

6. Select mission from menu

CHANGING MISSIONS, QUITTING, AND PAUSING

To quit playing and exit to DOS, press the ESC key. You will be asked if you are sure. Answer "Y" for yes or "N" for no.

To quit a mission. Press the ALT key and while holding it down, press the "N" key. The mission will end and the SELECT MISSION menu will appear.

To pause the program during a mission, press the ALT key and while holding it down, press the "P" key. The game will freeze until another key is pressed.

SUPER HUEY CONTROLS

Start the engine and turn on electrical systems with the backslash key "\". Accelerate the engine with the F8 key to between 500 and 600 RPM. If necessary, decelerate with the F10 key. The rotor will automatically engage and the rotor RPM will slowly rise to match the engine speed (at a 1 to 10 ratio).

Accelerate (F8) to around 2000 RPM and let the rotor catch up, then accelerate to 3000-3500 RPM and wait for the rotor. These steps are taken to avoid too great a difference between engine and rotor RPM that could increase rotor wear.

To take off, raise the pitch (F7) and monitor the level on the LCD (38). At a point above equilibrium, which is determined by the rotor RPM, the helicopter will lift at a rate based on the level of pitch; the higher the pitch level, the faster it will lift. Monitor the altitude at the altimeter (45). Now lower pitch (F9) and the rate of lift will slow until it stops at a hover. This is the point of equilibrium. If the pitch level falls below this point, the craft will begin to descend at a rate that increases as pitch level is lowered. The actual rate of lift or descent is displayed on the VSI readout (36), in positive (lift) or negative (descent) values. To move the helicopter horizontally, push the joystick forward a slight amount. The speedometer (44) will start to increment, the altitude indicator (37) will rise above the horizon line and, if the altitude was steady, it will begin to fall. This is because as the joystick (which is the cyclic control) is moved forward, it tilts the rotor in the same direction. This transfers some of the lifting power to forward acceleration. Therefore, it affects the system in the same way as if the pitch was lowered proportionately.

If you are not using a joystick, the arrow (cursor) keys on the numeric keypad may be used instead. The left and right arrow keys roll the helicopter left and right respectively. The up and down arrows pitch the helicopter forward and backward.

To return to level flight at the established speed, increase pitch (F7). The more speed required, the greater the pitch level will need to be. However, at any pitch level, the cyclic control will transfer that power to forward motion. So that at full forward stick, the craft will always descend. To achieve the fastest level flight, raise pitch (F7) to full (38) and push the stick forward until the helicopter starts rising and pull back a bit if it starts to fall. The forward speed will also depend on the engine RPM. Therefore, an increase in acceleration (F8) will increase both speed and lift and the pitch and cyclic controls will need to be adjusted.

To turn the helicopter, there are two general methods. The most direct and quickest is to push the joystick (cyclic) in the direction of the turn. The second method is to change the pitch of the tail rotor using the anti-torque controls the '<' and '>' keys. The LCD (46) shows a line across the center when the torque caused by the main rotor is compensated for by the pitch of the tail rotor. Normally, this control is internally automatic, keeping steady with any rotor RPM changes. When the pitch is manually altered, the LCD (45) will indicate the change in under-or-over-compensation, which will result in turning the craft left or right at a rate determined by the degree of change. Any manual change will need to be manually corrected to stop the turning by taking the opposite action.

Given this control system, the suggested method of operation is to bring the helicopter to the desired altitude (51) and speed (52) and then fly the craft with the stick almost exclusively. Changes in altitude can be accomplished by moving the stick forward or back and turns done with the other directions.

The console displays dedicated to aircraft control are the engine (37) and rotor (38) RPM gauges, the altimeter (51), the speedometer (52), the compass (39), the altitude indicator (51), the pitch (45), tail-rotor (46), manifold pressure (47), LCD indicators and the VSI (44). The RPM and AVI (altitude/velocity indicator) systems have both slide gauge and digital readouts. All have warning lights on each side to indicate excessively low or high levels. The digital compass shows in degrees (000-360), the actual geographic heading of the helicopter with 000 being true north.

The altitude indicator (44), or artifical horizon, displays the deviation of the craft from the horizontal, or level, flight. For example, when moving forward, the nose dips down and the A.I. rises. When slowing, the nose comes up and the A.I. moves down. The helicopter should be level when landing. the four lights to the right of the A.I. are a graphic representation of horizontal displacement.

The manifold pressure LCD (47) displays the power demands put on the engine. If the engine or rotor system is damaged, for example, it could put excessive strain on the engine, driving up manifold pressure.

WARNING: At very high levels, the engine will automatically shut down to prevent rupture. The vertical speed indicator shows digitally the rate of lift (+) or descent (–). A safe landing should be made at the smallest possible negative rate.

Differences between a real cyclic control and joysticks should be noted. To reach a level of change with a cyclic, one would push it in a direction and hold it at the desired angle. Since the joystick is merely an on and off switch, to hold it "on" is to continue to change. Therefore, when using the joystick as a cyclic, hold it in the desired direction until the desired change had been achieved, and then release it.

