WHEN TWO WORLDS WAR
Impressions Software, Inc.
INSTRUCTIONS v0.09

VERSION CONTROL

Every time I update these instructions or the program I will update the version number. This will keep the program version and instructions in line. I will also add EDNEW to any area of change (addition or amendment) in these instructions. I will delete all EDNEWs before sending a further revision so that changes can be easily spotted. I will keep a list of oustanding development work at the very bottom of the document. Before that will be the development changes that are in the lastest version of the program.

The instructions concentrate on WHAT things are in W2WW and HOW to do things. WHY is very skimpy as is WHEN as is WHERE. These are the questions we need to address along with BACKGROUND explaining the development of the technology and history of the planets concerned.

I apologise that the instructions are quite dry. They are written to give the facts - not for reader pleasure. When Two Worlds War(W2WW) offers tremendous opportunity for the creative writer. All aspects of the rules, including the simplification of planetary motion, allows the writer to produce pseudo-science fiction 'facts' to add color to the new exciting worlds that are being created. W2WW should be treated as a game system when writing the user-guide, not just a one off adventure, but a launch into a new universe of reality.
The player will be able to create a new force with pilots that they know by name, with craft designed and christened by themselves, all fighting for a world where they know every canal, mountain range and lake. And having won this battle they can then transport their world into another system to fight an even more formidable foe! Enough of this, on with the facts!

SETUP

Run Scott's setup program SETUP.EXE. This allows you to define your soundcard and set things such as Card Address and Interrupt Number.

RUNNING THE GAME

Change to the directory you have the game in and type WHEN.EXE to run the game. (To run the Aria Listener Version with speech recognition use WHENARIA.EXE).
If you have 512k or more of EXTENDED MEMORY the sound effects will load into it and this will save hard disk access and slightly speed up the flow of the

game. If you have a 2Mb or more PC using HIMEM.SYS in your CONFIG.SYS will get EXTENDED MEMORY working, however if you use EMM386.SYS to change it all to EXPANDED well there won't be any left!
So why not allow the game some or create a boot disk allowing EXTENDED MEMORY - don't forget your MOUSE DRIVER. If you are unsure as to what memory you've got run MEM.EXE which I think comes with DOS 5.

OVERALL GAME PLAY / OBJECTIVES

The year is 2121. You control the blue planet. The opponent controls the red planet in a battle to the death.

GLOSSARY

BASES - Homes of your squad. New craft are delivered there and supplies are always available. Also where material produced by the facilities is stored.
DIRECT CONTROL - an individual MU under direct movement control of the player.
DROPZONES - Forward bases on the enemy planet used for supply purposes.
FACILITIES - used to describe all manufacturing units. These are immobile and come in four forms:
Sci-Labs - Hi-tech laboratory.
Mines - where raw material is created.
Power Stations - to provide energy for manufacturing and research.
Food Farms - provide supplies for the Military.
They deliver to the nearest active Base.
GROUPS - Each Mission is allocated to a group to enable you to access / retrieve the mission faster.
LIBRARY - a store of 50 missions, which can be allocated to any or all MU. (Several MU can be following the same mission - running the same program?)
MISSIONS - a string of orders (programmed instructions) used by MUs to carry out your wishes.
MU - Military Unit, used to describe all pieces that you can move.
They are grouped into five types, classified by propulsion limitations.
NONE - can't move at all, recon satellites, fortified defences
LAND - Only move on land, tanks. (Facilities are land).
SEA - Only move thru water. The Navy.
AIR - Move over land and sea but not into space.
SPACE - can travel thru space.
OPERATOR - the human player of the game (as in Workstation Operator).
Q+A - simple missions created using a Question and answer technique, ideal for beginners and simple one off commands.
SQUAD - Each base city has it's own squad. Each MU is assigned to a squad. A squad can have any number of MU of any type. Squads can be controlled either by the Operator or switched over to the computer.

STRATEGIC DISPLAY - name for map at top right of main screen showing the complete world or space.
TACTICAL DISPLAY - name for large display on left of main screen.
TECHNOLOGY - Any Mu is defined by the TEN technologies used in it's construction. The player will name each Mu design so if he creates a Stealth Fighter he can call it this. If he creates a ship that can transport Mu's he can call it a Freighter. Each technology(Tech) can be rated from 0 to 10. (0 being it has not got this capability). This rating is called Tech-Level. As in 'the red planet has a higher Tech-Level in radar technology than me'. The Technologies are:

Land Propulsion.
Sea Propulsion.
Flight.
Spaceflight.
Fire power - how powerful in terms of penetration the weapon is.
Range - the effective distance of the weapon.
Targetting - how accurate the weapon is.
Armour(Armor US) - The ability to withstand a hit.
Radar - how far around you, you can see the enemy.
Transport - how many Mu's you can carry at anyone time.

TECHLEVEL - Each Technology is rated between 1 and 10, these ratings are known as Techlevels.
WORLDFORCE is the name given to an entire planet and it's army.
WORKSTATION is the term used to describe the game control system.

The sequence of play:

START-UP - DIFFICULTY & WORLD CREATION
You either let the simulation generate a game for you OR

You design your planets terrain.
You design or have created blind the red planets terrain.
You decide how many facilities you'll start with.
You decide how many facilities the red planet will start with.
You decide the tech levels you'll start with.
You decide the tech levels the red planet will start with.
You decide to generate the starting blue MUs.
You decide to generate the starting red MUs.

BATTLE - THE GAME
Continuous real-time action which stops whenever you do something.
Suggested course of play:
Design Mu's for specific purpose.
Select to build a MU.
Build some more facilities.
Start researching into higher technological capapbilities.
Design programmed missions to

- defend home planet
- explore enemy planet
- transport Mu's to enemy planet
- bomb enemy facilities
- destroy enemy Mu's
- intercept enemy Mu's in Space
- setup safe landing zones (beach-heads) on red planet.

Assign missions to built Mu's.
Use MU under Direct Control for special assignments.
Might alter construction schedule to get what you need quicker.
Monitor performance of Mu's on screen and with stats.
Scrap Mu's of poor performance or damaged and create fresh M's.

END

The winner is the first planet to destroy all of the other planets MU or Facilities (without MU you cannot defend, without Facilities you cammot build or supply MU - which will therefore run out of supplies shortly anyway). However, to give you a chance to build up some form of worldforce, during the first year the game will continue if the 'loser' has facilities left.

SIMULATION MODE

To ease you into the game you can play the game as STOP-GO.
This means that although the main panel and all of it's functions are available the game is paused. When you click on the GO button the play starts and continues until you access a menu (as in the real game) or you click the GO button again. This gives the new OPERATOR a chance to play in real-time at a more controlled pace.

TURN MODE

You can play When as a turn based game. Blue gives all his move commands to his MUs and carries out all the normal duties.
When finished they click on END. Blue MUs are moved, then the red MUs and then combat is resolved. While this is happening if the TRACK MU button is depressed the zoom window will move to show you the action, otherwise the pieces move but you are not shown their progress. Having completed their moves the game then halts and it's your turn to give fresh orders or press END to move again.

This is an ideal mode for beginners who want to examine the game closely or players who prefer TURN BASED games and the lack of time pressure.

NB If game speed is 1, then craft of speed 1 will move a single square per turn. This can be a little slow, so game speed in turn based mode is set at 5 but can

be adjusted to between 1 and 10. At 5 a MU of speed 1 will move 5 squares. In addition, to recreate real-time your craft will move at first 1 square then the red will move 1 square, then blue 1 square until the turn is ended (after 5 squares have been moved by both sides in my example). This removes the cheat you can often do in turn based games - that is if you move first you can swoop in destroy the enemy before they have a chance to counter.

THE SOLAR MAP

Basically there are two planets of the same size, but not necessarily of the same formation, in the solar system. The battle takes place on the two planets and the space in-between them. Each of the three areas (two planets and the space between) is 100 by 100 squares. Space acts as a chess board with two squares designated for the two planets. Location 50(x left to right),20(y up and down) is the blue planet's location, 50,80 is the red's. The planets are also like two chess boards. So a MU travelling into space (say from the blue planet) will transfer to the space area and appear in orbit around the planet (for blue that will be 50,20). If it is travelling to the red planet, it will leave and move towards 50,80. On arrival if entering the planet it will appear on the red planet at a location set by the computer which will depend on when you arrive at the planet.

For player simplicity on any 'board' you cannot wrap-around, go off one side and onto the other.

Each square can hold one facility but any number of Mu.
Terrain-wise it can be either:

- Land
- Ice
- Desert
- Forest
- Mountain range
- Sea

Squares which appear to be made up of two types of terrain hold the attributes of only one of them. It will be the one which is on display the most. You will normally find that the sea dominates over everything and that land sorts out the other conflicts.

GAME CONTROL

To play this game you MUST HAVE A MOUSE. Left mouse single click is the normal way of selecting anything. Hold the right mouse button down if you want to alter numbers without having to repeatedly click the mouse or if you want to drag a viewing box across the screen.

YES OR NO

If you request to do something which is irreversable (like exiting to dos and therefore losing your current game) a YES NO button will appear. Click on YES to proceed with the command you just initiated, or NO to stop it happening.

TEXT EDITING

W2WW allows much customization. When you click on something to change or add text the following will happen. The background of the text field will change to indicate you are now in text input mode. A blinking cursor will show you where text is to be added. The text input works by replacing whatever is above the cursor with whatever you typed. You can use upper and lower case. The cursor will move after each letter until it reaches the end of the text entry field, where it willl stay. You can move the cursor backwards and forwards using the cursor keys. Delete and Backspace work. When finished either press ENTER or click the left mouse button. Insert mode is available.

HOT AREAS

Areas on the screen other than buttons or lists of items that can be clicked on are highlighted by a yellow arrow. The most common use is to indicate what text can be customized by the OPERATOR.

KEYBOARD COMMANDS

On screens with lists of data you can use PAGE UP, PAGE DOWN to move thru the list a page at a time. In addition HOME will take you to the top of the list and END to the bottom.

WORKSTATION

The player has command of his army thru a WORKSTATION specifically designed to handle the tasks needed to control an entire planet's resources during an inter-planetary conflict. Buttons are there to be pressed. Additional screens will slide on and off as you need them.

GAME VERSION

Version number is found on the main start-up screen underneath the WORKSTATION AWAITING ACTIVATION.

NAMING SIDES

On the start-up screen, click on the names of the two WorldForces and change them. BLUE and RED are the default names. Throughout the simulation your army is blue and the enemy is red.

QUICKSTART

Firstly you can quickstart by clicking on ACTIVATE. This will generate two even worlds with minimal facilities and techlevels and no MU. This allows you to enjoy the build up before the war really starts when either you invade or are invaded.

Otherwise you can design your own war, by accessing SETUP WAR or EASY SETUP.

SETTING UP A WAR

SETUP WAR allows you to:
LOAD GAME - load a game that you didn't finish and saved previously.
LOAD BLUE - load a pre-defined Worldforce as your army.
LOAD RED - load a pre-defined Worldforce to fight.
CREATE BLUE - design your planet, facility, tech and MU level.
CREATE RED - design the enemy planet, facility, tech and MU level.
SCENARIO - set up war between pre-defined worldforces.

Once complete click on END an then ACTIVATE and WAR will commence after two screens which inform you of the balance of the two armies and gives you the opportunity to 'pull out' of this game. If you only CREATE/LOAD one side the simulation will generate the other.

SCENARIO EDNEW

Seven Worldforces to choose from.

EARTH 21
Terrain Earth like with majority of sea. People are adaptable hence no weakness or strength.

ISUSKI
Low gravity Moon has resulted in the Isuski's speciality in range, with plenty of craters for protection armor has never really been investigated.

BURANTI
Hot dry Rock planet with higher than average amount of desert. The hard rocker surface has generated a great scientific knowledge of protective surfaces (armor). The large mountain ranges have inhibited speed tests and resulted in their weakness.

KYLSTAN
This Ice planet is covered mostly in cold oceans. The low friction ice surface has enabled Kylstan scientists to develop a great technical knowledge of speed. The flat nature of the planet has meant that radar technology has not been fully investigated as identifying incoming craft in peace time was not normally a problem.

THARGON
A planet based on Silicon as opposed to carbon has meant that science has developed differently. Power is easy to obtain on Silicon planets so little effort has been expended on this discipline. Targetting has proved quite difficult on Silicon planet so the Thargon's have spent extra time in developing this skill.

NAVELLE
A Rocky planet which has prevented the development of long range projectiles (experiments tend to hit mountains too quickly). However the Mountain ranges have proved hazardous to pilots and much effort has been expended on radar technology.

TRIAX
The Triax have no weaknesses, and are skillled in all disciplines however the conductive Silicon make-up has enabled the Triaxians to have particular skill in power.

CREATE

To create a worldforce you will be taken thru:
PLANET CREATION
GENERATING FACILITIES
MU CREATION

PLANET CREATION

This allows the first player(blue planet) to design his own planet or load in a pre-defined one. First decision is the proportion of land to water. Sea + Land = 100%!!! Then decide on the form that the land should take. The choices are:
Forest (green dots)
Desert (yellow dots)
Mountains (red dots)
Ice (white dots)

The total % of forest+desert+mountain+ice will be no greater than the % land. Any land which has not got any special terrain on it, remains plain old land.

You can also select the composition of planet from: ()
EARTH-TYPE
SUPER-MOON
INNER ROCK
ICE CRUST
SILICON MINOR
OUTER ROCK
SILCON MAJOR
These alter the in-game terrain graphics.

Click on CREATE to make the planet. VIEW is initially depressed and works with HIDE on a toggle basis. With VIEW down (the default) you can see the newly formed planet. With HIDE down the world is generated but not displayed - this means you then have to 'discover' the planet as you play. On CREATING with VIEW down you can then click on INSPECT to change the left fullscreen height panel into a view over the world. The top right shows a pixel per square representation of the whole world with a black rectangle indicating the part of the planet currently in view on the left. To leave INSPECT push the button again and it will pop out. To move around the world move the mouse to the edge of the screen or hold the right mouse button down and drag the view box around the top right screen.

ACCEPT accepts the planet form. REJECT gives you another chance to build another. SAVE allows you to save the shape to disk - you may want to fight on this planet again. CANCEL exits from the screen and does not set up the planet.

Load allows you to load in a saved planet. (Earth in the year 2121 is available). The directory system works the same throughout the product. I will not repeat the instructions but just saying using the Directory system you can LOAD/SAVE etc. etc..
To select a file if you don't know it's name - just click on either UP or DOWN (or the arrows) to scroll through the directory.
Note only files of the type you are trying to load in will show up. When you see the one you want click on it, to move it to the File name area.

If you know the file's name click on FILE, another box will appear and allow you to type in the name. (Do not bother entering the file extension).

Select LOAD to load the planet or CANCEL to escape the directory. If you select LOAD you will be prompted to confirm that you've selected the correct file. The file will then be loaded.

For the Red planet. If you want to play against an identical opponent click on COPY BLUE so Red is the same as Blue.

GENERATE FACILITIES

Works like GENERATE PLANET. Set up the number of Facilities you want for the Blue planet and what starting TECH LEVEL (from 1 to 10) you will have and press CREATE. This will automatically place your facilities around your planet. If however you wish to manually place them, first set-up your starting techlevels then click on PLACE. The BUILD FACILITIES screen appears. You can now click on the button of the facility that you want and then click on either of the two maps to place the facility. Keep clicking and placing until you are finished with that facilty. Then click on the the next one. You can scroll the zoom map about by clicking on the arrows. Click END when finished to generate the world.

CANCEL exits from the screen and does not set things up.

MU GENERATION

Two things to adjust, the number of MU craft you wish to start with and the default name for the pilot (you can name each MU pilot, but this starts you off).
Concerning MU generation, there are six basic craft available at the start. You are given a starting WorldForce made up of an equal number of the designs. The MU are allocated to squad number 1 (Lightning). This sets-up your start base.
You cannot generate more MU then the number of Food Farms that you have. This is to prevent having more MU than you can supply / feed and them dying at the start of the game.

You can also on the RED side set up the enemy's IQ. The higher you set it the tougher the game will bw as the computer will make decisions quicker.

EASY SETUP

This takes you step by step through the start-up process. It does not allow you to do everything, but what it does do, it does simply and with the minimum of fuss.

BATTLE STATISTICS

Having set-up the two sides stats will appear giving detailed comparison between the two enemies. You can adjust the tech levels by at first setting the max and the min that they can be for each side and then pressing ALTER TECH. This allows you to reduce or increase your worldforces chances and make the battle more even. It is quite useful if you have built-up the ultimate Worldforce and wish to re-fight a smaller foe. By adjusting the techlevels the battle will be more enjoyable.

You can also on this screen ask for the locations of the two planets within the location of space to be randomly altered -click on ALTER PLANET START. This makes the early part of the game more interesting as the location of your enemy planet has to be discovered and as their proximity will now vary the intense-ness of the battle will change.

