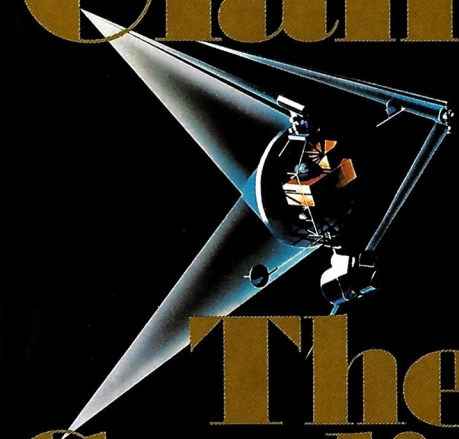
Tom Clancy



The Cardinal of the Kremlin

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The ultimate challenge.

From the author of **The Hunt for Red October** and **Red Storm Rising** comes the riveting story of spies and scientists, negotiators and covert operators - masterfully linked in the technological race to develop a Star Wars defense system. Based on Tom Clancy's multi-million best seller, **THE CARDINAL OF THE KREMLIN** computer simulation challenges you to develop America's laser anti-missile defenses.

THE CARDINAL OF THE KREMLIN offers a realistic glimpse of the complexities and dangers in maintaining America's strategic defenses. Espionage and misinformation, kidnapping of scientists, satellite launches and laser technology testing all come into play. You assemble a team of computer programmers, scientists, and engineers; run a spy network; monitor peace negotiations; deal with third world revolutionaries and more.

A stunning graphic opening, with original music score, sets the stage for the global events about to unfold. You must manipulate a myriad of international forces, develop and test your laser systems and anticipate the Soviet's next moves. The fate of America's laser anti-missile project, code name: Tea Clipper, is in you hands.

The excitement and intrigue of this quest to rule the stratosphere, as told in Tom Clancy's spellbinding novel, now comes to life in the captivating strategy computer simulation, **THE CARDINAL OF THE KREMLIN.**

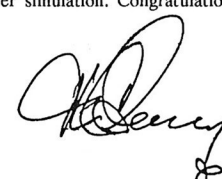
Foreword by Tom Clancy

Since **The Cardinal of the Kremlin** was released in 1988, the world political climate has been transformed. With the fall of the Berlin Wall and the emergence of more democratic governments in Eastern Europe, critics have questioned whether the events and strategic defense programs depicted in the book are relevant today. The answer is a definitive YES.

Let me assure you that the Soviets commitment to space-defense research has never faltered. Headlines may declare the end of the "Cold War", yet the work of the Soviet, and American, intelligence agencies quietly goes on. Espionage and covert actions are necessary tools to confront terrorism and the all too real potential of war.

The development of America's Strategic Defense Initiative is of vital importance to our country. It will be at our national peril should the SDI critics ever succeed in weakening support for this program. In the current Middle East crisis, it is our satellite intelligence which allows the United States to track Iraqi troop movements. The recent actions of Saddam Hussien have vividly demonstrated why laser anti-missile defenses and similiar technologies are crucial for the security of our nation, and the world.

Computer games, like novels, are entertainment. They give us an opportunity to vicariously participate in events beyond our daily life. Realism is the hallmark of my novels and the benchmark for judging computer games based on my books. For **Cardinal of the Kremlin**, the challenge to Capstone was to create a game that successfully captures the book's complexities, human drama, and the interplay of espionage, technology and international politics. It is a superb strategy computer simulation. Congratulations, Capstone. *Well done.*



August, 1990

CHAPTER 1: An Overview

Game scenario

Now you can control the outcome of the story of THE CARDINAL OF THE KREMLIN. You have the power to manipulate all phases of the story to reach the desired outcome of deploying the United States' missile defense system. The scenario below sets the stage for your dramatic effort:

Mikhail Filitov is a war hero and Red Army Colonel. He is also one of the CIA's most valuable spies. His codename: "Cardinal".

The Cardinal has been sending information about a new Soviet project: "Bright Star" -- a high-powered laser defense system, capable of destroying incoming missiles.

The U.S.A. is also working on a laser project, codename: "Tea Clipper". Project leader: Major Alan Gregory, also leader of Software Development for Tea Clipper.

Afghanistan remains a crisis point. An Afghan rebel, The Archer, contacted by the U.S., is covertly given weapons and supplies for his guerrilla attacks on Soviet troops.

Surveillance satellites have revealed a new Soviet installation in the mountains just north of the Afghanistan border.

The Cardinal verifies this information. It is Bright Star! But, it is also heavily fortified against attack by crack Red Army and KGB soldiers.

Meanwhile, in the news, the U.S. and Soviet negotiation teams are hammering out a new treaty that could mean peace ... or war!

FBI security on Tea Clipper is highly effective. Even so, the KGB is one of the most capable international espionage groups. Somethings bound to leak ...

Suddenly, a chance encounter in a Moscow subway has the KGB on the Cardinal's trail. The Cardinal must be very careful in his operations, to keep himself from being tracked down.

International tension mounts as the treaty talks come to a standstill. U.S. and Soviet forces silently prepare for a possible third world war.

The KGB strikes at the U.S. laser project by kidnaping a Tea Clipper department head! The project will slow miserably unless the scientist can be recovered alive.

Your objectives are ...

... as Tea Clipper Project Leader, to complete the Tea Clipper project ...

... as CIA Chairman, to direct the activities of our spy network ...

... as NSA director, to construct a complete spy satellite network ...

... as a U.S. negotiator, to settle the terms of the treaty ...

... as the FBI, to secure Tea Clipper against the KGB

... as the Archer, to destroy or disable Bright Star ...

... and to save the planet from WORLD WAR III!

Starting the game

Refer to your User's Manual for information on loading and running the program.

The first thing that will appear when you run the program is a killer satellite drifting across the open skies and strike out at a small enemy satellite. The program will then display some credits.

Next, a horizontal gauge will appear. This gauge will move to the right as the program initializes itself. This will only take a few seconds, before proceeding to the introduction screen.

The introduction will lay out the game scenario, accompanied by images depicting the story. Press the **SPACE** bar to skip past this sequence.

Copy protection

The game will then present you with a picture of one of the 15 department heads. Refer to **Appendix A** of this manual to find the ID number that corresponds to this person. Type in the number and press the **ENTER** key. You will be given three opportunities to enter the correct code, otherwise you will not be allowed into the program.

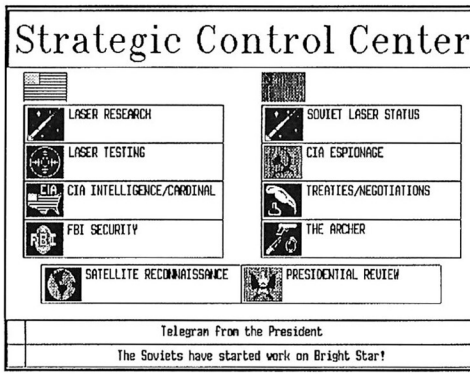
Starting from scratch

When the game begins, the Tea Clipper and Bright Star projects are in their infancy. You have no scientists, no department heads, no satellites in orbit, and no research has been conducted. Things aren't all bad! You do have nine agents in place throughout the world, including the Cardinal. Also, the Archer is in Afghanistan waiting for your commands.

However, you can be assured that the Soviets, controlled by the computer, are already fast at work on Bright Star.

Strategic Control Center

The Strategic Control Center is the heart of the program. From here you will branch to all other parts of the program. Below is an illustration of the Control Center, followed by a description of each section. Detailed descriptions of how to use each section follow in Chapter 2 of this manual.



American side

The options grouped under the American flag take place primarily on American soil or with American personnel.

Laser Research

Laser Research is the painstaking process of scientific discovery, delicate machining, all night software programming sessions, and failure after failure.

There will be setbacks, but the research on Tea Clipper must proceed. Choose the best department leaders and set the work pace: too slow, and the Soviets will outstrip you; too fast, and your teams will burnout.

Laser Testing

When the think-sessions are over, it is time to put the research to the test. There are several different tests you can apply to each different part of your Tea Clipper project. Depending on how advanced each group is, you may need to check with the satellite launch screens to be sure that there are enough 'birds' (satellites) in the sky for you to test with.

Something to be careful of is the Soviet factor: if you test when the Soviets are interested in your projects, they will learn a great deal about your progress.

