SC-78503 STARFIGHTER

NEW PILOT INDUCTION MANUAL

TOP SECRET

SGA PERIODICALS OFFICE/LANDBASE CENTRAL
Printing: 5E

SC-78503 STARFIGHTER

NEW PILOT INDUCTION MANUAL

FROM: S.G.A.
Military Central Command
Office of the Adjutant General
000001-413 LB. Sec. 38-AM

TO: ALL LANDBASE CENTRAL INSTALLATIONS

RE: STARFIGHTER CRAFT DEVELOPMENT

Commendations are awarded to the following:
Ensign Terri Starks
Ensign Chuck Starks
Ensign Russ Wetmore
Ensign Peppy Pietrzak
Ensign Roger Walukiewicz
Captain Scott Adams
For:
BRAVERY IN THE FACE OF EXTREME DANGER, and
SERVICE ABOVE AND BEYOND THE CALL OF DUTY

These persons are promoted to the rank of LORD OF THE STARS and are to be recognized as officers and individuals of the highest calibre in consideration to their substantial contribution to the development of the SC-78503 craft.

Special mention is awarded to the following:
L.O.T.S. Russ Wetmore
For:
PERSISTENCE AND DETERMINATION AGAINST OVERWHELMING ODDS, and
PERSONAL SACRIFICE FOR THE CAUSE OF THE AUTHORITY.

Lord Wetmore is promoted to L.O.T.S./Red Star Cluster

Promotions are permanent and effective immediately.

FROM: S.G.A.
Dept. of Systems Development
Research Division
129647-876 LB. Sec. 172-BN

TO: All personnel
STARFIGHTER SERVICE

RE: Aft Gravity Detectors

Pilots are advised that the gravity sensing system utilized in the SC-78503 craft is highly complex and represents an expense to the Authority. The high attrition rate of SC-78503 craft and the relative freedom with which they are dispensed to inductees precludes enhancement of hyper-technology avionics systems at this time.

A tentative program has been proposed which would offer modification of craft to include a gravity sensing system in the stern. As proposed, the modification would be made at installation cost and offered to pilots who have demonstrated their ability to preserve their craft.

Estimated cost of this modification has been placed at 1,720,000 soveriegns. This estimation is subject to adjustment as required due to unexpected difficulties, impromptu design changes, material over-runs, and inflation.

Modification as proposed will require a craft down-time of no less than 14 months barring unforseen circumstances. No facilities will be dedicated to conversion until the war has been won.

Pilots are advised to develop their skills on existing craft.

RUMORS

Rumors are circulating to the effect that the SC-78503 craft is capable of performing beyond the published design specifications. The pilot is informed that operation of the STARFIGHTER craft in an unauthorized manner is potentially harmful to the craft and despite the reported success of "Hot Rod" pilots, is strictly forbidden. Further, involvement in the unwarranted spreading of rumors is strictly discouraged.

SOLAR GALACTIC AUTHORITY
Information Service Division

FROM: S. G. A.
Dept. of Information
Office of Public Operations
129647-876 LB, Sec. 116-BF

T O : All Pilots
STARFIGHTER SERVICE

R E : Undocumented Craft Function and
Unauthorized use of SG-78503

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CHAPTER 1
INTRODUCTION

Section 1. POLITICAL ENVIRONMENT

1-1. Petro Resource Conglomerate
The STARFIGHTER pilot is commissioned by the Solar Galactic Authority as a paramilitary mercenary combatant. As such, the pilot is instructed that the relationship of the Authority to the Petro Resource Conglomerate is currently a State of War. The conflict was initiated by wanton acts of sabotage on the part of agents of the Petro Resource Conglomerate against properties in the rightful territorial domain of the Authority. In addition, the Conglomerate has recently completed a new class of intersteller HYPERCHARGE mine known at this time only by its self-dubbed code-name — DEATHCASTER. The sole purpose of this weapon is the destruction of the LANDBASE system network itself and the extinction of the Authority protected way of life for billions of subjects. The STARFIGHTER pilot is compelled by conscience and commission to attack all PRC craft to destroy.

1-2. Existance of Piracy
Certain non PRC craft have been authorized as attack targets. These craft are merchant vessels engaged in piracy of lawful merchant trade. Treaty agreement with the Independent Merchant's Resource Corporation empowers the SGA to validate such pirate craft as targets.

1-3. Existance of General Unauthorized and Disruptive Activity
Certain SGA craft are authorized targets. These are exclusively limited to a very large number of SC-78503 STARFIGHTER type designated craft. These craft are engaged in Marauder activities and are regularly intercepted in attempts to seriously interfere with civilian and military craft apparently without purpose or goal. It has been widely rumored that Marauder craft are actual SGA fighters, stolen while in service by criminals and other inexperienced pilots. Pilots are prohibited from engaging in such rumors. In fact, many more Marauder craft have been encountered than are accountable as missing. The pilot is instructed that Marauder STARFIGHTER craft are replicas apparently constructed by the PRC in an attempt to approach SGA technology levels.

1-4. Independent Merchant's Resource Corporation
a. The Independent Merchant's Resource Corporation is a private corporation chartered by the SGA as a profit-making enterprise. Evaluation of the relationship between the SGA and IMRC indicates that IMRC considers itself to have recently attained soveriegn status and is operating as an independent state within SGA boundaries unlawfully. Despite this appearance no formal declaration of soveriegnty has been advanced by IMRC and therefore the official position of the SGA in reference to the issue is to tolerate so-called "treaty requests" in order to maintain a cooperative relationship with IMRC.

b. The IMRC has initiated a policy of offering a kill bounty on certain craft. All such craft are considered to be adversary craft according to SGA directives and therefore pilot participation in the bounty program is both sanctioned and encouraged. Pilot is reminded that under no circumstances is IMRC to be considered soveriegn in any way. In the interest of alliance the pilot is cautioned to accord every courtesy to representatives of IMRC and to avoid confrontatory circumstances with IMRC craft and other property.

Section 2. SOCIAL ENVIRONMENT

2-1. Historical Impact of Hypercharge Technology
a. Originally Hypercharge was storable only in crudely controlled fields maintained by an unmanned keeping craft. Application of Hypercharge technology was at that time limited to military uses. The original charge bomb is the forerunner of the present interstellar mine.

b. Civilian use of Hypercharge became practical when safe maintenance of large fields was made possible by application of Alsinger's Klien Cone Imaginary Matter model to a postulated large Hypercharge field, thus providing negative entropy to the field as a function of the field in time. This field configuration model heralded life as known today. Among other things, time

travel, stellar defense fields, the LANDBASE steller system redesign process, Hyperdrive, negative time communication channels, direct energy-to-mass conversion, and regulated stellar radiation are all founded in Kline Cone Field self-management. Modern civilization would be impossible without star pumping and pumping was at best impractical without the Hypercharge cone.

c. With the advent of negative duration interstellar voyages, the normal tendency of humans to overpopulate available living space become a forgotten worry. In the spirit of patriotic duty, the Solar Galactic Authority provided much of the Hypercharge technology that now provides the source of every meaningful expenditure of energy. To provide protection of its right to authority in the licensing and use of a valuable commodity, the SGA developed the military organization that is now the core of galactic social order.

d. During the early period of the Hypercharge era many of the concepts pioneered by the SGA (then a private corporation with no viable recourse) were stolen and used for competitive purposes. The majority of the sources of this disruptive opposition have been encorporated as part of the present SGA empire and are now subject; most other distractive sources no longer exist. Orderly expansion of the frontiers of man has been realized.

2-2. Hypercharge Technology and Current Events

a. The advent of Hypercharge technology has essentially created society as you know it. In the forseeable future, time-space manipulation and energy-mass conversion promise to obsolete most production and transportation processes. With the extension and perfection of technology based on the existing body of knowledge alone, the wildest dreams of the human race will soon be realized.

b. The power of Hypercharge is unquestioned and power may be equated with a certain element of danger. As a tool of destruction, Hypercharge is the most devasting weapon conceivable. Such tools are valuable aids to the protection of the civilian population against invasion. The presence of an ultimate weapon in the hands of authority provides security against violent revolution, however, in the hands of a malicious and destructive enemy, the prospect of Hypercharge use is a threat to life itself. The Petro Resource Conglomerate has succeeded in duplicating or stealing much of the knowledge discovered and developed by the Solar Galactic Authority. Evidence exists that the PRC is constructing a weapon capable of disrupting the entire Hypercharge shield of a LANDBASE steller system. If allowed to continue unopposed, the PRC may succeed in annihilating all life, or worse, dictating terms with the threat of total destruction of life.

c. In reaction to danger present, the Solar Galactic Authority has mobilized all available military units to defeat the Petro Resource Conglomerate before they are able to close the Hypercharge gap. To further aid in the confrontation, para-military units (capable of supporting themselves financially while also supporting the military effort) have been authorized. These units comprise the STARFIGHTER service. All STARFIGHTER pilots are outfitted with the SC-78503 STARFIGHTER craft — a formidable weapon in its own right.

Section 3. THE STARFIGHTER PILOT AND CRAFT

3-1. Responsibilities of the STARFIGHTER pilot.

a. The STARFIGHTER pilot is expected to be capable of independent action. The peculiar nature of hyperdrive requires that the pilot be willing to abandon his home LANDBASE and all civilian ties. While in the field, the pilot is responsible for the use of the STARFIGHTER craft. Aggressive action against friendly craft is not permitted and will result in demotion.

b. The pilot is responsible for the maintenance of his craft. This maintenance includes the fueling and charging of the craft as well as periodic overhaul. The SC-78503 craft is both capable and dependable. If properly cared for and maintained, this vessel will last until retired or destroyed in combat. The Solar Galactic Authority provides the SC-78503 free of charge to new pilots. Respect the craft for what it is — a useful and well-built tool.

3-2. Conduct of the Pilot while at LANDBASE

a. Occasionally the pilot will be required to enter the field of a LANDBASE to attend the needs of the craft. Conduct while at LANDBASE is to be befitting to the STARFIGHTER service.

b. Protocall requires that when entering LANDBASE space, the craft beacon should

be ON. No request for service should be made when funds are not sufficient to afford the offered service. Pilot should not DRIVE out of the LANDBASE field until invited to do so. No DRIVE to LANDBASE should be endeavored unless the intent to purchase service exists.

c. The pilot should not attempt to depart the craft at a non-military LANDBASE. Such attempt will result in the loss of pilot status. Proper debarkation is accomplished at LANDBASE CENTRAL only.

d. The Solar Galactic Authority has invested heavily in its relationship with the companies which provide the various LANDBASE services. When at LANDBASE the pilot represents the SGA and inappropriate actions directly reflect on the service. LANDBASE facilities must be treated with respect.

3-3. The SC-78503 STARFIGHTER Craft

The SC-78503 is a drive-capable light chase-attack fighter with advanced Hypercharge weaponry. Some other features of the SC-78503 include extremely long drive range & two independent gravity sensing systems. The craft boasts 3 nose jet control systems; manual control, target lock tracking system, and an advanced automatic long range drive alignment system just introduced. The most advanced feature implemented in the SC-78503 is the newly introduced target positive identification system which is capable of determining not only target craft type but also port of call. This unique system takes instantaneous readings of craft profile, exhaust emissions, and tactics to identify the use to which the craft is put. When this system is able to return results from data, the information so presented is infallible. The targeting system in the STARFIGHTER craft returns position and direction of travel on target craft in any position within range.

Section 4. PILOT SOLVENCY

4-1. Bounty availability

a. LANDBASE FOUR and SIX offer cash bounty for certain craft. This bounty is entered into the pilot record as an increase to the bank balance. The bank balance will accept a maximum credit of 65,000 sovereigns. Beyond this limit computational errors may result in improper posting and total loss of the bank balance.

b. As with all LANDBASE procedures, the pilot will be advised of the proper moment to press ENTER to select the offered service. The ENTER control will operate only when the ENTER advice communication is visible on the com line. The pilot is reminded to observe appropriate protocal.

c. Use of bounty is required for all craft support services so the pilot is advised to maintain a sufficient bank balance to afford unexpected expenses. STARFIGHTER pilots enjoy a high status in keeping with their patriotic achievements, however, due to the nature of the STARFIGHTER pilot life style, no credit is extended for services rendered to pilot or craft.

d. All craft for which bounty is offered are also rank improvement material. The pilot should understand that no military credit is considered for craft for which bounty has already been offered.

4-2. Pilot Expenses

a. The SC-78503 utilizes hypercharge for many craft functions and will need to be recharged at regular intervals. Two companies maintain vessel recharging LANDBASE facilities. The first is Hypertech Incorporated which maintains various facilities type designated LANDBASE FIVE. The second is Independent Merchant's Resource Corporation which maintains all of the LANDBASE SEVEN designated facilities. The fee for vessel recharge is 3000 sovereigns for the active field and 4000 sovereigns apiece for compressed reserve fields. This fee is uniform regardless of charge condition on arrival at LANDBASE. LANDBASE SEVEN facilities also offer maneuvering fuel.

b. Maneuvering Fuel is required for normal space flight. This fuel is available from Chemical Specialties Corporation at LANDBASE TWO and from I.M.R.C.'s LANDBASE SEVEN facilities. Cost for fuel is ten units per sovereign to a limit of 5000 units or the pilot's bank balance. Pilot is charged only for the amount of fuel added by landbase.

c. Occasionally the SC-78503 requires drive system overhaul. When required, overhaul is available at LANDBASE ONE facilities, operated by the Unadynamics Group. Overhaul is offered for a fee of 2000 sovereigns and will restore the craft to a repair state of 100.

d. I.M.R.C. has established a credit system for pilots stranded without hypercharge or maneuvering fuel. Under this system the pilot is able to purchase tow tickets at

I.M.R.C. LANDBASE THREE facilities. By the use of these tickets, the pilot is able to request an I.M.R.C. supported tractor craft for power tow to LANDBASE SEVEN facilities. The fee for these tickets is 500 sovereigns each. The pilot may purchase as many tickets as are desired.

Section 5. STARFIGHTER MILITARY SERVICE

5-1. Landbase Central
The only truly military LANDBASE facility available to the pilot is designated LANDBASE CENTRAL. LANDBASE CENTRAL facilities are maintained exclusively for the STARFIGHTER service and offer two functions to the pilot.