NOTES ON TECHNOLOGY

PROPULSION

This covers Land Propulsion, Sea Propulsion, Flight thru Air and Spaceflight. If you have a rating of one in land you can move into land squares (in any one of 8 directions, north, north-east, east etc.) from another land square (if you are in the sea you are stuck until a transporter gets you out). Sea works in the same way - except that you can travel thru the sea instead of land. To be able to do both (amphibious) you need a TECHLEVEL of 1 in land and sea. Having an Air TECHLEVEL does not give you the ability to enter space. However you can fly on both the Blue and the Red planet (you just need to be carried there). Space does not allow to travel thru the air - you need air as well. So unless the MU is only going to live 'in orbit' as an interceptor I recommend it has at least a minimum air TECHLEVEL.

The higher the TECHLEVEL the faster the MU will travel.

TERRAIN EFFECTS

Land MU travel more slowly thru desert, ice, forest and mountain terrain. However the chance of being hit while in the forest or on a mountain is reduced by 75%. Sea Mu are also harder to hit, once again reducing the hit chance by 75%.
Land MU will try to go around terrain that hampers their progress.

WEAPON SYSTEM

To be able to fire on an enemy MU, you need first to have it on your radar (radar TECHLEVEL of 1 means you can 'see' one square around you, 2 is two squares, etc.), then it must be within range (TECHRANGE uses 1 square for every TECHLEVEL like TECHRADAR). Your chance of hitting depends on TECHTARGET. If a hit takes place your TECHPOWER rating is used up against the defending MU's TECHARMOR rating to decide the damage.

MAPPING

TECHRADAR is used to map space and the enemy planet. Your home planet starts mapped. Without a square being mapped you will not know what terrain is there, whether there is a facility on it or an enemy MU.

TRANSPORT

TECHTRANSPORT is how many Mu's you can carry at any one time. When in the 'hold' MU's are switched off and unable to recieve re- programming until they are off-loaded. If a transporter is destroyed, it's entire cargo of MU's is lost as well.

OVERALL DIFFICULTY RATING

Before entering battle your overall chance for victory is given. You have the opportunity to reject the set up and start again.

THE WORKSTATION MAIN SCREEN

The game continues to run in real-time until you press one of the large buttons on the bottom right.

LEFT SCREEN

The lefthand screen shows a tactical part of the currently selected planet/space. To move the screen in any 1 of 8 directions move the mouse to the border of the work station screen. There is no need to click.

When blue and red buttons are depressed a dot appears for every MU. When the mouse is away from the strategic screen, as the MU move 'trails of motion'(dots) will appear. However this does mean that after a while the screen can get a little messy, but you can request an immediate update by clicking the mouse on any part of the workstation (this includes when you press buttons etc.), which will tidy it up.

You can move the tactical screen to a specific location by clicking on the strategic world map. You can also change the magnification by clicking on the x4 icon. This toggles the magnification. When small your pieces are blue squares, the enemy red. Facilities are identified by their letter L,M,P and F. In track mu mode the currently selected MU will occassionally appear as white to identify it to you.

VIEW DISPLAY

In fullscreen mode the white dot on the green rectangle on the topright of the panel shows the area of the planet you are viewing. To switch to view space or the red planet - click on the appropriate beige button on the top middle of

the panel. The display will only show graphics if the area has been mapped. (An area is mapped whenever your craft move over that area - the larger the RADAR TECH LEVEL of the MU the larger area that will be revealed. Once mapped it remians mapped.)

FULLSCREEN VIEW

You can enlarge this detailed view to cover the whole screen by selecting the blue button under the beige ones. To switch back toggle it again. When in fullscreen view you can of course move the screen by moving the mouse to the edge of the screen.

SCREEN LOCK-ON

The green one to the left of the D is used to lock the screen to the currently selected MU. (You select a MU by clicking on it - you can only lock onto your own MU). With MU LOCK on whenever the MU in view leaves the screen it will be redrawn with the MU at the centre. This enables you to watch the MU on it's mission.

DIRECT CONTROL

The D button switches you into DIRECT CONTROL mode. The currently selected MU (the last MU you clicked on) is under your personal command. It will ignore it's orders and move to wherever you click the mouse to on the zoom map. Click the D button to exit DIRECT CONTROL mode, the craft will return to it's orders. However if you transfer over to controlling another MU by using the + and - buttons, the MU you left behind will remain under DIRECT CONTROL and continue carrying out your last direct command. This allows the OPERATOR total control over all of their MU. Players who prefer Turn-Based Games may wish to use this option for most of the time as it allows you to move each piece without using computer missions.

A T will appear for MUs under Direct Control to show where their target location is. Xs will appear showing the pilots selected course.

While in DIRECT CONTROL, you can do several other things beside getting the craft to move to a set location. If you click on the craft itself the TRANSPORT SCREEN will appear if you have the ability to transport craft.

On the left is a scrollable list of all the other MUs on the same square as you. On the right is a list of all the craft you are currently transporting. To load a craft, click on the MU on the left. To unload, click on a MU on the right. Click Exit to leave the screen.

If you click on an enemy MU on the screen, an option box will appear asking whether you wish to PURSUE, YES or NO. If NO is selected you will just move to the square that you've clicked on. If YES you will go into DIRECT PURSUE. Your craft will then use both it's own radar and your GLOBAL RADAR coverage (the squares you can see on the tactical screen) and fly on an intercept course to engage the enemy. Having completed the mission (enemy destroyed or moved out of radar range) the craft will revert to it's previous DIRECT CONTROL orders. However the enemy craft, like your own, are fitted with jammers and other electronic devices which can sometimes cloud the systems judgement by ghosting fake images. The closer you are to the enemy when PURSUE is activated the less the chance of failure.

If you click on a friendly MU, you will be asked MOVE TO, YES or NO. If you click on YES, you will move to that square like normal. If you choose NO, the new MU that you have clicked on will replace the MU that you are currently controlling.

MISSION ROUTE

Three buttons above Direct Control is a button which when set will display on the world map black lines tracing the MOVE TO commands of the MUs mission. If the destination point is off this view port, the lines are not drawn. A blue dot appears highlighting the connecting leg on the mission programming screen.

NEXT AND PREVIOUS MU

The plus and minus buttons underneath the MISSION ROUTE button step you thru your MU army, one MU at a time.

STACKING

If there are more than one of your MU on a square keep clicking to walk thru the stack of MU's until you reach the one you want.

TOP RIGHT SCREEN

Has three areas the strategic worldmap screen, the message display and details of the currently selected MU. As the battle rages messages will appear giving the player important information, a MESSAGE LIST can be found at the end of the manual (CHRIS I will furnish this once we've firmed up on the game). The last 30 message lines are stored and you can scroll backwards and forwards through the list by clicking on the up and down arrows on the bottom right of the top left panel!!!

Should a mu in battle message appear (hit or down) you can click on the message and the tactical screen will move to display the battle.

WORLD MAP

The currently selected planet/space is displayed on the worldmap. (If the blue planet is selected the blue world is mapped, the red selected - the red is mapped). Once again if you haven't mapped the area it will appear blue. You select what information is presented on the screen by clicking on the four blue buttons on the right. The yellow (S) toggles squad base locations and dropzones. The white toggles display of the facilities (F). (Remember if you are on the Blue planet they are yours, if the Red, they are the enemy's.) The blue (B) toggles on your MU positions. The Red (R) toggles enemy MU position if known. If a red MU is over an area not mapped by you it will not appear. (Your home planet is fully mapped by you from day one.)

The screen is not continuously updated. Just like radar screens it is updated every few seconds -this is a limit of current W2WW technology. However you can request immediate update by clicking on the map at any time. A time bar appears at the top of the message screen, the length represents a month of game time.

PLACE NAMES

You can name locations on the zoom map. Click on the P on the top left of the zoom panel. Select one of the twenty available spots, then click on the zoom map. Enter the place name in the text box that will appear. You can toggle the names off by clicking on the N button below.

On start-up they are assigned the squads name and located directly beneath the squad.

BASE LOCATION

Squad bases appear as a B on the Blue planet on the zoom map. Dropzones appear as D on the red planet. You can click on them to bring up the SQUAD information screen.

MU INFO

The currently selected MUs number appears in the centre of the screen to the left of the date.

The I button brings up a panel giving full information as to what the MU is capable of, where it is, what mission it's doing and what's in it's transport bays.

In addition the screen constantly displays of the MU currently selected:
- craft type
- pilot name (click on it to edit it)
- squad name (click on it to edit it)
- mission
- location (x,y,z)
- fuel (f) left
- missiles (m) left

ASSIGN BUTTON

Brings up the MISSION grouping screen to allow the OPERATOR to quickly set-up a mission for the currently selected MU. This can be done by selecting a LIBRARY MISSION or using Q+A to create a unique mission for the craft under your command.

You can also access the LIBRARY FUNCTION screen.

LIBRARY FUNCTIONS

You have up to 50 missions in your library. The library function menu allows you to delete the whole library, save the whole library and load in a new library which would erase the current library in memory.

A copy of the library that you get on start up is saved to your hard drive and is called STANDARD.MLI.

You can also copy the Q+A mission that the craft currently under your command is using into the library. This allows you to do advanced modification to the mission, using the mission programing screen. It also enables you to allocate this new library mission to other MUs or if you like'd the mission so much, that you feel you may want to use it again - it stores it away for you.

MISSION BUTTON

Brings up the MISSION screen to allow the OPERATOR to quickly alter the mission that MU is currently performing.

SCHED BUTTON

Brings up the SCHEDULE screen to allow the OPERATOR to quickly see the work in progress.

HELP MAIN SCREEN

If you click on the ? on the bottom right panel, you switch into HELP MODE. The game is paused. Move the mouse around the screen whenever you pass over a button a message will appear telling you what that button does. To exit HELP MODE click on ? again.

ADVANCED HELP

While in help mode click on any button and a WORKSTATION HELP text box will appear. Use the keyboard arrows or page keys or click on the up and down arrows. The white bar on the right shows if there is more text to be read. When finished click on end or hit return.

If the help box is obscuring your screen click anywhere outside the help box to move it.
Clicking on UNIT brings up the UNIT RECOGNITION CHART which informs
you as to what mountains look like etc, - things can look a little weird on some of the planets.

Advanced help is also available on the mission programming
screen.

NOTE: To alter the help text - just load it into windows notepad, edit it and save it out and it should work. Some rules maximum text (plus spaces) line length is 31 characters and:
/e -ends the file
/0 -changes font to white (start font is white)
/1 -changes font to greeny yellow
/2 -changes font to gray

BOTTOM RIGHT - BUTTONS

These five buttons gain access to the rest of the simulation. First a brief description:

DESIGN - use to design new MU
BUILD - use to start building new MU
or new FACILITIES
or start researching to improve technology
or re-schedule or cancel work currently in progress
or setup automated production line.
or set build prioritys
ORDER - create or alter new missions

assign missions to a MU (to get them to do something)
scrap a MU that is no longer useful
alter the squad a MU belongs to
change whether you control the squad or you obtain
Computer
Assistance
Send damaged MU for repair
Identify MUs running low on supplies
STATS - various information as to how you are doing
SYSTEM - save and load, exit to dos, game speed, restart,
sound
settings

To the left of SYSTEM are 5 function keys which can be set
by you to
immediately access any of the screens. The game defaults to:
1-Build Facility
2-Build MU
3-MU Roster (to give orders to craft)
4-Order Squad screen
5-Overall Stats (to see how you are doing)

Details on how to alter the FUNCTION keys can be found in the SYSTEM panel section - under SPEED.

DESIGN

On selecting DESIGN a list of the 20 design slots available to you appear. Click on the design you wish to amend or one of the available slots to bring up the DESIGN screen. (To get you started with provide six example designs named by function).
To change the name of the MODEL. Click on the name area and you'll go into text input mode. I recommend that as you are likely to upgrade your design (as new TECHLEVELs happen) you add version or mark numbers to the name you come up with.

To change the MU's TECHLEVELS click on the arrows and watch
the 'spec' numbers change. You can of course only build a MU to the current limits of your technology (the figures under the column headed max).

As you do this the visualization of your new design will
take place on the right. Sometimes the change in TECHLEVEL is an internal design change as opposed to a visible external change and the crafts image will not change. You will see in your design work, that in the 22nd century there are basically five 'body shapes', relating to the method of propulsion. So a MU with 0 land,sea,air and space looks like a satellite. A land MU (0 sea,air

and space) resembles an armoured tank. A sea MU follows the shape of sub-marines. An air MU, a single seater jet fighter. A space MU a two seater spaceship.

Build cost, shows you expensive interms of resources needing to be spent the craft is. The more TECHLEVELs involved, the more expensive the craft will be and therefore take longer to be built.

BUILD COST CALCULATION:

Sci-labs needed = 1 + the models techlevels of land,sea,air,space Mines needed = 1 + the models techlevels of armor,transport Power needed = 1 + the models techlevels of power,range,target,radar The cost for Sci-Labs is then squared and then quartered.
The cost for Mines is then squared and then quartered and then doubled.
The cost for Power is squared and then quartered.
You can step thru to the other available designs by using the two arrows on the top left of the screen.

Once designed you can jump to the BUILD screen by clicking on BUILD and start production straight away.

Every time you enter the DESIGN screen or switch to a different model a copy of the current design is copied to memory. If you decide that your new design is not what yopu want to undo the work you have done click on UNDO. UNDO can also be UNDONE???

TECH

MU STATS

Statistics are given about that model:
- number in service (actually built and in action)
- number in production (on the production line)
- number of enemy MU's 'killed' by this model
- number of this type of model 'lost' in action

DESIGN HELP

You could go for all powerful do everything, all singing, all dancing monster craft - but the wise player will design craft for a purpose and end up with perhaps two or more highly specialized but effective craft, in their own field, rather than this one big Goliath.
Some further suggested craft (based on designs created during the history of the planet Earth!!) and which TECHLEVELS to concentrate on are:

TYPE EDNEW	USE	KEY TECHLEVELS
Balloons	Air Defence	armor,radar
Satellites	Space Defence	armor,radar
AAA	Air Defence	power,radar,target, range
Landing Craft	Move Land troops	sea,transport
Space Landing Craft	Move MU to Red planet	air,space,transport
Spotter Planes	Recon	air,radar
Light Artillery	Bombardment	land,range,radar, target
Heavy Artillery	Bombardment	land,range,radar, power,target
Bombers	Offence	air,power,target,armor
Fighter Bombers	Offence	air,power,range, radar,target
Fighters	Offence / Defence	air speed,power,radar ,target
Air Transport	Move MUs	air,transport,armor
Land MU Carriers	Move MUs quickly	land speed,armor transport

Using the TECHLEVELS available to you, you have over 100 designs to
come up with.

RESET STATS

You can reset the the kill, losses facilities hit stats to zero at any time. The purpose of the Stats is for you to use to measure hoe successful your design is. If you change the design you may wish the stats to continue on. However, a radical design change and you may wish to reset the stats to see just how the new model fares.

DESIGN END

Having finished press END.

BUILD

The building system works like this. The Sci-labs, Mines and Power Stations (and Food Farms as well but they are not important for building) generate a building unit approximately every 15 seconds of real-time (equates to 4 units a month). So the scientists in the Sci-Labs generate a SCI-UNIT, the miners produce a MINE-UNIT and the power-station workers produce a POWER-UNIT. These units are stored in a 'stock-pile' awaiting use. You the player create a work schedule made up of jobs which are worked on in strict job-number sequence.

The jobs you can create are:
- building new facilities
- building new MU's
- starting fresh research into improved TECHLEVELs

Every month the jobs at the top of the schedule will be completed and the work delivered (a message appears on the message screen) until the next job on the job schedule requires resources not available. For instance it's a research project into improved RADAR and you do not have enough SCI-UNITS to complete the work. This item will remain of the top of the list and nothing else will get built until this job is done - which could take several months. However you can re-schedule work to ensure that priority work gets done as soon as possible.

BUILD SELECT

On selecting BUILD a screen appears for you to choose what you want to do. You are also given the number of resource units currently in your stock-pile.

BUILDING A FACILITY

You are told how many of each facility type is currently built and or already on the work schedule. The world map displays there locations as black dots. To build an additional facility: - press the button with the facilities name on it.
- the BUILD COST will appear
- each facility has a favoured location. The square appears above the END button. If you build on a different square the build cost will rise by the factor stated. (x4). This includes rebuilding damaged facilities.
- move the mouse to the world map and it will form a 'cross-hair'
- move the mouse to the location for your new facility. (The only restriction is that it cannot be on one that is already built or reserved).
- click the mouse to build or move the mouse back to the now pushed-in button and toggle it out to cancel the operation
- either click on the small map or the large zoom map to select your build spot
- with no button pressed click on the strategic screen to move the map

- move the mouse to the edge of the screen to scroll it
- repeat until finished then click on END

This adds them to your work schedule.

When you move the mouse pointer over the strategic map the costs will change to indicate what sort of square you would build on.

FACILITY BUILD COSTS

Build / cost	SCI-UNITS	MINE-UNITS	POWER-UNITS
SCI-LAB	0	5	5
MINE	1	0	4
POWER STATION	3	4	0
FOOD FARM	1	0	1

BUILD MU

First select a design from the list.

To start the building project off just click on BUILD, - however we do recommend you: - name the PILOT, just click on the space to the right of PILOT (besides being fun - getting your fellow mates to 'fly your craft for you' it will aid in recognizing the MU and as medals are given for ace pilots why not fly one yourself.) - select your squad by clicking the arrows to the right of the SQUAD PATCH) or clicking on the squad patch itself to bring up a selection screen. You can also rename the SQUAD just click on the squad's name. -
Estimated time in months appears underneath the MU ID. Just like the real thing estimates are not 100% accurate.