CIA Intelligence/Cardinal

The Central Intelligence Agency is responsible for your network of overseas informants. The agents on your screen are all placed in strategic jobs in the Soviet Union. You must control them.

Decide who is to attempt to learn what information, and when. All these options are important. If you have bad timing, for example, the Soviets will likely catch your undercover operative. If that happens, you might not even realize it, because the Russians could send back falsified information.

FBI Security

The FBI handles the security of the Tea Clipper project. All of the people on the staff are monitored to various degrees. The 'degree' or severity of the FBI security measures will affect the pace at which the project proceeds. More so than most ordinary military personnel, scientific researchers are very sensitive to high security levels. Slowdowns in work can be caused due to several reasons:

- Obtrusiveness
- Rebellion of staff
- Security slip-ups

Soviet side

The options grouped under the Soviet flag take place primarily on Soviet soil or with Soviet personnel.

Soviet Laser Status

This screen shows information reflecting how the U.S. thinks the Soviet Bright Star project is coming along. The intelligence reports from our C.I.A. moles are given to various department heads for analysis. Depending on the age of the report and the experience of the department head, your confidence in the evaluation will vary.

A low confidence doesn't mean that the Soviets are doing poorly; it means that we are not sure how they are doing. If you're missing a department head, you won't get any confidence information at all.

CIA Espionage

The CIA Espionage indicators are more indirect than any of the other displays. They show 'how we think the Soviets think we are doing', as opposed to 'how we are doing', or 'how we think the Soviets are doing'.

This is vital information needed for planning your security level, as well as trying to anticipate any possible Soviet actions, such as a kidnapping attempt.

Treaties/Negotiations

International tension can contribute to the premature ending of the game -- via the outbreak of World War III. When tension levels rise, the Americans and the Soviets must both work to hash out a new level of detente. This will prolong your game for a while.

The Archer

This is a very important resource. The Archer will, when you have equipped and informed him, attack the Soviet Bright Star installation to either destroy or damage as much of it as possible. Give Archer weapons, but not too many,

as he'll use them do defend his homeland, Afghanistan, against invading Soviet troops. If he is too much of a thorn in the Soviet's side, they will send a task force out to attempt to kill him. If you don't keep him happy, via weapons, supplies, and information, he will abandon your cause.

Satellite Reconnaissance

The sky above is filled with many kinds of satellites. Both the U.S. and the Soviets have military satellites that can be classified in one of four ways. Also, the classification of 'space junk' or 'unknown' can apply. Your different types of satellites determine how well you test Tea Clipper, how effective your satellite tracking is, your laser attack effectiveness, as well as your ground-watching satellite reconnaissance.

Keep in mind, of course, the Soviets have satellites too. There are many unfriendly eyes in the sky.

Presidential Review

Every so often, you must turn to the President of the U.S. for a progress review. While he is not concerned with the day-to-day operations of your mission, you still are responsible to him. Use his judgment as a guide as to how well you are progressing in the game. He will also offer insight into how the Soviets are progressing.

However, the President is a very busy person. Do not bother him too often.

Game time

The counter on the lower left-hand portion of the screen will keep you apprised of the elapsed time of the simulation in both days and hours. Your goal is to deploy your system in the least amount of time. The clock runs constantly while you are playing the game.

The game can run in two speeds. The default speed is slow. Press the **F** key to double the rate at which time passes. Press the **R** key to return to the default (slower) rate.

Telegram lines

On the bottom of the screen are two telegram lines. You will be informed of any problems, changes in status, or any other vital information, on these lines. You can only see the last two messages, with the most recent one on the bottom. Any time that a new message appears, a beep will sound. You can turn the beep off and on by pressing the **B** key.

You can scroll through the messages by **CLICK**ing on the up/down arrow buttons to the left of the Telegram lines.

Often times, several telegrams will arrive in a short period of time. You must monitor these lines to keep yourself abreast of any developments that may require your attention. These line are always visible on any of the menu screens of the game.

You can have the program display only one telegram line. Press the **W** key to toggle between 1 or 2 telegram lines.

Levels

Cardinal of the Kremlin can be played at three different levels: **Novice, Easy,** and **Regular**. The default level is regular. To change levels, press the **D** key within the first 10 days of the game. You will then be asked to enter **N** for novice, **E** for Easy, or **R** for Regular.

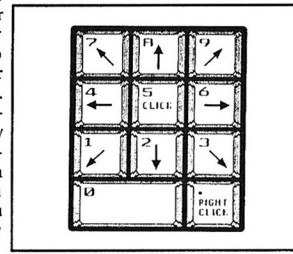
The levels effect the speed at which the Americans and Soviets are able to develop their respective missile defense systems. On the novice level, the American development is fairly rapid, while the Soviet development is slow. On the regular level, the American development is much slower, while the Soviet development is faster. The easy level is in between novice and regular.

NOTE: You can only change levels within the first 10 days of game time.

Chapter 2: Playing the game

Keyboard control

If you have selected keyboard control in the installation program, use the cursor keys on the keyboard to move the pointer around the screen. To move the arrow around the screen, press any of the cursor keys on your keyboard to move the cursor in that direction. To move quickly, hold the key down. The cursor will move in that direction for as long as you hold the key down.



Throughout this manual, you are asked to **CLICK** on an item. When using the keyboard, press the **5** key on your numeric keypad. In other instances, you will be asked to **RIGHT-CLICK** on an item. When using the keyboard, press the **DEL** key on your numeric keypad.

Joystick control

If you have a joystick connected to your computer, and have selected joystick control in the installation program, you will use the joystick to move the pointer around the screen.

If the manual tells you to **CLICK** on an item, press the left joystick button. If the manual tells you to **RIGHT-CLICK** on an item, press the right joystick button.

Mouse control

If you have a mouse installed on your computer, and have selected mouse control in the installation program, you will use your mouse to move the pointer around the screen. If the manual tells you to **CLICK** on an item, press the left mouse button. If the manual tells you to **RIGHT-CLICK** on an item, press the right mouse button.

Special keys

Below is a list of keys used throughout the program.

P - *Pauses the game. Press any key to resume play.*
S - *Save the game. See Saving the Game for details.*
L - *Load a game. See Loading a Game for details.*
G - *Toggle the testing and satellite animation.*
N - *Toggle game sound off and on.*
B - *Toggle the telegram beep off and on.*
D - *Set the level of difficulty.*
F - *Increase the speed of the game clock*
R - *Decrease the speed of the game clock*
W - *Toggle between 1 or 2 telegram lines.*
ESC - *Quit the game. See Quitting the Game for details.*

CARDINAL OF THE KREMLIN employs a very simple point-and-shoot interface. To select an option on the Strategic Control Center screen, or any sub-screen, simply point at the box (not the icon) and **CLICK.**

Help

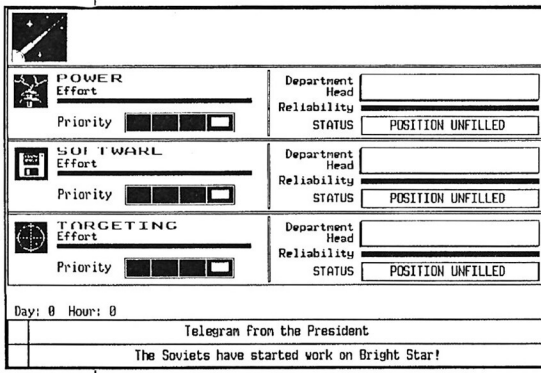
On-line help is available throughout the game. Help is available for any option that has an icon (small picture) next to it. To access the help screen, simply **CLICK** on the icon. A screen will appear with information regarding that particular option. Once you have read the screen **RIGHT-CLICK** to return to the menu.

Using the Strategic Control Center

From the Strategic Control Center you can access any of tem different sub-screens. To access a sub-screen, **CLICK** within one of the ten boxes with an option in it (i.e. Laser Research). To return to the Strategic Control Center from a sub-screen, **RIGHT-CLICK**. Help is available for all ten options. Also, **CLICK** on the American or Soviet flags for information regarding each side.

Using Laser Research

When you select the Laser Research option on the Strategic Control Center screen, the Laser Research sub-screen will appear.