CAPABILITIES

The UH2X is equipped with five types of weapons which are activated by pressing the proper function key (F1 to F5) and launched by pressing the joystick fire button or the space key. Only one weapon system can be active at a time. The ammunition supply is counted down while firing on the digital display. Two lights on the left of each weapons dislay indicate problems: either a low ammo supply (2) or a firing malfunction (5). Weapons can be reloaded only at a base. To load weapons, activate it with its function key and press the 'L' key.

Laser Guided Missiles:

The UH2X Super Huey is equipped with an advanced Target Recognition Computer (TRC). When activated with the TAB key, the TRC will identify potential targets automatically and project an aiming box on the pilot's helmet visor. To launch a missile at that target, the pilot only needs to activate a laser guided weapon (either ATA or TOW missiles) and press the fire button. As long as the TRC is active, the missile will automatically steer itself to the target.

The TRC display is in the lower right part of the cockpit, left of the ground radar. There are three lights: left (62) is the TRC active light which is switched on and off with the TAB key, center (63) is the target LOCK ON indicator which comes on if a potential target is identified, right is malfunction light (64). Above these three lights the range in miles to a locked on target is displayed (61). A small black box will appear at the aiming point (65). The optics for the TRC are located in the nose of the UH2X, therefore, only targets in front of you can be locked on. To change targets, press the second joystick button or the '/' key and the TRC will switch to a different target if any are visible. If a guided missile (ATA or TOW) is launched without the TRC being active, the missile will fly straight ahead and perform like an unguided missile.

WARNING: The TRC simply identifies 'unnatural' structures—buildings, tanks, planes, etc. that match a database of potential targets. It does not recognize whether an object is friend or foe, so think before you shoot.

The Air-To-Air Missiles (ATA) are activated by F1 key and launched with the fire button. The UH2X carries a maximum of 4 Air-To-Air missiles.

The Air-To-Ground Missiles (TOW) are activated by F3 key and launched with the fire button. The UH2X carries a maximum of 8 TOWs.

Unguided Weapons:

Unguided weapons do not automatically steer to target and do not use the TRC. They simply fly straight ahead until they either hit something or the ground.

'RKT' is a 2.75-inch rocket launcher which is activated by F5 key and fired with the fire button. These are unguided folding fin rockets (FFAR). The UH2X can carry two 19-shot rocket pods for a total of 38 rockets.

The UH2X carries two 9MM machine guns that hold 2000 rounds each. The guns are activated by the F2 function key and fired by fire button.

The 'M75' is a 40MM grenade launcher which is activated by F4 key and fired with the fire button. The UH2X carries up to 300 rounds.

The UH2X also carries a CO2 tank for fire control capability. The tank release is set by the F6 key and the CO2 is released with the fire button space bar. A digital counter (18) displays the PSI Level and the lights indicate low levels or malfunction. The tank can be refilled only at base.

An air radar screen (57) automatically activates when an airborne object comes into range. The center of the screen represents the location of the UH2X and the bottom half is in back of it.

To the right of the air radar screen there is an enemy missile warning light (60). If the UH2X has been locked on by an enemy laser guided missile, this light will come on and the direction of the missile will be displayed above (59). In order to avoid being hit, you can maneuver erratically or hide near a cloud, mountain or other structure. Another tactic is to fire your guns at direction of the laser source in order to distract or kill the missile's controller. If he flinches, especially in the last seconds, he may cause the missile to miss.

Below the computer screen is a digital clock (42) that runs in real time.

NAVIGATION

The area available for flight is 16400 square miles (128 miles to a side). The main base is at the exact center (Plot 00,00), and there are four secondary bases approximately 28 miles NE, NW, SW and SE of the main base. Each base is equipped for refueling, reloading and repair.

An odometer (53) displays miles traveled and current direction from the main base.

The navigation system can be tuned to three types of incoming signals with the tuning buttons "=" and "-". On initial start-up, the days' VOR frequency is established and is transmitted from the main Base only. Tuning through a range 000-100, a reception indicator will light at the proper frequency. The homing frequency is set each time the "H" key is pressed. The rescue frequency is established by the sender. All three signals can be transmitted simultaneously, but only one can be tuned to.

The ground radar (58) is activated when the navigation system is tuned to an incoming signal. Each type of signal source is displayed on the grid if the appropriate key is pressed; Base '1', HOM '2', and Rescue '3'. The compass heading to the source is displayed at three digital readouts: Base (39), HOM (40) and Rescue (41).

Each square in the ground radar grid represents eight miles. When at the source of transmission, the center of the grid represents the position of the UH2X. The top half is north, the lower half south. Right is east and left is west.

A wind speed and direction display (54) allows for course correction due to deviations caused by the wind. For example, if the wind speed is 10 miles an hour from the west and the UH2X is flying due north, then the actual course is shifted to the Northwest by ten miles an hour.

Navigation in use might proceed as follows:

The UH2X takes off and flies due north, compass heading 000. The VOR navigation signal is initially set to the main Base which is the take-off point. Tune to the proper frequency using the "–" or "=" keys. The reception indicator will light up. The odometer (53) will soon show one mile. Continue flying north. When the odometer reaches eight miles, the blip will move one square.