SQUADS

Each side has twenty squads. Any number of MU's can be assigned to a squad. A squad doesn't have to have any members. The purpose of the squad is to enable you to group MU's together and use them as a number of smaller teams than trying to view your WORLDFORCE as a lot of individuals. So in your mind have a battle plan, decide on how aggressive you are going to be, and designate which squads are for 'overseas duty' and which for home planet defence.

To help you play the game you have the ability of turning control of a squad over to the WORKSTATION (COMPUTER-ASSIST). It will then control that squad, leaving you free to deal with other matters (like your invasion of the red planet) or just get into the simulation. There are two settings ComOF

(COMPUTER-OFFENCE) and ComDE (COMPUTER-DEFENCE). In the first the computer will aim to invade space and attack the red planet. In ComDE it will concern itself with the defence of the home planet, setting up patrols etc.. At start-up all SQUADS are under HUMAN (your) control.

MU's can be transferred between squads.

Each squad has it's own base, which can be moved, but is always on your home planet. When a new MU is built, it is delivered to it's squad's base. In addition any MU arriving at a base is refuelled and restocked of missiles. In the euivalent location on the red planet are Dropzones where supplies are available for your invading MUs. Consider that the supplies are delivered there by long range missile.

BASES

Bases have to built and cost 3 mine units. To build a base use the Build menu. You select a patch / name from the one's available and then select the bases location. The bases name will be located just below it on the map. Once built the base will be considered active and MUs can be assigned to it.

If you move a base all fortifications are lost.

Enemy bases are shown on the enemy planet. Bombing them
helps the effort as this is where materials generated by their facilities are stored.

Only ACTIVE bases appear on the tactical and strategic maps. Names however always appear as they can be used for quick identification of an area.

WORLDFORCE SIZE

You can have up to 100 MU's under your control at any one time. Each one is given a unique MU ID. (Bottom left). If a craft is lost it's MU ID will be re-issued, but the kill, loss, MU statistics will start from zero again, so that this pilot's performance can be measured.

What happens to MU's in service and production if I upgrade the design of the MU (using DESIGN)? Answer- nothing the existing MU's will remain as they are now. If you wish to prevent the old models coming off of the production line - you can delete their job from the schedule. (If you've given the new model a new name or version / mark number - it will be very easy to spot the old models on the job schedule.)

To make some more of the same just continue clicking Build.

You can change the model you are to make by clicking on the top left arrows (this saves you leaving the screen to re-select a different model).

RESEARCH

As you have probably gathered by now your technological capabilities will have a major effect on your success. To increase your capabilities in an area first click on the technology you are interested in, to select it. Your selected project will be described at the bottom with the build cost above. Click START to commence this project. You will see that the Work column will be increased to show your new research project is under way. It will remain in the work column until it is finished and your TECHLEVEL is raised.

The maximum TECHLEVEL for any one discipline is ten. You can have several projects under way for the same discipline.

All 100 (10 technologys by 10 levels) techs have been given names and appear throughout the simulation. (CHRIS a brief explanation of each tech is good - we'll speak later).

TECH BUILD COST

As you would expect it's your Scientists job to advance your 'war-machine'. Cost is calculated by first obtaining the difficulty factor, which is based on what the TECH subject is:

Subject	Factor
TECHLAND	2
TECHSEA	2
TECHAIR	3
TECHSPACE	4
TECHPOWER	4
TECHRANGE	4
TECHTARGET	2
TECHARMOR	3
TECHRADAR	2
TECHTRANSPORT	2

The factor is then multiplied by the sum of the current chosen TECHLEVEL plus the total of the current TECHLEVEL multiplied by 8 and then 50 is added for good measure (isn't Maths in English fun and open to error???).

The bottom line is for higher TECHLEVELS greater work is needed.

To cancel a techlevel project access the SCHEDULE, and DELETE it.

SCHEDULE

There can be up to 100 jobs on the go at any one time. The PRODUCTION SCHEDULE gives on the top right the number in progress. As the screen can only show 16 at a time, you can scroll thru the list using the arrows on the far left. The double arrows are page up and page down.

Project zero, is the first one to be done. Followed by project one, then two etc.. You are told what type of job it is and the build cost. The bottom line reminds you of your world's current resources ('stock-pile'). Clicking on EST. gives you the estimated build time in years. ++ means more than 100 years.

DELETING JOBS

Click on DELETE, then click on the job you wish to cancel. After a YES / NO confirm the job will be deleted if you click on YES and the jobs below it will move up one in the schedule.

MOVING JOBS

To alter the order in which things get done, you can move a job. If the move button is not depressed already click on the MOVE button, then click on the job you WANT to move. It will be highlighted red.

Finally click on where you want it to go to. It will squeeze in-between the job you've just clicked on and the one before
it.

AUTO - AUTOMATIC PRODUCTION

You can setup an automatic production line, where every time something is built other jobs are automatically added onto the schedule. So if you want to add a Food Farm every build cycle, just click on AUTO. The Automatic Production screen will appear.

You have ten slots available which are on the left. The jobs you can add are on the right. To add a job just click on the item on the right. To remove a job from this list just click on it in the list.

Jobs are added each build, starting from the top of the list. Clicking CLEAR removes all entries from the list.

BASE EFFORT

Material and parts generated by the facilities are stored at the nearest active squad base (active is defined as having a MU with that squad number). If that base is destroyed all of the material stored there is lost!!!

You can ask bases to specialize in a type of work. They will then only build that type of object. They still adhere to the production schedule rule of doing whatever is on the top of the work list, but if something is on the work list but is not what their specializing in they will ignore that item and look further down the list. In this way you can have the majority of your bases working towards that big project while others still manufacture smaller items. To do this access BASE EFFORT.

The Squad bases are listed along with the total number of MU assigned to that base, and either the number of facilities working for that base or (if view unit is depressed) the actual number of produced facility units at the base available for use.

To change the effort of a base from All - it will work on anything - click on the effort column to step through the prioritys:
- MU Build
- Research
- Facility
- Base Defence
- Base Construction
- All

The player is warned if they choose a combination that would prevent them from building any particular item.

You also set here how the Schedule works. In the default, the schedule always tries to build something. So if a large job requiring 100 sci-labs is at the top and a small job is beneath requiring only 1 sci-lab the 1 sci-lab job will get done. But you may want all your effort to go on this one job - this is where setting two is better, as jobs of work are carried out in the set sequence. So in our example the 1 sci-lab job would not get down until the larger task is finished. (You can of course use the MOVE command to shift priority).

ORDER

You are given a choice to:

- alter or program a new mission (MISSION)
- alter a MU's mission (MU)
- switch a squad's base or who controls it (computer/human) (SQUAD)
- Identify and send for repair out of date or damaged MU

- Identify Mu low on supplies
- review a recent battle (DEBRIEF)

CONCEPT OF MISSION PROGRAMMING

You have 100 MU to command - how on Earth (or in space) are you to control them all. This simulation runs in real-time, (like the real thing) so having a way of giving orders that will be followed by your army to the letter is ideal. That way the Commander of WORLDFORCES will know that his battle plans are being carried out to the letter.

So you write a mission using a simplified programming language which carries enough commands for you to recreate any modern military task. You then assign one or more MU's to this mission and away they'll go repeating and repeating the mission until their demise or you change the mission or get them to do a different one.

MISSION GROUPS

You can classify missions by a user-defined group. Rather then just be presented with ALL 50 missions a list will appear where you can click on ALL to see all missions or select the type of mission you want.

MISSION PROGRAMMING

You can have up to 50 missions in the WORKSTATIONs memory at once. Additional missions can be stored on your hard drive for future access. The MISSION PROGRAMMING SCREEN is divided into three sections. The large area on the left displays the mission. The bottom right is where you access the commands and the top right is used to select where you want certain things to happen and is relevent to only a few commands.

A mission consists of up to ten move instructions and two offence/defence instructions. The way the mission works is that a MU when first assigned a mission looks at instruction('order') number 1. He carries that out. When complete he then carries out order number 2. When complete he carries out order 3, then order 4 etc etc. When he has finished all of the instructions he goes back to number 1 and starts again. While he is carrying them out, he is constantly looking at his offence instructions and following those out continually regardless of what move instruction he is on (parallel processing?!).

When creating a mission the first thing to do is plan out in your head what you are trying to do. Perhaps patrol some of your facilities or go on a bombing mission etc etc. Then give the mission a name. Just click to the left of NAME: and type away.

OFFENCE INSTRUCTIONS

The first relates to whether the MU should fire at enemy foe within radar and firing range. A 'tick' means always fire (which could draw attention to youself), a 'X' means never fire (for Stealth missions) and a '>' is fire if you believe you are stronger than the enemy.

To alter your offence fire instruction just click on the symbol you want it to become and it will change.

The Pursue MU is equally as straightforward. A 'tick' means if an enemy MU is within your radar chase after it - returning to your current move command once the enemy is no longer within the range of your radar scope - either it flew away or was shot down. A 'X' means never pursue. A '>'means pursue if you are of greater strength (firepower versus enemy armor rating). The last symbol means keep your distance - 'evade'. Your craft will try and avoid direct contact with the enemy. This is quite good for weakly armored craft on recon.

MOVE INSTRUCTION

Is made up of a symbol to represent the action and sometimes extra information that the instruction needs. A cursor to the right of the instruction points to which order line is being changed. On the bottom right a text message explains what the command currently selected is (very helpful during the early days). There are seven commands available (here's a listing in the same order in which they appear on the screen):

MOVE TO - moves MU to a set location anywhere in the system
GOTO - tells MU not to go to the next instruction but the one following
LOAD - pickup a MU in your cargo bay
UNLOAD - off-load A MU that is in your cargo bay
HOLD POSITION - Wait here
SEEK - Using your radar head towards a selected target
RETURN TO BASE - return back to base / dropzone

I will first give a description of them and then show some examples of their use.

COMMAND OPERATION

To enter a command just click on it's icon, on the bottom right. The icon will be highlighted if it needs more information to complete the instruction (such as where to MOVE TO). To cancel the order toggle the command by clicking on the icon again.

MOVE TO

Click on the icon. Then look at the instruction line, next to the symbol will be a symbol representing which planet you are going to move to. If it's the wrong planet for your plan click on the correct planet icon found on the right side of the world map. This also changes the map to show the world you are moving around on. Finally click on the world view where you want the MU to move to.

The co-ordinates (x,y) will appear on the instruction line and being as that completes the command, the cursor will move and point at the next instruction line.
On the top right window is the SHOW ROUTE button. Selecting this will draw on the map all the MOVE TO points and draw a line connecting them up. It ignores any changes in planet and just traces the path on the screen.

A Z button will appear under the zoom command. Clicking this will change the left planet into Zoom mode (hence the Z button).
When in this mode you can click either on the zoom screen or the map to enter your destination. You can scroll the zoom map by clicking on the arrows on it's panel. Having clicked on the screen unlike the other way the move to command stays active allowing you to repeatedly enter destination points. When finished click on the move to command to end.

GOTO

Click on GOTO icon then which line you want the program to jump to.
One use of this, is getting the MU to leap back to the first instruction, rather than step thru the empty instructions (which takes a little time) in a program that does not use all of the ten lines available.

N.B. ADVANCED USERS can also chain missions together so that you are not limited to 10 line programs!!! Having clicked on GOTO, then click on MISSION ID. A list of your programs will appear select the one you wish to jump to, it will appear on the screen. Now click on the line you wish to go to and it's finished. Now when the program reaches that instruction not only will it move to a different line but also a different mission!

LOAD TYPES

Having selected the load icon, you then click on one of the six beige icons just below the commands which represent the type of craft the MU will pick up (if it's on the same square). The first is 'all', the second is satellite, the third is land based, the fourth sea, the fifth air and the last space.

Note the second blue information line will explain what the type you have selected is.

UNLOAD TYPES

Works the same as LOAD.

HOLD POSITION

One click on the icon is enough. The MU will reach this command and stop. It's purpose is for sentry units guarding strategic locations such as squad bases or facilities or transportation gateways.

SEEK TYPE

Works like LOAD however you can also select whether you are refering to a blue or red MU (click on the blue or red symbols on the selection line prior to selecting the unit type) or which type of facility, L-laboratory, M-mines, P-power station, F-food- farm. This commands allows you to get MU's of the same side to meet so that one can transport the other or the command can be used to set up bombing or intercept missions. Your craft will not only use it's own radar but also the world radar stored by the Workstation (which basically means any squares that are visible on the tactical map).

RETURN TO BASE

Like HOLD POSITION only a single click is required. Enables craft to meet at a known rendevous point - the squad base or forward drop zone. Only goes to drop zone if craft is already on red planet else goes to squad base.

LINE EDITING

On the bottom of the large window are the line edit commands CUT, COPY and PASTE. Use these to CUT (remove the instruction line currently selected from the program and place in the line buffer) COPY (copy the current line into a buffer) PASTE (place the instruction line in the buffer into the mission at the line currently selected).

The edit screen commands CUT, COPY and PASTE work either on just the LINE highlighted or ALL the program. To switch between the two modes click on either ALL or LINE to toggle the two buttons. This enables you to whole programs from one program to another or delete (CUT) whole programs? (You can get them back with PASTE).

UNDO

If having worked on a mission you decide you prefer to have it back the way it was when you first started click on UNDO. You are asked to confirm that you wish to revert back. You cannot UNDO a program once you have left that program by either leaving the screen or moving on to another mission.

SELECTING OTHER MISSIONS

To help you get started there are over 40 pre-programmed missions available for you to use. To access them click on MISSION ID, a list will appear for you to scroll thru to select from. You are told in the top middle how many MU's are currently using this MISSION. This is useful else you might modify a mission being used by some MU's that you didn't know about. Otherwise to step thru the programs you can use the up and down arrows at the top left of the large window.

LOADING AND SAVING MISSIONS

Use LOAD and SAVE to load and save missions to and from your hard disk. If you've got a particularly nice mission why not save it to use another day.

MISSION ZERO

Although mission zero can be used in exactly the same way as any other mission, it is slightly special in that all new MU's when first built are given program zero as their first mission. This is why the default mission zero is a HOLD and WAIT one.

SAMPLE MISSIONS PROVIDED

I would suggest you look at the sample missions to see how the commands can be easily strung together to create an effective fighting force. N.B. B means blue planet and R means red. So mission B.Patrol N-West, is a mission set on the Blue planet involving moving around the North-West part of the planet looking for intruders.

MISSION EXAMPLES

Requires examples of use of commands here.

ALTERING MISSION GROUPING

On the mission screen click on the word GROUP to change it's classification. To re-name a group, click on the text to the right of the word group and you go into text entry mode to alter it.

MISSIONS ON ANOTHER PLANET

You can setup missions which are to take place on another planet in advance of the MUs transportation. Example: If your MU is on the Blue planet and gets a Red Planet instruction (say move to 50,50) it will sit there and do nothing (you will occassionally get a message to remind you of it's stationary problem). This means that if it gets pickup up and transported to the red planet - the moment it touches down - it's ready for action!!!

WHEN DONE

When finished click on END.

HELP MISSION SCREEN

If you click on the ? on the bottom right panel, you switch into HELP MODE. Move the mouse around the screen whenever you pass over a button or a selectable icon a message will appear telling you what that it does. To exit HELP MODE click on ? again.

MISSION LIBRARY

You get STANDARD.MLI with when a library containg over 40 missions which can be used to play W2WW without ever needing to write a mission! They are grouped by type:
General - Used for Misc. missions e.g.
Back to Base - sends MU back to base
Hold and Wait - Sentry
Patrol Blue - Missions to patrol parts of the Blue planet,
B.Patrol N-West = Patrol the North West area of the Blue Planet
Patrol Red - example R.Patrol S-East = Patrol The South
Eastern area of the Red Planet
Bombing Runs - Select which type of facility you wish to attack
Intercept - Hunt Red MU, you will seek to attack any red
MUs
that fall within your radar scope
Transport - Two types the first are for transporters and
describe where you wish to move the craft to
- either the Blue or Red planet. All pickup
from home base
The second type are for your MUs to seek certain
types of craft for transportation example
B.Seek Space, which gets your blue craft to look
for a space craft.

MISSIONS THAT YOU MIGHT WANT TO BUILD

Missions that sweep over a larger area of the planet - you could chain several missions together to accomplish this. Attack MUs on red (fly to red then hunt) Space Patrol missions Planet Defence in Space missions Transport routes from a specific blue location to a specific red location (you would probably create to missions one general purpose collect and deliver mission for the transporter and another for the passenger which simply moves the MU to the pickup point.)

Q+A MISSIONS

Mission creation may seem daunting to the beginner. It may also be that you want to have a single MU do a unique one off mission that you do not need again. If either is the case Q+A can help. Q+A, accessed from the ASSIGN button, generates missions which are not stored in the library, but are attached to individual MU.

Q+A missions are limited compared to MISSION PROGRAMMING, but they are very friendly and lead the OPERATOR through the task of creating a mission step by step. Q+A missions can later on be placed in the mission LIBRARY for further work, or for storage for later use or to enable several MU to follow this one set of orders.