5-2. Rank Evaluation
a. The primary function of all LANDBASE CENTRALS is the evaluation process that is the basis of rank award. During consideration of the pilot combat record, LANDBASE CENTRAL tallies the craft which have been dispatched by the pilot. Friendly craft are specially considered and even hits on friendlies are measured against the record of the pilot. The rank evaluation procedure is mandatory on arrival at a LANDBASE CENTRAL.

b. The results of evaluation are shown in two entries. Competence measures the average service record of the pilot and will be updated by the results of the evaluation. Assertion compares the performance on the latest tour of duty with that of previous tours. The system used for both competance and assertion is Excellent, Very Good, Passable, Very Poor, Pathetic. Notice that Passable is the best assertion attainable while maintaining an Excellent competance. This is because no improvement on Excellent is possible. Notice also that once Excellent competance is lost it cannot be regained.

c. Rank evaluation will always affect pilot rank. The rank grades for pilots are STARLORD, CAPTAIN, INSPECTOR, ENSIGN, and NEW PILOT. Each of these ranks is divided into 255 grades. Each grade is further divided into 255 credits toward grade. New pilots begin service with a rank of NEW PILOT, grade 250. It should be mentioned that many factors of STARFIGHTER life are rank dependent. Bounty is decreased for higher ranks, pilot combat zones also become more challenging. Higher ranks are entitled to greater amounts of hypercharge. Arrival at a LANDBASE CENTRAL without any craft hit credit will result in a reduction in rank. Occasionally a pilot may arrive at a LANDBASE CENTRAL ahead of the credit for the last few combat encounters.

CHAPTER 2
HYPERCHARGE

Section 1. HYPERCHARGE THEORY

1-1. Introduction
The pilot is no doubt aware of the civilian concept of Hypercharge. This is the stuff that makes the weather and keeps the void of space out of your stellar system. A different perspective of Hypercharge will be presented in this chapter. The pilot is advised that, under no circumstances, is Hypercharge to be hereafter referred to as "stuff."

1-2. Extra Light Velocity
a. The great majority of the energy released by a star is non-productive. This fact was of little importance until the end of the 23rd century when the discovery was made that a gravity field could be complex polarized to cause the energy escaping a star to leave on a curved path. When sufficiently curved, the energy is reattached to the source and serves both to reinforce the new gravity polarization and to accelerate the fusion reaction.

b. The expected result of this acceleration occurs — the star begins to condense as a result of its increasing internal energy and the pressure of its own accelerating harmonic gravity field. The result in the presence of normal gravity would be immediate Nova followed by cooled recondensation. This however, does not occur. Actually, the energy trapped in the cyclic gravity field is being repeatedly accelerated escaping the power system in a form which is very real but totally undetectable by normal means — Hypercharge.

c. Hypercharge does not interact with sublight matter and energy but it does respond

to the harmonic gravity system that created it from them. The Hypercharge field is not even conceivable in three-dimensional thought and yet is totally controllable by four-dimensional gravity models which are not beyond existing technology in production means.

d. Simply stated we cannot measure or even sense a balanced Hypercharge field.As with wind-blown trees, we can only see the effects of a field imbalance. when a condition of imbalance occurs, amounts of Hypercharge are deaccelerated to sub-light velocity. Needless to say the results are impressive.

1-3. Simplified Field Theory

a. When Hypercharge is deaccelerated the result is an enormous quantity of normal energy, normal matter, or both. The question of what "appears" and in what quantity is beyond the scope of this text, but it is of note that both the field from which the charge is extracted and the physics of the sub-light reality into which the fallout is introduced are affected by the transition, and that the effects can be precisely controlled.

b. Fortunately a Hypercharge field is self regulating and will re-establish balance within most disruption bounds. This balance is comparable to the balance of the sub-light energy of the star harmonic gravity field that created the Hypercharge.

c. It is theorized that Hypercharge does not accumulate in an increased field once produced but instead generates a Hyper-Hyper charge Field due to acceleration. This process, if actually occurring, is dimensionally infinite.

d. At this point it is known that when the Hypercharge field is "scratched" to produce a predictable form and amount of matter or energy, the process does not noticably diminish the availability of Hypercharge (field symmetry is affected). Rather, the primary consumption of fusionable fuels of the field-generating star is increased until field balance is reestablished.

1-4. Star Pumping

The net result of application of Hypercharge technology to a host star is the conversion of the star into a powerful tool at the expense of vast quantities of stellar fuel. The Hypercharge pumping process is less than .0001% efficient with current technology. This is apparently due to the loss of primary Hypercharge as secondary, tertiary, etc. Fields are successively generated. Theoretically, an infinate number of fields are so produced and the star should instantly vanish, however the self-reinforcement of field production is incomplete and stellar exhaustion is merely accelerated greatly. It is believed that the existance of increasing order fields aids the stability of primary fields.

1-5. Field Assignment

a. Field assignment is the process by which objects which do not produce stellar quantities of sub-light energy may attract and confine a Hypercharge field. This process is of value to the STARFIGHTER because it is by this means that power is available for weaponry and drive in the SC-78503.

b. It was originally believed that primary energy production was required for maintenance of a Hypercharge field. Interstellar Mines reflect this philosophy with their fast decay fission cores. More recently it was discovered that any object capable of harmonically rearranging its gravity field could support Hypercharge fields without producing primary energy.

c. The field must be transferred to the host object while in the presence of a dynamically (stellar) produced Hypercharge field. The resulting sub-field is then self-maintaining. Subsequent charging appears to press the primary sub-field into a secondary state while producing a new primary field. It is of interest to the STARFIGHTER that the SC-78503 craft is able to support five concentric fields. The innermost of these is a normal-space interactive field. The remaining fields are measurable only by the fact that when the primary field is expended, it is replaced by another until all reserve fields are eventually expended. The SC-78503 is the only SGA-produced craft with "Field stacking" capability commonly known. Information beyond this point is classified and not available to pilot ratings.

Section 2. LANDBASE TECHNOLOGY

2-1. Introduction

a. This section will expand the pilot's understanding of the universe in which he lives. Most civilians are aware that their ancestors' lived on the naked planets of normal stars. What may be surprising is that these ancestors planets spun, exposing their inhabitants to long periods of darkness such as the Dark Watchers on the adverse sides of modern planets endure. This condition was not the choice of a few for lucrative pay and hazard benefits; it was the fate of every

dweller of the colonized universe.

b. In addition, these ancestors did not look out into the protective black void of the stellar systems defense field; they looked into naked space and were aware of other star systems by direct vision. All of the various star systems hung in the dark sky like disaster waiting to fall. Most planets also "enjoyed" the night view of large natural satelites called moons. These spun madly around the planets and appeared to be large brightly lit rocks floating through the dark sky. Star was a term which applied to a small bright point in a dark sky even before stellar systems beyond the home planet were understood. Life in the past must have been an eerie experience indeed.

c. Although it seems ridiculous, the dwellers of these defenseless stars often required forcible relocation to LANDBASE systems. The term LANDBASE is now in common military use and refers to any protected, inhabitable stellar system. We will now discuss the structure, strengths and weaknesses in the LANDBASE stellar inhabitation system. Much of the following information is CLASSIFIED. Discussion with non-military personnel on the subject of LANDBASE technology is forbidden and is considered to be a capital offense against the security of the LANDBASE system.

2-2. Stellar Pumping and Landbase

a. Stellar pumping made possible the inception of the defended stellar system. Energy-mass conversion enabled planetary reorganization. The end consequence of these combined concepts was LANDBASE.

b. The first pumped stars were established early in the 23rd century by the Solar Galactic Authority as a possible source of efficient energy production. The dramatic consequences of some early failures in harmonic gravity field balance caused the now defunct United Federation of Planets to classify all knowledge arising from Hypercharge technology and the SGA became a government captive corporation.

c. The first productive result of stellar pumping was the transferal of Hypercharge to nuclear reactors in space. At this time no means of organized control of the harmonic field was known, but when outfitted with gravity detection equipment and released in deep space, these primitive devices became excellent interstellar mines.

d. Problems with sub-light communication caused a lull in Hyper-capable craft design. These problems did not arise if self-sufficient system could be created within the Hypercharge field and so research was begun on maintenance of a stellar field large enough to incorporate the planets of the producing star. The result of this research was the destruction of an undisclosed number of planetary systems and a lull in Landbase research began.

e. Quite by accident, the SGA acquired the services of an obscure young physicist named Van Kratener. Van Kratener's work on energy-mass conversion within a Hypercharge field had been rejected by the United Federation on the basis of a simplistic observation. Van Kratener had not had access to most of the then-classified information on the subject of harmonic fields and therefore was either an impossible genius who had reconstructed the work of a hundred renowned researchers single-handedly, or was a quack guessing in the dark. As the SGA soon discovered, Van Kratener was an impossible genius.

f. The Solar Galactic Authority obtained exclusive rights to Van Kratener's ideas and, under his direction, produced a LANDBASE system in essentially the form of a modern LANDBASE system. To accomplish transferal of mass (colonists) through the field perimeter a unique concept was made into dubiously physical reality. The concept was called transient mass. Transient mass is a hypothetical mass which never materializes, but which affects the Hypercharge field that creates it. The field maintains mathematical balance while producing a physical hole to the field interior. This effect is only producable from the field interior and so the security against unauthorized entry is intact even in light of field hole technology.

g. Solid mass could not be created within the Hypercharge field, but the field could precisely translate sub-light mass or energy of any sort into a more desirable form by the same means that transient mass was created.

h. Bringing all of the above technology together in a masterful plan, Van Kratener first constructed a standard Hypercharge field from within and then expanded the field to include the star's planetary system. The mass so included in the area of the Hypercharge field was then permutated into LANDBASE — a homogeneous substance suitable for the support of biological organisms. Atmosphere and finally colonists were added.

2-3. LANDBASE Configuration

a. The structure of LANDBASE stellar systems was established with the construction of the first such system and has not required alteration to date. According to design perimeters, a ring of 250 to 2500 planets of 8000 miles approximate diameter and separated by a minimum of 250,000 miles, circle a central star in syncronous orbit at an approximate distance of 100 million miles. Adjustments to the specifications of the star and the availability of mass for planet creation cause a broad variation in these specifications.

b. The host stars of LANDBASE systems are fully pumped Hypercharge producers. Field control in populated systems is fully segmented and allows local field density control and spot creation of transient mass bodies for weather creation. Frequency selective light output is allowed in conical sections to illuminate the various planets, the remaining energy being committed to pumping. It is significant to note that the nominal light output of a pumped star is suppressed at its Hypercharge field perimeter. LANDBASE systems cannot be detected from without except by gravity detection; however, the external effective gravity of Hypercharge fields is enormous and therefore gravity detection range is extended somewhat.

c. Hypercharge field variation causes time frame distortion even when the variation is quite small. This condition forces those wishing to maintain the time frame of their peers to avoid crossing LANDBASE field boundaries. The result of this phenomena has been the tendency of the populations of LANDBASE systems to isolate themselves from the unseen universe beyond their field boundary. Only those desirous of a transient life style are willing to cross Hypercharge field boundaries.

d. All LANDBASE systems are the property of the Solar Galactic Authority making this institution the defacto ruler of the populated universe. In addition, the SGA is solely responsible for maintenance of Hypercharge technology which in turn maintains all LANDBASE systems. Despite this condition, the vast majority of LANDBASE systems are administrated by local (system) governmental bodies.

2-4. Conclusion

This presentation was not intended as an in-depth treatment of the intricate mechanics of LANDBASE technology. Rather, it was intended as an aid to appreciation of the role played by the Solar Galactic Authority in pioneering and supporting the life-style enjoyed by civilized mankind. Critics may portray the SGA as despotic but the case is quite the contrary. No such critics exist in the LANDBASE system network which derives its livelyhood from SGA investment and research.

CHAPTER 3
TECHNICAL INTRODUCTION

Section 1. HYPERCHARGE

1-1. STARFIGHTER Hypercharge Field

The SC-78503 craft maintains an assigned Hypercharge field (ref: 2;2-5) with a maximum controllable depth of factor 5. This field is utilized by the craft for lambda-plus transportation, for defense shield, for displaced time gravity sensing, and for weaponry. The field controller includes a Van Kratener field perimeter charge decelerator and gravity sensing to a 100 year limit on any vector. The craft is capable of Hyperdrive within the gravity detection range.

1-2 Hypercharge Application to Weaponry

a. SC-78503 weaponry operates on the Hypercharge deceleration principal. Functionally, all craft weapons operate by rapid distortion of a Hypercharge field into an elongated shape. This distortion creates a temporary field imbalance and a nominal loss of Hypercharge. In the absence of mass or competitive field at the craft field perimeter, the loss of charge to sub-light mass or energy is evenly distributed as field balance is re-established. If a condition of competition occurs during field extension, the imbalance matter is precipitated at the point of competition. This sudden occurence of matter or energy is highly disruptive to the competing field or mass. Unshielded bodies will be destroyed. Targets with Hypercharge fields will experience heavy field imbalance. Hypercharge-to-mass conversion within the SC-78503 field is not possible so the pilot is not subjected to the consequence of his

weapons; however, the sudden precipitation of mass at the field perimeter will return a mild concussive shock in the SC-78503.

b. There are two separate Hypercharge weapons. The first is the Wave Weapon and the second is the Beam Weapon. The Wave Weapon elongates the field bi-laterally in two opposed directions. The range of this weapon (500 distance units) is not great but damage to competitive fields is substantial — 2000 charge units on the average. Notably, if this weapon encounters mass at either extension point, matter is precipitated at both points.

c. The Beam Weapon creates a spear-like charge elongation in one direction only. The range of this weapon is 3500 distance units and damage delivered is a function of field strength at impact and therefore varies inversely with target distance.

d. The SC-78503 utilizes its Hypercharge field for both drive and weaponry. For this reason, the field keeping Kline cones must be reconfigured for Beam Weaponry, Wave Weaponry, or Drive as desired. The pilot should familiarize himself with weapon selection and drive readiness procedures.

1-3. Local Gravity Sensing

a. The SC-78503 utilizes two Hypercharge technology gravity sensing systems. The most fundamental of these is the local time-space gravity sensing system which calculates the direction and shape of target craft on the basis of the reaction of the STARFIGHTER field to external gravity.

b. Many new pilots are curious to know if they will "see real stars" while in the STARFIGHTER. Of course, the Hypercharge field around the SC-78503 blocks light from outside the field and there are no view ports in the craft. As a consolation to eager pilots, the gravity-reactive screen display does produce star gravity images which are similar to the visual appearance of stars and which represent the position of actual stars in space.