The Base return heading is digitally displayed (41) and should read between 130 and 140

COMPUTER FUNCTIONS

The computer (56) displays various operations and messages and accepts command from the keyboard.

STATUS COMMANDS

KEY	—	REPORTS
P	—	Display current position in mileage coordinates such as 10 miles north/25 miles east.
N	—	Reports which navigation signal is currently tracked on the ground radar.
F	—	Reports exact fuel supply.
I	—	Reports location of fire hazards.
S	—	Reports mission status.

FUNCTION COMMANDS

KEY	—	REPORTS
H	—	Set a homing device. This establishes a new frequency and cancels transmission of any previous homing signals.
T	—	Displays a thermal radar image to center in on hot spots at fire locations for CO2 release.
L	—	Reload active weapon. Only at Base.
BKSPC	—	Clear computer screen.

MALFUNCTION CHARACTERISTICS

1. Oil Line breaks will increase temperature until engine shut-down.

2. Transmission problems will affect rotor operation.

3. Rotor wear can occur with excessive power or large differences in engine and rotor RPM as well as combat damage. Will increase manifold pressure.

4. Compression problems will reduce engine power, lift and speed.

5. Tail rotor wear or damage will result in control problems.

6. Coolant leaks will raise temperature.

7. Torque stabilizer damage will cause control problems.

8. Pitch controls and linkage damage will seriously disable flight controls.

9. Engine turbine problems will affect power and could cause failure.

10. Manifold ruptures will seriously affect power and performance and could cause the engine to explode.

11. Electrical problems can disable various console displays, navigation and the computer.

Malfunctions can occur in many ways and cause various problems from disabled displays to complete destruction. If in combat, for example, being hit may not destroy the UH2X but will cause some damage. This can accumulate to a point of destruction or inability to control the aircraft.

MISSIONS

1. RENEGADE

A UH1X helicopter has been stolen by a madman who threatens to destroy all the bases in the area. Only the UH2X has a chance to stop him. As a challenge, he has sent a message saying he will follow a square course from base to base and will save the main base for last. However, he has not said which direction he will be traveling in. Try to intercept him. Unfortunately, that gets easier as more bases are destroyed. Keep in mind that the UH1X is armed with machine guns and missiles also.

2. P.O.W. Rescue

American P.O.W.s are being held at a small camp north of your secret base. Your mission is to neutralize the camp's guards and land long enough for the prisoners to reach and board the UH2X. Extreme care must be taken when attacking the camp—indiscriminate firing could kill the personnel that you're trying to rescue. Time is critical, enemy reinforcements are on the way!

3. GULF OF TERROR

You are on carrier duty in the Mediterranean. Your job is reconnaissance of shipping in the area and to report on possible terrorist activities. There are gunboats and submarines patrolling all along the shore and hostilities could flare at any time. It is inadvisable to fire on unprovocative vessels, but you are free to defend yourself if necessary.

4. OIL FIRE

While in the Mediterranean area, an American Oil Drilling Operation has come under attack by hostile intruders. The rigging has been set ablaze and American working crews are in jeopardy. The UH2X, with its fire fighting, defense and rescue abilities, has the best chance of dealing with the situation. Use the Fire command ('I' key) to locate the burning oil rig. Good luck! We're all counting on you.

5. BERMUDA TRIANGLE

The hurricane season has come to the Florida region. The UH2X is assigned to weather reconnaissance in the infamous Bermuda Triangle, and no other information is available, because no one really knows what will happen in "the Devil's Triangle."

6. ANTARCTIC RESCUE

At a Scientific Station near the Pole, the UH2X encounters some of the most severe conditions for flying possible. Researchers may be lost in a blizzard, or fall into constantly moving crevices in the ice, or other helicopters may go down in gale force winds. Flying near the Pole will affect the compass operations. Of course, nothing at all can happen, too, but don't count on it.

In all scenarios, the main base and the four secondary bases are located at the same coordinates, although in the Gulf of Terror, they are carriers instead of bases, and in the Bermuda Triangle, they are located on islands. Various messages and displays will aid you in your assignments, but the pilot is under no obligation to perform his or her duties in any prescribed manner.

CONSOLE CONTROLS

KEY(s)	FUNCTION
F1	ATA missile on/off switch
F2	9MM machine guns on/off switch
F3	TOW missile on/off switch
F4	M75 grenade launcher on/off switch
F5	FFAR rockets on/off switch
F6	CO2 on/off switch
F7	Pitch level UP control
F9	Pitch level down control
F8	Engine Accelerator
F10	Engine Decelerator
SPACE	Fire Weapon or CO2
TAB	Target Recognition Computer (TRC) on/off switch
/	Change TRC Target
1	Base VOR on ground radar
2	Homing signal on ground radar
3	Rescue signal on ground radar
- =	Radio frequency tuner
< >	Tail rotor control