Q+A allows you to generate several types of mission:
Patrolling your home planet, space or the enemy planet.
Bombing targets (facilities or enemy bases) on the red planet.
Transport runs (moving MU from one set location to another).

Patrol is a general purpose move commands where you set up waypoints (destination points) where the MU flies to.

Bomb is very similar to Patrol except it will only except enemy targets.

Fire and pursue modes are automatically switched on for all Q+A missions.

To generate a Q+A mission just read the question and give the answer!

I personally always change the default mission name (leaving Q+A at the start to remind me what type of mission it is) so that on the MU ORDERS screen I have a better idea as to what the MUs up to.

Q+A does possess one command that MISSION programming does not. In the transport section you can pick up a specific MU that is on the same planet as you and your MU will go and find it and pick it up. Q+A can do this because it's missions are specific to one MU, whereas LIBRARY MISSIONS

can be used by any or all MUs and asking several transporters to all pick up the same MU wouldn't work!

MU ORDERS

Brings up the MU ROSTER. Detailing the number of MU available. You can scroll thru the MUs using the arrows on the side and do a number of things:
- alter their squad (click on the squad name to bring up the SELECT SQUAD screen, click on their new squad and then END to return back to the roster.)
- alter the pilot's name (just click on it)
- alter the MU's mission (click on it to bring up the mission list, scroll thru the list and select the new mission)
- you can view any MU's currently assigned mission by first selecting the MU (click on it) assuming it's active and not in production or in a transport bay, it will be highlighted in red. Then click on VIEW MISSION to access it.
- scrap MU (Click on SCRAP then the MU, then YES and the MU is no more).
- copy the human controlled MUs mission to other MUs (just click on COPY to switch to COPY MISSION MODE, the COPY button is depressed, click on other MUs to copy the mission over, when finished click on COPY again, the button will be released.)
- Use quick Q+A Transport function, click on the Transporter that you want to use, then click on the arrow that will appear by his Transport Techlevel at the bottom of the screen. You are then asked to click on the MU you want to pick up! You go into a Q+A transport session. Yet another way to transport MU!

The currently selected MUs CRAFT DETAIL is displayed below showing the complete TECHLEVEL of the MU. The TECHDATA is land, sea, air, space, Power, Range, Target, Armor, Radar and Transport. Also the current grid location is given, clicking on it will bring up a worldmap with a white dot showing the MUs location.

EXIT exits back to the main screen. MENU exits back to the previous screen - which is the MENU screen.

SQUAD ORDERS

Allows you to scroll thru your squads seeing the number of MUs in each squad and what type they are (by propulsion None, Land, Sea, Air, Space). Cont. is the controller Human or Computer and whether the computer's priority is for defence of the home planet (ComDE) or attacking the red planet (ComOF). Just click on the one you want to change and it will happen. Note changing from computer to human alters the mission to zero of all MUs in the squad. You are also given the base co-ordinates X and then Y. Click there to bring up a world map of your planet the black dots show where all the

bases are, the white dot where the base you're about to change is. Click on the map to change the squad's base.

You can also change the squad name by clicking on it ans typing a fresh one.

You can see more data about the MUs in the squad by clicking on VIEW SQUAD and then the squad you are interested in. This will bring up the MU ORDERS screen, but will only display those MU in the squad selected.

You can also fortify your base, Click on the D for defence column and the increase base defence screen will appear. Base defenecs are protected by the same technology as MU armour. So you can only fortify your base up to your TECHARMOUR rating. Click on START WORK to add the work to your job schedule. Fortified bases will survive hits from enemy MUs. As bases contain valuable raw material armoured baes defence is worth while.

EXIT exits back to the main screen. MENU exits back to the previous screen - which is the MENU screen.

SUPPLIES MU

This screen lists the current fuel and missile level for each MU. If the level is low the number is printed in white otherwise it's in grey. Use this to identify craft in trouble and send them to either a Squad Base or Dropzone for further supplies. If a craft runs out of fuel it can no longer move (you'll have to transport it back to base). If a craft runs out of missiles it will not be able to fire at an enemy MU or bomb a facility. Missile restocking takes place at bases and dropzones.

The maxmimum amount of supplies that can be carried by a MU is dependent on their propulsion design as shown below:

Propulsion Design	Max. Fuel	Max. Missiles
Stationery	0	100
Land	2000	100
Sea	5000	250
Air	100	25
Space	250	25

From this table you can see that Sea MU can go on a long time before being transported back to base. Similarly Land MU carry a good supply, however Space and Air MU do require continuous supply.

Warning messages are issued if the WORKSTATION can see that the a MU is heading for supply trouble.

MU REFIT

This screen will only list a MU if it's current TECHLEVELS are less than the TECHLEVELS of it's design model. So this screen shows MUs that have been damaged in battle or are under-specified in comparison to the model's current design.

The screen tells you the comparison model and the techlevels which are under-stated. So if a MU has lost two units of armor in battle, a 2 will appear under Ar. To refit a MU just click on it. You you be told the cost and asked whether to proceed. If you accept the MU is immediately removed from the battlefield and is added to the work schedule and treated just like a normal job. It keeps it's original MU ID and stats. The cost of repair / upgrade is generally cheaper and therefore quicker than building a new MU from scratch as those parts needing repair are costed for. However the cost of each techlevel step is double that for a normal build.

MUs can only be refit on your home planet.

DEBRIEF

The last 100 engagements are listed. You can scroll thru to see how you have faired in both MU on MU and MU bombing.

MU HERO'S

Successful MU pilot's are rewarded with the following medals of honour.

Bronze Globe 5 kills
Pilot Medal 10 kills
Golden Cross 20 kills
Silver Eagle 50 kills
Platinum Star 100 kills

A message will appear every time one of your pilot's achieve's one of these great honours.

MU PILOT RANK

MU pilots start with the rank of second lieutenant and by destroying enemy facilities and craft will be promoted. This promotion reflects their experience and is used in future combat calculations. The higher your rank the better chance of combat success. The best get better. The ranks are:

2nd Lieu. - start level
1st Lieu. - 7 kills / hits combined
Captain - 14 kills / hits combined
Major - 21 kills / hits combined
Colonel - 28 kills / hits combined
1 star General - 35 kills / hits combined
2 star General - 42 kills / hits combined
3 star General - 49 kills / hits combined
4 star General - 56 kills / hits combined
5 star General - 63 kills / hits combined

STATS

You get a choice of statistical information. OVERALL gives details about everything, MU at MU level, SQUAD at squad level.

OVERALL STATS

You get for each planet, their current number of MU in total and by type. The number of facilities each side has. The current TECHLEVEL of the two sides. How the campaign is progressing with number of enemy MUs killed, number of your own lost, percentage of enemy planet mapped, how many of your MUs are currently on the enemy planet and how many enemy MUs are on yours.

SQUAD STATS

Similar to the SQUAD ORDER screen except you are given kills and losses.

MU STATS

Similar to MU ROSTER except you get kills plus the medal ribbons are displayed - if your pilots have one anything. You can change squad and name just like on the ROSTER screen.

MU ACE'S

A list of all active MU's accredited with bringing down at least 1 enemy MU. They are ranked by number of kills and the list can be scrolled.

MU HIT'S

A list of all active MU's accredited with destroying at least 1 enemy facility. They are ranked by number of hits and the list can be scrolled.

MU HERO'S

A list of the TOP TEN MU pilots of all time. Minimum entry is ten downed enemy MUs and the pilot being no longer in active service - they might be retired (SCRAPPED by you) or Missing In Action. They are ranked by number of kills and the list can be scrolled.

COMBAT

If an enemy comes within your RADAR and firing RANGE plus you have permission to fire, a shot will be fired. The result is calculated by dividing the distance of the shot into the MUs TARGET which has been multiplied by 100. It is modified by 10-rank doubled being subtracted. The maximum this hit figure can be is 98 (therefore there is always a chance of missing). In addition Land MU in forest or on desert terrain have their hit chance reduced by 75%. Sea MU also recieve a 75% reduction in hit chance. A D100 is rolled and if less than the result figure a hit has happened.

Damage is calculated by subtracting the target's TECHARMOR from the attacker's TECHPOWER. If the figure is less than one, the target's TECHARMOR is reduced by one, otherwise the figure is the number of TECHLEVELS of damage caused.

TECHLEVEL DAMAGE is stripped off of the target, one unit at a time, in the following order of priority:
ARMOR then all the rest have a random chance of being hit.

So if a hit is two damage levels and the craft has 2 armor and 1 power and 1 land - the result would be: 1 armor and 1 land.

Animated explosions indicating a ship has been hit or destroyed appear if the MU under attack is on screen.

BOMBING FACILITIES

To attack a facility you must be directly over it. The hit chance is TECHTARGET plus TECHPOWER plus your rank compared to a D31 roll. If the result is less than the roll a hit happens and the facility is destroyed. If you fail there is a 5% chance that you will be hit by the facilities AAA defence system. If hit, the hit is against your ARMOR, but should you no longer have armor protection, your MU will be SHOT DOWN and lost.

Destroyed Facilities are shown cratered.

FOOD SUPPLIES

Every month the simulation checks the stock pile of FOOD against the number of MU you have (MU in transportation bays do not count). If you have more MUs than food - the surplus MUs will be lost. For those remaining a unit of food is removed from the stock-pile.

Warning messages are issued if the WORKSTATION can see that the number of Food Farms currently available is less than the current number of MUs.

THE ENEMY

The enemy fly under the same system as you do - programmed missions and are subject to the same simulation rules.

SYSTEM

This panel allows you to:

RESTART the game.
SAVE the current game in progress.
SAVE the current worldforce.
Alter various OPTIONS which effect the game.
EXIT TO DOS
RESUME the game
MODEM

DATA, STOP BITS and PARITY remain set at 8 1 N.

TWO PLAYER DIRECT LINK

Attach your two PCs using a NULL modem cable. When supports comm ports 1 and 2. Decide on which player is going to be the PRIMARY machine. They do all the setting up of the game - but before you set up the game you should let the system know that you are playing by modem: The procedure is:

PRIMARY MACHINE

Select SYSTEM then MODEM
Set BAUD RATE (choices are 2400,4800,9600,19200,38400)
Set Comm Port (very important to get it right)
Change Blue-One Player to BLUE-PRIMARY
Click on SETUP
You should now set up the game parameters for both sides as per normal.
When finished press ACTIVATE as normal and OK the difficulty.
At this stage the PRIMARY will wait looking for the
SECONDARY.

SECONDARY MACHINE

Select SYSTEM then MODEM
Set BAUD RATE
Set Comm Port (very important to get it right)
Change Blue-One Player to BLUE-SECONDARY
Click on SETUP
At this stage the SECONDARY will wait looking for the PRIMARY.

IF JOINED TOGETHER

Various messages will be displayed as data is transferred between the two machines - the higher the BAUD rate the quicker this will be. It will take several minutes on 2400 BAUD, this game has a lot of data just look at the size of the save game files!!! However I think you'll find it worth the wait as once you are in the game it plays at pretty much normal speed!

You play the game in exactly the same way the only differences being that the COMPUTER ASSIST OPTION is not available as the space used for it's library of missions is taken up by the OPPONENTS mission programs. Remember YOUR pieces are BLUE and the ENEMY pieces are RED, just like in the single player game. So no matter what machine you play on you are the blue side. You will find that the SECONDARY player has different squad names and patches available to him.

IF LINK FAILS

Just repeat the procedure: most likely causes, besides time outs caused by the 'other' player taking too long to get ready (hurry up don't you know there's a war on!):
Do you have a NULL MODEM cable?
You must have the same BAUD RATE on the two machines.
You did press SETUP and not CANCEL?

MODEM LINK

Works the same as NULL link. Options to play via a line that is already up and to dial and connect. You can choose between pulse or tone dial depending on what your phone system is.

MODEM

MODEM screen in game allows you to type in and pass message strings to the ENEMY (GNASH! GNASH!). You can also see the last five messages.

OPTIONS MENU

This lists the options which effect the speed of the game-

- STOP-GO PLAY
- TURN BASED
- GAME SPEED
- ENEMY IQ (max is 200)
- INSTANT PANELS
- BUTTON SPEED
- MU SUPPLIES
- FUNCTION KEYS

STOP-GO PLAY

Toggles it on and off.

TURN BASED

Toggles it on and off.

GAME SPEED

The higher the number the faster the pieces will move and the shorter the game will take to play. 1 is the norm, as this means every piece with a speed of 1 will move 1 square each game tick. Set to 2 means each piece will move 2 squares per 'go'.

This is very use in Turn based games as the scale of the game can mean it takes a long time to complete. However if you have high techlevels (say speed of 10) you probably would not want the speed set higher than 1 else the game would finish too soon (a MU with a speed of 10 would travel 100 squares in a go!!!).

ENEMY IQ

This only effects the computer player. It is the rate at which he is allowed to think and act. The higher the number the faster he will think and the harder the game will be for you. As you play thru a game the figure will change as the computer 'learns' thru experience.

INSTANT PANELS

When ON the panels will no longer slide onto the screen but appear instantly. This is for players with slower machines or those who tire of the novelty.

BUTTON SPEED

The higher the number the quicker the button being pressed in animation will run. Put in for the same reasons as INSTANT
PANELS.
MU SUPPLIES

If ON MUs fuel and missiles will be depleted. If off, technology has deemed to advanced to a sufficient stage whereby replenishment is required so in frequently that for any campaign the OPERATOR need not bother about it.

FUNCTION KEYS

You have five keys 1 to 5. You can assign any screen to any button. The function key acts as a hot-key to bring up your most commonly used screens and saving the advanced OPERATOR having to go through the menu structure. On start-up they are defined as:

1- BUILD FACILITY
2- BUILD MU
3- ORDER MU
4- MISSION PROGRAMMING
5- OVERALL STATS

You alter the setup by clicking on FUNCTION KEYS and then the up and down arrows on the panel that appears.

SAVING OPTIONS SETTINGS

On exiting the screen your current settings are saved as GAME.CFG. This file will be loaded in the next time you play the game. This all happens in 'background' and is transparent to the player.

KEYBOARD COMMANDS (ARIA VOICE COMMAND WORDS are in CAPS)

MAIN SCREEN AND FULLSCREEN (screen_is==0)

arrow keys scroll screen half a page

P-place name	PLACENAME
N-Name change	MOVE TO
1-show blue planet	BLUE
2-show space	SPACE
3-show red planet	RED

f-fullscreen toggle FULLSCREEN

6-Show base SHOW BASE
7-Show facilities SHOW FACILITIES
8-Show blue MU SHOW BLUE
9-Show red MU SHOW RED

page up-scroll messages up 1
page down-scroll messages down 1
home-goto top of message list
end-goto bottom of list

F1-function 1 ONE
F2-function 2 TWO
F3-function 3 THREE
F4-function 4 FOUR
F5-function 5 FIVE

F6-Design DESIGN
F7-Build BUILD
F8-Schedule SCHEDULE
F9-Order ORDER
F10-Stats STATS

`-System (left of 1)

i-mu info MU INFO
a-assign mission ASSIGN
m-modify mission MISSION
t-track mu TRACK
r-show routes on strategic map ROUTE
d-direct control DIRECT
plus-next mu NEXT
minus-previous mu PREVIOUS

return- stop / go switch and turn end RETURN

ESC-help HELP

BUILD FACILITIES SCREEN (screen_is==scr_facility)

arrow keys scroll screen half a page
l-select lab LAB
m-select mine MINE
p-select power POWER
f-select food farm FARM

MISSION SCREEN (screen_is==scr_mission)

up arrow - move up a line
down arrow - move down a line
plus-next mission
minus-previous mission

m-select mission from library LIBRARY
n-mission name NAME

F1-CUT CUT
F2-COPY COPY
F3-PASTE PASTE
F4-EFFECT LINE LINE
F5-EFFECT ALL OF MISSION ALL

F6-LOAD LOAD
F7-SAVE SAVE
F8-UNDO UNDO
F10-END END

4-move to MOVE TO
5-goto GOTO
6-load LOAD
7-unload UNLOAD
8-hold position HOLD
9-seek SEEK
0-back to base BASE

z-zoom (toggle magnification)

f-fire
p-pursue

g-alter group GROUP
h-alter group name

1-show blue planet BLUE
2-show space SPACE
3-show red planet RED
r-show routes on strategic map ROUTE

ESC-help HELP

GENERATE WORLD SCREEN(screen_is==scr_world)

j-save SAVE
x-load LOAD
c-copy blue COPY
v-inspect INSPECT
return-create CREATE
a-accept ACCEPT
r-reject REJECT
z-view VIEW
z-hide HIDE
d-cancel CANCEL

EASY SETUP WAR

c-continue CONTINUE
e-exit EXIT

OVERALL STATS SCREEN

e-end END
p-planet start PLANET
t-alter tech TECH

DIRECTORY SCREEN(screen_is==scr_directory)

1-item1 ONE
2-item2 TWO
3-item3 THREE
4-item4 FOUR
5-item5 FIVE
6-item6 SIX
f-find/name FIND
NAME
c-cancel CANCEL
l-load/save LOAD
SAVE