From this screen you can control the operation of each of the three departments: **Power, Software, Targeting.**

Power

The Tea Clipper is the most powerful laser ever designed. To make it effective, the laser beam intensity (Laser Power) must be as high as possible -- but it's not as easy as running another power line to the electric station.

High-power laser problems include blooming (distortion of the beam in the atmosphere) and pumping efficiency (the more power that is wasted in heat, the more the risk of a costly breakdown).

Software

Tea Clipper has several distinct functions that are controlled by software:

- Missile Protection
- Satellite Destruction
- Ground-Based Target Destruction

The software programmers must create control programs to track (via satellite) and destroy incoming missiles without damaging American equipment.

Targeting

The problem is to direct the laser beam over a distance of tens of thousands of kilometers with an accuracy of less than a meter. Targeting: the targeting team is trying to create a high-speed, super accurate, dynamic mirror-targeting system.

This is not an easy task. The mirror must be large, able to withstand millions of watts of laser power, yet be thin enough, and precise enough to move very quickly under the control of the software.

Hiring department heads

The first thing that you need to do is hire a person to run each of the three departments. When you first go to this screen, the three department head boxes are empty. To review the available scientists, **CLICK** on one of the empty department head boxes. You will now see a dossier of one of the available scientists. There are five candidates for each of the three positions. To flip through the candidates,

CLICK on the **NEXT** or **PREVIOUS** buttons. When the dossier for the scientist you want to hire is on the screen, **RIGHT-CLICK** to return to the Laser Research screen. You will notice that the scientists last name now appears in the department head box. Repeat the hiring process for the other two department heads.

Replacing department heads

If it becomes necessary to replace a department head, simply **CLICK** on the department head box (which contains the name of the scientist you wish to replace), and follow the procedure for hiring a department head. When you **RIGHT-CLICK** to return to the Laser Research screen, you will be asked to confirm the change in department head.

Reliability

Below each department head box is a reliability indicator. This graph will give you an indication of how reliable the department head is at any given time. Reliability is affected by knowledge, experience, fatigue, and many other factors. If a department head becomes increasingly unreliable, you may want to make a staffing change.

Status

This box will show you the status of the department head at any given time. There are at least five different things that may appear in this box. The most common are below:

Off-Duty - This is fairly obvious. The department is in effect closed. No tests can be scheduled or performed.

Learning - The department head is learning a new skill that he/she needs to perform his/her job.

Research - The department head in conducting research that relates to his/her department. No tests can be scheduled or performed.

Briefing - The department head is being brought up to date on any new developments that may relate to his/her department. No tests can be scheduled or performed.

Working - This is when the action takes place. Tests can be performed, and progress can be made.

Priority

You can select one of four priorities to assign to each department. The default priority is Very High (the right-hand most box). You can change priorities by pointing to one of the four boxes and **CLICK**ing. The priorities are from left to right: Low, Medium, High, Very High.

The higher the priority, the more the department head and his/her staff will work. Progress can come very quickly in High or Very High priority mode. However, this progress can come at a very high price. The more a department works, the more susceptible they are to errors and burnout (see below). Also, an increased schedule is likely to attract the attention of Soviet moles. It is recommended that High or Very High priority only be used for short periods of time.

Burnout

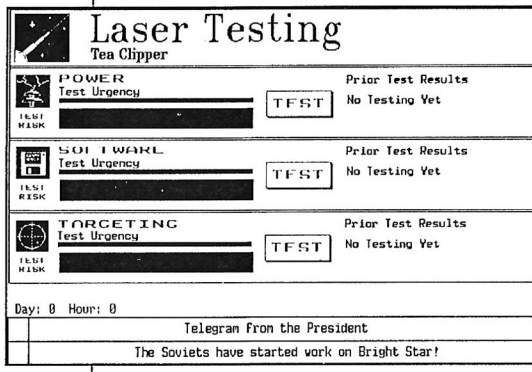
If a department has been operating in High or Very High modes for an extended period of time, the likelihood of burnout is high. If a department head goes into burnout, you will be notified on the Telegram lines. The word BURNOUT will also appear on the Laser Research screen by that department's name. It is critical that you immediately lower the priority for this department.

Effort

Underneath each department name is the related effort indicators. This graph represents how hard the department head and related staff are working at a given time. This will depend on the department heads leadership ability, the staff's level of fatigue, the department's priority, and the time of day.

Using Laser Testing

When you select the Laser Testing option on the Strategic Control Center screen, the Laser Testing sub-screen will appear.



This screen gives you some very important information about the status of your testing. From this screen you also can control the testing of each of the three departments: **Power, Software, Targeting.**

There are two horizontal bar indicators for each department. The topmost indicator is the **Test Urgency** for that department. This will show you how necessary it is to perform a test at any given time. If urgency is high and you do not perform a test, development may stall.

The second indicator is labelled **Test Risk.** This graph will show you the probability of a test in this department being a failure. The longer the bar, the more likely a failure will occur. As research progresses, the risk of a test being a failure will decrease.

Power Test

The power of the laser must be tested -- and it must be tested in different ways: low-power testing, laser beam coherency testing, and atmospheric blooming testing. Be sure you know when the Soviet interest in your tests is high (see the section on CIA Espionage), so you don't inadvertently give away any details on how far you have progressed in your development.

See the section on Using Power Testing for more information on how to conduct tests.

Software Test

Laser software testing can usually take place completely in the realm of the computer. However, once your tracking satellites are in orbit, you'll need to have trial runs of the defense/attack software.

See the section on Using Software Testing for more information on how to conduct tests.

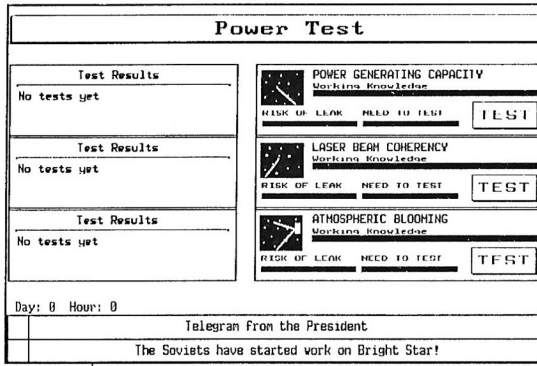
Targeting Test

Since the laser targeting system is solely a mechanical device, it's relatively simple to test. However, there are many things that can go wrong with it. Some of the tests require the full power of the laser to be used. One error in aiming the mirror, and you might melt a hole in the wall of your labratory.

See the section on Using Targeting Testing for more information on how to conduct tests.

Using Power Testing

To initiate a power test, **CLICK** on the **TEST** button in the Power section of the Laser Testing screen. The Power Test sub-screen will now appear.



There are three different tests that can be performed from the Power Test sub-screen: Power Generating Capacity, Laser Beam Coherency, Atmospheric Blooming. A description of the purpose for each test is given below. For instructions on performing the tests, see the section on Performing Tests.

Power Generating Capacity

The power capacity determines the absolute capacity of the laser to destroy. This sub-department specializes in increasing the wattage that the laser is capable of emitting.

Laser Beam Coherency

A laser generates a very special beam of light: it is coherent. Unlike a light bulb, which spreads light around in all directions, a laser concentrates all its power in a single direction. Coherency is related to the degree of beam spreading. A perfect laser, one that was perfectly coherent, would also

have a light beam that was the same diamater at 1000 miles as it was when it left the laser.

A laser with low coherency will not be very dangerous because the energy is spread out.

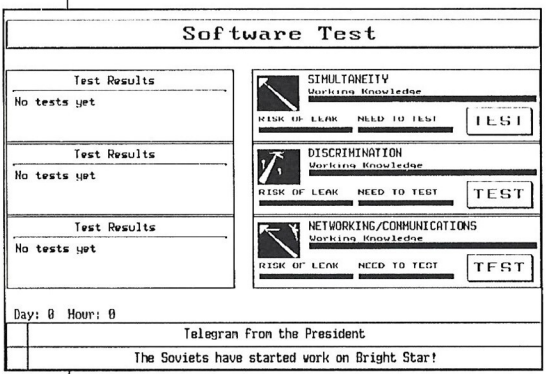
Atmospheric Blooming

When a high-energy laser beam is shot through the atmosphere, it can ionize the air molecules, creating a phenomena known as 'blooming'. Ionized air is not as transparent as unionized air, and that makes the laser much less effective at great distances because much of the laser power is eaten up by the plasma.