UH2X SUPER HUEY
SPECIFICATIONS

PERFORMANCE	English	Metric
High speed (SL)	Classified	Classified
Cruise speed (SL)	150 kts.	278 km./hr.
Maximum rate of climb		
(25,000 lb. payload)	2,500 fpm	12.7 m/sec.
Engines:	(3) T64-GE-416	
Rating:		
Maximum (10 min.)	4,380 SHP	4,380 SHP
Total (SHP)	13,140 SHP	13,140 SHP
Main transmission rating	13,140 SHP	13,140 SHP

WEIGHTS

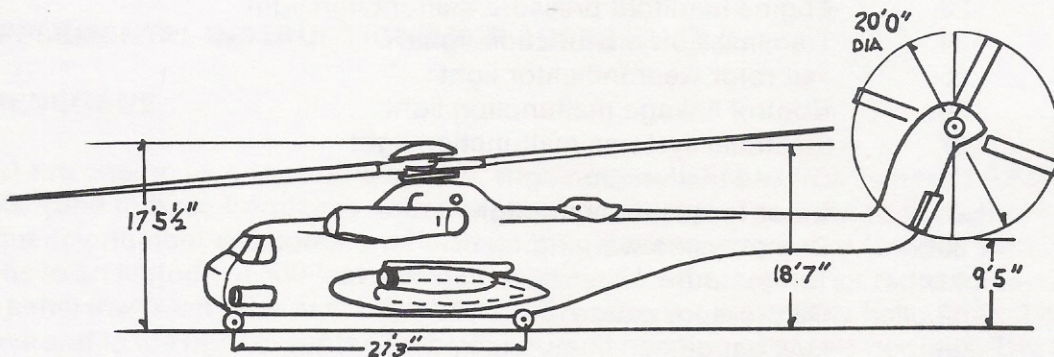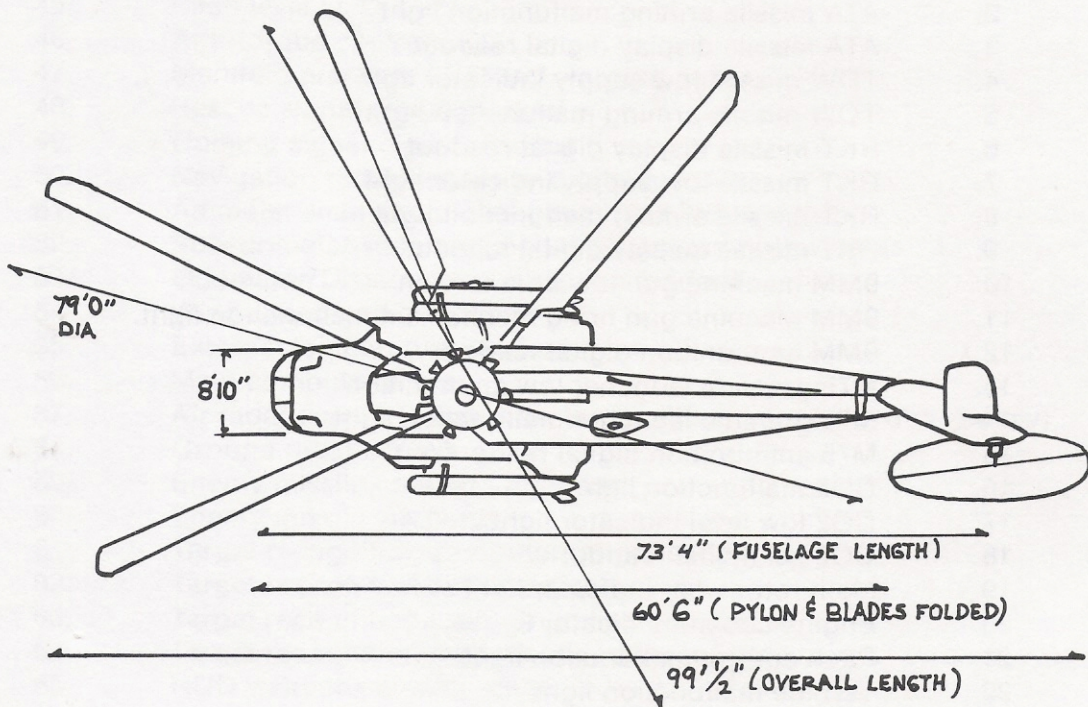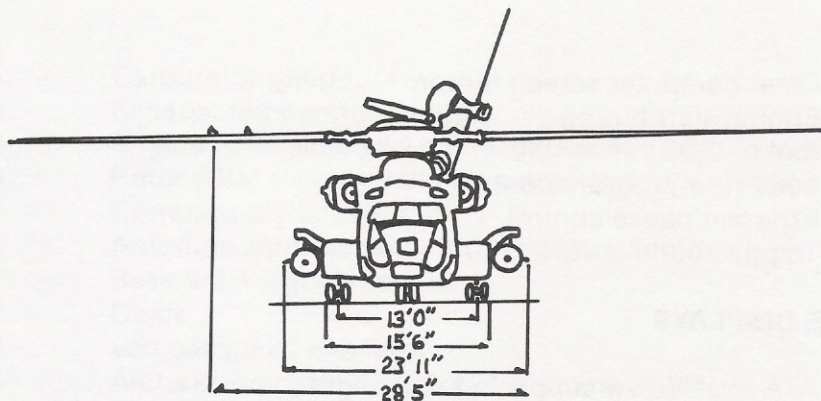|		
Maximum gross weight, external	73,500 lbs.	33,339 kg
Maximum gross weight, internal	69,750 lbs.	31,631 kg
Weight empty	33,226 lbs.	15,071 kg
Basic mission payload	32,000 lbs.	14,512 kg