GENERATE FACILITY(screen-is==scr_generate_facility)

c-copy blue COPY
o-place PLACE
return-create CREATE

DESIGN SCREEN(screen_is==scr_design)

r-reset stats RESET
u-undo UNDO
b-build BUILD
e-end END

BUILD MENU SCREEN(screen_is==scr_buildmenu)

e-end END
b-base BASE
f-facility FACILITY
m-mu MU
t-techlevel TECHLEVEL
s-schedule SCHEDULE

BUILD SCREEN(screen_is==scr_build)

p-pilot name PILOTNAME
n-squad name SQUADNAME
e-end END
s-select squad SQUAD
b-build BUILD

SCHEDULE SCREEN(screen_is==scr_schedule)

e-end END
d-delete DELETE
a-auto AUTO
b-base effort BASE
m-move MOVE

ORDERS MENU(screen_is==scr_ordersmenu)

e-end END
s-supplies SUPPLIES
r-refit REFIT
m-mu MU
q-squad SQUAD
i-mission MISSION
d-debrief DEBRIEF

MU ORDERS SCREEN(screen_is==scr_ordermu)

e-exit EXIT
m-muinfo MUINFO
l-mu location LOCATION

s-scrap mu SCRAP
r-menu MENU
c-copy mission COPY

SQUAD ORDERS SCREEN(screen_is==scr_ordersquad)

e-exit EXIT
v-view squad VIEW
r-menu MENU

STATS MENU(screen_is==scr_statsmenu)

e-end END
h-hero's HERO'S
a-aces ACES
i-hits HITS
m-mu MU
s-squad SQUAD
o-overall OVERALL

SYSTEM MENU(screen_is==scr_systemmenu)

t-restart RESTART
g-save game GAME
b-save blue BLUE
s-sound SOUND
o-options OPTIONS
e-exit EXIT
r-resume RESUME

START SCREEN(screen_is==scr_start)

e-easy setup EASY
w-setup war WAR
a-activate ACTIVATE
s-system SYSTEM

SETUP WAR MENU(screen_is==scr_setup)

g-load game GAME
b-load blue BLUE
r-load red RED
l-create blue CREATE BLUE
d-create red CREATE RED
e-end END
a-activate ACTIVATE

s-scenario SCENARIO

SELECT PROGRAM SCREEN(screen_is==scr_selectprogram)

e-end END
q-q+a Q+A
l-library LIBRARY

LIBRARY SCREEN(screen_is==scr_library)

e-end END
s-save library SAVE
l-load library LOAD
d-delete library DELETE
c-copy q+a mission COPY

SOUND MENU(screen-is==scr_sound)

e-end END
m-music MUSIC
f-effects EFFECTS
s-speech SPEECH

MODEM SCREEN

y-you
b-baud
p-port
c-cancel CANCEL
s-setup SETUP

*NOTE FOR ARIA - the following words should generate the listed
keycodes in all vocabs:
YES-y
NO -n
END-e
FINISHED-space
OK-space
COMMANDS-shows a list of word commands available

MESSAGE LIST

The messages that appear on the mainscreen message panel:

```
"----WAR BEGUN-----/"
"BUILDING MU      /"
"MUXX  BUILT      /"
"RESEARCH BEGUN    /"
"NEW TECHLEVEL     /"
"LAB STARTED       /"
"MINE STARTED      /"
"POWER STARTED     /"
"FARM STARTED      /"

"JOB DELETED       /"
"---MU LINK DEAD---/"
"RED HIT  X:  Y:   /"
"RED DOWN X:  Y:   /"
"MUXX HIT X:  Y:   /"
"MUXXLOST X:  Y:   /"
"RED FACILITY DOWN /"
"BLUE FACILITY LOST/"
"-MUXX  LOST BY    /"
"SUPPLY FAILURE    /"
"-WARNING FOOD LOW-/"  /* 20 */
"-CRISIS FOOD LOW--/"
"--ENEMY MU CAN----/"
"--MOVE FASTER-----/"
"MUXX  REQUEST     /"
"-NEW ORDERS       /"
"-UNABLE TO MOVE   /"
"-RESUPPLY         /"

"BASE UPGRADE BEGUN/"
"BASE UPGRADED     /"
"--BLUE BASE HIT---/"
"NEW BASE STARTED  /"
"NEW BASE BUILT    /"
"---RED BASE HIT---/"
"FARM BUILT        /"
"POWER BUILT       /"
"MINE BUILT        /"
"LAB BUILT         /"
```

THE FOLLOWING ARE THE MAIN CHANGES TO THIS VERSION OF W2WW

149. Added Commands word to whenaria - say the word and a help screen
appears listing words available.

When Two Worlds War
Impressions Software, Inc.
Technical Supplement and Tutorial

Technical Support Line

If you any problems installing or running this game, call the Impressions Technical Support Line listed in the data card. A member of our Support staff will assist you. Hours are
9 a.m. to 5:30 p.m. E.S.T., Monday through Friday.

A. Installation and Loading -- IBM PC

(Note: If you purchased the Amiga version of this game, the installation instructions are included elsewhere in the game package.)

This game cannot be run from a floppy drive -- it must be installed to a hard disk. When fully installed, it will take up about six megabytes of hard drive space.

Hard Drive Installation

Turn on your PC, and wait for DOS prompt (C:\ etc.) -- exit Windows or Dos-Shell if they run automatically on startup.

Insert disk 1 in the appropriate floppy drive, and access that drive by typing

A: <ENTER>

or

B: <ENTER>

-- whichever is appropriate for your PC. Then type

INSTALL <ENTER>

at the DOS prompt, and follow the on-screen instructions. The procedure is self-explanatory. At the end of the procedure you can enter information for your soundcard, if you have one. When done, the game will be ready to run from your hard drive.

Playing from the Hard Drive

If you do not still have the computer on, do so now, and get to the DOS prompt as described above. From the DOS prompt, type

C: <ENTER>

or

D: <ENTER>

or even E:, if necessary, to access the hard drive where you installed the game. Then, type

CD<path-name> <ENTER>

to select the directory which contains the game. <path-name> should be the same directory name you gave when installing the program minus the drive designation that starts it off. (For example, to access C:\W2WW, type CD\W2WW.)

Then type

WHEN <ENTER>

to play.

Speech Recognition

If you own an ARIA soundcard and wish to play the game with speech recognition, you need to enter a different command when starting the game. Instead of typing WHEN, type

WHENARIA <ENTER>

to access the recognition-capable version of the game. (You should also see the chapter on How to Use Aria Speech Recognition later in this booklet.)

Modem-Play and Direct (Serial) Link

To play the game using your modem or direct-link null-modem cable, you start the game as normal, and access the modem commands from within the game. See the chapter on Communications later in this booklet.

Changing your Soundcard Setup

If you change your computer's sound setup after installing the game, you can reconfigure your computer by accessing the directory where the game is stored and typing

SETUP <ENTER>

This configuration program works identically to the one you used when installing the game.

Sound and Soundcards

With the proper sound setup installed in your computer, this game can produce a variety of sounds (including digitized speech). However, if you intend to use your computer's internal PC speaker instead of a soundcard, you may find the game's digitized speech to be garbled or inaudible. If this is the case, you should turn it off from the SYSTEM-Sound panel (see Chapter 12 of the manual).

Memory Requirements

The memory requirements for running this game will be listed in the text file README.TXT included with the game. For instructions of viewing this file, see "Additional Features and Documentation," below. This file will (among other things) list the required memory for running this program with ARIA speech recognition, and without.

If you cannot run this program on your machine, you may not be fulfilling the game's memory requirements. You can check this by running either of the utilities included with DOS, CHKDSK or MEM. Both will display the amount of available memory you have. To run one of these utilities, just type its name from the DOS prompt.

If you require more memory, the first thing to do is try modifying your AUTOEXEC.BAT and CONFIG.SYS files. (NOTE: Copy them to a floppy disk before making any changes, so you can undo them if you make a mistake.) If you have any unnecessary Terminate-and-Stay-Resident (TSR) programs loaded by these files, try removing them. If you have DOS 5.0 or higher, make sure that you have loaded DOS and as many drivers as possible "high". See your DOS manual for more information on these items.

After you have done this, reboot the computer and try to run the game. If it still does not run, the next step is to make a boot disk which you will use to start the computer "clean" of all extraneous programs and drivers. For information on making a boot disk, see your DOS manual.

Additional Features & Documentation

Some game features have been added or modified since this game's documentation went to press. Information on these new features has been included in the text file "README.TXT." To access this file, load it into any text editor (like Windows' NOTEPAD or Dos 5's EDIT utility), or access the directory where this game was installed and type

TYPE README.TXT | MORE <ENTER>

The character before the word "MORE" is a vertical bar, which is generated by holding down the Shift key and pressing the back-slash key. This text can also be read directly from your game disks.

B. Tutorial

(Are you a first-time general? New to the pressures and difficulties of command? Then you've come to the right place -- it's time for a little officer's training. By the time you finish here, you'll have started your first war, designed and built your first vehicles, engaged in battle, and started

generating some of the resources that feed the great war-machine.)

Calibration

Before we begin, you need to activate your Westock-Waadam Warfare Workstation (W.2.W.W.). The instructions for doing so are in at the beginning of this booklet, under the heading Installing and Loading. When you activate, the large display on the left will show a startup message, the small display to the upper right contains the name of the worlds, and the panel in the bottom-right corner contains buttons for starting a game. This workstation goes through many changes over the course of the game, but you'll find that this arrangement of screens occurs a number of times throughout the game.

The buttons to the bottom right access the game's startup commands. The first one we'll use is SYSTEM, the red button second from the bottom. Press it now by clicking on it with the mouse -- see the panel slide in from the right side of the screen? Most controls in the game will "slide on" and "slide off" in that way. This is one of the smaller panels you will see in the game, as it has only five buttons on it.

Press the blue button near the middle of the panel, OPTIONS, and another panel will appear. This controls the game's speed and difficulty settings. The default setting for this game is real-time, where the clock keeps ticking while you make your plans. Since this is your first time in command, we should activate one of the options that gives you a chance to think. Choose the topmost selection, STOP-GO PLAY, and press the small arrow buttons next to it so that the display says "ON." Press the END button on the panel, and it will disappear.

Calibrating the Workstation

Now, it's time to give the workstations the information it needs to know about the two warring worlds. This is referred to in the manual as "Calibration."

Press the EASY SETUP button on the console. This accesses the easiest method of setting up, where you feed the workstation the information it needs by answering a series of simple questions. The panel which appears will display the questions, and allow you to click the mouse on the answer you want. Press CONTINUE now

and we'll step through the questions. The text in the panel explains each one pretty well, so we'll just summarize them here. In most cases we'll be selecting the defaults by pressing CONTINUE.

First, you're given a choice to alter the name of your planet from its default setting, BLUE. The two planets and their forces are referred to by the colors blue and red throughout the game, but you can change the names here if you want. Use the keyboard to edit the name, and click the mouse or press ENTER when done.

Next up is what type of planet you want to have. For our world, we'll select the default setting of Earth-type. Select CONTINUE to take the default.

Then comes the surface composition of your planet; here we'll take the default setting: 50% land and 50% sea, with a mix of different terrain types. Again press CONTINUE.

The next question sets the TechLevels that your world starts with. These select the level of technology that you'll be able to use at the start of the war (hence the name). Select the default level, which is the lowest possible. Don't worry, you'll learn how to research better technology later on.

Next comes the number of facilities you have at the start of the game. Facilities allow you to generate the resources that allow you to build and maintain equipment, as well as perform research. This is one place where we'll give you an advantage over the opponent, since without resources it will take a while to start your war effort. Select HIGH from the list of choices, and the panel will continue to the next question.

The last choice is the number of MU's that your WorldForce will start out with. "MU" is short for "Military Unit," and is the name for every vehicle (tank, submarine, jet, spaceship) and satellite in your armed forces. Since you should really go through the MU Building experience yourself, select CONTINUE so that you begin with only one MU.

Now that you've setup your own planet, all of the questions and choices are repeated for the Red planet as well. Choose a name for the enemy planet, and then select the default settings for every questions by pressing CONTINUE.

The Battle Statistics Panel

The panel that appears now summarizes the statistics for the two worlds, covering (clockwise from bottom left) TechLevels, MU's and facilities. We'll study some of these numbers now, and in doing so explain some of the basic concepts of the game.

We'll start with TechLevels, in the lower left corner of the screen. You can see that there are ten technologies here, each with their own techlevel for each planet. They are:

Land Speed
Sea Speed
Air Speed
Space Speed Different means of propulsion. The techlevel is a measure of speed; the higher the techlevel, the faster it goes.

Fire Power Measures the ability of your missile weapons to destroy enemy armor and systems.
Range Measures the effective distance of the weapons.
Targeting The accuracy of your weapons.

Armor The ability of an MU (or Squad Base) to withstand missile hits.
Radar Measures the distance at which an MU can identify enemy MU's and facilities, and reveal unexplored areas.
Transport The number of MU's you can tow or carry at any one time.

The number "1" for each technology measures its techlevel, which can be a number from 1 to 10. TechLevels measures how powerful the components you build for a particular technology is, e.g. a Radar component built with a techlevel of 3 is more effective than one with a techlevel of 2.

Technology and techlevels come into play when designing and building MU's. Military Units are constructed with modular components, and each component uses one of the ten technologies at one of the ten techlevels. When you design an MU, you choose a techlevel for each of the technologies and the appropriate component is installed.

Of course, you can only use high-techlevel components if your world has knowledge of that level of technology or higher. Since you are starting out with techlevels of 1 "across the board", you won't have a lot of components to choose from! By the end of the tutorial, you'll learn how to research higher techlevels.

Next up is the MU display in the top-left corner. This lists the number of MU's for either side, separated into five categories. The categories are none, land, sea, air and space. These designate the most complex mode of propulsion used in an MU: sea is more complex than land, air more than sea, and space more than air. So if an MU is capable of land travel and spaceflight, it is listed as a space MU.

Each category has its own MU chassis: land MU's are tanks, sea MU's are submarines, air MU's are jets, space MU's are spacefighters, and stationary MU's are satellites. These five chassis types are used to identify MU types at various points throughout the game, which we'll note later.

An important note to remember is that the war is considered won when one side has eliminated all of the enemy's MU's. However, during the first year of game time (measured by the date display in the center of the console) that player must also destroy all facilities to be declared a winner. So make sure you always have MU's built!

Now we come to the facility listings in the top-right corner of the screen. You can see that there are four facility types, each producing a different type of resource:

Sci-Labs: Produces units of knowledge
Mines: Produces units of material
Power Stations: Produces units of power
Food Farms: Produces supplies to support one MU.

These resources are the fuel that feeds your war effort. The more of them you have, the easier it will be for you to build and perform research, the key activities for your world at war.

Ready to Go

OK, you've set up two planets and are ready to go. Press the END button at the bottom of the screen, and a panel will appear

displaying the chances for success on either side, calculated as a percentage. As you can see, the increased number of facilities on your world has given you a considerable advantage. When you are ready to begin the conflict, press OK.

The Main Display

Now that you've pressed OK, the war begins and the MAIN DISPLAY is revealed. Before doing anything else, take a look at the blue button that says either "STOP" or "GO", located along the very bottom of the console. (If you can't find it, look next to the small, narrow red button marked "SY" -- which is the SYSTEM button.) The blue button (the STOP/GO button) controls the flow of time in the game, stopping it and starting it as needed.

Now look just below the square display on the top-right corner of the screen. Here you can find a wide, thin horizontal slit which will either be completely black, or part black and part blue. This is the time index. If this index is moving -- if the blue bar is growing from left to right -- then press the STOP/GO button to stop the game.

> SPECIAL NOTE: Throughout this tutorial, it will take a while to read the instructions for activating various commands. If you ever feel rushed, or need time to figure things out, make sure to press the STOP/GO button so that time no longer passes, and your world is not in danger. Also, if you find that the enemy has beaten you before you have had a chance to respond, then restart the game (from the red "SY" button at the bottom of the screen), restart the tutorial and keep the game "stopped" whenever you are reading from the tutorial.
>
> Also note that the game is paused whenever a game panel or screen other than this main screen is activated.

The Main Display contains over forty buttons and displays, but you'll only need to learn a few of them at a time. We'll take a look right now at the major displays on the console, and we'll tackle the great big bar of buttons in the middle through the course of this tutorial. All you need to know for now is that stack of buttons is known as the CONTROL BAR.

TACTICAL DISPLAY

Almost immediately you will have noticed the two large square displays to either side of the Control Bar. The larger one (on the left) is the TACTICAL DISPLAY, which shows a close-up, scrollable view of the action. The view here can be shifted to any part of the three locations where the war takes place: the Blue planet, the Red planet, and the Space between them. These three locales are called THEATERS OF WAR. When the game starts, you're looking at the Blue planet -- your world.

Let's SCROLL the view right now. Move the mouse pointer to any of the edges of the screen, and you'll see that the view on the display shifts TOWARDS the pointer. Try shifting the view diagonally, by pushing the pointer into the corners of the display.

STRATEGIC DISPLAY

The smaller display in the top-right corner of the display is the STRATEGIC DISPLAY, which displays the entire map for the current theater of war. See the small black square? This shows what part of the current theater is displayed on the Tactical display. The dark green shapes show the continents of your world, and the light green shows its seas and oceans.

You'll notice a number of white dots on the display. These indicate the locations of FACILITIES on your world. If you scroll the view so that the black square is over some of these dots, you can see how they are represented on the map: squares with a single letter (L, M, F or P) to identify them as labs, mines, farms and power stations.