The cure for all of this is power modulation. A correct formula for beam modulation must be determined so that the laser can be varied in power to minimize the blooming effect.

Using Software Testing

To initiate a software test, **CLICK** on the **TEST** button in the Software section of the Laser Testing screen. The Software Test sub-screen will now appear.



There are three different tests that can be performed from the Software Test sub-screen: Simultaneity, Discrimination, and Network/Communication. A description of the purpose for each test is given below. For instructions on performing the tests, see the section on Performing Tests.

Simultaneity

The software element of Tea Clipper does not merely control the laser. It receives information from the orbiting tracking network satellites, as well as ground based radar stations.

Simultaneity determines the ability of the software to track, control and update more than one space borne object at a time.

Discrimination

While the software may be able to track objects in space, it also needs to determine what kind of object it is tracking. It would be a pity to destroy a native satellite that the software thought was an incoming missle.

This test determines how well the software can determine what is what.

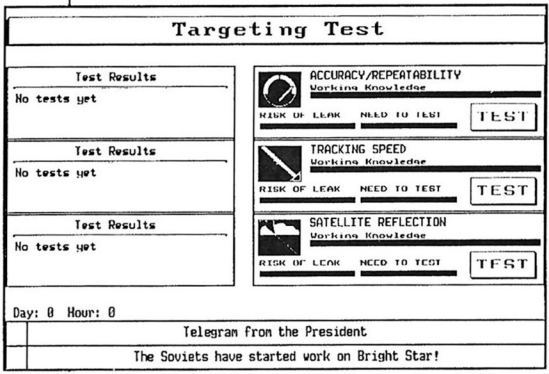
Networking/Communication

The software must communicate with the mirror satellites in order to direct their aiming. It must also receive information from ground-based radar stations, as well as the tracking network satellites.

The networking test checks the capability of the Tea Clipper software to handle the large flow of information as well as to control the aiming of the satellite mirrors so that they can accurately reflect the laser beam at the intended target.

Using Targeting Testing

To initiate a targeting test, **CLICK** on the **TEST** button in the Targeting section of the Laser Testing screen. The Targeting Test sub-screen will now appear.



There are three different tests that can be performed from the Targeting Test sub-screen: Accuracy/Repeatability, Tracking Speed, and Satellite Reflection. A description of the purpose for each test is given below. For instructions on performing the tests, see the section on Performing Tests.

Accuracy/Repeatability

The laser mirror device, which is also common to the mirror satellites, is a precision device that can move the mirror with an accuracy measured in hundreths of an arcsecond. (An arcsecond is equal to approximately 1/10 of an inch at a distance of one mile.)

The servo-mechanisims must be precise and reproducible. They must move the mirror, be it ground or satellite based, with a very high degree of accuracy.

Tracking Speed

The laser must also be able to react quickly, making multiple shots in a short span of time. If the mirror is accurate, but moves too slowly, then only one or two shots will ever be fired. Conversely, if the speed is good, but accuracy low, many shots can be made, but they may miss the target.

Satellite Reflection

This tests how well the laser beam is reflected by the satellite mirror. Small imperfections in the mirror shape (as recently discovered in the Hubble space telescope) can degrade the accuracy of the reflected beam. Imperfections in the mirror surface can also degrade the reflectivity of the mirror.

Performing Tests

As you can see, all of the test screens have the same basic layout. For each of the three tests available on each screen, there are three graph indicators along with a Test Results section. When you first see each of these screens, the Test Results section will display **'No tests yet'.**

Underneath the name of each test (i.e. POWER GENERATING CAPACITY), is a long narrow graph indicator. This indicator is the **Working Knowledge** indicator. This indicator will show you how much useable knowledge you have acquired. This is knowledge that has been proven through testing. This is the most accurate gauge of how far research has progressed.

The two smaller indicators are **RISK OF LEAK** and **NEED TO TEST.** RISK OF LEAK shows exactly that. This is the probability of the Soviets receiving information regarding the test or its results.

NEED TO TEST indicates how critical it is to perform a test in order for progress to continue. As each department conducts research, it must perform tests that will prove out its theories. If the need to test is very high and no test is performed, progress will slow down.

To schedule one of the tests on the screen, point at the **TEST** button and **CLICK.** If all systems are go, a countdown will appear in the Test Results section. There

are several things that will prevent the scheduling of a test, including: department head not available, another test is scheduled in this department, equipment is not ready, and many more. After you schedule a test, a checkmark will appear on the **TEST** button for that department on the Laser Testing screen.

NOTE: You must hire a department head for a department before you can schedule any testing in that department.

Once a countdown is in progress, it will continue no matter what screen you are on. When the test begins, you will see a **TEST PENDING** message on your screen. Shortly, a screen will come on to allow you to watch the test. While a test is being performed, the clock stops running. If you have toggled the graphics animation off with the G key, you will only get a message on the telegram line informing you that the test was performed.

Test Results

After a test is completed, the results will be put into the Test Results section of the testing sub-screen. If you are not on this screen at the time of a test, you can go to this screen at any point to review the results. The results will stay on this screen until the same test is scheduled again.

The results will show you some very important information. First, it will show you the test success as a percentage. It will also show you the day on which the test was performed. In addition, one of five failure modes will be displayed. The modes are numbered 0 through 4, and their descriptions follow:

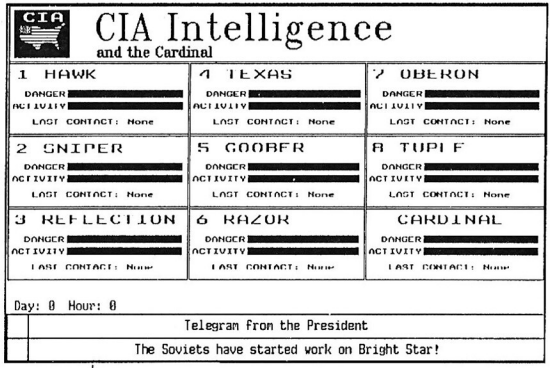
Failure mode 0 - *No failure.*

Failure mode 1 - *Design failure.*

Failure mode 2 - *Human error.*

Failure mode 3 - *Ambient conditions.*

Failure mode 4 - *Improper testing procedures.*



You control your secret agents from this screen. When the game begins, you have nine operatives, including the Cardinal, all placed in strategic jobs in the Soviet Union. These operatives have the potential to be your most important asset. When the game begins, none of the operatives have been given any objectives.

When an agent is assigned an objective, it has two effects. First, the Americans will gain knowledge from the espionage. Second, the Soviet's progress in that department will slow down. The fewer operatives you have assigned objectives to, the quicker the Soviets will progress in their research. You should assign at least two agents to each of the Soviet's departments (see the Agent sub-screen section in order to assign objectives).

Each of the operatives has a box on this screen. The box show their name, danger level, activity level, and last contact.

Danger

The Danger indicator will show you the probability of the agent being discovered by the Soviets. If the level gets too high, a telegram message will inform you of the agents imminent danger. If you do not act quickly and reduce the agent's objectives, the agent may disappear or be arrested. (See the section on Agent Sub-screen for information on changing objectives.)

Activity

The Activity indicator gauges the agent's covert operation. A skilled agent can maintain a high degree of activity without significantly increasing his/her danger level.

Last Contact

This is the name of the last CIA operative that this agent had contact with to pass information.

Agent Sub-screen

Each of the nine agents has a sub-screen. To access this screen, place the pointer inside the agent's box on the CIA Intelligence screen, and **CLICK**. The agent's sub-screen will now appear.

The agent sub-screen provides you with a great deal of information, and also allows you to change the agents objectives. On the top portion of the screen is a section that gives the agent's Last Contact, Risk of Discovery and Reliability.

Last Contact

This serves the same purpose as the last contact name on the CIA Intelligence screen.

Risk of Discovery

This indicator will show you the same information as the Danger indicator on the CIA Intelligence screen.

Reliability

This graph will give you an indication of how reliable this agent has proved to be in the past, based on information supplied by the agent that has proven to be correct.

Dossier

The dossier portion of the screen provides a photo of the agent along with several interesting pieces of information, including: background information, people that the agent has regular contact with, and any potential risk factors.