DIMENSIONS

Overall length (spread/folded)	99'1½"/60' 6"	30.18 m/18.44 m
Overall height (spread/folded)	28'4"/18'7"	8.64 m/5.66 m
Overall width (folded)	28'5"	8.66 m
Main rotor diameter	79'0"	24.07 m
Tail rotor diameter	20'0"	6.10 m
Internal:		
Cabin length	30'0"	9.14 m
Cabin width	7'6"	2.29 m
Cabin height	6'6"	1.98 m
Seating capacity:		
Crew	3	3
Troops	55	55

WEAPONS SYSTEMS

Laser Guided Missiles		
Air-To-Air	(4)	(ATA)
Air-To-Ground	(8)	(TOW)
Unguided Weapons		
2-2.75" Rocket Launcher	(38)	(FFAR)
2-9mm Machine Guns	(4000)	(MG9)
1-40mm Grenade Launcher	(300)	(M75)
CO_2 Fire Control System		(CO_2)

ELECTRONIC COUNTER-MEASURE SYSTEMS

Target Recognition Computer	(TRC)
Air Radar System	(ARS)
Enemy Missile "Lock-On" Warning System	(EMW)
Heads Up "Aiming" Display	(HUD)
Ground Radar Display	(GRD)

13'0"
15'6"
23'11"
28'5"

79'0" DIA

8'10"

73'4" (FUSELAGE LENGTH)

60'6" (PYLON & BLADES FOLDED)

99'½" (OVERALL LENGTH)

20'0" DIA

17'5½"

18'7"

9'5"

27'3"

BKS	Clear computer screen button
\	Engine start button
ESC	Exit to DOS
alt + N	Load new program control
alt + P	Program pause control
alt + S	Toggle sound on/off

CONSOLE DISPLAYS

1. ATA missile low supply indicator light
2. ATA missile arming malfunction light
3. ATA missile display digital readout
4. TOW missile low supply indicator light
5. TOW missile arming malfunction light
6. RKT missile display digital readout
7. RKT missile low supply indicator light
8. RKT missile arming malfunction light
9. RKT missile display digital readout
10. 9MM machine gun low ammunition
11. 9MM machine gun firing mechanism malfunction light
12. 9MM ammunition digital readout
13. M75 grenade launcher low ammunition
14. M75 grenade launcher malfunction light
15. M75 ammunition digital readout
16. CO_2 malfunction light
17. CO_2 low level indicator light
18. CO_2 psi digital readout
19. Main rotor wear indicator light
20. Engine coolant indicator lights
21. Pitch control malfunction light
22. Turbine malfunction light
23. Engine manifold pressure malfunction light
24. Transmission malfunction light
25. Tail rotor wear indicator light
26. Control linkage malfunction light
27. Electrical systems malfunction light
28. Oil line malfunction light
29. Rotor torque indicator light
30. Compression warning
31. Temperature
32. Oil pressure gauge
33. Fuel gauge
34. Generator gauge

35. Carburetor gauge
36. Exhaust temperature gauge
37. Engine RPM slide and digital gauge and high/low indicator lights
38. Rotor RPM slide and digital gauge and hi/low indicator lights
39. Compass digital readout
40. Automatic course correction digital readout
41. Base VOR digital readout
42. Clock
43. Vertical speed indicator
44. Altitude indicator LCD and correction lights
45. Pitch level LCD
46. Anti-torque control LCD
47. Manifold pressure LCD and warning light
48. Rescue signal digital readout
49. Homing signal digital readout
50. Navigation radio frequency digital readout
51. Altimeter slide and digital gauge and hi/low lights
52. Speedometer slide and digital gauge and hi/low lights
53. Odometer/Distance and direction readout
54. Wind speed and direction
55. External temperature readout
56. Main computer screen
57. Air radar screen (black dot—target above you/white dot—below)
58. Ground radar screen
59. Enemy missile compass direction
60. Enemy missile warning
61. Target recognition computer range readout
62. Target recognition active indicator light
63. Target recognition Lock On indicator light
64. Target recognition malfunctin indicator light
65. HUD weapons aiming point

SUPPLEMENTAL INSTRUCTIONS FOR SUPER HUEY II

I. RENEGADE

Start the engine with the run/stop key. Raise engine RPM to 500. Increase RPM to 3500. Tune in base frequency with the plus-minus keys. The light to the left of the frequency number will come on. Raise pitch to three-quarters and forward with the cyclic to an altitude of 500 feet. Level off with cyclic. Observe the air radar screen on the panel lower left. The dark blip shows the location of the enemy helicopter. If it is above and to the right of center, then your pursuit heading will be 45 degrees. The air radar screen displays the location of the enemy craft relative to the UH2X. That is, if

the blip is in the upper part of the screen, then the target is ahead of you, and if the blip is in the lower half of the screen, then the target is behind you.