The blue dot on the Strategic Display shows the location of whichever MU is selected by the console. You only have one MU now, and that dot shows where it is. Let's take a look at it, and try a different way of shifting the Tactical Display's view. Point the mouse at the blue dot and click the left button; you should now see a blue vehicle on the Tactical Display. You can use this technique to jump to any point on the map.

"TUNING" THE STRATEGIC DISPLAY

Take a look at the four blue-framed buttons to the left of the strategic display. These are the STRATEGIC DISPLAY CONTROLS,

which choose which items are displayed on the Strategic Display. Only the pale blue button is currently pushed in -- it shows your facilities. We'll activate the rest of them now.

The yellow button on top displays BASES and DROPZONES. Press it now, and... nothing happens. Why? Your MU is sitting on top of your only base, so the blue dot on the map is obscuring it. When you move your MU, you'll see that your base (and all other bases and dropzones) are indicated with yellow dots.

Right now you're asking, what exactly is a base? They help you organize your forces into SQUADS, which you can send off to perform separate tasks under Computer-Assisted Control. Each base also can be ordered to concentrate on a particular production effort, for example favoring research over construction. When the game starts, you only have one Base.

The blue and red buttons below the light-blue one display all MU's on the map. Naturally, the blue button displays Blue MU's, and the red button shows Red ones. Press both of them now, so you can both see your troops on the move, and (more importantly) get warning of enemy targets.

And now that you're strategic display is ready for war, let's take a closer look at the MU now on display.

STUDYING AN MU

What type of MU did the game provide for you, and what will you be able to do with it? The first key to finding that information out lies in the black display windows below the Strategic Display.

These displays (with the exception of the black box in the bottom-right corner of the console) give you information on the currently selected MU. The top one gives the name of the MU, which indicates which DESIGN it was made from. This will either be a TANK or a SUBMARINE, depending on the location of your first base.

The two-line display shows the name of the PILOT running the MU, and the SQUAD to which he's assigned. You'll notice (if you still have the MU lined up inside the Tactical Display) that the name of the squad (and therefore your current base) is shown on

the terrain below the MU. This is because (as mentioned before) that the MU is currently stationed on top of the base.

The line below this indicates which mission the MU is following. All orders to an MU are given in terms of missions, which are a series of precise commands chosen to complete a desired goal. Goals (and therefore mission types) include patrolling, bombing, and transporting. Right now, your MU's current mission is "Hold and Wait," which means "stay alert but do nothing." In a moment we'll give it something useful to do.

Before we do that, one more piece of information should be seen. In the center of the Control Bar is the word "MU," and directly below it is the number "00." This is the MU Number Display, and it identifies of the two-digit number assigned to the current MU. As the game progresses, you'll learn to identify MU's by their numbers.

ORDERING AN MU #1 -- Q+A MISSIONS

It's time ("Finally," you're saying) to give orders to one of your MU's. We'll take your current MU (whether it's an land MU or Sea MU) on a defensive patrol of part of your planet.

Normally, you'd need to select the particular MU before giving an order. However, since you only have ONE MU, we can assume that it's already chosen.

All of the orders you can give to MU's are phrased as "missions." You'll learn all about missions from the manual, and you'll learn what you need to know to get started from this tutorial. But what you need to know right now is that the first step in any case is to ASSIGN a mission to the MU. You do this, sensibly enough, with the ASSIGN button located in the middle of the Control bar. It's a wide green button, located just above the large red button marked "MISSION." Press this now. (By the way, these two buttons are known as the MISSION CONTROL BUTTONS, and that's how they are referred to in the manual and the rest of this tutorial.)

THE MISSION ASSIGNMENT PANEL

The panel that slides on displays a menu of MISSION GROUPS, which separate the available missions into the appropriate categories.

For instance, "Patrol Red" contains all of the library missions designed for patrolling the Red planet.

In many cases, you'll want to use a library mission. But there's one good reason why you can't do that now. These preprogrammed missions were designed to work on any planet -- that means that they do not take into account the terrain of your world. Now, this works fine for jets, which can move anywhere on the map; but since tanks can't cross water and subs can't cross land, these missions aren't going to be a lot of help. What we need is a custom-tailored mission, which we can design to take into account "the lay of the land (or sea)." We need a Q+A MISSION.

Press the yellow "Q+A" button in the bottom-right corner of the panel, and a new panel will appear.

QUESTION AND ANSWER MISSIONS

This "query" panel will now prompt you for information on exactly what mission you want your MU to perform. As the process continues, you'll select options from menus and pick destinations on the Strategic Display. The end result is that in a short amount of time, your MU will be ready to perform exactly the actions you want it to.

The first menu asks you to select the TYPE of mission you want the MU to perform. Since we want it to patrol the home planet, select "PATROL HOME PLANET" from the menu.

Now the Strategic Display will be shown. When using a Q+A mission, a patrol route can pass through up to six WAYPOINTS, which are locations of your own choosing. You are now prompted to select the first waypoint, and are therefore forced to make your first tactical decision.

Here's some background information for you. The enemy is going to try, more than anything, to destroy your facilities -- that is what both sides need to do to win the war. The point of this defensive patrol is to keep your MU close to some of your facilities, so that it may intercept enemy MU's that approach them. The easiest way to do that is to choose waypoints that are ON TOP OF the facilities you want to defend.

One major problem is that you currently have limited radar technology, so that an MU can only recognize an enemy vehicle

that is DIRECTLY ADJACENT to its "square" on the map. Therefore, you probably won't want the patrol route to stretch too far.

The other concern is, of course, that tanks and subs can't go everywhere on the map. You need to choose waypoints that your MU can reach -- and can be reached by a relatively straight path. Your pilots can compensate for rough terrain and "cut" around large bodies of water, but if you make their routes too difficult they will have trouble navigating.

Take a look at the display. If you followed the earlier instructions, a blue dot shows where the MU currently is. Do you a see a white dot, or facility that is both a) close to it and b) located across traversable terrain? If so, then this should be the location of your first waypoint. (If there are none, than you should just find a nearby spot as a "practice" waypoint.)

Move the mouse over that facility. You'll now notice that as you move the mouse, the terrain it points to is shown on a miniature version of the Tactical Display near the bottom of the screen. Fine-tune the pointer's position so that the facility you want is right in the middle of the mini-Tactical Display, and press the mouse. The first waypoint is now entered.

Now, select up to five other facilities that meet the two above criteria, and choose them as waypoints. You'll see a black line be drawn on the Strategic Display, indicating the route of the mission as you construct it. If you run out of places to patrol, just press the FINISHED button at the bottom of the panel.

When you finish entering waypoints, the menu panel will ask you to choose what the MU will do when the mission is completed. He can a) repeat it, b) Hold his final position when done, or c) return to base when done. Since this is a defensive patrol, and (hopefully) these facilities won't be going anywhere, let's make this mission repeat. Select that option now.

Finally, you are prompted to choose a name for this mission. You could use the name that's been preset by the computer, but since it will be used every time Q+A is used to patrol your planet, you should start setting up some unique mission names. Type in "DEFENSE 1" as the name, and press ENTER. Now, the mission's assigned and ready to go!

(The reason the MU isn't moving, in case you forgot, is because the STOP/GO button has paused the game. You'll have plenty of

time to see your MU in action later.)

SAVING A Q+A MISSION

The mission you just created might be more useful if you had several MU's following it. However, it would be aggravating if you had to recreate the mission using Q+A for every one of the MU's. Luckily, the workstation allows you to copy the Q+A mission from any MU into your library of programmed missions.

Press ASSIGN again on the Main Display. Then press the "LIB" button just above the "Q+A button you pressed before. A menu will appear with options for manipulating your mission library. The button we want is the wide, dark blue one on the bottom, "COPY Q+A INTO." Press it now.

A large panel will appear displaying all of the library missions in the game. You can see that there are a few empty slots on the right side of the panel. Click on first one of these, and your Q+A mission will be saved.

If you try to access it later, it will be located under the GENERAL mission group.

BUILDING FACILITIES

As we've said before, facilities are crucial to your success. So, before we unpause the game and start the action, let's build a few more of them.

To do this, we need to use one of the PANEL ACCESS BUTTONS. These are the wide buttons at the bottom of the Control Bar, located just below the Mission Control buttons. The blue button you want is the second from the top of the stack, titled BUILD. Press it now, and a menu of building options will appear.

Notice the RESOURCES display at the top of this new panel. They all read "0" because your facilities won't start generating resources until the game is unpaused. Don't worry about this, since you can start construction jobs regardless of what resources you have; it's up to the scheduling system to see if and when they will be completed. The button you want is the second from the top, FACILITIES. Press it, and a new, full screen will appear.

THE BUILD FACILITIES SCREEN

You'll notice that this screen has its own versions of the Tactical and Strategic Displays. You'll use these to select locations for facilities, and order their construction. The numeric displays at the bottom-right of the screen show how many of each type of facility you currently have, including those waiting to be built.

For now, we'll build just two of each of the four types of facilities. But before you build, we need to SURVEY the land. To do this, all you need to do is click locations on the Strategic Display and they will be shown on the Tactical Display.

Each facility costs a certain amount to be built, and that cost is lowest when the facility is built on its preferred type of terrain. Each facility has its own preferred terrain. The purpose of surveying is to look for pockets of these types of terrain on which you can build cheaply.

The first facilities we'll build are Sci-Labs, which are preferable built on deserts. Look over the terrain for deserts -- - to do this quickly, hold down the right mouse button and drag the pointer over the map. When you find a desert area, we're ready to build.

Press the first of the four buttons in the bottom-right corner of the screen, the one marked "LAB." Now, when you click on either of the two displays, you'll order a facility to be built at that location. Move the mouse over the Tactical Display to select a location. If you watch the numeric displays, they now show the cost of building in the currently selected location. It takes resources generated by facilities to make facilities, and these displays show exactly how much of each type of resource is needed for the Sci-Lab you want to build.

As you move the pointer, you'll see the numbers jump up if you aren't selecting desert, and shrink down when you are. Choose a desert square with the pointer, and press the left-mouse button. You'll see the foundation of the facility appear on the display, indicating that the job was started. Choose another location (either in the same "patch" of desert or elsewhere), and build one more Lab.

Once you've done that, you should build two each of Mines, Power Stations and Food Farms. Mines prefer mountains, Power Stations prefer oceans, and Food Farms prefer clear land. To survey again, press whichever of the four buttons is currently active, so that none of them will be active. This lets you select points on the Strategic Display without building.

When you're done, press END to return to the Build Menu Panel. Press END on this panel as well, and we're back at the Main Display.

BUILDING MU'S

Now that some facilities are under construction, we should add a couple of MU's to your forces. Select the BUILD button, and select the third option from the top, MU. This displays a list of MU Designs, which were are the defaults created at the start of the game.

For this tutorial, we want to build one AirFighter MKI and one SpaceFighter MKI. The SpaceFighter will cross space to the enemy planet while carrying the AirFighter, and the AirFighter will begin patrolling the enemy world when it gets there. We can only choose one pilot now, so we'll select the AirFighter. Click on its entry in the list now.

A full-screen panel appears, featuring a close-up view of the MU you have asked to build. The AirFighter is shown in detail, including its armor, weapons and devices. You can check out its TechLevels and other statistics along the left side of the panel. Right now, the most important statistic is below all of the techlevels -- it is the cost in resources for manufacturing the MU. You'll get a feel for what these numbers mean as the game progresses.

All you need to do now is press the BUILD button. This requests that one MU of this type is put on the production schedule. A small panel should appear, asking you to enter in a pilot's name. Type in a name, then press ENTER or click the mouse. The MU will be put on the schedule.

Now all we need to do is build a SpaceFighter, which can be done easily without leaving the panel. Locate the two small arrow buttons in the top-left corner of the panel, and press the one that points up. This selects the SpaceFighter design. Press

BUILD as before, and enter in another name. When you press ENTER or click the mouse, this MU will also be put on the schedule.

Press the END button to return to the Build panel, and END again to return to the Main Display.

OPTIMIZING YOUR SCHEDULE

Now, we're almost ready to unpause the game and get the action moving, but not quite. Before we do that, we have to take a look at our schedule, and make sure that the things we need the most (i.e. MU's) are built before less important things (extra facilities). To do this we need to access the SCHEDULE panel, which is accessed by pressing the Panel Access Button marked SCHED (located just below BUILD on the Control Bar). Press it now.

The schedule panel should appear, listing all of the construction jobs you have order throughout the tutorial. In total, there should be eight facility listings and two MU listings. Jobs are completed in order from the top of the list, downwards. So right now, the first lab you requested is the first thing to be built. It would make sense that we need to move the MU jobs to the top of the list.

However, when there aren't enough resources to complete that first task, the schedule will also look down the list for easier jobs. It's therefore possible that your MU's will be repeatedly skipped over in favor of building simpler facilities. To correct this, we can focus your one base's effort towards building MU's, so that it does that to the exclusion of all other tasks.

We shall do both of these tasks, to insure that the MU's are built first and to show you how the system works.

MOVING SCHEDULE ITEMS

Moving items in the schedule is easy. You'll notice by looking at the bottom of the panel that the MOVE button is already selected for you. To move an item, select it with the mouse. Find the AirFighter MU in the schedule and select it. The MU listing will be highlighted red, indicating that you must choose a new location for it. Click on the top space of the list, and the MU will be moved there.

Now do the same for the SpaceFighter, moving it into the second space in the list. That's all you need to do.

CHANGING BASE EFFORT

Now we'll focus your base's production efforts specifically onto building MU's. Press the BASE EFFORT button at the bottom of the screen, and a new panel will appear. This lists your base, and where its current efforts are directed. Right now, the base is working on ALL tasks, since it's the only base you have. We need more focus than that right now, so click on the word "All."

You can see how the effort changed to "MU Build" when you pressed it. It also has four other settings; click on the space repeatedly to see them all, until "MU Build" reappears. You are now ready to start the game moving! Press END on this panel, and again on the Schedule panel to exit.

NOTE: As you exit the Base Effort panel, you will be warned that there are no bases with efforts set to "ALL," and therefore not all tasks may be accomplished. You knew that already, but it serves as a reminder to reset the base effort to "All" after the MU's are built.

UNPAUSING THE GAME / WATCHING THE ACTION.

We're back on the Main Display now. Press the "STOP/GO" button at the bottom of the panel, and the game will unpause. If you still have your first MU on the screen, you should see it start to patrol the route you set out. The TIME INDEX, the blue bar located just below the Strategic Display, will grow to indicate the passage of time through a month. The war has begun!

Watch the black box in the bottom-right corner of the console. This is your MESSAGE DISPLAY, which informs you of important events throughout the war. If your MU has a tough time crossing the terrain of its patrol route, you may receive some "Engine Queries" here. You can ignore them here, or create a new Q+A mission that cuts through clearer paths.

The messages you're looking for here are "MU1 BUILT" and "MU2 BUILT." These indicate, naturally, that the AirFighter and SpaceFighter you requested have been built. When these messages

appear, press the STOP/GO button again to pause the game.

IMPORTANT: Before you forget, select SCHED, and reset the Base Effort for your base to "All." If you forget how, refer to the section "Changing Base Effort" above. Exit the Schedule panel when you are done.

ORDERING AN MU #2 -- DIRECT CONTROL

While the game is paused, we'll set your SpaceFighter to transport the jet to the enemy world. To do this, we'll use a special type of mission called DIRECT CONTROL. (However, you can use Q+A or library missions to do the same thing.)

To continue, we first need to select the SpaceFighter for control. Remember the MU Number Display on the Control Bar? Just above it are a group of green buttons; these are known as the MU Buttons. The two buttons we're interested in are the + and - buttons -- these cycle you through the list of available MU's.

Pressing these buttons increments the MU Number shown in the aforementioned display, and shows information about that MU in the MU Readout below the Strategic Display. Let's use these buttons to find the SpaceFighter; since you only have three MU's it won't be difficult. Press either of these buttons until the name "SpaceFighter MKI" appears in the top display of the MU Readout. This MU is now yours to control.

A WORD ABOUT TRANSPORTING

Before we do so, let's clarify exactly what transporting is all about. Press the small "I" button to the right of the + and - buttons; this is the MU Info button and will display the technical specs about the currently selected MU. When the info screen appears, look in its lower right corner.

This section, titled "TRANSPORT BAYS," shows what MU's, if any, are being carried by the SpaceFighter. Depending on the level of your transport technology, an MU can be constructed to carry up to ten other MU's. You only have the first techlevel of Transport, so only one of the bays will be available. The first bay, listed as "Free," is what you'll use to carry your AirFighter to the enemy world.

Why can't the jet travel there under its own power? That's simple -- it doesn't use Space Travel technology. Press END to return to the Main Display.

DIRECT CONTROL

Located above the + and - buttons, the small green button with a "D" in it activates Direct Control. Direct Control is a particular type of mission where the General (you) selects particular destinations and actions for one specified MU. Push the button now, and Direct Control will be activated for the SpaceFighter. You can see evidence of this in the MU Readout, where "DIRECT CONTROL" is now displayed as the MU's current mission.

Using Direct Control is easy. All direct orders are given by clicking on the Tactical Display. For example, to give an order involving transport, just click on the current MU when it is either a) carrying MU's or b) in the same location as a friendly MU.