Section 2. HYPERSPACE

2-1. Hyperdrive

a. Hyperdrive is the most accurate form of lambda plus travel known and also the safest. Drive is achieved by creation of a large quantity of transient mass behind the SC-78503 craft. The consequence of the size of this mass in comparison with the mass of the STARFIGHTER craft is the displacement of the Hypercharge field in space and time from any viewpoint outside the field. Technically this displacement is not motion and no sensation of inertial acceleration will be experienced within the field.

b. While accelerated to lambda-plus velocity, the Hypercharge field is non-interactive with sub-light matter, however the result of collision of an accelerated field with a stationary Hypercharge field would be cataclysmic. In the event of such a collision, the stationary field would be mildly inbalanced and then augmented by the amount of the moving field. Any sub-light substance within the accelerated field would simply become pumped — the pilot would become Hypercharge. The incidence of LANDBASE systems is common enough for such an accident to occur. Fortunately the SC-78503 is outfitted with a detection system to avoid problems. The system is fully automatic and is called Star Scan.

c. The pilot is advised to expect significant changes in the physical universe during Hyperdrive. Time displacement is a necessary corrolary to the drive function and may occur on a positive or negative axis, resulting in some change in time frame with nearly all drive sequences.

2-2. Extended Range Gravity Scan

a. The SC-78503 incorporates two distinct gravity detection systems. The first is normal-spatial with target auxiliary systems for profile and axis-of-motion resolution. The second system is simply a scan for the presence of any significant gravity field but is temporally extended to scan about 250 years in two directions and about 250 major distance units spatially. This spatial range is roughly 600 times the maximum range of the normal-spatial detection system.

b. Target gravities, in the direction of the STARFIGHTER crafts original time and position are treated preferentially by the scan to limit spatial or temporal drift. One possible result of significant drift would be precipitation of the STARFIGHTER craft into a time when the P.R.C. will be subdued and therefore not subject to needful attack. The pilot is encouraged that exploration on the temporal axis has been undertaken by research craft. As a result of data collected during such exploration it is known that subdual of the Petro Resource Conglomerate rebellion will be accomplished largly through the efforts of the STARFIGHTER service.

2-3. Hyperspace Communication

a. The intricacies of Hyperspace communication are beyond the scope of this text, however, a brief description of the SC-78503 COM system is in order. Hypercharge technology is required for communication due to radiation suppression at the charge field perimeter. In the case of delta time communication the problem of field interference is complicated by the problem of temporal precedence.

b. Simply speaking, in order for the pilot to receive credit for a target at a LANDBASE CENTRAL facility, in some cases it is necessary for the facility to be able to scan future gravity occurences with sufficient detail to establish that the claimed encounter will take place. Further, the LANDBASE scanner must be capable of identifying both the STARFIGHTER and his target.

c. With the aid of the LANDBASE field this process is quite possible and is, in fact, exactly the manner in which STARFIGHTER credit is established. SC-78503 time log and encounter record are temporaly and spatially verified by a detailed scan of the recorded event and credit is awarded accordingly.

d. The equipment required for Extended Identification is maintained exclusively at military LANDBASE CENTRAL facilities. Bounty stations must request support from an available LANDBASE CENTRAL to confirm encounters with targets for which bounty is awarded.

Section 3. NORMAL SPACE THRUST AND MANEUVERING SYSTEMS

3-1. Main Thrust Jets

The SC-78503 generates thrust by investing mass in the Hypercharge field. This mass is then precipitated at four points on the field perimeter directly behind or before the craft. The result is craft motion. The distribution of mass to these four points is controled by axis sensing equipment to prevent side slide conditions. In other terms, the thrust system provides craft motion and insures that the craft is always moving in the direction to which its nose points. In the event of field loss, the fuel is burned directly to produce the same result. Fuel is consumed only during acceleration and deceleration procedures.

3-2. Nose Jets

The SC-78503 uses conventional nose jets for manuevering. These small jets spin the STARFIGHTER craft, creating a side slide condition which is corrected by the main thrust system, the result being an altered vector direction. Nose Jets burn conventionally into the field area and do not directly employ Hypercharge concepts. They use only nominal amounts of fuel and are generally available even when manuevering fuel is technically expanded.

Section 4. TARGET EVALUATION SYSTEMS

4-1. Introduction

The SC-78503 incorporates several standard local navigational aids. These include Range & Axis advices and a military Craft Outline display. In addition to these standard features, an advanced peripheral target position indicator and a target position lock are available. The total of these systems comprises the SC-78503 targeting system.

4-2. Range

The Range advice indicates the absolute distance to a target craft in minor distance units. The magnitude of these units is classified information and not available to pilot ratings. As with all data collection systems within a Hypercharge field, the ranging system is gravity-sense operated. Range indication is automatically activated by target presence and is overridden by some Navigation & Drive Mode systems which share its screen display area.

4-3. Axis

As an aid to the observation of target craft, the SC-78503 incorporates an axis sensing system. This system indicates the predominent axis of motion of a target craft relative to the position of the pilot. Axis equipment reads to target gravity field. Axis indication is automatically activated by target detection. Function is overridden by some Drive preparation systems.

4-4. Craft Display Screen

a. As an aid to target identification, the SC-78503 incorporates a target outline display for targets directly in front of the craft. This system operates for targets in a section which measures 72 degrees horizontally and 42 degrees vertically. Stellar gravity fields are represented in a section which measures 60 degrees horizontally and 30 degrees vertically.

b. Pilot is instructed to note that the craft display area extends beyond the display window by 6 degrees in each direction. This fact is known to have resulted in the demise of inexperienced pilots. It is possible for a craft to be displayed on screen in a conflicting display area and therefore to be unobservable without some rotation of the STARFIGHTER craft.

c. The operation of craft display is a comparative process which produces an arbitrary screen display. The pilot should not confuse this display with any visual anology. One notable difference is the on axis nature of the gravity analysis. Targets will always be presented as though pointed exactly in the direction of their primary direction of travel even though this is seldom actually the exact direction of travel. Targets are represented in 6 distinct resolution ranges. Transition between ranges is abrupt and targets will appear to change size very suddenly. Resolution range is a function of target gravity magnitude and target distance. Gravity detection allows target detection in cases when visual examination would be ineffective. The relative lack of light in deep space generally disallows visual detection of craft. In addition the gravity display represents an enormous magnification of the craft outline. Only craft at resolution ranges 5 and 6 would be visible by the most powerful optical magnification equipment even if sufficient light were present to make such equipment usable. Resolution of craft outline is limited by the evaluation time alloted to outline display and therefore many target features appear to be jagged. This does not reflect current space craft construction techniques but, rather, reflects the level of resolution of the outline display equipment.

4-5. Peripheral Targeting

The SC-78503 is equipped with an advanced target tracking system that operates omnidirectionally to the limit of the local gravity detection range. This system is available only in the Combat Mode and must be manually selected. The system is similar in design technology to other craft systems which operate on gravity detection. The function of targeting is to display positional information on targets as an aid to combat activities. Use of the targeting system is detailed in the section concerned with craft control systems.

CHAPTER 4

STARFIGHTER CRAFT DATA DISPLAY

Section 1. DATA DISPLAY DESCRIPTION

1-1. Introduction

Detection of and reaction to stimulus outside a Hypercharge field is a very complicated process. Within such a field no normal sensation of outside occurences is possible and therefore automated support processes are required to inform the pilot of conditions beyond his field perimeter. Essentially, the pilot uses his data display as his eyes and field distortion as his ears. His console becomes an extension of his body and his weapons are his tools. This chapter will educate the pilot to interpret data presented in the data display — a process which is essential to pilot survival.

1-2. Description

a. Some references in this chapter to the data display will be labled Figures 1 through 5. These figures appear in Appendix C. In cases where an Item or Area alone is referenced, all figures should be compared to determining the various advices available in the specified area. Many areas of the data display are multi-purpose and the pilot should be aware of when to look for needed information as well as where on the display such information can be found.

b. The cone configuration advice (items A and B) informs the pilot of the shape of the SC-78503 Hypercharge field. The advice displays the field readiness status and the relative cone shape.

c. The axis advice (item C) displays the primary direction of travel of a target craft. This area will be blank if no target exists. Refer to figure 6 for demonstration of the various displays, they are: (H) Oncoming, (J) Fleeing, (K) Evading Left, (L) Evading Right, (M) Evading Upward, and (N) Evading Downward. This area is masked by the NAVIGATION mode zero velocity advice.

d. The target range advice (item D) indicates the distance to the target. Maximum trackable range is in the vicinity of 35000 distance units and targets which escape this range will be lost to the pilot and cannot be retreived. This area is masked by the NAVIGATION mode when SC-78503 velocity

is zero. The masking procedure allows the display of Extended Range Gravity Scan and LANDBASE Location distance advices to be displayed in this area.

e. SC-78503 velocity is displayed in this area (E). In COMBAT mode, this area will be blank if no target is within range or if STARFIGHTER craft velocity is zero. In NAVIGATION mode, the area will be masked by double horizontal bars if craft velocity is zero.

f. TARGETING and TARGET LOCK advices (item F) indicate that the corresponding systems are selected. TARGET LOCK advice will mask TARGETING display. These systems function only in the COMBAT mode.

g. Hypercharge and maneuvering fuel warnings will be displayed (item G) when the corresponding "materials" are depleted to an extent which indicates possible hazard. FUEL LOW is displayed only when craft velocity is changing.

h. The GRAVITY advice (item H) operates in two modes. This advice will be steadily displayed in the presence of a local target gravity field. It will light dimly if the Extended Range Gravity Scan locates a target in a close time-space. NOTICE. The NAVIGATION mode zero velocity indication masks areas C, D, and E with a double horizontal bar and thereby interferes with local target detection. In this situation, the GRAVITY advice is the only indication of local targets available.

i. Area I is used for several purposes. The COM waiting advice appears here. In addition, Hypercharge and Maneuvering fuel amounts appear here when requested by pilot control.

j. The Beacon status display (item J) indicates whether the STARFIGHTER beacon is OFF or ON.

k. Area K is used during DRIVE only and is one of only two displays available during Hyperdrive. The scanning advice presented here is an indication that the STAR SCAN mass detection system is functioning properly.

l. Area L is reserved for four display systems in non-LANDBASE environments. The data display plots the gravity fields of reference stars into this area to provide a sense of motion to the pilot. The plotted stars are those used by the craft navigational record system. If a local gravity field (target) is present within the detection bounds of the target outline discriminator, the craft outline interpretation is displayed in roughly this area. The TARGET LOCK centering grid is displayed in this area when the nose jets are target locked. Finally, if a target is present but is not within the outline detector bounds, the TARGETING grid and its blinking block will be displayed in this area if the TARGETING system has been activated.

m. This area displays the selected craft operation mode for the SC-78503.

Section 2. DATA DISPLAY USE

1-1. Introduction

Most data display advices are self-explanatory in use; however, studies have indicated that effective pilot performance requires that certain points concerning use of the data display be highlighted. In this section, the implications indicated by certain advices will be discussed.

2-2. Axis and Range

The RANGE advice (area D) can be read dynamically to determine target speed. The pilot should note that, for instance, if the AXIS indicator shows a fleeing target and the RANGE is increasing, the target is escaping. If the AXIS indicator shows an oncoming target and the RANGE is decreasing rapidly, the pilot should prepare to be attacked.

2-3. Low Charge and Fuel Advices

The warning indicators (item G) for Hypercharge and Maneuvering Fuel do not indicate an emergency state. They are reminders that the pilot should use remaining craft resources carefully and that replacement should be anticipated as being eminent. The pilot should note that the LOW CHARGE indicator **does not** consider reserve fields. The pilot is advised to replace the primary field in preference to the use of reserve fields. This is recommended due to the added security of additional charge and the cost of field compression. Reserve fields are replaced at a cost of 4000 sovereigns; primary fields cost 3000 sovereigns.

2-4. TARGETING Advice

a. Some of the most creative language used by the average STARFIGHTER pilot involves the question of the location of a target known to exist but not prominently displayed. The data display, if correctly used, will answer this question quickly as follows:

b. If the craft is not operating in the COMBAT mode, change mode to COMBAT.

c. If there is no GRAVITY advice, **there is no target.**

d. If area F is vacant, turn **on** TARGETING.

e. If area F displays TARGET LOCK, turn **off** TARGET LOCK.

f. If TARGETING grid is displayed, move blinking block to center of grid.

g. If TARGETING grid is not displayed, recheck b-f above. If there is still no grid available, **the target is on screen.** Remember that targets are displayed in an area that significantly overlaps the area L frame; frame may be interfering with clear view of craft, move your craft to center the target. If the TARGETING grid appears during this process, note the position of the blinking block. Craft will be centered using the same controls required to center the blinking block.

h. If craft is still not located, evaluate RANGE (area D). At greater ranges, craft often appear as wide stars and may be difficult to distinguish. If the RANGE is small and changing rapidly and the AXIS advice (area C) is also changing often, the craft is at high velocity and close range and is outflying the STARFIGHTER craft's ability to follow. In this situation, special dogfighting maneuvers are required; these are discussed in Chapter 5.

2-5. Beacon Advice

The pilot should be aware of his beacon status (area J). If the beacon is on, the SC-78503 is continually identifying itself to the target craft. If the beacon is off, target craft must use other means to determine the intent and nature of the STARFIGHTER craft. Beacon use is at pilot discretion with the cautionary notice that interstellar treaty provides that the SC-78503 must send an identifying beacon at some point during all encounters.

2-6. Weapon and Drive Readiness

More charge is lost by new pilots to weapon and drive malfunctions than to all other uses combined. To fire weapon, area A must indicate weapon readiness. To DRIVE, zero velocity must be indicated by bars in areas C, D, and E. Control console must be CLEARed. Notice — there is no advice to indicate that the CLEAR procedure has been performed.

CHAPTER 5
OPERATIONAL PROCEDURES

Section 1. CHAPTER INTRODUCTION

1-1. Scope of Chapter

The term "operational procedure" can be applied to every action that is possible for the STARFIGHTER pilot. Operational procedures range in complexity from the simple selection of a LANDBASE service to the complicated procedure of target craft identification. This chapter will cover or at least touch upon all known capabilities of the SC-78503 craft from the applications viewpoint.