The goal of the pursuit is to prevent the enemy helicopter from reaching any other base and destroying it. Until shot down, the enemy will proceed in a regular pattern to each base until finally returning to the main base and destroying it, at which point, you will have no further options. During the course of the battle, if your ship is damaged, you can attempt to reach the nearest base for repair, refueling and rearming.

II. P.O.W. Rescue

Fly low and avoid enemy forces on the way to the prison camp.

The sooner you are detected, the sooner reinforcements will arrive. There is a radio station near the camp; it should be destroyed early to prevent your attack from being reported. in order for prisoners to escape, you must either land in the camp, or destroy part of the fence that surrounds it. The closer you are to the barracks, the more quickly the camp can be evacuated. Press the status key to get a report of number of prisoners loaded (LD:) and killed (KL:). When your computer screen reads "all clear," you are free to return to base.

III. GULF OF TERROR

As a reconnaissance mission in the Mediterranean, your duties are to locate and make note of the positions of ships and submarines in the area. If you should be fired upon, you are at liberty to defend yourself. Some ships are armed with anti-aircraft rockets, and submarines may fire missiles. Ships and submarines are difficult to destroy even with your missiles. It may take several hits. Machine gun fire can be effective but with great difficulty and much ammunition. Pressing the 'S' key will tell you how many ships are in the area. Missiles fire straight out from the nose of the helicopter, therefore, in most cases you will need to dive at your target on the surface of the water. When your computer screen reads "all clear," you are free to return to base. Ships appear as blinking white dots on the air radar screen.

IV. OIL BLAZE

The Oil Drilling Station that has been sabotaged and set ablaze can be located with the fire command. The map coordinates will be given and the burning tower will be located at this point. From the start of the mission, there is an unknown time element before the tower blows up. If you are within sight of the tower when it blows, the shock wave will destroy the helicopter. Therefore, the first priority is to put out the fire. The method is to fly directly over the blazing structure and release CO_2. Several passes may be required. The station is surrounded by terrorist armed vehicles, and these

terrorists will attempt to shoot you down. Naturally, you must fly quite close to the ground in order to combat with these land vehicles. Remember that the fire must be put out as soon as possible. After this is done, the terrorist's forces can be dealt with at will to free the station.
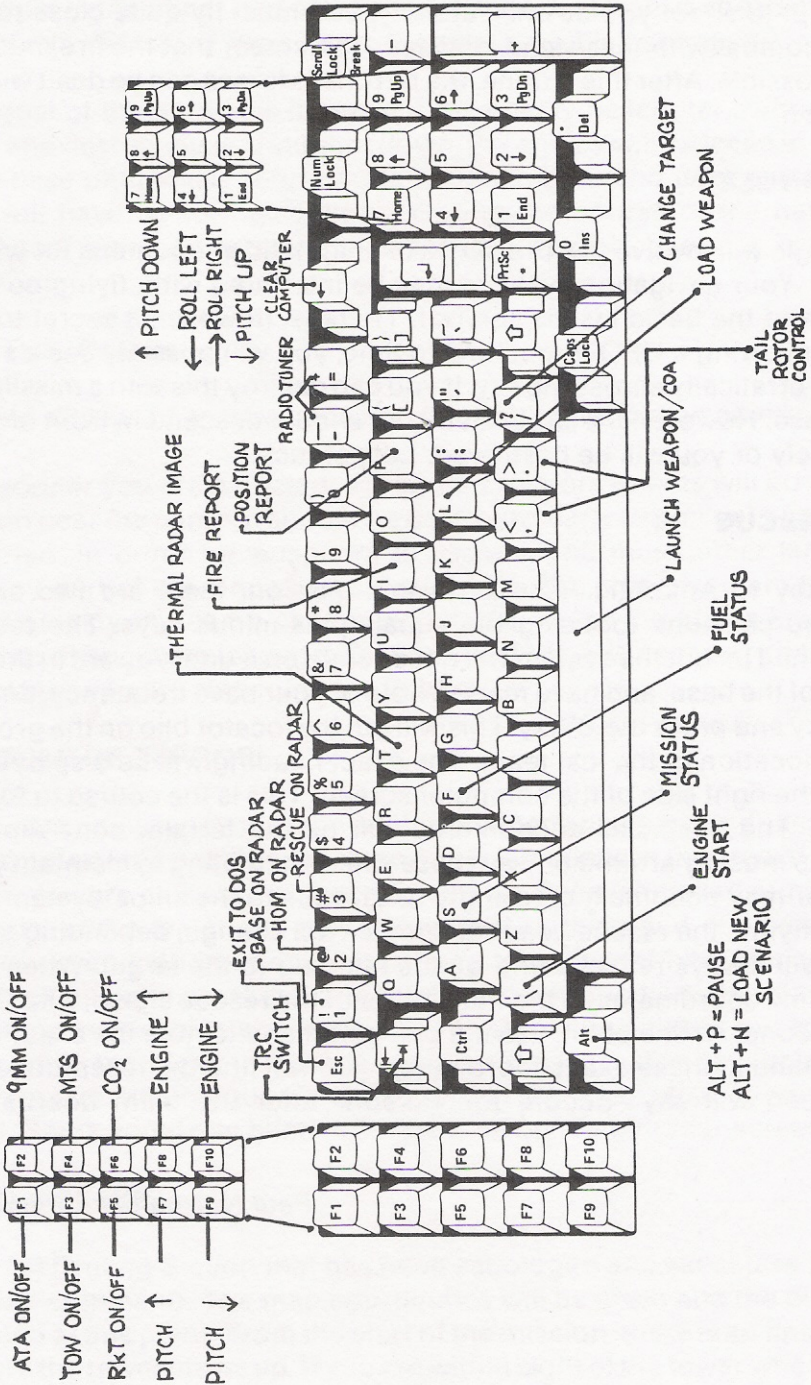
V. BERMUDA TRIANGLE