Objectives

The most important section of the screen is the objectives portion. There are 5 possible objectives: POWER SECRETS, SOFTWARE SECRETS, TARGETING SECRETS, KGB ACTIVITIES, and BRIGHT STAR SECURITY. Each agent can be assigned any combination of these objectives. However, the more objectives an agent is assigned, the higher their activity level, and of course, the higher their risk of discovery. Below is a brief description of each of the objectives:

POWER SECRETS - any information regarding research or testing involving the power department of the Bright Star project.

SOFTWARE SECRETS - any information regarding research or testing involving the software department of the Bright Star project.

TARGETING SECRETS - any information regarding research or testing involving the targeting department of the Bright Star project.

KGB ACTIVITIES - any information regarding KGB operations against Tea Clipper. This includes espionage, counter-intelligence, and sabotage.

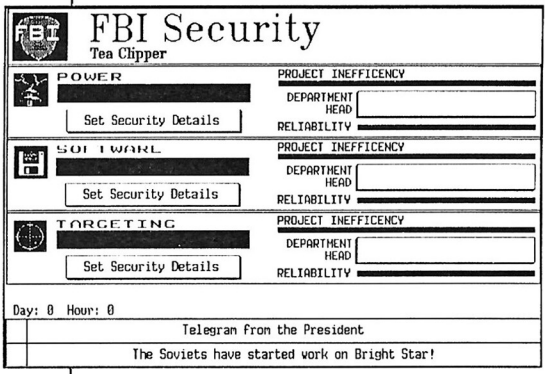
BRIGHT STAR SECURITY - any information regarding what security measures are in place, or may be put in place, to protect the Bright Star project.

It is advisable to assign only one or two objectives to any agent. The loss of an agent, especially the Cardinal, can prove very costly if not fatal, to the Tea Clipper project.

When you are finished with the agent sub-screen, **RIGHT-CLICK** to return to the CIA Intelligence/Cardinal screen.

Using FBI Security

When you select the FBI Security option on the Strategic Control Center screen, The FBI sub-screen will appear.



The FBI is in charge of the security surrounding the Tea Clipper project. It is very important that no information is passed to the KGB or that the Soviets not be able to kidnap a scientist. Therefore, the FBI monitors all of the personnel in each department. The FBI Security screen lets you set the level of security for each of the three departments. This screen also offers a gauge of what effect the security measures are having on the operation of each department.

Each of the departments has a section on this screen. For each department there are several important pieces of information.

Security level

This graph indicator, which is underneath the department name, shows the level of security currently implemented for this department.

Project Inefficiency

The drawback of a high security level is that it tends to slow down progress. Security measures are often obtrusive and can cause resentment among the staff. The Project Inefficiency graph will indicate how the security is effecting the department's ability to perform its primary function. Inefficiency is also related to the number of CIA agents you have in the field. If you have several agents in the field with the objective that corresponds to a given department. That department will be more efficient because the agents are supplying it with information.

Department Head

The name of the scientist that is in charge of this department is also shown on this screen.

Reliability

This graph will give you an indication of how reliable the department head is at any given time. Reliability is effected by knowledge, experience, fatigue, and many other factors.

Set Security Details

Place the arrow on the Set Security Details box and **CLICK** to access the sub-screen. You can make two selections on this screen.

Security Detail Level

There are seven levels of security, from Minimal to Oppressive. Minimal security provides little protection against information leaks. You should only use this level on rare occasions when the Soviets are showing little interest in developments in this department (see the section on CIA Espionage). Oppressive security should also only be used on rare occasions. Very little progress can occur when security is this tight.

To select a level, point at one of the seven buttons and **CLICK**. The graphics on the screen will change to indicate the new level.

Department Head: If Captured...

If there is a complete breakdown in security, it is possible that the Soviets may kidnap one of your scientists. If this happens, you have three options: Attempt a rescue, Rescue if possible, kill otherwise, or do nothing. You must select one of these options, so that when and if a kidnapping occurs, the FBI knows which procedure to follow.

Attempt Rescue

The FBI will dispatch agents to try to recover the agent. This rescue effort will take place in the form of a car chase. See the section later in the manual about Department Head Rescue for instructions on using the car chase.

Rescue if Possible, Kill Otherwise

This is the same as the Attempt Rescue option, but if you fail to recover the scientist, the FBI will dispatch an agent to attempt to kill the scientist. This is done so that the Soviets can not force the scientist to reveal secret information.

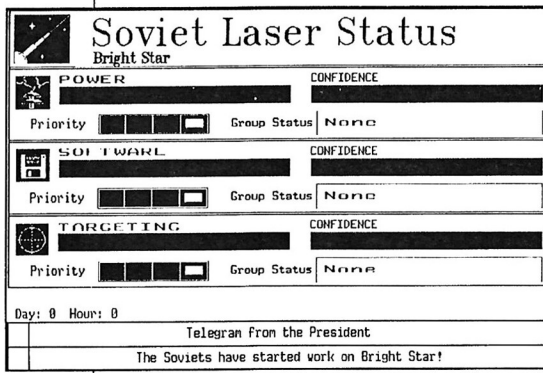
Do Nothing

You may decide that you want the FBI to do nothing if a Department Head is kidnaped. If you choose this option and the Department Head is kidnapped, you will simply be notified via telegram. You must then replace this department head.

To select an option, point at the button next to it and **CLICK.**

Using Soviet Laser Status

When you select the Soviet Laser Status option on the Strategic Control Center screen, The Soviet Laser Status sub-screen will appear.



This is one of the most important screens in the game. From this screen you can see how well the Soviets are doing in each of the three departments. There is a large graph indicator for each of the three departments.

Power

This indicates how well the Soviet Bright Star project is moving along in the area of power generation.

The Soviets are somewhat better in creating powerful lasers than the Americans. Therefore, you will have to be careful not to get behind in your power system development.

Software

This graph shows how well developed the Soviet Bright Star software systems are. While the Soviets are better at making laser power, the Americans have better software engineers. This should tell you that, while development of the software is faster, and the eventual quality is higher, you must be careful to increase security so that the Soviets don't learn too much from espionage.

Targeting

This indicator displays how advanced the Soviet's laser targeting system is. The Soviets are about as capable as the Americans in this area, but you can be sure that it takes less time to steal the plans for something, than it takes to try to build it from scratch.

Confidence

The other large graphs on this screen, reflect the American confidence in their intelligence information. The intelligence reports that are submitted by the American operatives are given to the department heads for analysis. The confidence level reflects the Department Heads' feelings as to the accuracy of the information received. The higher the confidence level, the more accurate the department indicators on the left-hand side of the screen will be.

Priority

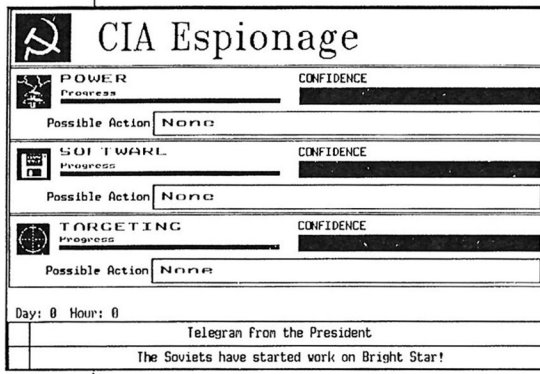
The Soviets have four different priority levels, much like the Americans. This screen will show you what priority the Soviets have assigned to research in each of their departments. The priorities are, from left to right: **Low, Medium, High, and Very High.**

Group Status

This will show you the last major task undertaken by this particular department.

Using CIA Espionage

When you select the CIA Intelligence/Cardinal option on the Strategic Control Center screen, The CIA sub-screen will appear.



This screen will show the CIA's opinion of what the Soviets think the American research in each department has produced. This information is very important in planning your security levels. It can also give you insight into any possible Soviet actions, such as a kidnapping attempt. There are several gauges for each department.

Progress

Below each department name is a progress indicator. This graph shows how much the Soviets think the Americans have achieved in this department. If this graph is very high, the Soviets think that the Americans are very close to completing development of this phase of Tea Clipper. When the graph is high, you will need to be cautious of any possible Soviet action against this department.

The bottom indicator shows how hard the Soviets think the Americans are working on this phase. In other words, how much of the American resources are dedicated to this department.