1-2. Types of Procedures

a. As discussed above, operational procedures vary widely. In this chapter, the pilot will first be instructed in the various modes of craft operation. Within the mode framework, each operable control will be discussed at length concerning its function and relationship to other controls.

b. When each control has been introduced as an independent function, the controls will be redefined as portions of the craft systems in which they are employed. The Craft Control Systems section will introduce to the pilot the use of the SC-78503 craft as a tool for STARFIGHTER service.

c. As the pilot will soon become aware, his console controls will be used in harmony to produce intelligent control of his craft. Some sequences are more productive than others and the pilot will be instructed in control procedures known to produce constructive results in some applications.

d. Some control procedures will result in particular hazard to the STARFIGHTER pilot or craft. These procedures are refered to as pilot error conditions and will be discussed in the last section of this chapter. Pilot error conditions are included so that the pilot will be able to avoid them and experimentation in the area of intentional error creation is strongly discouraged.

Section 2. CRAFT CONTROL MODES

2-1. Introduction

a. Several very specialized areas of operation are necessary in a craft such as the SC-78503. These include combat and weaponry control, time navigation and intertemporal communication, and time travel. In spite of the complexity of each of these areas of specialization, the pilot must be well versed and accomplished in each to achieve success in the STARFIGHTER service.

b. Fortunately, not all areas of specialization are required of the pilot and craft at the same time. If this were the case, both would be overwhelmed by the simplest of operational procedures. The complexity of the STAR craft series of craft types has resulted in the use of Control Modes. Each mode is most suited to a particular craft environment and provides pilot capability with the most needed craft systems, while ignoring systems not needed in the environment for which the mode is designed.

c. In this section, we will analyze and define the four Control Modes available in the STARFIGHTER craft. Specific reference will be made to each of the systems and controls available in each mode, however, the pilot is advised that the treatment of the subjects of craft systems and craft controls presented in this section is not exhaustive and the pilot should possess a working knowledge of the entire manual before attempting to operate the SC-78503 craft.

2-2. DRIVE Control Mode

a. The DRIVE control mode is the most straight forward of the SC-78503 control modes and is therefore presented first. All systems in operation in the DRIVE mode are fully automatic. The control console is disconnected and the pilot is encouraged to use his DRIVE mode time to prepare for the anticipated environment at the end of the drive.

b. Although there are no manually operated systems available in the DRIVE mode, the pilot should be aware of the process that occurs during drive. In this time, the pilot and craft are accelerated beyond the speed of light and rapidly displace time and distance in a process not properly called travel. Most of the SC-78503 systems are occupied during time displacement with the problems of recording the displaced time and distance and with continually plotting the desired course to the destination time-place.

c. Those systems not occupied with providing thrust, course, or records are used to provide a more important function — STARSCAN. The STARSCAN systems avoid the possibility of passing through a Hypercharge field en route. The result of such an accident would be immediate destruction of the SC-78503 craft as normal matter and the demise of the pilot. STARSCAN operation is totally automatic and the pilot is advised of proper operation by a Scanning indicator immediately above the target outline display. This area of the Data Display is used exclusively by the STARSCAN systems.

d. The single exception to the lack of manual control during DRIVE is the self-destruct procedure which is available to the pilot at all times. The pilot should note that although the DRIVE mode is fully automatic, the preparation for DRIVE requires some complicated manual control and should be studied carefully.

2-3. LANDBASE Control Mode

a. LANDBASE Control Mode is the default mode in the presence of a LANDBASE field. The pilot will encounter such a field directly from DRIVE if a successful drive is made with a LANDBASE selected as the destination time-place. The LANDBASE mode yields craft control to LANDBASE authority and is designed to provide security to the LANDBASE facility against potential damage from welcomed craft.

b. In this mode the LANDBASE is able to assess craft records not normally available to the pilot while in unprotected space. Some craft statistics available to the pilot while at LANDBASE are rank details, performance details, craft drive systems condition, pilot bank balance, and pilot tow credits. These are displayed automatically for the pilot while under LANDBASE control.

c. All LANDBASE facilities are able to provide some service to the SC-78503 craft or pilot. At all non-military LANDBASE installations, these services are selected by pressing "ENTER" when requested to do so. All functions of the STARFIGHTER craft normally available to the pilot are disabled by LANDBASE control, with a single exception.

d. When any LANDBASE facility is prepared to release the SC-78503 craft, the advice "D TO DRIVE" will be presented to the pilot. Pressing the D control authorizes the LANDBASE to shift the STARFIGHTER craft into the DRIVE mode and to eject the craft into Hyperspace. The drive provided by LANDBASE is roughly four times the magnitude producible by the craft itself and is selected to place the pilot and craft in a time-place area according to pilot rank.

e. The drive from LANDBASE uses no STARFIGHTER Hypercharge. The pilot is warned that the drive may take a considerable period of time even in the pilot subjective time frame. The DRIVE process deriving from LANDBASE ejection will terminate with the SC-78503 in NAVIGATION mode in a non-hostile environment.

2-4. NAVIGATION Control Mode

a. The NAVIGATION control mode is designed to focus craft systems on the required preparatory procedures for DRIVE.

In the NAVIGATION mode, the pilot is able to locate targets and LANDBASE destinations in the near time-space vicinity. In addition to the location of Hyperdrive destinations, the pilot initiates the procedures required for DRIVE in the NAVIGATION mode.

b. NAVIGATION is one of two modes available to the pilot in potentially hazardous space. The pilot is advised to carefully watch the GRAVITY advice field on the data display for an **unsolicited** GRAVITY advice while in the NAVIGATION mode. In this mode, a double horizontal bar is presented in the AXIS, RANGE and VELOCITY display areas to indicate that the SC-78503 craft has achieved zero velocity relative to the area entry speed. **This advice will interfere with target data information in these areas.** The GRAVITY advice present with no controls pressed is the only indication of potentially hazardous **local** craft presented.

c. Selection of the NAVIGATION mode automatically initiates re-orientation of the Hypercharge field for DRIVE. Pilot is advised that **this condition disables all weaponry** and locks out the weapon fire control. To re-establish weapon readiness, COMBAT and a weapon must be re-selected.

2-5. COMBAT Control Mode

a. The COMBAT control mode is specifically tailored to pilot needs in combat environments. This mode enables a large variety of systems suited to effective target tracking, identification and destruction. These will be dealt with briefly as individual subjects in this section.

b. TARGETING is provided only in the COMBAT mode. This system is utilized to locate target craft that are not within the area shown in the target outline display. Use of TARGETING is a subject which requires intensive study and is covered elsewhere.

c. A target Identification system is functional in the COMBAT mode which allow the pilot to positively identify targets not only by craft type but also by craft use. This system is 100% accurate when able to return information.

d. Automatic target position control is available in the COMBAT mode. This system allows the pilot to center and LOCK a target craft so that manual nose jet controls are not required. The ability of the nose jets to spin the STARFIGHTER craft under the control of this system far exceeds their ability under manual control.

e. STARFIGHTER velocity is selectable exclusively in the COMBAT mode. The controls used for the velocity selection process are logorithmically placed in the range of 0-127 distance units/update segment. This velocity range makes the SC-78503 the most powerful craft in existence in its size class in the area of local thrust. Thrust also provides the intelligent process of slide compensation and so operates with the nose jets to turn the STARFIGHTER craft in normal space.

f. The most important capability in the COMBAT mode is weaponry. The STARFIGHTER craft employs two weapon types, both operational as an adjunct of the Hypercharge field. These weapons, unlike earlier laser types, are capable of continuous fire once activated by proper Hypercharge cone configuration. Details of weapon operation are provided elsewhere in this text. Pilot is cautioned that weapon use implies several hazards to the SC-78503 Hypercharge field. Pilot should be fully conversant in weapon operation before attempting to use the SC-78503 weapon systems.

Section 3. CONSOLE CONTROL INTRODUCTION

3-1. Section Introduction

This section will serve to introduce the various control buttons on the SC-78503 craft console. The information is presented in alphabetical order by control letter with symbolled and named controls last. It is of extreme importance that the pilot be well educated in the use of each control. This information will be used in later sections as the basis for construction of more complicated procedures. Capitol letter references made in this section are to craft controls or the systems they operate.

3-2. Beam Weapon Select

a. Usage parameters —

(1) Control: B

(2) Mode usable: Combat

b. The B control is used to shape the HYPERCHARGE field around the STARFIGHTER craft into LONG RANGE WEAPON configuration. The BEAM WEAPON has a range of approximately 3500 distance units. Attempt to use any weapon during CONE SHIFT will result in HYPERCHARGE field disruption and 256 charge units will be expended to preserve the field from distructive collapse.

3-3. Combat Operation Select

a. Usage parameters —

(1) Contol: C

(2) Mode usable: Navigation

b. The C control is used to activate the COMBAT tracking and weapon systems. (See Velo., I,T,B,W,F,L). Weapon selection and activation of TARGETING should be the first priorities following entry into COMBAT readiness. The COMBAT mode allows selection of velocity as well and normal space flight is easiest in this mode. DRIVE, LANDBASE selection and EXTENDED GRAVITY SCAN **cannot** be accomplished while in COMBAT readiness.

3-4. DRIVE Initiate

a. Usage parameters —

(1) Contol: D

(2) Mode usable: LANDBASE, Navig.

b. The D button initiates a totally automatic time-space warp process which is used for Long Distance travel in the SC-78503. During the DRIVE process, all craft functions are dedicated to ploting time-space course and STAR-SCAN (re-plotting en route to avoid stellar gravity effect). The STARFIGHTER keyboard does not accept pilot input during DRIVE, however keys may be held down throughout this process to be read as normal space is re-entered. Failure to provide occasional craft maintenence may result in a malfunction of the sensitive DRIVE equipment. The D control is usually used in conjunction with EXTENDED GRAVITY SCAN or LANDBASE selection (See 5: 3-5, 3-19) but may be used alone. This will result in CRASH DRIVE which takes the craft its maximum DRIVE range in the direction of its nose. Use of DRIVE must be preceded by certain preparatory procedures. CLEAR must be used to avoid manual interference during the DRIVE process. CLEAR will de-activate the NOSE JET controls and idle down thrust with retro fire to achieve relative zero velocity. (SC-78503 must leave area at the same velocity under which it entered.) D key must not be pressed until velocity is zero or field disruption will occur (See B). Drive function shifts time and previous LANDBASE relationships are invalidated.

3-5. Extended Range Gravity Scan

a. Usage parameters —

(1) Control: E

(2) Mode usable: Navigation

b. This key provides advice of gravity fields in near space or time. This advice occurs as a flickering GRAVITY advice and a flickering distance indication in the target distance field. Take special care to distinguish discovered long range targets from chance encounters in local space. The long range advices are only present when E key is held down. The scan may not immediately result in a target location but patience will always provide a target in time — hold the key down. If E key is HELD DOWN while D is pressed, resulting DRIVE will be into the local space of the located target. Pilot should be prepared to enter this target area in COMBAT readiness.

3-6. Fire Weapon

a. Usage parameters —

(1) Control: F

(2) Mode usable: Combat

b. The F key is used to extend the HYPERCHARGE field as a weapon. The nature of this extension depends on type of weapon selected (See B,W). No weapon is available unless the cone configuration advice indicates weapon readiness. Any attempt to fire the weapon will result in a HYPERCHARGE field deployment error (See B) and charge loss. BEAM WEAPON extends the field forward about 3500 distance units. WAVE WEAPON extends the field fore and aft about 500 units. Use of any weapon consumes 20 charge units and occurs during one update segment. F key may be held down for continuous fire. Weapon Damage to target is dependant on range. Target hit is accompanied by a visual indication of energy conversion as the field impacts and the "sound" of field modulation as the conversion occurs. Resultant amount of sub-light energy is large and results in immediate destruction of most unshielded targets. Shielded craft will generally require multiple hits to disipate field.

3-7. HYPERCHARGE Field Strength Test

a. Usage parameters —

(1) Contol: H

(2) Mode usable: Navigation, Combat

b. The STARFIGHTER Craft is equipped with a HYPERCHARGE field monitoring system. Strength of the HYPERCHARGE field may be displayed by pressing the H key. The advice is presented in the area of the screen that also presents the COM waiting advice. There are two parts of the HYPERCHARGE display; the only adivce required by the new pilot is the field strength display, however, each RANK promotion allows an extra field (Which is also displayed).If elected, these compacted reserve fields are indicated by a digit to the left of the field strength indication. They are released automatically when the outer defense shield is depleted by in-

coming fire or can be forced by the pilot by creation of a field disrupting error under NIL FIELD conditions. Extra fields are offered at LANDBASE FIVE and SEVEN directly after the outer shell is replenished.

3-8 Identify Target

a. Usage parameters —

(1) Control: I

(2) Mode usable: Combat

b. This craft is equipped with a highly sophisticated target identification system. This system presents an evaluation of the available data on a target at the moment that the I key is depressed. Identification is possible at a distance of 500-5000 units depending on target type. Beyond the maximum range, identification attempts will return an INSUFFICIENT DATA com. Within range the function is 80% effective. IMPORTANT, MEMORIZE. The identification function is never inaccurate and is the only means of POSITIVE IDENTIFICATION of target craft description AND usage. Beacons sent from target craft accurately describe the craft but only IDENTIFICATION can discern how the craft is being used. This is accomplished by analysis of fuel residue, craft manuevers, and similar means. Incoming beacons will over-ride identification attempts and it is recommended that the pilot use means to persuade target craft to stop beacon transmission before I.D.

3-9. Kill Starfighter Beacon

a. Usage parameters —

(1) Contol: K

(2) Mode usable: Navigation, Combat

b. The STARFIGHTER Beacon is used to identify your craft to vehicles in your local space. STARFIGHTER service regulations encourage transmission of the identification beacon but do not require its use under all circumstances. The K key de-activates the beacon.