Both your AirFighter and SpaceFighter are located in the same square -- on top of your base -- so you can initiate direct transport by clicking on them. A panel will appear, listing all MU's in that location on the left, and the MU's transport bays on the right. To load an MU, select it from the list on the left. Click on the AirFighter now, and you'll see it moved into the first (and only) transport bay. (Direct transport is one action that can be performed while the game is paused.) Press END to return to the main display.

Next we'll want to move the SpaceFighter (and its passenger) to the enemy planet. Selecting a destination for direct movement is just as easy as transporting; all you need to do is select a location in any of the three theaters, and the MU is ordered to go there.

CONTROLLING THE MAP

We want to go to the Red planet, so should select that theater for display. At the top of the Control Bar are a cluster of buttons labeled "MAP". These are the Map Controls. The buttons that we are interested here are the blue, black and red buttons

on the left-hand side of the cluster. Each of these select a different theater of the war to display. Currently, the blue button (called View Blue) is depressed, so that the Strategic and Tactical displays show the Blue (your) planet. Push the red button, and you'll be shown a view of the Red (enemy) world. This button is known as View Red.

The first thing you'll notice -- is that there's nothing to notice. Since you haven't explored any of the Red world, none of its terrain will be shown on either display. The only feature of note is the small yellow dot on the Strategic Display, which indicates your dropzone. Dropzones are the locations where your MU's arrive on the enemy planet; each base is programmed with its own dropzone, using the same coordinates as the base (but on the other planet) which all MU's assigned to it will use. If there's no yellow dot, then press the button closest to the top-left corner of the Strategic Display, so that bases and dropzones are displayed.

Since you have no other terrain features to guide your decision, you might as well select a destination for the SpaceFighter that is close to the dropzone. That way, it will take a minimum of time to get there, once it "lands" on the planet. Shift your view so that the Tactical Display shows the dropzone (marked with a blue "D"), and click on a location close to it. A small yellow "T" will appear, to show where the current MU's destination is.

WATCHING YOUR MU'S PROGRESS

In a moment, you can unpause the game and your SpaceFighter will head out for the enemy world. (Don't worry, at this point in the game the enemy shouldn't have too many defenses in place.) But you need to find the best way to view an MU's progress. The following steps will make watching an MU easier. It may take longer to read this section than it does for your MU to reach the enemy planet, so feel free to pause and unpause the game as you read. However, the MU Lock control (see below) will only work when the game is unpaused.

Press the STOP/GO button to unpause the game. Now your ship is moving through space, but since you're looking at the Red planet you can't see it. You could select the View Space button, located between the aforementioned View Blue and View Red buttons; but you'd still have to manually center the Tactical

Display on the MU. What we will do will keep your display centered on it automatically.

See the button just to the left of the Direct Control button? Press it -- it's the MU Lock control. When it's active, it keeps the currently selected MU within the Tactical Display at all times, no matter where it goes. You should now be looking at space as your MU travels southwest. If you activated the control quickly enough, you'll even see your planet behind it. You can see the dark purple area that appears surrounding the MU and the areas it has traveled through; this is the territory that its radar has revealed as it passes. This area will remain visible for the remainder of the game, so you may see Red MU's traveling through it later. You can see that with the Radar limited to techlevel one, there is very little that will be revealed.

> NOTE: Before we continue, if you have a fast 386/486 machine, and/or a machine with local-bus graphics, you might want to use the SCROLL SPEED and INSTANT PANELS buttons to slow things down. If you just find you need more time to react to situations, you can use the GAME SPEED option. To access them, press the "SY" button located to the left of the STOP/GO button, and then press the OPTIONS button. When you're done, select the END buttons to return to the Main Display.

You'll notice that the Jet is not displayed on the map. MU's that are being carried cannot move or fire, so they are eliminated from the display to keep it less cluttered. To see what an MU is transporting, remember you can press the MU Info button.

Another useful feature is the Magnification button (marked with a "X4") located near the bottom-left corner of the Strategic Display. Press it now, and the Tactical Display will "zoom out" to show four times the territory that it did before. The ship will continue along its way; when it starts heading directly south, you know that its close to the Red planet. If MU Lock is still on, you will automatically follow it to that theater.

Since this you have never seen the terrain of that world before, you might want to get a closer look than "X4" allows. Press that button again to return to normal magnification.

When your SpaceFighter reaches the Red planet, you should see a line of "X's" connecting it to the destination you chose. This

shows its direct flight path, and only appears when the MU is on the same world as his destination. In a relatively short time, the MU should reach its destination and stop. Press the STOP/GO button to pause the game.

Now it's time to unload the jet. Select the MU again, and (since it's towing an MU) the Direct Transport panel will reappear. To unload an MU, just select from the list of transport bays. Click on the AirFighter MU listing now, and it will move to the left-hand list to signal that it was unloaded. Press END, and you'll see that the AirFighter is now displayed on the map.

Since we no longer want to follow the SpaceFighter, you should press MU Lock to deactivate it now.

ORDERING AN MU #3 -- LIBRARY MISSIONS

Now it's time to learn the last way to order an MU: library missions. We want to assign new missions to both of these MU's, sending the SpaceFighter back to its base and the jet on a predefined patrol route. Not surprisingly, the button we need to do this is the ASSIGN button, which we used before to select a Q+A mission. Press it now.

Currently you are still controlling the SpaceFighter. Returning to base is considered a general mission, so that's the mission group you should select. Click on that category now, and a new panel listing the General missions will appear. You'll notice that the mission "Defense 1" appears here as well, as that is where all newly copied missions first appear. Click on "Back to Base," and the SpaceFighter will be given new orders. You will be returned to the Main Display, and Direct Control will be disabled.

Now use the + and - buttons to select the AirFighter. When you have its name displayed in the MU Readout, press ASSIGN again. This MU should be ordered to patrol the Red planet, so select the "Patrol Red" category from the list.

A list of missions for patrolling the Red planet should now appear. You'll notice that most of the missions refer to a compass direction, like "North" or "Southeast". These refer different sections of the planet; each mission will patrol that section of the planet, revealing the terrain as it passes. Choose the section you would like explored, sticking to the

missions that indicate compass headings; the other missions follow specialized paths that you don't need yet. When you've made your decision, select the appropriate mission from the list. The panel will disappear and the orders will be given.

Press the STOP/GO button to unpause the game, and watch your AirFighter move out. You'll notice that the Strategic Display does not get updated at all times, but your MU's movements are immediately reflected as trailing lines. To "force" an update of the Strategic display, all you need to do is shift your view by scrolling the Tactical Display or clicking on the Strategic Display.

Would you like to see where it's going? Press the small green button to the right of the MU Info button; it has a picture of a black line connecting two white dots. This is the Show Path control, which displays the current MU's mission path on the Strategic Display. You'll notice that an approximation of the MU's expected path now covers the section of the map that you chose to patrol. As you watch (and prompt the Strategic Display for more updates), the areas of territory explored by the MU will fill that space nicely.

STARTING RESEARCH

As you watch your AirFighter complete its patrol route, you'll notice that it leaves "gaps" of unexplored space between the areas it explores. The reason for this is that its current level of radar technology leaves much to be desired, and that's the only level of technology that you have to work with. So how do you attain better technology? Through research.

Press the BUILD button -- it doesn't matter if the game is paused or not, since the game pauses whenever a panel appears over the workstation console. Choose the red button titled TECHLEVEL, and the Start Research Project panel will appear.

Listed to the left of the panel are your current levels in the ten technologies; right now, you have level one in all of them. A yellow arrow points the Land Speed technology, and the displays to the right and the text below indicate a research project that can improve it. You can select any of the ten technologies, and start enough projects to raise them up to level ten.

For now, we'll just try to raise the radar technology to level

two. Select that technology by clicking on the gray number next to it. The displays now show you a picture of a radar device, and a schematic of the new, proposed design. If you look below the techlevel listings, you'll see the cost of this research in Lab-units. Research is an expensive task, and it gets even more expensive for higher technologies.

Press the Start button once to start work on a research project. The gray number next to the Radar listing will change to show that one project has been started. This is all you need to do, so press END to exit the panel.

Later, you can initiate as many projects as you want. Just remember that they won't be done until you generate the resources to cover their costs. Fortunately, at this point in the game you should have a healthy amount of resources "in storage," since you haven't built anything in a while. In a fairly short while (with the game unpaused), the message display on the Main Display should announce the completion of the project with the words "NEW TECHLEVEL."

This leads us to the last step of our tutorial, which is --

DESIGNING AN MU

Once you have new radar technology, you naturally will want to incorporate in future MU's. This is done through the Design MU panel. To access it, press the Panel Access button titled "DESIGN."

A list of current designs will appear. For the tutorial we'll only update the design for AirFighters, but you can (and should) repeat the task for every design that uses radar. Select that design from the list, and the full Design panel will appear.

This panel looks similar to the Build MU panel, except that there are arrow buttons to either side of the techlevels used in the design. These buttons are all you need to control a design: you raise and lower techlevels, which alters the components used in the design. The yellow numbers to the right of the buttons display, as a reference, the maximum techlevels you can manufacture. You'll notice that the maximum level for radar is now two.

Look for the buttons to the left and right of the radar

techlevel. Before you raise this level, see what happens if you lower it to zero. Press the down button, and watch the display to the right. Notice how the white disc behind the MU's cockpit disappeared? This disc was the ship's radar sensor, and the visual display is updated to show what technologies are used in the current design. Press the up button, and the white disc will reappear.

Press the up button again, and the techlevel for Radar will change to two. However, the white disc will not change its appearance, because even-numbered techlevels feature only internal changes, and therefore don't affect the display.

Changing MU designs takes place immediately, since you are only altering plans, not actual machinery. Now that you're done affecting this design, press END to return to the Main Display.

WHERE TO GO FROM HERE

You've started out your war off on the right foot. What's left to do? A lot of things, actually. Here are some possibilities, as you prepare for victory:

Modify other designs: You might consider immediately changing all designs to use your new radar technology.

Build more MU's: Many more, actually. You need more than three MU's to fight a war. Building more will allow to patrol, explore and defend more territory at once.

Build more facilities: Remember that facilities provide the lifeblood of the campaign, so try to add more of them when the war allows. The sooner you build them, the sooner they start generating, and the greater the "jump" you can get over the enemy.

Research new technologies: How helpful would increased missile range be? How about thicker armor? You decide, and then order the research projects you desire.

Refit your existing MU's: If you want, you can use the Refit command (accessed by pressing ORDER on the Main Display) to update your MU's to new technology. It will cost you some resources, and the MU will be returned to base for the refit. See section 9.2.5. of the manual for details.

Watch your schedule: With all these building and research jobs coming onto the schedule, you'll probably want to perform some traffic control. The techniques explained in the tutorial will help you make sure that important things get done first.

Initiate bombing missions: After you've explored the enemy planet awhile, you should reveal a number of its facilities. Naturally, these are of as much importance to the enemy as your facilities are to you, so you might want to blow them of the face of their world. The "Bombing Runs" mission group allows an MU to attack any one type of facility on the enemy map. The MU following the mission will attempt to attack every facility of that type that is shown on the map. Note: You must get the MU to the red planet first, before you assign the bombing mission.

Defend your world: The enemy will start sending MU's to your world as soon as it can. Make sure that you have placed MU's in defensive positions and patrols across your world.

Monitor your MU's: Your MU's may leave their mission paths when they encounter enemy MU's, and they may be damaged or destroyed while attacking them. Likewise, they may be damaged or destroyed while attacking facilities. This damage may render them incapable of attacking, moving or exploring. Look for changes in an MU's behavior, and for warning messages in the Message Display in the lower-right corner of the Main Display.

Build another Base: Another option on the BUILD panel (section 7.2.1. of the manual) allows you to build squad bases. This allows you to send separate squads on different computer-controlled missions (via the ORDER SQUAD panel -- section 9.2.1. of the manual), and focus each one on a different type of production (via Base Effort). These can both help you in the war, and are explained in more detail in the manual.

Modify mission programs: A complicated but very rewarding task you may try is altering existing missions, using the mission programming panel. This allows you to create exactly the mission you want, with even more flexibility and power than Q+A missions. This process is explained in detail in Chapter 10 of the manual (and shown at the end of the workstation tutor -- see section 4.7.2. of the manual).

C. Communications: Modem and Null-Modem Play

Playing When Two Worlds War with two players adds a new level of

excitement to the game. However, the nature of the technology used to link two computers makes it very easy for things to go astray in the process. So we recommend you read this chapter carefully before attempting to use two-player mode, and refer to it often when using it.

Types of Communications

There are three types of communications available to you:

Direct Link If you wish to play with two computers that are in the same room, you can link them together by using a null-modem cable, and play in Direct Link mode. (See your local electronics store for information on purchasing a null-modem cable.) Direct Link works identically to the other communications modes, but naturally none of the commands for dialing the phone are used. No modems are required for this type of communication.

Modem-Dial This is the main type of communications that you will be using. One player uses his computer's modem to dial the other player's computer, and when the modems connect the link is created.

Modem-Connected This type of communication is used when two computers have already established an open modem line using a separate communications program; or have already connected using Modem-Dial, and have completed a game but kept the link active. The players can start another scenario without hanging up and dialing again by using this mode.

Communications Protocol

The basics of two-player mode are these: Of the two computers used, one must declared the primary computer and the other the secondary. The primary computer is responsible for setting up the game scenarios, dialing the other computer (when using modems) and sending the scenario files to the secondary.

This is important mainly when starting up the game, since only one of the two players is responsible for setting up the game, and you won't be able to discuss the setup while linked. You will want to talk on the phone before starting the modem link, so

that you can agree on the setup for the game in advance.

Accessing Modem Functions

All modem functions in this game are accessed in the same way, by pressing the MODEM button on the game's SYSTEM panel. When setting up the game, the MODEM button accesses the commands for establishing a link and starting games (see section 3.5. of the manual). While a game is in progress, this button accesses a "send message" panel which allows you to communicate with the other player and have "conversations" (see Chapter 12 of the manual).

The uses of these panels are detailed below.

Linking the Machines

To link two machines, both players must first boot their machines and start the game (see the first chapter of this booklet for details). Then, both players should press the SYSTEM button near the bottom of the screen, and then press the MODEM button on the panel that appears.

On this panel, the first row, YOU ARE, indicates which type of "player" your computer will be: one-player, two-player primary, or two-player secondary. For the two computers to link properly, one of them must be set to primary and the other must be set to secondary. Click on the yellow arrow button at the end of the row to change this setting.

The second row sets the modem's BAUD RATE and COMM PORT. The baud rate determines the speed at which your machines communicate with each other. Modem users can only set baud rates that their modems are capable of (see the computer's or modem's user manuals if you aren't sure what they are). If you are using a null-modem cable, then the highest speeds can be used in most cases without problems. The possible speeds are: 2400, 4800, 9600, 19200, and 38400.

> IMPORTANT: Both computers must be set to use the same baud rate. Always make sure to check the baud rate on this panel before linking, as the panel may reset the displayed baud rate to 2400, even if a link has been previously established at a higher speed.

The comm port setting can be either one or two; this must be set to either the comm port that your modem uses, or the comm (serial) port that your null-modem cable is connected to.

The next row displays modem data that describes how the system is communicating (data, stop and parity); it does not change and can be ignored. The row after that displays the LINK TYPE being used. If one of the two-player modes is selected, you can use this option to set the link that you will use. You change types by pressing the yellow arrow button at the end of the row.

The link type you want to establish depends on whether your computer is primary or secondary, which hardware you are using to create the link, and whether you have already linked the machines. Check the following table to determine which link type to select:

	Primary Computer	Secondary Computer
Null-Modem Cable	DIRECT LINK	DIRECT LINK
Modems -- haven't linked	MODEM-DIAL*	MODEM-AWAIT CONTACT
Modems -- already linked	MODEM CONNECTED	MODEM CONNECTED

*If the primary player has selected MODEM-DIAL, then an additional button, DIAL TYPE, appears at the bottom of the panel. Click on the yellow arrow next to it to choose between pulse and tone dialing (depending on the capabilities of your phone lines).

If you have done all this, you are ready to proceed. Follow the instructions below for the type of link you are using, and then continue below them with "After Establishing a Link."

Null Modem (Direct Link)
Both players should press SETUP to attempt the link. The machines will attempt to recognize each other; if they fail, a message will appear and the MODEM panel will remain. If they succeed, the MODEM panel will be cleared -- the link has been established. Establishing a link can take a while, so be patient.

Modem-Dial
Both players should speak on the phone, and agree on which worlds should be created or used. After hanging up, the secondary player should press the SETUP button to prepare to receive a call. The primary player should wait a moment for the primary to do this, and then press SETUP. He will be prompted for a phone

number to dial; he should type it in and press ENTER. The primary player then given a chance to cancel the call or retype the number; after a few seconds these options will be removed and the number will dial. If all goes well, the computers will link. Otherwise, both machines will time-out after a while. Remember to be patient when waiting for the link.

Modem-Connected

If both computers are still linked, then both players should press SETUP to start another game. (It is helpful if the players use the Message panel (see below) to discuss game plans before the current game ends.)