Confidence

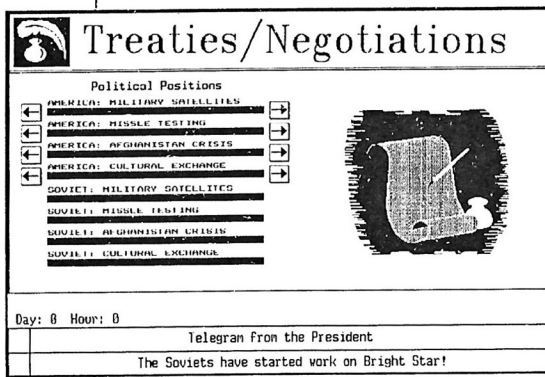
The Confidence indicator on this screen reflects the CIA's confidence in the intelligence information it has gathered regarding the Soviets perception of the U.S. development. The higher this level, the more accurate the other indicators on this screen will be.

Possible Action

This will show you what action the CIA is considering taking in order to gather more information regarding the Soviet's perception of Tea Clipper.

Using Treaties/Negotiations

When you select the Treaties/Negotiations option on the Strategic Control Center screen, The Treaties/Negotia-tions sub- screen will appear.



There are four different issues that the Soviet and American negotiators are working on: restricting the deployment of MILITARY SATELLITES, restricting MISSILE TESTING, resolving the AFGHANISTAN CRISIS, and increasing CULTURAL EXCHANGE.

The eight indicators on the Treaties/Negotiations screen will show you the American and Soviet position on each issue. The farther to the right the graph is, the more that country is willing to accept that issue. In general the more the Americans or Soviets are willing to accept some or all issues, the slower the development of their respective missile defense systems will be.

You can control the American position on each issue. To push harder for the acceptance of an issue, point at the

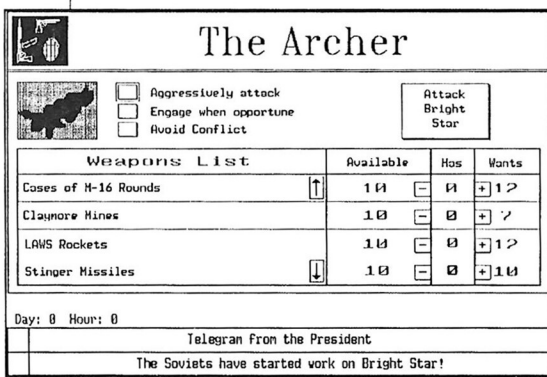
right-hand arrow and **CLICK**. To pull back support for an issue, point at the left-hand arrow and **CLICK**.

You will find it advantageous to increase support of all issues if the American development is lagging behind that of the Soviets. This will slow down the Soviets' progress, and may allow you to make up ground. Also, when both countries are supporting some or all issues, it is easier for the American operatives to get information out of the Soviet Union. Naturally, if the Americans are ahead in their development, you will want to pull back your support of these issues.

You will want to refer to this screen often, because the Soviets are constantly changing their positions. You can often gauge the Soviets development status by their willingness to give in on issues.

Using The Archer

When you select The Archer option on the Strategic Control Center screen, The Archer sub-screen will appear.



The Archer is possibly your most valuable resource. He is a rebel warrior fighting the Soviets that are occupying his homeland. The U.S. has been aiding the Archer for sometime, supplying him with weapons, supplies, and information. The Archer's most potent weapon is his ability and desire to attack the Soviet Bright Star complex, just north of the Soviet-Afghanistan border. This is an option you can only utilize once. Use it too soon, and the Soviets can quickly replicate equipment that is destroyed. Use it too late, and the Soviets will have already deployed their system.

There are three different modes that the Archer can operate in: Aggressively attack, Engage when opportune, and Avoid conflict. To select one, point at the box beside it and **CLICK.**

Aggressively attack

The Archer and his troops will seek out Soviet troops and conduct guerrilla attacks on them.

Engage when opportune

The Archer and his troops will only engage the Soviets when there is little risk of defeat.

Avoid Conflict

The Archer and his troops will go out of their way to steer clear of any Soviet troops.

Weapons and Supplies

The Americans supply the Archer with eleven different weapons and supplies: M-16 rounds, Claymore mines, LAWS rockets, Stinger missiles, Food, Clothing, Medical supplies, Intelligence contacts, Long range radios, Night vision equipment, and Binoculars.

Weapons list

On the left-hand side of the screen, you can see four supplies at a time. To move through the list, **CLICK** on the up-arrow button or down-arrow button.

For each type of supply, there are three important numbers.

Available

This is how many items the Americans can quickly and easily give to the Archer.

Has

This is how many of these items the Archer currently has in his possession.

Wants

The Archer is naturally aggressive. He will ask for large amounts of everything. To change the amount of any supply that the Archer has, **CLICK** on the + and - buttons.

WARNING: If the Archer is too aggressive, or has large amounts of weapons to use against the Soviets, he may become a big problem for the Soviets. If this happens, the Soviets may dispatch troops to try to kill the Archer and his army. However, if you don't give the Archer enough supplies, he will steal them or trade for them. If he becomes very low on supplies, some of his troops may desert, and he will be less effective in an attack on Bright Star.

Map

CLICK on the small map on the upper left-hand portion of the screen to reveal a large map of Afghanistan. This map will show you the location of the Archer's troops and the Soviet troops in Afghanistan. The approximate position of the Soviet Bright Star complex will also be shown. **RIGHT-CLICK** to return to the Archer screen.

Attack Bright Star

Once you have decided that the Soviets have made too many advances, and are nearing completion of the Bright Star project, you may choose to send the Archer on a raid of the Soviet complex. Point at the Attack Bright Star box and **CLICK**. If the Archer is not close enough to Bright Star to launch a raid, you will be given a message to that effect. You must wait a little while and try again.

NOTE: Make sure that the Archer has plenty of supplies before you launch an attack on Bright Star.

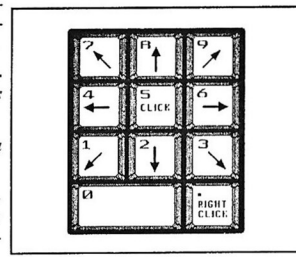
The Attack on Bright Star takes place in the form of an interactive arcade sequence. Even if you are playing with a joystick or mouse, you will need to use the keyboard to control the Archer.

Use the following keys to control the Archer.

SPACE BAR - *fire the Archer's gun.*

M - *detonates a mine.*

Arrow keys - *control the Archer's movements.*



When the raid begins, you will see the Bright Star complex from above. The Archer is the magenta (pink) colored man on the outside of the complex. You can move the Archer in any direction. The Bright Star complex is very large and does not fit on one screen. New sections of the complex will appear as the Archer walks to the edge of the current screen. The Archer will need to penetrate the walls of the complex to reach the equipment and scientists. To get through walls, the Archer must face the wall and use a mine (**M**). Use the Archer's gun against the Soviet personnel. The red men are the Soviet army troops. The cyan (light blue) men are the Soviet scientists. You can set back the Bright Star project greatly if you eliminate the scientists.

There is also one dark blue man (VGA and EGA). This is Colonel Bonderenko, the leader of the Bright Star project. If you can kill him, you will greatly impede the Soviets' progress.

If the Archer can reach the innermost rooms of the complex, he will be able to destroy the Soviet equipment and computers. The Archer must face a piece of equipment and use a mine (**M**) to blow it up.

Gauges

There are four gauges on the right-hand side of the screen. They will indicate Archer Damage, Enemy Damage, Bullets, and Mines.

Archer Damage

This will show you how much damage the Archer has sustained. If this reaches 100, the Archer is killed. The Archer can be injured by gun fire.

Enemy Damage

This indicates the amount of damage that the Archer has inflicted on Bright Star. This includes damage to equipment and personnel.

Bullets

This shows how many bullets the Archer has left in his gun.

Mines

This shows how many mines the Archer has left to use.

Fighting in Afghanistan

At various times, the Archer will carry out a raid on Soviet Troops in Afghanistan. At other times, Soviet Troops will carry out a raid on the Archer and his troops. If the Archer is in the Agressively Attack mode, this might happen quite often. If either of the above raids occurs, you will get a message on your screen to prepare for battle.