The Bermuda Triangle will involve you in a series of enigmatic phenomena for which there is no defense. Your navigation systems may be interfered with, flying control can be hampered, and the basic task is survival. There is, however, a secret to the Bermuda Triangle involving a UFO. From time to time, you will possibly see a small octahedron moving erratically across the sky. If you can destroy this with a missile, all phenomena will cease. However, if a large alien craft should descend in front of you, pull away immediately or you will be destroyed. Lots of luck.

VI. ANTARCTIC RESCUE

Navigation is the key to Antarctic Rescue. In this mission, there are two active frequencies that you can tune to, using the equals/plus-minus keys. The rescue frequency can be tuned in, but the system will not operate on it until you are in the air. Once you are clear of the base, and have made a note of your base frequency, tune in the rescue frequency and press the '3' key. This will put the locator blip on the ground radar screen at the location of the lost team. The exact heading will be displayed at the top number on the right side of the computer screen. This is the course to follow to find your target. The obstacles encountered will be the terrain, consisting of mountain peaks. You must fly around or over these while attempting to maintain your course. The weather may become increasingly hazardous to the ships' system and flying ability. While flying, the rescue heading number will change, depending upon your position and will always reflect a line-of-site heading to the target. When you have reached the same coordinates as the transmitter of the rescue signal, a flare will be fired from the ground. At this point, use the plot command to note the exact map coordinates. If you land at these exact coordinates, you will find the research team. The computer screen will say "Secure for Takeoff" after the team boards the helicopter.

Paul Norman/Ron Paludan

IBM SUPER HUEY II KEYBOARD CONTROLS

ATA ON/OFF — F1
TOW ON/OFF — F3
RKT ON/OFF — F5
PITCH ↑ — F7
PITCH → — F9

9MM ON/OFF — F2
MTS ON/OFF — F4
CO_2 ON/OFF — F6
ENGINE ↑ — F8
ENGINE → — F10

↑ PITCH DOWN
← ROLL LEFT
→ ROLL RIGHT
↓ PITCH UP
CLEAR COMPUTER

CHANGE TARGET
LOAD WEAPON
TAIL ROTOR CONTROL

RADIO TUNER
THERMAL RADAR IMAGE
FIRE REPORT
POSITION REPORT
LAUNCH WEAPON/COA
FUEL STATUS
MISSION STATUS
ENGINE START

EXIT TO DOS
BASE ON RADAR
HOM ON RADAR
RESCUE ON RADAR
TRC SWITCH

ALT + P = PAUSE
ALT + N = LOAD NEW SCENARIO

KEY	REPORTS
P	—Displays current position in mileage coordinates.
N	—Reports which navigation signal.
F	—Reports exact fuel supply.
S	—Reports mission status.

KEY	FUNCTION
H	—Set a Homing Device.
T	—Displays a thermal radar image.
L	—Reload active weapon. Only at Base.
BKSPC	—Clear computer screen.

CONSOLE CONTROLS

KEY(s)	FUNCTION
F1	ATA missile on/off switch
F2	9MM machine guns on/off switch
F3	TOW missile on/off switch
F4	M75 grenade launcher on/off switch
F5	FFAR rockets on/off switch
F6	CO_2 on/off switch
F7	Pitch level UP control
F9	Pitch level down control
F8	Engine Accelerator
F10	Engine Decelerator
SPACE	Fire Weapon or CO_2
TAB	Target Recognition Computer (TRC) on/off switch
/	Change TRC Target
1	Base VOR on ground radar
2	Homing signal on ground radar
3	Rescue signal on ground radar
– =	Radio frequency tuner
< >	Tail rotor control
BKS	Clear computer screen button
\	Engine start button
ESC	Exit to DOS
alt + N	Load new program control
alt + P	Program pause control
alt + S	Toggle sound on/off