3-10. Lock Target

a. Usage parameters —

(1) Control: L

(2) Mode usable: Combat

b. The Nose Jets of the SC-78503 are operable in three modes. The first is manual control with the ARROW keys, the second is DRIVE guidance system automatic control and the third is the automatic target tracking system (activated by the L key).

c. Automatic Target Tracking System (Target Lock) permits control of the craft nose jets to an accuracy and at a level of thrust not available by manual control. This system is virtually infallable and fully automated. Several safeguards are built into the A.T.T.S. to avoid damage to the system and the STARFIGHTER craft. These safeguards unlock A.T.T.S. They are:

(1). Danger Range anticollision protection. When SC-78503 velocity exceeds target range, collision is possibly emminent and Target Lock is defeated.

(2). Field Recoil protection. Field shock resulting from time shift when target is HIT by STARFIGHTER. The time shift condition is potentially destructive to A.T.T.S. equipment and therefore Target Lock is cancelled when target is HIT.

(3). Velocity error protection. A.T.T.S. will return inappropriate adjustments when craft velocity is changing. Use of velocity controls will cancel Target Lock.

(4). A.T.T.S. is affected by manual override. Use of ARROW controls cancels Target Lock.

d. In the majority of the above situations, Target Lock is nominally maintained by HOLDING DOWN the L button. A.T.T.S. will reinstate following interuption if this procedure is applied. Holding L during condition 1 above is not effective.

e. Most craft are aware of the STARFIGHTER tracking ability and some friendly targets may consider use of A.T.T.S. an aggressive action. Use of Target Lock on unidentified craft is at pilot's discretion.

3-11. Manuevering Fuel Display

a. Usage parameters —

(1) Control: M

(2) Mode usable: Combat, Navigation

b. This craft is equipped to monitor its Manuevering Fuel reservoirs. The Manuevering Fuel level is displayed in COM advice area (See 3-7). Advice is active while M control is HELD DOWN.

3-12. Navigation Operation Select

a. Usage parameters —

(1) Control: N

(2) Mode usable: Navigation

b. The N control is used to activate all systems associated with NAVIGATION. (See D, E, LANDBASE, P. Clear). These controls are used for extended range astrogation and require complex computation and very delicate gravity measurement. Pilot is advised to maintain Combat Readiness in situations which include a potentially hostile target craft. NAVIGATION selection automatically reconfigures Hypercharge Control Cones to CONE DRIVE status and therefore disables all weaponry. Reference should be made to the following controls which WILL NOT OPERATE in NAVIGA-

TION: B. F. I. T. Velo., W. SC-78503 craft enters and leaves DRIVE in the NAVIGATION mode except when destination is a LANDBASE.

3-13. Tractor Craft Tow Request (PLEASE)

a. Usage parameters —

(1) Contol: P

(2) Mode usable: Navigation

b. The Solar Galactic Authority maintains a reciprocal agreement with the Independent Merchants Resource Corporation. According to this agreement NO S.G.A. CRAFT, WHEATHER REGULAR MILITARY OR PARA MILITARY, SHALL MOLEST OR IN ANY WAY HAMPER I.M.R.C. CRAFT WHILE IN THE NORMAL PERSUIT OF LEGAL BUSINESS. (S.G.A. Treaty 17 September, 2178 — I.M.R.C. subcontract agreement) Craft falling under the terms of this treaty include lawfully employed Merchant craft, Merchant warehouse craft, and Tractor Craft. The pilot is advised that molestation of these craft is a serious offense. In return for non-interference, I.M.R.C. maintains a fleet of S.G.A. constructed Tractor Craft for support of distressed military and civilian craft. Request for Tractor Craft service is subject to certain Conditions of Request, these are:

(1) No Tractor Craft shall be required to perform service in a potentially hostile area. The pilot is advised that NO TRACTOR WILL ARRIVE while there is a target of any type in local space. TRACTOR CRAFT WILL LEAVE if local target appears during tow procedure.

(2) Tractor Craft will respond only to identified craft sending persistant standard MAYDAY. STARFIGHTER beacon must be ON. Com and Com Waiting (COM advice) must be occupied by the distress beacon which is activated with the P control.

(3) Tractor Craft are empowered to VOID THE HYPERCHARGE FIELD of craft requesting service. In order to tow, the tractor must first establish a NIL FIELD condition in the STARFIGHTER craft. Circuitry to aid the Tractor in this process is activated in the SC-78503 craft when P is pressed.

(4) Previous arrangements must have been made to purchase the fuel used by the TRACTOR CRAFT during tow. Credit for service is issued in the form of TOW TICKETS. These are alloted to military vessels and sold to para-military craft.

c. Non adherance to the above Conditions of Request will result in negative tractor response. Note that, regardless of conditions, response to P control takes time and pilot persistance is in order.

3-14. Request Beacon from Target Craft

a. Usage parameters —

(1) Control: R

(2) Mode usable: Combat, Navigation

b. The R control transmits a signal requesting local space targets to respond by sending a craft description beacon. An advice is activated on the com line to confirm that R has been used. Notice that the SC-78503 cannot transmit a request while sending other information, therefore the STARFIGHTER beacon must be KILLED to allow operation of the R control. Important Note: The COM associated with the R control names the STARFIGHTER craft for clarification only; actually, the Request is a universal transmission and does not identify the STARFIGHTER to the target craft in any way.

3-15 Send Craft Identification Beacon

a. Usage parameters —

(1) Contol: S

(2) Mode usable: Combat, Navigation

b. Interstellar law requires that all craft be outfitted with a craft identification beacon. This beacon is to be transmitted for sufficient duration to identify the craft during all deep space encounters. Field surveys indicate that these regulations are complied with on a nominal basis.

c. The STARFIGHTER S control activates your beacon. Once activated the beacon will operate periodically and the Beacon Status Advice on your screen will indicate BEACON ON. Beacon and beacon request are sent on the same communitcation frequency and therefore beacon request is not possible when the STARFIGHTER beacon is ON. Beacon may be KILLED with the K control.

3-16. Targeting Activate

a. Usage parameters —

(1) Control: T

(2) Mode usable: Combat

b. The SC-78503 COMBAT system controls include a sophisticated peripheral tracking system. This targeting system is activated by use of the T control. Targeting is automatically cancelled when N is pressed. The X control will also de-activate the targeting system. Proper use of the targeting is expected of the pilot and is required for survival. Refer to 4; 2-4 for instructions concerning targeting procedures.

3-17. Wave Weapon Selection

a. Usage parameters —

(1) Control: W

(2) Mode usable: Combat

b. The W control is used to shape your HYPERCHARGE into wide angle weapon selection.

3-18. Local Space Velocity Selection Controls

a. Usage parameters —

(1) Control: Numeral buttons 0-7

(2) Mode Using: Combat

b. Numeral controls are used to select STARFIGHTER combat cruise velocity when in normal time-space. These controls are supported by velocity keeping equipment which accelerates and decelerates the craft at the maximum rate tolerable while maintaining the pilot's conciousness; therefore, velocity adjustment is a programmed procedure initiated by the numeral control.

c. Numeral velocity controls activate all manual manuevering controls (See 3; 3-1, 2) including nose jets and therefore use of the 0 control is recommended procedure with selection of the COMBAT Mode (See 4; 2-5). Use of the 0 control will not change craft velocity if the craft is not moving.

d. STARFIGHTER velocity selections are not linear but follow the formula 2_n-1 where n is the number on the control pressed. More specifically, the keyed velocities are:

0-0	units/update
1-1	"
2-3	"
3-7	"
4-15	"
5-31	"
6-63	"
7-127	"

Intermediate velocities may not be programmed.

e. Use of velocity controls defeats TARGET LOCK (See Target Lock Key). Holding down the L control while pressing Velocity controls is the recommended procedure to support Target Lock condition while using Velocity controls. This allows nominal Lock maintainance.

3-19. LANDBASE Query and Selection Controls

a. Usage parameters —

(1) Control: Numeral buttons 0-7

(2) Mode usable: Navigation

b. In the NAVIGATION mode no velocity control is available except the selection of 0 velocity by use of the CLEAR control. The NUMERAL controls 0-7 are used in NAVIGATION to test the availability of the various LANDBASE types or to select a LANDBASE as a DRIVE destination. Each of the numerals 1 through 7 refers to the similarly numbered LANDBASE. The 0 control refers to LANDBASE CENTRAL.

c. When used to test the availability of a LANDBASE, controls are pressed down and held. If the LANDBASE is available, a distance advice will appear in the RANGE display area of the screen. This advice may not be visible if STARFIGHTER craft velocity is not zero. The distance advice is NOT accompanied by a GRAVITY advice.

d. When used to select a LANDBASE, the numeral control is HELD DOWN while D is pressed (See D). The selected LANDBASE must be available or a CRASH DRIVE condition will occur.

3-20. Manuevering Control Disabling

a. Usage parameters —

(1) Control: CLEAR control

(2) Mode usable: Combat, Navigation

b. The CLEAR control is used to set STARFIGHTER craft velocity to zero and to disable nose jet manual operation. This is the only control of velocity allowed in the NAVIGATION mode and CLEAR IS REQUIRED FOR DRIVE — NO EXCEPTIONS. CLEAR prevents dangerous pilot intervention during the DRIVE alignment procedure. Nose may be reactivated by use of the veloity controls in COMBAT mode (See Velo keys).

3-21. Nose Jet Manual Control

a. Usage parameters —

(1) Control: ARROW controls

(2) Mode usable: Combat, Navigation

(3) Prerequisites: Keyboard must NOT be CLEARED.

b. The nose jets of the STARFIGHTER craft require use of the ARROW controls when operated manually. This control is limited to a single operation format. The jet which directly opposes the direction of the arrow on the control is fired for a specific duration when the key is pressed. The nose jet to which the arrow is fired for a similar period when the control is released. The result of this process is that the SC-78503 spins at a uniform speed and only when ARROW controls are held down.

Section 4. CRAFT SYSTEMS CONTROL

4-1. Introduction

This section will present the usage of SC-78503 controls from a system viewpoint. The discussion is not exhaustive and the pilot is cautioned to not rely on this section alone for an understanding of the STARFIGHTER craft. The following material will reinforce the interaction of various controls in the systems in which they are employed.

4-2. Craft Condition Indicators

a. There are two craft condition indicators available on demand in the COMBAT and NAVIGATION modes. These indicators are not displayed in the COM waiting display area of the data display (ref: App. B, Fig. 1, Item I).

b. The first indicator displays the extent of the active Hypercharge Field as well as any existing additional reserve fields. The active field indication is a number in the range of 0-35000. The reserve field indication is a one digit number in the range of 1-4 which appears to the left of the active field display. No reserve indication is present if there are no reserve fields. Hypercharge indicators are active while the H control is held down.

c. The second indicator is the Manuevering Fuel display, activated while the M control is held down. This display appears as described above in the COM waiting area. Manuevering Fuel will fall into the range of 0-5000 pounds. Hypercharge reserve field advice will appear to the left of the manuevering fuel advice if the reserve fields exist.

4-3. Velocity Control System

The velocity control system of this craft consists of the controls 0-7 and is available in the COMBAT control mode only. The controls initiate automatic thrust, counter-thrust sequences and provide the velocities 0, 1, 3, 7, 15, 31, 63 and 127 respectively. Notice that a velocity request does not result in immediate compliance by the STARFIGHTER craft. Thrust takes time and the pilot should take care not to over-thrust as a result of the apparent slowness of the craft. The velocity control system uses manuevering fuel during acceleration and deceleration only. Velocity controls perform the auxilliary function of cancelling the control console CLEAR function.

4-4. Manual Nose Jets

The SC-78503 may be manually turned by use of the arrow controls. These controls may be used in any combination to produce vertical, horizontal, or diagonal turns. The nose jets operate only while the ARROW controls are held down. The nose jets burn manuevering fuel but the amount is nominal and therefore the ARROW controls may be used freely. Care should be taken when using the ARROW controls. Simultaneous use of SHIFT, UP ARROW, DOWN ARROW activates a craft destruction device and pilot demise will result. New pilots often attempt to use the ARROW controls to move the target as though the STARFIGHTER craft was stationary. **Use the ARROW that points in the direction you wish to move your own craft!** This point cannot be over-stressed. Most control consoles used in the SC-78503 are of the TRS type. If the pilot maintains a PMC equipped craft, Appendix B should be consulted.

4-5. Targeting System

a. This system is available only in the COMBAT mode. All references in the Targeting System sub-section will be to Appendix B, Figure 6 if an item number is specified. The SC-78503 Targeting System has proven very difficult to understand, though, once mastered it is very easy to use. The pilot is encouraged to study this sub-section and the related appendix figure very carefully.

b. Item A in the targeting figure represents the position of the blinking targeting block when the target is ON SCREEN, therefore the blinking block will never be displayed in this area. When the blinking block enters the A area, the targeting grid will vanish. This area is the desired destination for all blinking blocks **except** those in areas marked D.

c. Item B represents all of the space in front of the STARFIGHTER craft but not within the data display craft outline field. Item B includes the small box surrounding Item A. The pilot is reminded that the ARROW controls move his craft, **not the target.** Therefore if the blinking block appeared at point G, the pilot would use the DOWN and RIGHT ARROWS to move the target ON SCREEN.

d. Item C represents all of the space behind the STARFIGHTER craft. The craft should be manuevered to move targets in area C into Area A. It is sometimes possible to move high speed craft into Area E and allow them to fly "over your shoulder" and into Area A. This is possible if the craft are attacking from your rear and are closing distance.

e. Item D, oddly enough, represents craft that are **in front** of the STARFIGHTER craft but are **upside down.** This effect is caused by interaction of position reading and axis reading systems and has been found to be less confusing to the pilot than more conventional systems once learned. NOTICE. Craft represented by blinking blocks in Area D are sighted most quickly if they are moved into the closest position F and then forced **in the direction indicated by the corner arrow** on the targeting figure. If this procedure is correctly performed, the targeting grid should yield to an ON SCREEN display. as the blinking block leaves the corner of the targeting grid.

f. Item E represents craft directly behind the STARFIGHTER craft. A craft in this position is usually ATTACKING if indicated as incoming by the AXIS indicator.

g. Items H through N refer to the AXIS indicator which displays the direction of travel of a target relative to the STARFIGHTER position. Item H represents a craft which is **approaching** the STARFIGHTER. Item J represents a craft which is **fleeing** the STARFIGHTER. Items K, L, M, and N represent craft which are **evading** the STARFIGHTER by flying at a right angle to the STARFIGHTER position left, right, up and down respectively. The pilot should note that the AXIS indicator does not display the intention of the target craft, merely its direction of travel. Appendix B, Figure 1, Item C shows the position of the AXIS indicator on the data display.

h. The RANGE advice is used in conjunction with targeting to determine both target distance and target velocity. The RANGE advice is located on the data display as indicated by Appendix B, figure 1, Item D. i. The TARGETING advice is displayed on the data display as indicated in Appendix B, figure 1, item F. The pilot should be aware that it is possible to cancel TARGETING in two ways. Selection of NAVIGATION and use of the X control will both deactivate TARGETING and therefore loss of the targeting grid may indicate loss of TARGETING. If the targeting grid yields and the TARGETING advice is ON, the target is ON SCREEN. Note that ON SCREEN targets sometimes display outside of the outline display field and require further centering after loss of grid.