The raids in Afghanistan take place in the form of interactive arcade sequences. Even if you are playing with a joystick or mouse, you will need to use the keyboard to control the Archer.

Use the following keys to control the Archer.

SPACE BAR -fire the Archer's gun.

M - place a mine. A mine will blow up in 5 seconds, or if a jeep or tank hits it.

A - fire a short range missile.

S - fire a Stinger missle. This is a long range missile but uses up a large portion of your ammunition.

Arrow keys -control the Archer's movements.

When the raid begins, you will see the desert from above. The Archer is the magenta (pink) colored man. The Archer will need to destroy as many Soviet troops, planes, tanks, and jeeps as possible. Use the Archer's gun against the Soviet personnel. Use one of the missiles against planes, tanks, and jeeps. The missile will fire in whichever direction the Archer is facing. The Archer can walk in any direction. He can walk off of the top, bottom, or either side of the current screen, and a new screen will appear. The raid only lasts a short period of time. Therefore, the Archer will need to act quickly to inflict as much damage as possible on the Soviets.

Gauges

There are four gauges on the right-hand side of the screen. They will indicate Archer Damage, Enemy Damage, Bullets, and Ammo.

Archer Damage

This will show you how much damage the Archer has sustained. If this reaches 100, the Archer must retreat with his troops. The Archer can be injured by gun or rocket fire.

Enemy Damage

This indicates the amount of damage that the Archer has inflicted on the Soviet troops. This includes damage to vehicles and personnel.

Bullets

This shows how many bullets the Archer has left in his gun.

Ammo

This shows how many mines and missles the Archer has left to use. Remember, long range missiles use a large percentage of this each time one is used.

Using Satellite Reconnaissance

When you select the Satellite Reconnaissance option on the Strategic Control Center screen, the Satellite Reconnaissance sub-screen will appear.

Both the Americans and the Soviets have the ability to launch four different types of satellites: Laser Targets, Ground Recon, Targeting System, and Tracking Network.

Laser Targets

A laser target is basically something to shoot at. During your initial Tea Clipper tests, you will be aiming at targets on the ground, in your test lab. Later on, you will need something up in the sky to shoot at. The laser target can help test the fine-aim of your laser system. You don't shoot it with a lot of power, of course... at least, not intentionally.

Ground Recon

When you hear about satellite photos, these are the satellites that take them. These satellites are highly specialized, expensive, and delicate. With plenty of them in the sky, you'll be able to find the exact location of the Bright Star complex, as well as track Archer and the Soviet invaders in Afghanistan.

Targeting System

The targeting system satellites direct the full-power laser beam to its target. By reflecting off one or more targeting satellites, the laser can reach targets on the ground, at sea, in the air, or even in space.

This type of satellite contains a very high-reflectivity mirror and an incredibly accurate gyro-positioner.

Tracking Network

This is the 'Early Warning Network.' These satellites blanket the sky with sensitive detectors to report on satellite or missile launches. These won't be very important to

you during the early phases of Tea Clipper, but as your laser nears completion, these will form a vital part of your complete laser defense system.

USA

For each type of satellite, there is a number indicating the number of satellites that the Americans have in orbit of this type. In addition to the four types of satellites discussed above, there are satellites that are classified as Space Junk. After a satellite has used up its power, it can no longer be used. When it becomes completely inoperable, it is re-classified as Space Junk.

USSR

For each type of satellite, there is a number indicating the number of satellites that the Soviets have in orbit of this type. In addition to the four types of satellites discussed above, there are satellites that the Americans can not identify. These are listed as Unknown.

World Map

The map on this screen will show you the orbits of all of the American and Soviet satellites. Soviet satellites are shown as X's with a red center, the American satellites are round, with a white center.

CLICK on this map to reveal a full screen version. **CLICK** on the **BACK** button, or **RIGHT-CLICK** to retun to the Satellite Recon screen.

Launch Satellite

The Americans launch their satellites aboard one of the Space Shuttles. To prepare for a launch, point at the **LAUNCH PREP** button below whichever type of satellite you want to launch, and **CLICK**. The Launch sub-screen will appear. If a launch is scheduled, a checkmark will appear on the corresponding LAUNCH PREP button.

On the lower left-hand portion of the screen are several important pieces of information.

Launch Window

This will show you the time frame that the shuttle must be launched in. The length of the countdown will be related to this window. The smaller the window, the sooner the shuttle can be launched. However, if the window becomes too small, the countdown will have to wait until the next window.

Technology level

As research and time progress, the technology used on American satellites will increase. This number will show you the current level of technology. When this level increases, other satellites already in orbit become outdated. Outdated satellites are still usable, but do not utilize the latest technology.

Satellites to go

This will show you how many more satellites of this type you can launch before the orbit is full. The most effective SDI system would have a full orbit of each type of satellite. However, it is possible to complete Tea Clipper without completely filling all orbits. Once the orbit is full, you can only replace outdated satellites with new ones.

Available for launch

Satellites must be built, so you do not always have satellites available. This number will indicate how many satellites are complete and ready to be launched. If none are currently available, you will need to wait until one becomes available.

Time Until Launch

If a launch has been scheduled, this will show you the countdown in hours. When the countdown is about to expire, a box will appear on the screen and count off the final seconds. You will then see the satellite deployed. If you have the graphics animation toggled off, you will only be notified of the launch on the telegram lines.

Across the top right-hand side of each of the launch screens are your four options for launching satellites. To select one, point at the appropriate box and **CLICK.**

Fill Gap in Orbit

This will schedule the launch of a satellite to fill a gap not occupied by another satellite of this type. All of your initial launches will be of this type, as you establish a network of satellites.

Abort Launch

This will cancel a launch if a countdown is in progress.

Postpone Launch

This will hold the countdown at its current place until you **CLICK** on this button again to resume the countdown.

Replace Old

After satellites have been in orbit for some time, they become outdated. Use this option to schedule the launch of a satellite to replace one of this type that has become technologically obsolete.

Risk of Launch Detection by Soviets

This indicator will show you the probability of the Soviets detecting the launch of a military satellite. If the risk is very high, you may want to postpone the launch.

Orbit

On the lower right-hand portion of the screen is the orbit tracking map. This map will show you the orbit of all of your satellites of this type. Satellites that are still active are shown in blue, while outdated satellites are shown in red (white on CGA).

Using Presidential Review

When you select the Presidential Review option on the Strategic Control Center screen, the Presidential Review sub-screen will appear.

It is important to consult with the President on a regular basis. He will give you valuable insight into where the Americans Tea Clipper project stands in relation the Soviet system. Also, the President will be the first one to know when your SDI system is complete. He will also be the first person to inform you if the Soviets have completely deployed the Bright Star system.

Satellite Destruction

This is where all of the research and lab testing comes to life. The satellite destruction sequence will let you track and fire upon one of your Laser Target satellites. If you are successful in destroying a satellite, progress in all of your departments will move forward.

You can not initiate the satellite destruction sequence until you have performed at least one test. To initiate the satellite destruction sequence, press the **K** key. A satellite tracking map will appear. All of your Laser Target satellites will be shown as they move through their orbits. In the middle of the screen will be a crosshair. Your goal is to lock-on to one of the Laser Target satellites and fire four shots from your laser to destroy the satellite. Once completed, you can not initiate this sequence again until you have performed at least one more test.

The difficulty of this task depends on how advanced the research in all of your departments is. Use the **Up, Down, Left,** and **Right** arrow keys to move the crosshair over one of the satellites. It is best to anticipate the path of a satellite and intercept it as it moves past. The speed at which the crosshair moves is dependent upon the status of your targeting development. The more advanced your targeting, the faster the crosshair will move. If your targeting research is still in its early phases, you may not even be able to lock-

on to a satellite. Above the Lock-on indicator is a gauge that shows you how much time you have to lock-on to the satellite. The gauge starts all of the way up and you must lock-on before it goes all of the way down. The amount of time that you have to lock-on depends on how advanced your tracking is.

If the crosshair passes directly over the center of a satellite, the **Lock-on** indicator will light. Your tracking computers will only be able to maintain lock-on for a few seconds. If your tracking is developed well enough, you may be able to remain locked-on long enough to fire four shots.