ATA
TOW
RKT

q MM
M 7 5
O O 2 O

ENG
RPM
ROT

ALT
AVI
SPP

VSI +

ONE
ONN
ODF

10 : 22

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65.
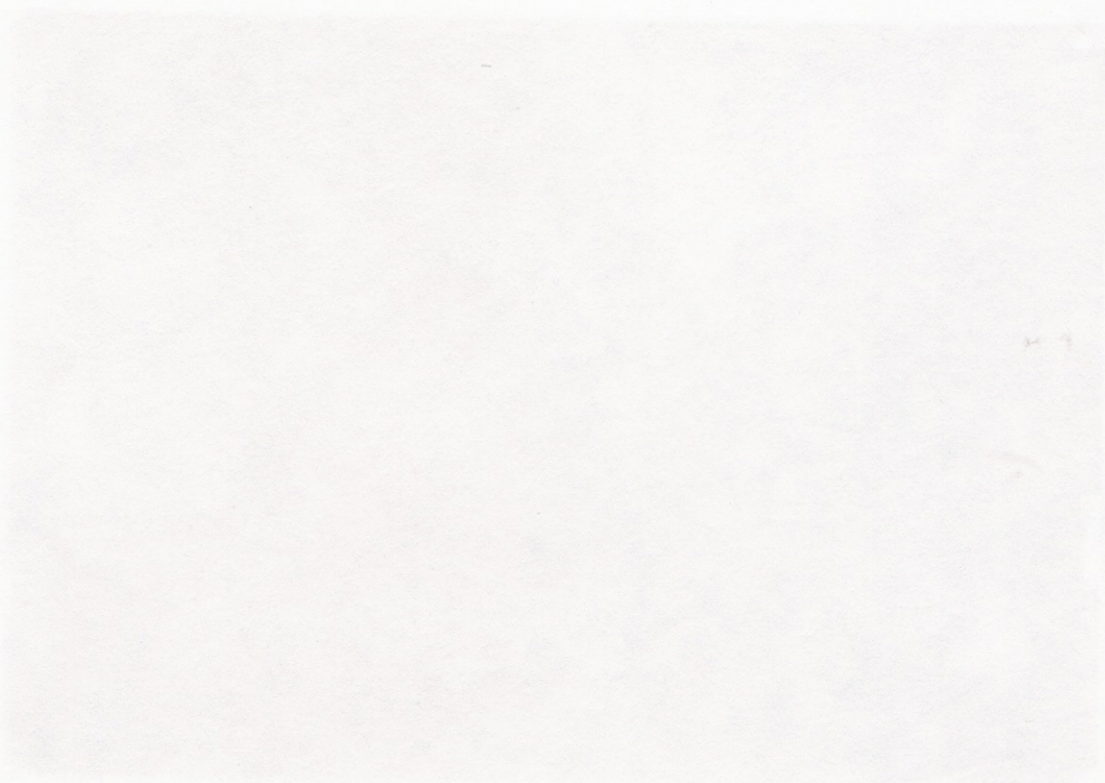
CONSOLE DISPLAYS

1. ATA missile low supply indicator light
2. ATA missile arming malfunction light
3. ATA missile display digital readout
4. TOW missile low supply indicator light
5. TOW missile arming malfunction light
6. RKT missile display digital readout
7. RKT missile low supply indicator light
8. RKT missile arming malfunction light
9. RKT missile display digital readout
10. 9MM machine gun low ammunition
11. 9MM machine gun firing mechanism malfunction light
12. 9MM ammunition digital readout
13. M75 grenade launcher low ammunition
14. M75 grenade launcher malfunction light
15. M75 ammunition digital readout
16. CO2 malfunction light
17. CO2 low level indicator light
18. CO2 psi digital readout
19. Main rotor wear indicator light
20. Engine coolant indicator lights
21. Pitch control malfunction light
22. Turbine malfunction light
23. Engine manifold pressure malfunction light
24. Transmission malfunction light
25. Tail rotor wear indicator light
26. Control linkage malfunction light
27. Electrical systems malfunction light
28. Oil line malfunction light
29. Rotor torque indicator light
30. Compression warning
31. Temperature
32. Oil pressure gauge
33. Fuel gauge
34. Generator gauge
35. Carburetor gauge
36. Exhaust temperature gauge
37. Engine RPM
38. Rotor RPM
39. Compass digital readout
40. Automatic course correction digital readout

41.	Base VOR digital readout
42.	Clock
43.	Vertical speed indicator
44.	Altitude indicator LCD and correction lights
45.	Pitch level LCD
46.	Anti-torque control LCD
47.	Manifold pressure LCD and warning light
48.	Rescue signal digital readout
49.	Homing signal digital readout
50.	Navigation radio frequency digital readout
51.	Altimeter
52.	Speedometer
53.	Odometer/Distance
54.	Wind speed and direction
55.	External temperature readout
56.	Main computer screen
57.	Air radar screen
58.	Ground radar screen
59.	Enemy missile compass direction
60.	Enemy missile warning
61.	Target recognition computer range readout
62.	Target recognition active indicator light
63.	Target recognition Lock On indicator light
64.	Target recognition malfunction indicator light
65.	HUD weapons aiming point