

PARTIAL FLIGHT MANUAL

USAF SERIES

T-39F

AIRCRAFT

CONTRACT

FO4606-69-C-0282



Commanders are responsible for bringing this publication to the attention of all personnel cleared for operation of subject aircraft.

PUBLISHED UNDER AUTHORITY OF THE
SECRETARY OF THE AIR FORCE

See T.O. 0-1-1-5A for current status of Flight Manuals, Safety Supplements, Operational Supplements, and Flight Crew Checklists.

This publication is incomplete without T.O. 1T-39A-1, 1T-39F-1A, and 1T-39F-1B.

31 JANUARY 1969**CHANGE 1 - 30 APRIL 1972**

Technical orders are normally distributed promptly after printing. Date(s) shown on the title page (lower right corner) are for identification only. These are not distribution dates. Processing time sometimes causes distribution to only appear to have been delayed.

LIST OF EFFECTIVE PAGES

INSERT LATEST CHANGED PAGES. DESTROY SUPERSEDED PAGES.

NOTE: The portion of the text affected by the changes is indicated by a vertical line in the outer margin of the page. Changes to illustrations are indicated by miniature Pointing-Hands. Changes to wiring diagrams are indicated by shaded areas.

Date of issue for original and changed pages are:

Original . . 0 . . 31 Jan 69

Change . . 1 . . 30 Apr 72

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 24, CONSISTING OF THE FOLLOWING:

Page No.	Chg. No.
* Title	1
* A	1
i - iii	0
* iv Deleted	1
v - vi	0
1-1 - 1-3	0
1-4 Blank	0
3-1	0
* 3-2	1
4-1 - 4-6	0
5-1 - 5-2	0
A-1 - A-2	0

CURRENT FLIGHT CREW CHECKLIST

The flight crew checklist to be used for T-39F Airplanes is T.O. 1T-39A-1CL-1.
For current checklist to be used, refer to LIST OF EFFECTIVE PAGES in
T.O. 1T-39A-1.

Upon receipt of the second and subsequent changes to this technical order, personnel responsible for maintaining this publication in current status will ascertain that all previous changes have been received and incorporated. Action should be taken promptly if the publication is incomplete.

* The asterisk indicates pages changed, added, or deleted by the current change.

ADDITIONAL COPIES OF THIS PUBLICATION MAY BE OBTAINED AS FOLLOWS:

USAF ACTIVITIES.—In accordance with Technical Order No. 00-5-2.

A

USAF

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† Refer to T.O. 1T-39A-1.

FOREWORD

IMPORTANT

To gain the maximum benefit from this manual, be sure to read the foreword carefully.

Scope.

This partial manual contains the necessary information for safe and efficient operation of the T-39F, and covers the differences between it and the T-39A. All information and operating instructions not covered in this manual remain unchanged and are covered in T.O. 1T-39A-1.

Sound Judgment.

This manual provides the best possible operating instructions under most circumstances, but it is not a substitute for sound judgment. Multiple emergencies, adverse weather, terrain, etc., may require modification of the procedures.

Permissible Operations.

The Flight Manual takes a "positive approach" and normally states only what you can do. Unusual operations or configurations (such as asymmetrical loading) are prohibited unless specifically covered herein. Clearance must be obtained from the Flight Manual Manager before any questionable operation is attempted which is not specifically permitted in this manual.

How to Be Assured of Having Latest Data.

Refer to T.O. 0-1-1-5A, which lists all current Flight Manuals, Safety Supplements, Operational Supplements, and Checklists. Its frequency of issue and brevity ensures an accurate, up-to-date listing of these publications.

Standardization and Arrangement.

Standardization assures that the scope and arrangement of all Flight Manuals are identical. The

manual is divided into independent sections to simplify reading it straight through or using it as a reference manual. The first three sections must be read thoroughly and fully understood before attempting to fly the airplane. The remaining sections provide important information for safe and efficient mission accomplishment.

Supplements.

The current status of each Supplement affecting your airplane can be determined by referring to T.O. 0-1-1-5A. The title page of the Flight Manual and the title block of each Supplement should be checked to determine the effect they may have on existing Supplements. You must remain constantly aware of all Supplements—current Supplements must be complied with but there is no point in restricting your operation by complying with a replaced or rescinded Supplement. Upon receiving each Supplement, file it in the front of your Flight Manual, and make reference to it on the Supplement Summary page. If existing Flight Manual information or procedures are revised, a reference to the applicable Supplement should then be written in the margin of the page opposite the affected write-up. A Safety Supplement may be replaced by an Operational Supplement or an Operational Supplement may be replaced by a Safety Supplement.