After Establishing a Link

If a link is successfully established, then the computers prepare to start a game. The secondary player will see a panel that says the computer is awaiting the data from the other machine. The secondary player should wait a while for the transfer to start.

Upon a successful link-up, the primary player will be presented with the normal game setup panel again; but here the game that the primary player chooses will be copied and sent to the secondary computer before the game begins. The primary player can select a game in the usual ways (see Chapter 3 of the manual for information), and even load in saved games. However, the secondary computer will only wait so long for its data; the primary player should not waste time choosing the war to fight. If the players want to use a fully-customized scenario, the primary should create it first as a one-player game, save it immediately upon starting it, restart and then load it in when the computers are linked.

If this part of the process works properly, panels and readouts on both computers will signal the transfer of game data between computers. When this process is complete, the game's main display will appear and the game will begin!

Playing the Game

Playing the game is mainly identical to playing against the computer, except that the enemy world is controlled by another person. Each player recognizes themselves as the blue player on their own displays, and their enemy as red. However, each side

has its own squad names.

All two-player games are played in real-time mode, but time is paused whenever either player enters a menu or accesses a panel. While time is paused, both players can give commands and review statistics, just as in STOP/GO mode. Time only continues when both players exit panels and return to the main display. (This creates the first rule of multiplayer etiquette: don't drag the fun to a halt by constantly pausing the game.) When time is paused like this, the player waiting on the main display will receive bulletins on how long the link has been suspended. These messages do not mean that the link has broken, just that time is stopped. However, if time remains paused for an extremely long time, then the link may have been severed. See Troubleshooting below for help.

On machines at slow baud rates, you may find that buttons on the main display are less responsive than normal. This is because of the amount of data processing that occurs between the computers, which takes up more processing time when it moves slowly.

> IMPORTANT NOTE -- In order for the game to be played fairly, both computers must use the same game speed. It is recommended that the game speed of one be used at all times.
>
> ANOTHER IMPORTANT NOTE -- Because modems and phone lines sometimes suffer unexpected line outages and signal disruptions, it is very wise for the primary player to save the game often.

Sending Messages

If you want to communicate with your enemy, you can do so through the Message panel. To access this, just press the MODEM button on the SYSTEM menu while a two-player game is in progress.

This panel consists of a buffer for several incoming messages, five message banks for outgoing messages, and several buttons. The procedure for "chatting" is simple: click on one of the message banks (marked with a yellow arrow), type the text you want to send, and press return; then press the SEND button next to that bank to send it. You have several message banks so you can prepare "stock responses" to your enemy's threats.

To maintain a conversation, it is easier to use the keyboard

commands to edit and send the contents of one message bank. Press the function keys F1 to F5 to edit the message bank of your choice, and press ENTER when done. Then press the appropriate number key from 1 to 5 to send the message. Using these keys, you can maintain a conversation entirely using with the keyboard.

Incoming messages are sent directly to the top of the screen during a game. They are automatically copied into the buffer on the Message panel as soon as the player performs an action or just clicks the mouse.

Finally, this panel contains an option to CUT LINK -- to sever the connection between the computers. Use this to hang up before exiting the program. This button takes a while to respond, so be patient.

Troubleshooting Communications Problems

If the computers seem to link together properly, but cannot complete the transfer of information before the game starts, it may mean that you are low on hard disk space. Transferring the scenario requires some temporary space on the primary computer's hard drive. If the machine has none, errors will occur. If this is the case, then the primary player must delete some files from his hard drive.

If the link has been suspended for a very long time, then it may have broken. See below.

If you think there is a break in the link for any reason, the primary player should save the program before doing anything else. That way, the game can be resumed like any other simply by loading it at a later date. You can test the line at any time by sending a message to the other player. Unfortunately, because of the nature of modems and phone lines, connections may be accidentally severed, so save often. If this happens repeatedly, both players should try reconnecting at a slower baud rate.

If your world's production or movement seem too slow or too fast, one of the two machines may be set at the wrong speed. If this is the case, reset them both to one.

D. How to Use ARIA Speech Recognition

When Two Worlds War is one of the first games released to support

the ARIA soundcard's speech recognition capabilities. If you do not have an Aria card, you will not be able to use speech recognition. Speech recognition in W2WW is designed to be an additional input device, and not a replacement for the keyboard and mouse. However, you can do almost everything through voice commands, except:

Text Entry
List Selection
Modem Functions
Scrolling the Map Displays

For more information on how speech recognition works, see the documentation that came with your ARIA card.

Preparing for Speech Recognition

First, make sure that the soundcard is properly installed in your computer, and that a microphone is plugged into it. To run W2WW with speech recognition, type

WHENARIA [ENTER]

instead of WHEN, when starting up the program.

Memory Requirements

To use speech recognition on your computer, you will need to have more memory free than when running the regular version of the game. For more information, see the chapter on Installing and Loading.

Using Speech Recognition

Speech Recognition is automatically engaged when you run WHENARIA. To turn it on and off, simply say "ARIA" into the microphone. The computer will display a panel to acknowledge.

Your Aria will use its built-in vocabularies to identify the words you speak into the microphone, and activate the appropriate commands and panels. The words it is programmed to recognize are listed in the next chapter.

Adjusting the System

When you run WHENARIA, a button marked "ARIA" is added to the Sound options panel that is available from the SYSTEM panel (see the game manual). This lets you make adjustments to the system so that it works better with your environment.

The following options are available from this panel:

Silence Threshold These arrows alter the loudest noise level which the Aria considers to be silence. Any sound below this level will be ignored. (The preferred method of altering this is to press BACKGROUND, which finds the best Silence Threshold automatically.)

Min Peak These arrows alter the softest noise level which the Aria considers to be speech. There is a "gap" between this level and the Silence Threshold which represents the pauses between words in a single command; the Aria uses this to keep the two words of a single command together. (The preferred method of altering this is to press BACKGROUND, which finds the best Min Peak automatically.)

Learning Level These arrows control how often the Aria will query you on the words it hears; the lower the level, the more often the Aria will "guess" by choosing the most likely match. The three manual levels are low, medium and high. The fourth level, auto, automatically accepts the closest match to your spoken words that it can find and trains the vocabulary to accept that match in the future. (This setting should be used with caution, as the computer incorporates every mistake it makes into the vocabulary as well).

BACKGROUND This button samples the microphone for a few seconds, and from that determines the optimum settings for Silence Threshold and Min Peak. The button will pop out when the sampling is done. NOTE: You must be silent while the microphone is being sampled.

ADJUST Press this button to accept any changes made by the other controls and exit the panel.

TRAIN Press this button to "teach" the computer to recognize your own vocal patterns. Use this only if the computer still has problems responding to

you after turning the Learning Level (see above) to high.

END Press this button to cancel any changes and exit the panel.

The Voice Query Panel

When the Aria is not sure which word or phrase you have spoken, the voice query panel appears to allow you to select from the three most likely candidates. If your command is among the three that appear, click on it and the vocabulary will learn it. If not, just press END. This panel will appear more often when the Learning Level (see previous item) is set high.

If this panel consistently appears without showing the proper command among its three choices, you may need to train the vocabularies to your voice (see next item).

Training the W2WW Vocabularies

If you have a lot of trouble getting W2WW to recognize your voice, switch learning to high. If it repeatedly still doesn't list the proper command among its three options on the query panel, you may go through the process of training the vocabularies. To do so, press the TRAIN button on the Aria panel, and follow the instructions that appear. Alternatively, you may use the utilities provided with your ARIA for training the .VCB files in your game directory.

E. Keyboard and ARIA Speech Recognition Commands

This chapter lists the keyboard commands and speech recognition commands available in each part of W2WW. In every section after the first one, the keystroke is listed first (if one applies), then the command it activates, and then the speech equivalent (if one applies).

GENERAL COMMANDS

(These speech and keyboard commands are used throughout the workstation.)

ARIA Toggle speech recognition on / off
YES y

NO n
END e
FINISHED space
OK space
COMMANDS Show a list of all speech commands.

MAIN DISPLAY/FULL-SCREEN

scrolls Tactical Display half-screen to north
scrolls Tactical Display half-screen to south
scrolls Tactical Display half-screen to west
scrolls Tactical Display half-screen to east

p place name PLACENAME
n name change MOVE TO
1 show blue planet BLUE
2 show space SPACE
3 show red planet RED
f fullscreen toggle FULLSCREEN

6 Show base SHOW BASE
7 Show facilities SHOW FACILITIES
8 Show blue MU SHOW BLUE
9 Show red MU SHOW RED

PgUp scroll messages up 1
PgDn scroll messages down 1
home goto top of message list
end goto bottom of list

F1 function 1 ONE
F2 function 2 TWO
F3 function 3 THREE
F4 function 4 FOUR
F5 function 5 FIVE

F6 Design DESIGN
F7 Build BUILD
F8 Schedule SCHEDULE
F9 Order ORDER
F10 Stats STATS
` (left of 1) System SYSTEM

i mu info MU INFO

a assign mission ASSIGN
m modify mission MISSION
t track MU TRACK
r show routes on strategic map ROUTE
d direct control DIRECT
plus next mu NEXT
minus previous mu PREVIOUS

enter stop / go switch and turn end RETURN

ESC help HELP

BUILD FACILITIES PANEL

scrolls large display half-screen to north
scrolls large display half-screen to south
scrolls large display half-screen to west
scrolls large display half-screen to east
l select lab LAB
m select mine MINE
p select power POWER
f select food farm FARM

MISSION PROGRAMMING PANEL

move up a line
move down a line
plus next mission
minus previous mission

m select mission from library LIBRARY
n mission name NAME

F1 CUT CUT
F2 COPY COPY
F3 PASTE PASTE
F4 EFFECT LINE LINE
F5 EFFECT ALL OF MISSION ALL

F6 LOAD LOAD
F7 SAVE SAVE
F8 UNDO UNDO
F10 END END

4 move to MOVE TO
5 goto GOTO
6 load LOAD
7 unload UNLOAD
8 hold position HOLD
9 seek SEEK
0 back to base BASE

z zoom (toggle magnification)

f fire
p pursue

g alter group GROUP
h alter group name

1 show blue planet BLUE
2 show space SPACE
3 show red planet RED
r show routes on strategic map ROUTE

ESC help HELP

WORLD GENERATOR -- GEOGRAPHY

j save SAVE
x load LOAD
c copy blue COPY
v inspect INSPECT
enter create CREATE
a accept ACCEPT
r reject REJECT
z view VIEW
z hide HIDE
d cancel CANCEL

EASY SETUP PANEL

c continue CONTINUE
e exit EXIT

OVERALL STATS SCREEN

e end END
p planet start PLANET
t alter tech TECH

DIRECTORY PANEL

1 item1 ONE
2 item2 TWO
3 item3 THREE
4 item4 FOUR
5 item5 FIVE
6 item6 SIX

f find/name FIND
NAME
c cancel CANCEL
l load/save LOAD
SAVE

WORLD GENERATOR -- FACILITIES & TECHLEVELS

c copy blue COPY
o place PLACE
enter create CREATE

DESIGN SCREEN

r reset stats RESET
u undo UNDO
b build BUILD
e end END

BUILD MENU PANEL

e end END
b base BASE
f facility FACILITY
m mu MU
t techlevel TECHLEVEL
s schedule SCHEDULE

BUILD MU PANEL

p	pilot name	PILOTNAME
n	squad name	SQUADNAME
e	end	END
s	select squad	SQUAD
b	build	BUILD

SCHEDULE PANEL

e	end	END
d	delete	DELETE
a	auto	AUTO
b	base effort	EFFORT
t	Est.	ESTIMATE
m	move	MOVE

ORDERS MENU PANEL

e	end	END
s	supplies	SUPPLIES
r	refit	REFIT
m	mu	MU
q	squad	SQUAD
i	mission	MISSION
d	debrief	DEBRIEF

MU ORDERS PANEL

e	exit	EXIT
m	mu info	MUINFO
l	mu location	LOCATION
s	scrap mu	SCRAP
r	menu	MENU
c	copy mission	COPY

SQUAD ORDERS PANEL

e	exit	EXIT
v	view squad	VIEW
r	menu	MENU

STATS MENU PANEL

e	end	END
h	hero's	HERO'S
a	aces	ACES
i	hits	HITS
m	mu	MU
s	squad	SQUAD
o	overall	OVERALL

SYSTEM MENU PANEL

t	restart	RESTART
g	save game	GAME
b	save blue	BLUE
s	sound	SOUND
o	options	OPTIONS
e	exit	EXIT
r	resume	RESUME

CALIBRATION

e	easy setup	EASY
w	setup war	WAR
a	activate	ACTIVATE
s	system	SYSTEM
t	tutor	TUTOR

SETUP WAR MENU PANEL

g	load game	GAME
b	load blue	BLUE
r	load red	RED
l	create blue	CREATE BLUE
d	create red	CREATE RED
e	end	END
a	activate	ACTIVATE
s	scenario	SCENARIO

ASSIGN MISSION PANEL

e end END
q q+a Q+A
l library LIBRARY

LIBRARY PANEL

e end END
s save library SAVE
l load library LOAD
d delete library DELETE
c copy q+a mission COPY

SYSTEM-SOUND PANEL

e end END
m music MUSIC
f effects EFFECTS
s speech SPEECH

SYSTEM-MODEM PANEL (STARTUP)

y you (no speech
b baud commands
p port on this
c cancel panel)
s setup

SYSTEM-MODEM (DURING A WAR)

1 send message 1
2 send message 2
3 send message 3
4 send message 4
5 send message 5
F1 edit message 1
F2 edit message 2
F3 edit message 3
F4 edit message 4
F5 edit message 5
d disconnect modem (cut link)
e end

When Two Woprlds War
Impressions Software, Inc.

ADDITIONS TO TECHNICAL SUPPLEMENT

A. Installing and Loading - Sound and Soundcards

Since the Ad Lib soundcard is not designed to play digitized sound, you may find the digitized speech on an Ad Lib to be unsatisfactory. If so, you can turn off speech from the SYSTEM-Sound panel.

Additionally, if you are using your PC's internal speaker for music and sound effects, and you have any problems running the game, you should try running SETUP and selecting "NONE" as your sound source.

C. Communications: Modem and Null-Modem Play

If two machines fail to connect, you should try again. Sometimes the two machines "miss each other," and require a second go to work.
C./ In a two-player game, don't use Alter Space command.
C./ Modem await-call -- ESC will take a few secs to respond, or not respond at all.
D./ Note: Aria -- remember the tone in which you said each command, or use one tone for all commands.
D./ Aria users -- MU pronounced "mew", not "emm-you". Vocabulary can be trained either way if desired.

ADDITIONS TO THE MANUAL
8.1.3. Schedule - Base Effort / Strict order versus base effort -- who wins? Strict Order
8.1. Schedule / Note: Resources for a world max out at 990
3.3. Calibration - Activate / Activate-only games start with Test Craft -- all techlevels equal 1
14.1.1. How the System Works - MU Building Costs / Flat increases to build costs (+10 to air, +15 to space)
3. Calibration / Suggest to add some facilities (if game takes a while to build anything), moves too slow in the beginning
3.2.7. Calibration - The Scenario Panel / Some of the scenario descriptions shown on the SCENARIO panel are inaccurate. Refer to the BROCHURE included with the game for accurate game statistics.
3.2.7./ Also, some scenario worlds use a defense system

called MUTUALLY-ASSURED CONFLICT. This system assures that if either player lands on the other's planet, the other can instantly attack it from its squad base; it does so by locating both worlds' bases (and therefore their dropzones) in the same locations on each world. If this defense system isn't to your liking, you can relocate your base without cost from the ORDER SQUAD panel (see section 9.2.1.3. of the manual).
14.3.2. How the System Works - Bombing Facilities / Your sea MU's are not be able to BOMB facilities, because they cannot move into the same map location with them; the same technology that allows facilities to remain stationary in an ocean makes the water directly beneath them unsafe for submarines. Of course, you can still defend facilities with subs; and sea MU's can attack squad bases.
4.6.1.2. Main Display Map Buttons - Move to or Edit Names / Be careful when moving base names, as they can be moved independently of their bases. Try to only edit and move unused names.
10.3.2. Command Icons and Parameters - Goto / Programming Goto -- even though line 1 is displayed, you MUST select a destination yourself to complete the command.
13.5. Changing the Opponent I.Q. / Research -- will take a long time with lower I.Q.'s -- smarter opponents can manage their resources well enough to get research done.
3.1.1. Calibration - Easy Setup Panel / There is an error in this section of the manual; each food farm can only support ONE MU, nor four.
14.3.1. How the System Works - Combat Between MU's -- In case this section is unclear, the terrain an MU is on affects its chance to be hit, not its chance to hit another MU.
1.3.1. Theaters of War: Blue, Red and Space / Make clear that enemy world is out there, missions will automatically home in on it and enter its atmosphere.
5.3. Direct Control / Pursue MU -- keeps going towards additional MU's

MISCELLANEOUS
AUTOSAVE.SAV XXX [modem and null-modem?]
When a game ends, you will be presented with the Overall Stats panel, so that you may view the results of the war.
Explain if too arcade-y (but not in those words -- more like for strategic, "boardgame-like challenge," try Turn-based with nothing but Direct Control. Use game speed to control duration of turn. Make sure Track MU is off, if movement of

your MU's takes too long to play out. (See 13.4.2.)