Section 5. RECOMMENDED OPERATIONAL PROCEDURES

5-1. Introduction

This section is non-regulation in some respects. Field surveys conducted by the S.G.A. Information Services Division have indicated that, as originally published, the section has not provided adequate insights into the situations encountered by STARFIGHTER pilots. For this reason, the recommended operational procedures originally presented here have been replaced by material compiled by veteran STARFIGHTER pilots. This approach to instruction is being studied on a trial basis with this text and should provide the new pilot with a knowledge of operational procedures which could otherwise be gained only after considerable field experience with the craft.

5-2. Combat Procedures

The COMBAT mode is necessary to track, identify and dispatch target craft. COMBAT may be entered at any time from NAVIGATION by pressing "C". In addition, the "B" or "W" control should be pressed to begin activation of some COMBAT weapon. DO NOT PRESS "F" to fire weapon unless COMBAT display indicates BEAM WEAPON or WAVE WEAPON! DO NOT ATTACK UNIDENTIFIED CRAFT unless STARFIGHTER craft is in peril. Suggestions for craft identification are found in the CRAFT section. In addition to the above COMBAT controls "T" is needed to locate off-screen targets and ANY VELOCITY KEY IS REQUIRED TO ACTIVATE NOSE JETS (Arrows). Note that TARGETING is only cancelled by the "X" or "N" control. Target block will always appear for off-screen targets IF TARGETING IS ON. Note that the "N" control will CANCEL THE WEAPON SELECTION by beginning the cone shift to drive configuration! Weapon must always be selected when selecting COMBAT if weapon is desired. Following are some specific procedures for COMBAT:

1) IDENTIFY can distinguish identical craft used for differing purposes (STAR PIRATE - STAR MERCHANT, STAR MARAUDER - STARFIGHTER, FRIEND and FOE INTERSTELLAR MINES). Range must be close (exact range for I.D. varies widely with craft type) and within I.D. range there is a mean 80% chance for I.D. EVEN FRIENDLY CRAFT MAY ACT AGGRESSIVE IF CIRCUMSTANCES WARRANT and VOLUNTARY BEACONS FIT CRAFT TYPE **NOT** CRAFT USE. In, for instance, the case of a STAR MARAUDER the beacon will indicate the craft is a STARFIGHTER. (Which it is!) I.D. will discern the MARAUDER craft use by subtle differences in brand of fuel being used, etc. INCOMING BEACONS HAVE COM PRIORITY OVER I.D. so the craft must be forced to another direction if it is persistantly sending beacons. Off-hand note: No friendly craft will REQUEST BEACON if A) Your beacon is ON, and B) You have not recently fired a weapon, and C) The craft is NOT TARGET LOCKED. Note, however. that a COM waiting may appear on your COM line that was entered BEFORE your beacon was turned on.

2) COMBAT is commonly entered fastest by depressing the T, 0, and C controls during

the entire DRIVE procedure. In DRIVE and NAVIGATION these controls do not function (except for C which is needed to go to COMBAT!) so no harm is done. This veteran procedure assures weapon use, target location, and manueverability at the earliest possible opportunity. Once TARGETING appears and ARROWS operate, controls above may be released. MAKE SURE TO SHIFT TO SOME WEAPON as soon as eminent danger is discounted. B key should be omitted from this if shields are low enough to warrant possible use of CRASH DRIVE under fire.

3) CRASH DRIVE. If surrounded by a single HYPERCHARGE field and incoming fire is noted at a high rate or at long distance, or if a MINE is closing range to rapidly destroy, perform the following procedure: N, CLEAR, D. This is the only instance in which the D control is pressed without use of the E (long range target search) or NUMBER (to select a LANDBASE destination). The procedure causes a HYPERDRIVE jump of the longest possible distance WITHOUT AUTOMATIC NOSE JET SEQUENCE. This will occur the moment that the Hypercharge field cones reach CONE DRIVE configuration. A DEATHCASTER or BALL TURRET GUNSHIP CAN DESTROY A FULL HYPERCHARGE AND ANNIHILATE A STARFIGHTER IN FOUR OR FEWER BURSTS AT CLOSE RANGE! These craft fire indiscriminantly at anything within range and at any angle. Note the D control may need to be HELD DOWN until Charges Cones reach DRIVE configuration (99).

4) Reaction control. The priorities of target craft are predictable and are elsewhere listed. By varying your MOST SIGNIFICANT ACTION, you can somewhat effect the reaction of targets. Most craft have a short reaction memory (having more faith in the present) so changes in most significant action will result in eventual changes in target reaction.

5) Stationary Lock-Fire Base. If your velocity exceeds target distance, you will lose your TARGET LOCK. The targeting computer is avoiding COLLISION by releasing your lock. In addition, target speed is difficult to determine when RANGE is affected by your own velocity. Therefore it is recommended that 0 VELOCITY BE USED to track-lock-identify craft that are willing to come into range. Thrust is necessary, of course, to chase fleeing craft.

6) FIRE taunt. Often the firing of un-aimed bursts will taunt fleeing craft into evasion (or attack). This ploy is useful with fast craft which may be difficult (impossible in the case of EXXONERATORS) to overtake while fleeing. Firing will sometimes turn mines...

7) LOCK taunt. Locking a target may cause it to ATTACK, saving fuel for the STARFIGHTER. This is effective for small (Exxonerator, Khomendier) craft with light weaponry. These are easily identified on sight and their attacks do little damage.

8) PLEASE send a tractor. P control is used when HYPERCHARGE or MANUEVERING FUEL are gone, making DRIVE impossible. TRACTORCRAFT are very picky and you must meet the following conditions to be towed!

a) NO TARGET! In fact, tractor will LEAVE if a target pops in during tow procedure.

b) Must have at least one TOW TICKET.

c) Must have MAYDAY (P key) ON COM LINE **AND** IN COM WAITING (COM advice)!

d) Must be willing to discard field (Tractor Craft must NULL YOUR FIELD to tow).

e) Must NOT TOUCH console once Tractor has responded to MAYDAY.

9) LOCK-FIRE-LOCK. The LOCK control should be HELD DOWN when F, NUMBER, or ARROW controls are in use if continued TARGET LOCK is desired. These controls cancel LOCK, which is reinstated when they are released if L control is HELD DOWN.

10) FIRE VOLLEY. Do not be afraid to HOLD DOWN the F control if target destruction is desired. A major feature of the STARFIGHTER police-mercenary craft is the ability to fire continuously.

11) CLOSE RANGE LOCK. Remember that the STARFIGHTER nose jets can operate faster when used by TARGET LOCK than when operated manually. Manual tracking after target FLY-BY is tedious and sometimes impractical. The STARFIGHTER craft is very powerful but not highly manueverable when nose jets are used manually.

12) POSSUM. Craft are often more docile when OFF-SCREEN.

13) I.D. OVERRIDE. Use the I control as a COM is just going OFF the line. HOLD IT DOWN. This helps to prevent the intervention of BEACONS. REMEMBER that the I control triggers a SPOT CHECK. It is possible to get positive and non-conclusive I.D.'s back to back. Freshly destroyed craft can sometimes be identified by remnants but IDENTIFY has no memory.

14) H & M controls over-ride COM waiting advice only while keys are HELD DOWN.

15) NUMBER controls are pressed only momentarily to thrust/counterthrust. Automatic velocity changes are indicated by these controls. Remember that they cancel LOCK.

16) Above all, forget any resemblance that your console may have to a typewriter. The console is played — like a chord organ, NOT PUNCHED! The STARFIGHTER combat computer is very busy and recognizes each control only during a brief instant in each update cycle. HYPERDRIVE and the existance of an EXTRA-LIGHT-VELOCITY/MASS field around your craft are constantly distorting both time and space. Without this field the STARFIGHTER craft is defenseless and stranded, and within it you depend on your combat computer to sense by mass effect everything beyond the field, through which no normal-spacial radiation (light, radio, heat, objects, etc.) can pass (although certain coherent light weapons tend to heavily disrupt the field by unbalance).

17) THE FINAL NOTE. If capture or destruction of the STARFIGHTER craft is impending or if failure and depression are overbearing, pilot man hold down SHIFT, UP ARROW, DOWN ARROW causing a collapse of the HYPERCHARGE field and craft destruction. There will then be an immediate opening for a new pilot. This function operates in any mode.

5-3. Navigation Procedures

Contrary to first impression, NAVIGATION is not used for "flying around"; you have no TARGETING, no velocity control, and no weapon. Instead, the NUMBER controls are used to query the availability of each of the eight LANDBASE types. In addition, the "E" key may be employed to search for a gravity field beyond local space. NAVIGATION is entered from COMBAT by pressing "N". Note that weapon is immediately disabled by cone shift toward DRIVE configuration. NAVIGATION mode always follows any DRIVE into space, (any DRIVE except to LANDBASE). Note that local targets are difficult to interpret in NAVIGATION. This is because 0 velocity is denoted in NAVIGATION by dotted bars through TARGET AXIS, RANGE, and VELOCITY advices and these bars interfere with the display of the advices. Note that the GRAVITY advice is still active and should be monitored to make sure that no local target "slips in" during preparation for DRIVE. Following are some specific procedures for NAVIGATION.

1) CRASH DRIVE provides DRIVE capability without first calculating distance and aligning craft direction. CRASH DRIVE is the result of pressing "D" without holding down "E" or NUMBER control. Result is the longest possible unassisted jump performed after the shortest possible "set up" time. Procedure is:

a) Press CLEAR to idle down velocity and lock out manual nose jets (ARROWS).

b. WAIT until dotted vertical bars mentioned above indicate 0 velocity.

c) Press "D" and HOLD DOWN until DRIVE appears at screen bottom.

D key may be immediately pressed without CLEAR or WAIT if DRIVE has been used since last COMBAT.

2) DRIVE to LONG DISTANCE target is accomplished by pressing CLEAR and holding down "E". After a search period of varying length, a distance figure will FLICKER on the dotted bars mentioned above. In addition, the advice GRAVITY will FLICKER in the same place it is seen for local craft. Note that this advices may appear BEFORE the dotted bars if target is located by "E" control velocity of STARCRUISER craft reaches 0. Jump to the located target is accomplished by HOLDING DOWN "E" and pressing "0". Note that pressing "D" without CLEAR having been previously pressed or without the dotted bars will result in a malfunction with loss of HYPERCHARGE and no DRIVE.

3) DRIVE to LANDBASE possibility for the various LANDBASE types is questioned by pressing the appropriate NUMBER key:

a) 0 LANDBASE CENTRAL	Rank Review...Mandatory on arrival at landbase Retirement available.
b) 1 LANDBASE ONE	Craft Overhaul
c) 2 LANDBASE TWO	Refueling
d) 3 LANDBASE THREE	Tow Tickets
e) 4 LANDBASE FOUR	Bounty
f) 5 LANDBASE FIVE	Hypercharge
g) 6 LANDBASE SIX	Bounty
h) 7 LANDBASE SEVEN	Fuel & Hypercharge

4) CLEAR control and 0 velocity conditions must be met as with all DRIVE setup preparations. Any LANDBASE which is available will yield immediate distance advice on dotted bars. If no distance advice appears, LANDBASE being tried is NOT AVAILABLE from this point in time-space. DRIVE is started by HOLDING DOWN desired LANDBASE (Number) control and pressing "D". See malfunction note in 2 above.

5) SEND BEACON, REQUEST BEACON, KILL BEACON, and please send a tractor all operate as discussed elsewhere. Notice that it is not possible to request a beacon while you are sending one.

5-4. Landbase Procedures

LANDBASE procedures are basically self explanatory. Most availabilities are selected with the ENTER control. Drive is available with the "D" control. Permanent record production is available when leaving LAND-

BASE CENTRAL. Some examples of special procedures are as follows:

1) Permanent performance records are issued when leaving LANBASE CENTRAL. **No advice is given to indicate this.** To prepare a permanent performance record, refer to sub-section 5-4 of this chapter.

2) Extra HYPERCHARGE fields in concentric spheres are avilable to higher ranks. These extra fields are available at LANDBASES FIVE and SEVEN and one will be offered after a fresh recharge if rank permits. Outer shell HYPERCHARGE costs 3000 sovereigns and reserve HYPERCHARGE costs 4000 sovereigns. The fee is uniform regardless of craft charge state when recharge is elected. Note that an extra charge is offered **only** after a fresh outer charge is taken.

3) Tow tickets are issued one per ENTER. Multiple tickets may be purchased by repressing ENTER repeatedly while the COM LINE advises availability.

5-5. Permanent Performance Record Procedures.

a. Writing performance records. Permanent records are made when leaving LANDBASE CENTRAL. No advice is presented to indicate availability of this option. Creation of records will depend on the storage medium used.

1) *Tape*-based SC-78503 Record Procedure. The MAIN MISSION tape will need to be removed from the tape receptacle and a blank storage tape inserted. Press RECORD and PLAY on the receptacle. Care should be taken to insure that the storage tape is wound past its "leader" previous to insertion. When the COMLINE advises D to DRIVE at LANDBASE CENTRAL, hold down W and T and press D. The record will be written. (Such records can and should be recorded several times in succession to insure that a valid record exists.)

2) *Disk*-based SC-78503 Record Procedure. The Combat Computer's disk-bay already holds the proper storage medium. When the COMLINE advises D to DRIVE at LANDBASE CENTRAL, hold down W and T and press D. The pilot will then be prompted for one of the ten storage areas, corresponding to buttons 0 through 9 on the console. Once an area is selected, the record will be written. (Such records can and should be recorded to several areas to insure that a valid record exists.)

b. Loading performance record. Once a permanent record exits, it can be entered into the SC-78503 records upon entering STARFIGHTER service.