SAFETY SUPPLEMENTS. Information involving safety will be promptly forwarded to you by Safety Supplements. Supplements covering loss of life will get to you in 48 hours by TWX, and those concerning serious damage to equipment within 10 days by mail.

OPERATIONAL SUPPLEMENTS. Nonsafety requirements or airplane changes affecting flight

crew information that is not timely, or that cannot be practically or adequately covered in the Flight Manual at the time of a scheduled change or revision will be forwarded to you by Operational Supplements.

Checklists.

The Flight Manual contains only amplified checklists. Abbreviated checklists have been issued as separate technical orders. (Refer to the back of the title page for the T.O. number and date of your latest checklist.) Line items in the Flight Manual and checklists are identical with respect to arrangement and item number. Whenever a Supplement affects the abbreviated checklist, write in the applicable change on the affected checklist page. As soon as possible, a new checklist page, incorporating the supplement will be issued. This will keep handwritten entries of Supplement information in your checklist to a minimum.

How to Get Personal Copies.

Each flight crew member is entitled to personal copies of the Flight Manual, Safety Supplements, Operational Supplements, and Checklists. The required quantities should be ordered before you need them to assure prompt receipt. Check with your supply personnel; it is their job to fulfill your Technical Order requests. Basically, you must order the required quantities on the Numerical Index and Requirement Table (T.O. 0-1-1-5). Technical Orders 00-5-1 and 00-5-2 give detailed information for properly ordering these publications. Make sure a system is established at your base to deliver these publications to the flight crew immediately upon receipt.

Flight Manual and Checklist Binders.

Loose-leaf binders and sectionalized tabs are available for use with your manual. These are obtained through local purchase procedures and are listed in the Federal Supply Schedule (FSC Group 75, Office Supplies, Part 1). Binders are also available for carrying your abbreviated checklist. These binders contain plastic envelopes into which individual checklist pages are inserted. They are available in three capacities: 15-, 25-, and 40-envelope binders, respectively. Check with your supply personnel for assistance in securing these items.

J201 Computer.

A J201 computer (Federal Stock No. 6686-076-0759) is included as miscellaneous equipment with this airplane. This computer is used to compute P_{t5} for engine thrust setting and as an aid to in-flight planning. It is also a valuable aid in obtaining various conversion and correction factors, as well as performing certain numerical computations.

Operation of this computer is explained in Appendix I of the T-39A Flight Manual, T.O. 1T-39A-1. The J201 computer is stowed in a pouch on the overhead panel. Additional computers may be obtained through normal supply channels.

Warnings, Cautions, and Notes.

The following definitions apply to "Warnings," "Cautions," and "Notes" found throughout the manual.

Warning

Operating procedures, techniques, etc, which will result in personal

injury or loss of life if not carefully followed.

Caution

Operating procedures, techniques, etc, which will result in damage to equipment if not carefully followed.

sult in damage to equipment if not carefully followed.

NOTE An operating procedure, technique, etc, which is considered essential to emphasize.

Illustration Changes.

To help you more easily find, on illustrations, changes that might otherwise be inconspicuous, the following identifier will be used:



Your Responsibility—To Let Us Know.

Every effort is made to keep the Flight Manual current. Review conferences with operating personnel and a constant review of accident and flight test reports assure inclusion of the latest data in the manual. However, we cannot correct an error unless we know of its existence. In this regard, it is essential that you do your part. Comments, corrections, and questions regarding this manual or any phase of the Flight Manual program are welcomed. AF Form 847 will be used for recommending changes to the Flight Manual in accordance with instructions in AFR 60-9 and T.O. 00-5-1. These will be forwarded through command headquarters to SMAMA, McClellan AFB, California, 95652, Attn: SMNSTT. AF Forms 847 are routed to SMNSTT for control purposes only. Technical content of the Flight Manual is the responsibility of the Flight Manual Manager (SMNEAH), and all comments and questions transmitted by means other than the AF Form 847 will be submitted directly to the Flight Manual Manager, SMAMA, McClellan AFB, California, 95652, Attn: SMNEAH.