Once you have achieved Lock-on, you must press the **SPACE** bar to fire the laser. Just above the Fire indicator is a small graph. This graph indicates when the laser is charged-up for another shot. After you fire a shot, you must wait for this gauge to move all the way to the right before you can fire another shot. Four shots are required to destroy the satellite. The Fire light will flash each time you press the **SPACE** bar. If you manage to get off four shots before you lose lock-on, the **Destroyed** indicator will light up.

Because destroying a satellite requires all three of your departments to work together, it is necessary that each department has developed enough technology to accomplish the satellite destruction. If your power production is low, the laser will not be able to fire four consecutive shots. If your software is not far enough advanced, the computers may not be able to track the satellite correctly. If targeting development is low, you will not be able to lock onto a satellite.

Labratory research can only advance development to a certain point. The satellite destruction sequence applies all of your labratory findings to the real world. It will give you an accurate gauge of just how advanced your strategic defense system has become. You can attempt to destroy a satellite as many times and as often as you wish. However, you must perform at least one test between each satellite destruction sequence.

Department Head Rescue

If one of your department heads is kidnapped by the KGB, and you have set the Rescue if possible option in FBI Security, you will see a notice on your screen telling you to prepare for the chase. Several minutes may pass after the kidnapping, before the chase begins. The Soviets have your scientist in a van, and are racing along the highway to their secret command center. You must pursue them in your car and ram the van from the side so that it must stop.

If you are successful in stopping the kidnappers, the scientist will return to work immediately. If you are unsuccessful in your rescue effort, you will need to hire a new department head to replace him/her.

You will see the chase from above. The kidnapers are in the gray van (Light Blue on Tandy and EGA, white on CGA), and you are in the blue car (magenta on CGA) at the bottom of the screen. You must speed up, avoiding the other cars, and repeatedly bump into the kidnaper's van to disable it. Use the following keys to control your car:

Left-arrow - *move to the left.*

Right-arrow - *move to the right.*

Up-arrow - *move up slightly.*

Down-arrow - *move back slightly.*

1, 2, 3 - *control your speed. Use the keys on the top row of the keyboard.*

There are four gauges on the right-hand side of the screen.

Fuel

Keep an eye on this. If you drive too fast you will burn a large amount of fuel.

RPM

Show you how hard your engine is working. This is a good gauge of how much fuel you are using.

Damage

This will show you how much damage your car has sustained. If it reaches 100, you must stop, and the kidnapers will get away.

Enemy Damage

This will show you how much damage you have inflicted on the kidnapers van. You must get this value to 100 to force them to stop.

Winning the Game

If you have outpaced the Soviets in deploying your missile defense system, you will win the game. In order to complete development, you must have completed sucessful tests in all your departments, and deployed a significant number of each type of satellite. Your Working Knowledge gauges for each department will show you how close you are getting. At the same time, you must have prevented the Soviets from advancing Bright Star to the point of completion.

The President will be the first person to know that the U.S. system has been completed. Therefore, you will not be informed that you have won, until you check the Presidential Review screen.

You will be asked to enter your name on the High Score screen, if you have one of the ten fastest development times.

Saving the Game

While on any menu screen, press the **S** key to save the game. There are three save positions, allowing you to save three different games in progress.

After you press the S key, you will be asked to choose a save position. Press **1**, **2** or **3**. The current game will be saved at that exact point. You can then use Load Game at a later time to resume the game where you saved it.

If you are going to quit the game, and want to resume playing the same game later, make sure you save before pressing **ESC** to quit.

Loading a Game

While on any menu screen, press the **L** key to load a previously saved game. You will be asked to choose a save position to load from. Enter the desired number and the game will be loaded, and resume from the point at which it was saved.

Appendix A
Department Head Dossiers

This section contains dossiers on the fifteen people available to fill the three department head positions: Power Systems, Software Development, and Targeting/Mirror. These dossiers are available in the program for you to reference at any time.

The dossiers list: name, department, qualifications, education, ID number, and any other pertinent information.

You must also refer to this section whenever you load the program. As explained in Chapter 1, you will be asked to identify one of these scientists. Find the corresponding picture in this section and enter the department head's ID number.

Arien Kierkgaard

PHOTO

ID #:
13

Department: Power systems

Qualifications: Designs very power efficient lasers.

Education: C.I.T.

Other: Norwegian import, now naturalized.

Milton Thales

PHOTO

ID #:
14

Department: Power systems

Qualifications: Pioneer in laser research

Education: M.I.T.

Other: Widower

Newton Meninges

PHOTO

ID #:
9

Department: Power systems

Qualifications: Expert with laser pumping systems.

Education: MIT, Ph.D.

Other: Married, 2 children, native Bostonian.

Alexander Theibold

PHOTO

ID #:
10

Department: Power systems

Qualifications: Designed rail gun, expert at power feeds.

Education: Yale, MIT

Other: Native of Ohio, married.

Werner Klaus

PHOTO

ID #:
6

Department: Power systems

Qualifications: High energy physics system designer.

Education: Harvard, Ph.D.

Other: Parents were immigrants, no family ties.

Stan Kamazotz

PHOTO

ID #:
3

Department: Software Dev.

Qualifications: Networking systems designer

Education: UCLA

Other: Unattached

Major Alan Gregory

PHOTO

ID #:
4

Department: Software Dev.

Qualifications: Intuitive grasp of systems.

Education: MIT

Other: Interest in Bea Taussig.

Helena Troy

PHOTO

ID #:
8

Department: Software Dev.

Qualifications: Extensive artificial intelligence experience.

Education: Univ. of Athens

Other: Unmarried, amateur radio hobbyist.

Walter Gilbert

PHOTO

ID #:
7

Department: Software Dev.

Qualifications: Data transfer specialist.

Education: U.S. Air Force.

Other: Published novelist, pen name: Michael Donovan.

Will Green

PHOTO

ID #:
15

Department: Software Dev.

Qualifications: Systems compilers and user interfaces.

Education: Florida Int'l Univ.

Other: Once nominated for Albert Einstein award.

Ray Szenig

PHOTO

ID #:
12

Department: Targeting/Mirror

Qualifications: Reflectology specialist.

Education: Univ. or Helsinki

Other: Divorced 3 times.

Molly Adams

PHOTO

ID #:
2

Department: Targeting/Mirror

Qualifications: Special substance engineer.

Education: Univ. or N. Carolina.

Other: Large video game hobby.

Dr. Bea Taussig

PHOTO

ID #:
1

Department: Targeting/Mirror.

Qualifications: Large systems design specialist.

Education: MIT

Other: A long history of innovative breakthroughs.

Winston Zedemore

PHOTO

ID #:
11

Department: Targeting/Mirror.

Qualifications: Servo mechanism specialist.

Education: Georgia Tech.

Other: Solar energy buff, many patents pending.

Kathy Fresco

PHOTO

ID #:
5

Department: Targeting/Mirror

Qualifications: Theoretical light and particle physics genius.

Education: Calif. Institute of Tech.

Other: Art lover

Appendix B
Glossary

Blooming: Distortion of a laser beam in an atmosphere caused by the ionization of air molecules.

Bright Star: The codename for the Soviet strategic laser defense system.

Discrimination: Determining the identity of a space-borne object.

Ground Reconnaissance satellite: A satellite that performs high- altitude espionage by sending pictures and data.

Laser beam coherency: The degree of spreading that a beam has as it gets farther from the source.

Laser Target satellite: A satellite that is used as a target for laser testing.

Launch Window: Time period in which the launch of the Space Shuttle can safely take place.

Mole: A intelligence officer for an unfriendly country that has been placed in a job in a friendly country for the purpose of gathering information.

Power generating capacity: The absolute measure of a laser's power to destroy.

Pumping efficiency: A measure of how little of a laser's power is wasted in generating heat.

Repeatability: Ability of a mirror to achieve the same targeting angle over and over.

Simultaneity: The ability of software to track multiple space- borne objects, while handling mirror movements and vector updates.

Space junk: An object in orbit that is no longer usable.

Targeting System satellite: A satellite used to reflect and aim a laser beam at a target.

Tea Clipper: The codename for the American strategic laser defense system.

Technology level: Numeric value showing the currently available satellite technology. Tracking Network satellite: A satellite used to identify and track missiles.

Tracking speed: The rate at which a mirror can maintain aim on a moving target.

Working knowledge: Knowledge that has been proven through testing.

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