1) *Tape*-based SC-78503 Loading Procedure. The MAIN MISSION tape will need to be removed from the tape receptacle and a valid performance storage tape inserted. Press PLAY on the receptacle. Upon entering STARFIGHTER service, when the **R and T FOR VETS** advice appears at the bottom center of the Data Display, hold down R and T on the console. The record will be read. (If advice stops before receptacle is prepared, R and T may be made available again by pressing SHIFT, UP ARROW, and DOWN ARROW at the same time.)

2) *Disk*-based SC-78503 Loading Procedure. Upon entering STARFIGHTER service, when the **R and T FOR VETS** advice appears at the bottom center of the Data Display, hold down R and T on the console. The pilot will then be prompted for one of ten storage areas to load from, corresponding to buttons 0 through 9 on the console. Once an area is selected, the record will be read. (If a non-valid record is selected, the pilot will revert to NEW PILOT status. If advice stops before disk storage area can be selected, R and T may be made available again by pressing SHIFT, UP ARROW, and DOWN ARROW at the same time.)

Section 6. PILOT ERROR CONDITIONS

6-1. Introduction

This section has been arranged to provide answers to specific questions. The problems posed have been found to occur quite frequently and the pilot should expect to be faced by one or more while becoming acquainted with the SC-78503 craft. It is to the advantage of the new pilot to study the following situations very carefully in order to avoid similar situations while in the craft.

a. NAVIGATION mode. Velocity controls will not work. NUMBER controls operate only for LANDBASE selection in the NAVIGATION mode. This is normal for this craft. Select Combat mode.

b. COMBAT mode. ARROWS will not work. Manual nose jet control has been locked out by CLEAR control. Any velocity control, including 0, will enable ARROW controls.

c. COMBAT mode. GRAVITY advice. No target on screen, no targeting grid. If TARGETING **advice** is off, TARGETING is off—press T. If TARGETING is on, target is

"in the wings"- just slightly out of the primary target display field. Use ARROWS to center target. NOTE, TARGETING operates in COMBAT and only when GRAVITY advice is present.

d. COMBAT mode. No DRIVE. D control operates only in NAVIGATION and LANDBASE modes.

e. NAVIGATION mode. No DRIVE. D control results in DRIVE only if craft velocity is zero and CLEAR control has been used to lock out manual interference. Failure to observe the proper procedure will in malfunction.

f. Use of P control does not result in tractor tow. Carefully re-read tractor requirements. If all requirements are being met, be **be persistant** with the P control. Tractor will eventualy come.

g. F control does not result in weapon fire. Weapons are functional in COMBAT mode. Data display must indicate BEAM WEAPON or WAVE WEAPON. Improper procedure will result in a malfunction. No weapon is available if a NO FIELD condition exists.

h. Weapon fires but does not hit. Beam weapon is 75% effective on **centered** targets within range—0% effective beyond 3500 distance units. Wave weapon is 100% effective on **centered** targets within range—0% effective beyond 500 distance units. Beam weapon centering implies some portion of target in exact center of screen.

i. NAVIGATION mode. Hold E press D results in DRIVE TO AN EMPTY ZONE. If the advice ***DRIVE MALFUNCTION** has occured during drive, the destination timespace may have been missed. Such malfunction is due to field management system degradation and may be remedied by overhaul at LANDBASE ONE. Holding E must result in GRAVITY advice and display of long range target distance before A is pressed or CRASH DRIVE will result.

j. Friendly craft is firing on STARFIGHTER craft. Aggressive actions (TARGET LOCK, weapon fire) may cause retaliation from friendly craft. Ball turret gunships will fire casually at any target within their extenssive range.

k. Target out-turning STARFIGHTER. Target cannot be brought on screen. There are two distinct causes possible. STARFIGHTER craft velocity may be too great, resulting in a forced vector orbit. Idle down velocity. Target may be too close, alowing target to out fly the SC-78503 manual nose jet capability. Fly away from target to establish greater range. Idle down thrust and try re-centering. Remember that the STARFIGHTER craft is over powered for its size and has a very large turning radius at high velocities.

l. Targeting out-turning STARFIGHTER. Target is able to chase to hold close range. Probably a GNAT fighter.(which can out fly the SC78503). Set WAVE WEAPON, accelerate to top speed, firing occasionally to maintain the interest of the GNAT. Use **no ARROWS**. Allow the GNAT to make a few good attack runs. SC-78503 will force the GNAT to eventually attack directly over the tail of the STARFIGHTER craft. As the GNAT closes range, **hold down** the F control. GNAT will fly directly into the weapon from behind. Early centering of GNATS will avoid the wasted fuel of a dog-fight.

m. Hypercharge is repeatedly destroyed by interstellar mines. There are two procedures which help protect the STARFIGHTER craft from mines. First, if the SC-78503 beacon is left on, friendly mines will usually avoid contact. Second, when in doubt, CRASH DRIVE. If encountered at close range, mines may be able to contact the STARFIGHTER FIELD BEFORE CRAFT WEAPONRY CAN BE ACTIVATED. Study DISTANCE and AXIS advices to identify targets immediately upon entering an encounter area.

n. STARFIGHTER is destroyed immediately upon entering an encounter area. Certain craft, with long distance high power weapons, tend to use these weapons indiscriminantly. If incoming fire is detected immediately upon entry into an encounter area, the pilot should employ the CRASH DRIVE procedure to escape destruction.

p. Display freezes during R and T process and will not continue. Permanent performance record process has been performed incorrectly or record is damaged. Study permanent performance record procedures. Press SHIFT, UP ARROW, DOWN ARROW and repeat the record entry process. If problem is repeated, tape record is faulty. Reattempt process with alternate record if such exists.

q. R and T process results in production of meaningless statistics. Permanent performance record is probably faulty. Procedures directly above may be effective. Adjustment of recording machine volume may also remedy the problem.

6-2. Craft Flight and Combat Simulator

For further training in avoidance of pilot error conditions, the pilot is referred to the SC-78503 STARFIGHTER CRAFT FLIGHT AND COMBAT SIMULATOR. This valuable pilot aid is specifically designed to provide STARFIGHTER experience without the hazards of space. The simulator is quite thorough and provides the pilot with a very convincing scenerio.

CHAPTER 6
TARGET INTRODUCTION

Section 1. FRIENDLY AND FOE

1-1. Introduction
New pilots generally enter the service with the intention of destroying every craft encountered. The result of this misconception is wasted charge, wasted fuel, and substantial loss of rank. Proper identification of target craft is required to insure that the craft is a valid target of opportunity.

1-2. Identification
a. There are several means of identification of target craft. Some craft create unique profiles and are easily recognizable, others require less direct procedures. Regardless of the actual means used to identify craft, the pilot is advised to acquire definite identification before dispatching target craft.

b. Many craft are identifiable by their actions, in fact, some craft types can be anticipated by the RANGE and AXIS advices even before their profiles are seen. Experience is the only dependable basis for drawing conclusions on the data PROVIDED BY CRAFT actions.

c. The beacons transmitted by various craft types will serve to limit identification procedures to a simple distinction between craft lawfully employed and those not so used. Most craft will identify themselves with their craft beacons when faced by an identified STARFIGHTER craft.

d. The only certain means of identification of target craft is the identification system available in the STARFIGHTER craft. The pilot should note that this procedure requires the target range be very small and that target craft beacon be **off**.

1-3. Atypical Target Craft Actions.
The pilot is warned to present an impression to target craft that is consistent with the code of ethics of the STARFIGHTER service. Presently, some STARFIGHTER craft are at large and are apparently being used for marauder activites. Target craft may have difficulty distinguishing proper STARFIGHTER craft form the marauding raiders. This may cause friendly craft to attack the pilot if molested or uncertain.

Section 2. DESCRIPTION OF CRAFT BY TARGET TYPE

2-1. Introduction
A large body of information has been compiled on the various craft normally encountered by the STARFIGHTER pilot. The scope of this information includes craft capabilities, habits, and use. If properly informed as to the nature of the craft which are likely to become potential targets and also the nature of friends, the pilot is most likely to react appropriately in combat situations. This section will briefly describe the craft most commonly encountered by the STARFIGHTER pilot.

2-2. Exxonerator
a. Petro Resource Conglomerate craft.
b. Very small, weapon capable, no drive.
c. The Exxonerator is an early P.R.C. Hypercharge technology craft.
The Exxonerator, or "GNAT", possesses a very small Hypercharge field which is employed for weaponry and local space travel. The radical shape of this field makes it nearly useless as a defensive shield, however the GNAT **is** optimised for impressive speed and maneuverability. Typical deployment of GNAT fighters is against undefended and isolated ground installations. **GNATS are valid targets.**

2-3. Tractor Craft
a. Private craft affiliated with the Solar Galactic Authority.
b. Small craft, no weapon, drive capable, special purpose craft.
c. Tractor craft are vessels equipped with large Hypercharge fields which are normally unbalanced. These craft can incorporate large objects in their fields and so achieve field balance to drive both the tractor and the object. Tractor craft are generally used to tow disabled vessels and merchant barges. They are friendly craft.

2-4. Interstellar Mines
a. Military drone craft.
b. Very small, special purpose weaponry, no drive capability.
c. Mines are very little more than minature Hypercharge producing stars. They are ar-

chaeic according to modern standards but are none-the-less dangerous. Interstellar mines respond to any mass they detect by attacking. Both the Petro Resource Conglomerate and the Solar Galactic Authority have launched these mines and have equipped them with fail-safe beacon detectors. If the STARFIGHTER craft beacon is on, friendly mines will attempt to **avoid** the craft; enemy mines will ignore SGA beacons. Interstellar mines are somewhat sluggish and do not manuever well. They can, however, attain high velocities in time.

2-5. SC-78503 STARFIGHTER

a. Para-military craft, affiliated with the S G A ·

b. Moderate size, moderate weaponry, drive capable.

c. This entire manual is devoted to the STARFIGHTER craft so very little can be added here. STARFIGHTER pilots tend to be somewhat aggressive. Craft are friendly.

2-6. Star Marauders.

a. Privately operated craft conforming to SC-78503 specs.

b. Moderate size, moderate weaponry, drive capable.

c. Marauder craft appear to be SC-78503 craft in use for unauthorized activities. Marauder weapon capability is a significant threat to the STARFIGHTER craft. Marauders are able to send a standard STARFIGHTER beacon, making identification difficult. **Marauders are valid targets.**

2-7. Khomendier Class C Raiders.

a. Petro Resouce Conglomerate military craft.

b. Small size, light weaponry, drive capable.

c. Individually, Khomendiers, or "Cluster Chucks", are very similar to GNATS. They are somewhat slower and have somewhat less effective weaponry. Lately the P.R.C. has been employing Cluster Chucks in triplet for enhanced operations capability. The fields of combined units produce greater shielding and weapon capability to Cluster Chuck fighting groups but tend to confuse their reactions and the outline profiles they produce. These craft are capable of high rate fire when attacking and can use weaponry at any angle. **Khomendier Class C Raiders are valid targets.**

2-8. Star Merchants.

a. Private craft.

b. Large size, light weaponry, drive capable.

c. Merchant craft are defended craft engaged in private commerce. They have good defensive shields and some weapon capabiility. Merchants are very sluggish with a moderate top speed. Solar Galactic Authority treaties protect merchants from attack. They are not valid targets.

2-9. Star Pirates.

a. Private craft.

b. Large size, light weaponry, drive capable.

c. Star pirates are merchant craft not protected by treaty. In most respects they correspond functionally to merchant vessels, in some cases with enhanced weapon capability. Pirates are capable of transmitting Merchant craft beacons and sometimes use their beacons to block identification attempts. Star pirates pose a threat to merchant shipping **Star Pirates are valid targets.**

2-10. LC-1719 Ball Turret Gunship.

a. Solar Galactic Authority military craft.

b. Very large, very heavy weaponry, drive capable.

c. The Ball Turret Gunship is an early development of the SGA military structure. They posess no Hypercharge field but are able to approach light speed by a process of matter to anti-matter conversion. Static energy field generation is used effectively as defensive shielding. The most impressive feature of the B.T.G. is its coherent light weaponry which is capable of seriously upsetting Hypercharge fields. Ball Turret Gunship laser weapons have an enormous range and are used freely and indiscriminately. These crafts are friendly.

2-11. Star Scouts

a. Military craft.

b. Very small, very fast, no known weapon.

c. The Solar Galactic Authority employs Star Scout craft for routine reconnaisance activities. It is believed that the P.R.C. may also be using these craft as spies in association with sabotage activities. The SGA is not concerned with the fate of Star Scouts in any way.

2-12. Navigational beacons

a. Military craft.

b. Very small, non-mobile, no weaponry.

c. Nav. beacons have been widely distributed as an adjunct to DRIVE navigation. They have no weapon or defense and are friendly.

2-13. Death Caster.

a. P.R.C. military craft.

b. Very large, slow moving, heavy weaponry, not drive capable.

c. The Death Caster is the most powerful weapon ever sent to battle by the Peteo

Resource Conglomerate. It is believed that these craft employ the principle developed for Cluster Chucks but combine many more fields. If intelligence is accurate, the craft are intended to self-destruct like mines. The resulting cataclysm could be dangerous to defended LANDBASE systems. Death Casters are believed to be capable of firing Hypercharge-keeping projectiles at very high speeds. It is known that their weaponry has long range and is very effective. **Death Casters are valid targets.**

Section 3. ANTICIPATED TARGET MANUEVERS

3-1. Introduction
Standard battle procedure can be resolved into distinct and differenciable manuevers. By careful study, the pilot will be able to distinguish the various manuevers and so will be more effective in the STARFIGHTER service. A presentation of standard manuevers follows.

3-2. Wait
The most conservative manuever possible is to simply wait and hope to gain more target information without giving any clues as to identity or intent to the enemy.

3-3. Flee
Sometimes running away is the best available defensive manuever. Fleeing craft will present a fleeing AXIS advice. The pilot should **not** imply that fleeing craft are afraid. Many craft use a fleeing manuever to draw an enemy fire into a chase.

3-4. Evade
Most craft fire weapons from mounted facilities. For this reason, evasion is a means of breaking attack. In addition, identification of off screen craft is difficult and suggests evasion to maintain secrecy. Evasion consists of flying at right angles to the target craft to stay away from the target's nose.

3-5. Jump
When all else fails, a Hyperspace drive will always shake an attack. It should **not** be implied that all jumps are reactions. Many craft spend very little time in normal space between jumps.

3-6. Beacon Transmission
Sometimes a simple beacon transmission can clear the "air" of uncertainty and avoid the need for more complicated manuevers.

3-7. Beacon Request
Like beacon transmission, beacon request is a valid alternative to more complex manuevers. Treaty requires that craft identify themselves and the beacon request serves as a reminder and as a test to determine the lawfulness of a target. Many craft request a beacon after being insulted or unreasonably attacked.

3-8. Turn to Bear.
This is a preparatory activity that puts a target on screen for identification and allows attack without warning. Some craft consider targets persistently turned to bear as aggressive. Socialization is the implied threat of violence.

3-9. Attack
"When in doubt, kill it." This is not acceptable procedure in the STARFIGHTER service but is quite common procedure in some craft. The pilot may assume that targets which attack without cause have identified the SC-78503 as an enemy vessel. Such craft are probably valid targets.

CHAPTER 7
PILOT TRAINING SIMULATOR

Section 1. DESCRIPTION AND USE

1-1. Introduction
The SC-78503 craft is equipped to provide simulated combat as a pilot trainer. When configured in this manner the craft is able to provide simulated encounters with known craft types. This training is effective to instruct the pilot in procedure without endangering the craft.

1-2. Operation
The training simulator is similar in operation to the STARFIGHTER craft in actual use. Some differences exist and these are presented to be used in conjunction with this text when operating the simulator.

a. No permanent performance records are available in the trainer.

b. The trainer presents a menu which is basically self explanatory and allows the following options.

(1). ENTER control will present simulation of all STARFIGHTER experiences except LANDBASE CENTRAL.

(2). Letter-number combinations will present combat encounter with a selected craft type

(3). Stationary practice block is offered as a possible target to aid manuevering skills.

c. BREAK control will return pilot to the menu at any point.

Section 2. TRAINING AIDS

2-1. Description

a. The pilot trainer will interupt simulation to present an error advice when a pilot error condition is created. This advice will include a list of the controls available in the chosen operating mode and will display an error advice at the bottom of the screen. This has been implemented as a training tool for the avoidance of craft control errors only. Pilot judgemental errors must be corrected in actual combat.

b. The ENTER control may be used at any time during simulation to display a list of the available controls in the selected craft operation mode. This display suspends simulation during during the period that the ENTER control is held down. Simulation will continue when the control is released.

c. The SPACEBAR may be used at any time to freeze the display and provide time for the pilot to study his data display.

APPENDIX A — PMC EQUIPPED STARFIGHTER CRAFT

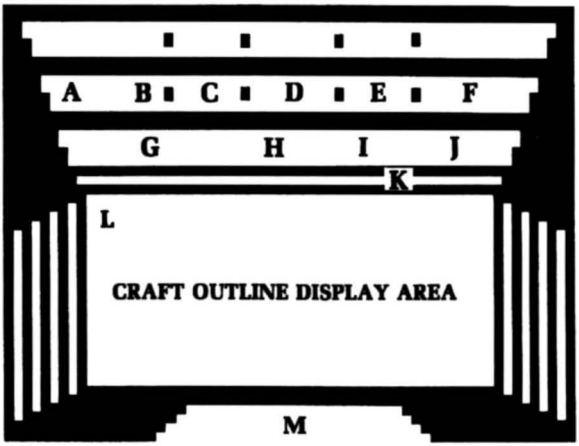
Most SC-78503 STARFIGHTER craft currently in service utilize the TRS type control console, however, there are also some PMC type consoles in use. If the craft to which you have been assigned is PMC equipped, you will notice that the console lacks the left and right ARROW controls. In PMC equipped craft, the left and right VECTOR controls (< , >) are used to activate the horizontal nose jets. These controls are inoperative in TRS equipped craft.

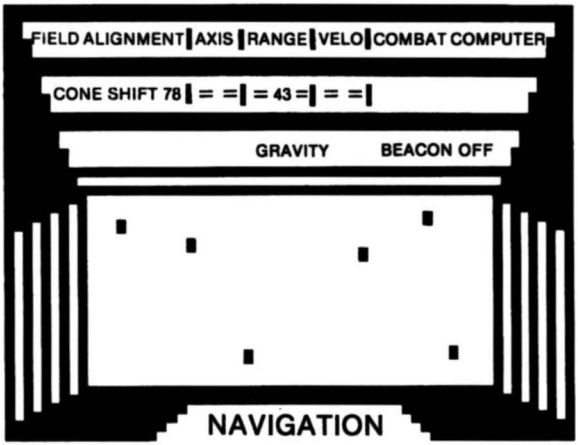
Only the most intrepid STARFIGHTER pilot reaches Star Lord rank and even fewer exceed it! If you are one of the dauntless few, a special password will appear on your companel. Contact Adventure International via landgram (U.S. Postal letter will also be fine) of this password and you will receive a special Gift.

APPENDIX B
TEXT RELATED FIGURES

Fig. 1 ►
DATA DISPLAY ADVICE ITEMS

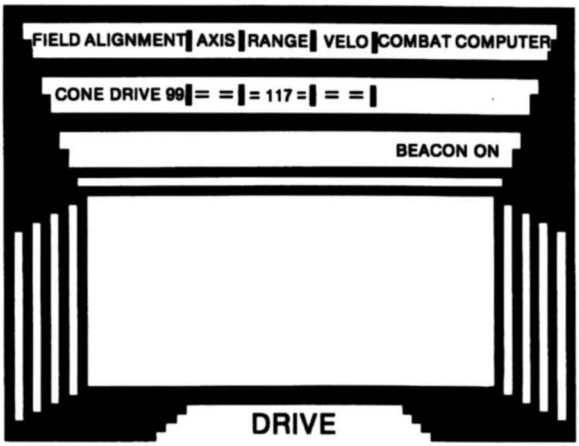
A & B - Cone Configuration Advice
C - Target Axis
D - Target Range
E - SC-78503 Velocity
F - Targeting & Lock Advices
G - Low Hypercharge & Low Fuel Advice
H - Gravity Advice
I - COM Waiting
J - Beacon Status
K - Star Scan
I - Craft Outline Display Area
M - Mode Advice

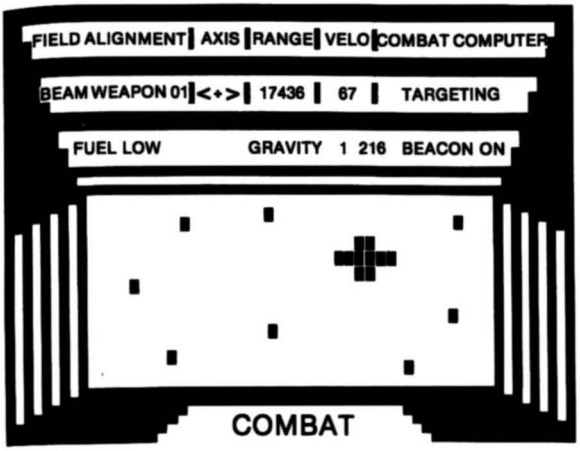




◄ Fig. 2
NAVIGATION MODE, EXTENDED RANGE SCAN HAS LOCATED A TARGET. VELOCITY IS ZERO, CONES SHIFTING FOR DRIVE.

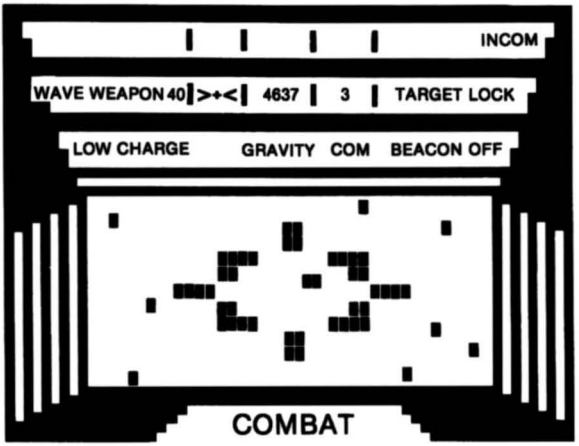
FIG. 3 ►
DRIVE MODE, STILL IN NORMAL SPACE. LANDBASE DESTINATION IS SELECTED.

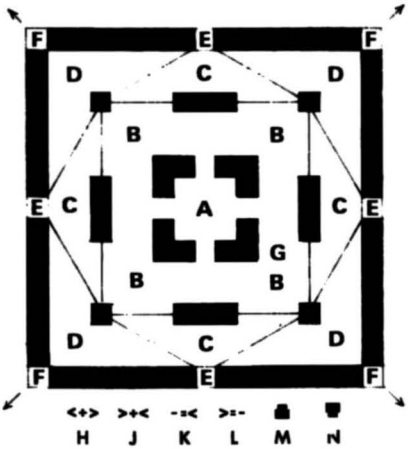




◄ **Fig. 4**
COMBAT MODE, INCOMING DEATHCASTER (See Axis, Range, Outline Display). BEAM WEAPON OPERABLE, TARGET NOT CENTERED & NOT IN WEAPON RANGE. FUEL IS BEING CHECKED, 2 CHARGE FIELDS BUT VERY LOW FUEL IS SHOWN.

Fig. 5 ►
COMBAT MODE. FLEEING CRAFT IS TARGET LOCKED BUT NOT IN RANGE & NOT CENTERED. WAVE WEAPON OPERABLE. TARGET IS SENDING A BEACON. SECOND COMMUNICATION IS WAITING FOR COM LINE TO CLEAR.





◄ **Fig. 6**
TARGETING GRID & AXIS ADVICE.

APPENDIX C — CONSOLE CONTROL SYNOPSIS

COMBAT

←,→,↓,↑ NOSEJETS (turn craft) PMC craft see Appendix A
0 VELOCITY 0
1 VELOCITY 1
2 VELOCITY 3 Velocity controls also cancel CLEAR
3 VELOCITY 7
4 VELOCITY 15
5 VELOCITY 31
6 VELOCITY 63
7 VELOCITY 127

B Shift Cones to BEAM WEAPON (range approx. 3500, Damage by distance)
W Shift Cones to WAVE WEAPON (range 500, wide angle - heavy damage)
* F FIRE weapon(requires WEAPON indication in Cone display).(uses 20 Hypercharge Units/Segment)
S SEND BEACON (will stay on)
K KILL BEACON
R REQUEST BEACON (not effective while STARFIGHTER Beacon is on)
I IDENTIFY target if within I.D. range for target type. (will function after target destroyed)
T TARGET ON
X CANCEL TARGET
* L TARGET LOCK (distance less thanorequal to velocity,velocity controls,ARROWS-all UNLOCK target)
* H HYPERCHARGE Display (in COM advice area)
* M MANUEVERING FUEL Display (in COM advice area)
CLEAR Lock Out Arrows and idle down thrust (preparation for DRIVE, not normally used in COMBAT)
N NAVIGATION REQUEST (voids most controls above)
P Request for Tractor Craft tow (must be no target, must have tow ticket, will destroy active field)

NOTE: NAVIGATION sets Cones to 99-Cone Drive and CANCELS TARGETING and TARGET LOCK. DRIVE REQUIRES CLEAR which cuts thrust and LOCKS OUT ARROWS. For these reasons, several controls require immediate attention when entering COMBAT, these are T, B or W, 0-7. These controls set Cones, cancel CLEAR, and activate TARGETING.

NAVIGATION

The following controls operate as above: ARROWS, S, K, R, H, M, CLEAR, P

These controls are new or different:

*	0	LANDBASE CENTRAL	RANK REVIEW—Performance review, clears all craft reviewed from record.
*	1	LANDBASE ONE	OVERHAUL — 2000 Sovereigns to put craft in 100% condition.
*	2	LANDBASE TWO	REFUELING — 10 Sovereigns/lb.(5000 lblimit)
*	3	LANDBASE THREE	TOW TICKETS — 500 Sovereigns/ticket — One ticket per ENTER press.
*	4	LANDBASE FOUR	BOUNTY — Various amounts offered on Pirates, Marauders, and as below.
*	5	LANDBASE FIVE	HYPERCHARGE — 3000 Sovereigns buys full (3000) Charge.
*	6	LANDBASE SIX	BOUNTY — Offered on Deathcasters, Khomendiers, and as above.
*	7	LANDBASE SEVEN	REFUELING & HYPERCHARGE

* E Long Distance Target Scan (locates target in due time)
D Go to DRIVE - requires CLEAR. Velocity must be 0 when D is pressed or malfunction results. Field must be present to DRIVE. E or 0-7 must be HELD Down while D is pressed if Long Distance Target or LANDBASE Destination is desired. Pressing D **alone** will result in DRIVE to open space if DRIVE conditions have been met. DRIVE (everything after pressing D) is AUTOMATIC and can only be aborted by craft destruction. DRIVE MALFUNCTION alone can interupt DRIVE or avert from destination.

NOTE: BOUNTY and CENTRAL REVIEW clear STARFIGHTER records of only mentioned craft.

NOTE: P-TOW requests must be held until COM shows. No Tractor will arrive in any segment during which COM is not on.

NOTE: MALFUNCTION (F with no weapon, D while thrusting) results in loss of 256 Hypercharge units.

 # These controls initiate sequences that TAKE TIME.
*** These controls May or Should be HELD DOWN in operation.**

TO LOAD MAIN MISSION OR SIMULATOR ON 16K TRS-80 TAPE SYSTEM

*To load STARFIGHTER on TRS-80 Level II 16K. If loading on Model 3, 16K select "LOW" Cassette.

1) Power up system
2) Put tape in player and rewind
3) Volume around 4 — 5
4) Type: SYSTEM
5) Type: STARFI
6) The tape should now load with a blinking * in the upper right corner on CRT. If you get a 'C' or the * does not appear then rewind tape, set volume to a notch higher and go back to step 1.
7) Type: /

*There is a duplicate copy of the Program on the back of the tape.

FOR GAME SAVE INSTRUCTIONS, see the Induction Manual, Chapter 5, Section 5-5

TO LOAD ON 32K TRS-80 DISK SYSTEM

1) Select the disk (or side of the disk if a double-sided disk) that says the name of your Model (Model I or Model III)
2) Power up system
3) Place disk in drive 0 and press reset.

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