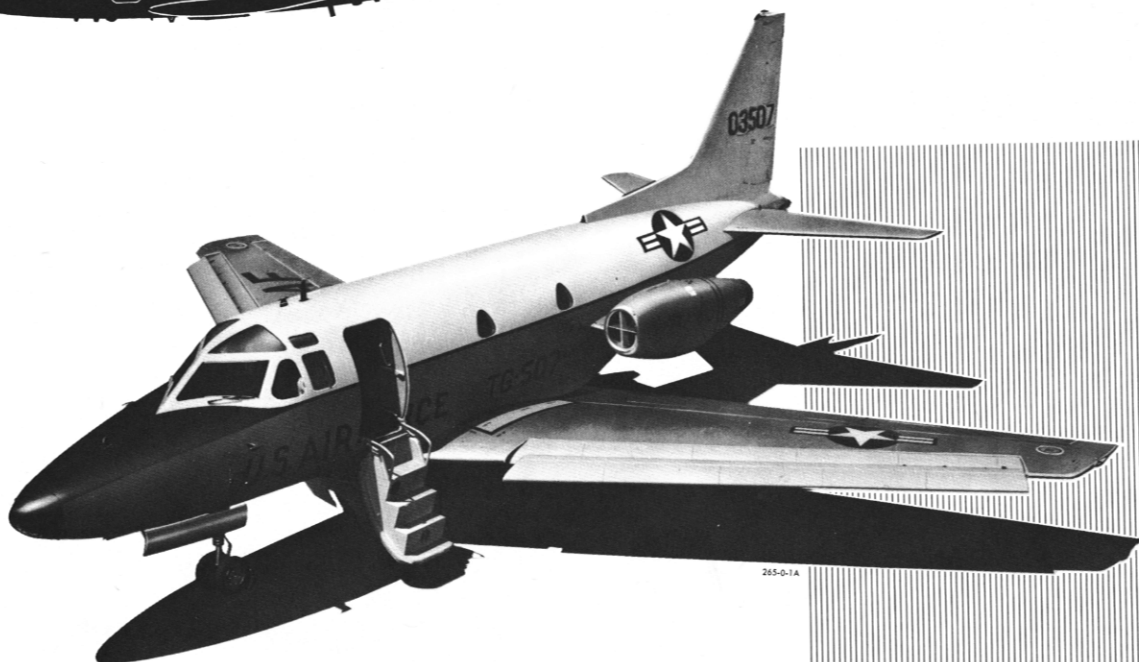
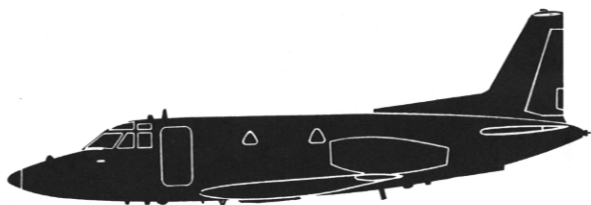
T.C.T.O. IDENTIFICATION

The following T.C.T.O.'s, affecting T-39F Airplanes, are covered in this Partial Flight Manual. This is not a complete T.O. listing and does not include rescinded T.C.T.O.'s. Refer to the Numerical Index and Requirement Table (T.O. 0-1-1-5A) for the complete listing of T.C.T.O.'s for these airplanes.

T.O. NUMBER

SUBJECT

T-39F



39F-1-00-7

265-Q-1A

DESCRIPTION

SECTION I

All information on description is contained in the T-39A Flight Manual, T.O. 1T-39A-1, except the following:

AIRPLANE.

The T-39F Airplane, built by North American Rockwell Corporation, is a modified T-39A Airplane which has been converted to a Wild Weasel training configuration. The primary mission of the airplane is to train electronics warfare officers and pilots in the RHAW (radar homing and warning) system used in locating air-to-air, surface-to-air, and antiaircraft radar sites from forward positions.

AIRPLANE WEIGHT.

The approximate take-off gross weight is as follows:

Crew of five and wing fuel 16,900 pounds

The preceding plus full fuselage fuel 17,950 pounds

The approximate basic weight is as follows:

Airplane plus engine oil and trapped fuel 10,150 pounds

For more detailed weight information, refer to "Weight Limitations" in Section V.

AIRPLANE SERIAL NUMBERS.

Airplane serial numbers are as follows:

T-39F-1 AF59-2869 and -2872 and AF60-3507

INTERIOR ARRANGEMENT.

A student training console and a student seat are on each side of the cabin. Immediately behind and

between the two student seats is an instructor's seat with an instructor's console to the right of it. The RHAW system electronic equipment is mounted on shelves in the baggage compartment and in the area between the baggage compartment and the right student's console, and the additional command radio receiver-transmitter for the students and instructor is on the floor of the baggage compartment.

ELECTRICAL POWER SUPPLY SYSTEMS.

Alternating current is supplied by a dc-powered, main 3-phase, 2500-volt-ampere inverter, with a dc-powered, stand-by 3-phase inverter, capable of 500-volt-ampere capacity, incorporating an automatic change-over system.

CIRCUIT BREAKERS.

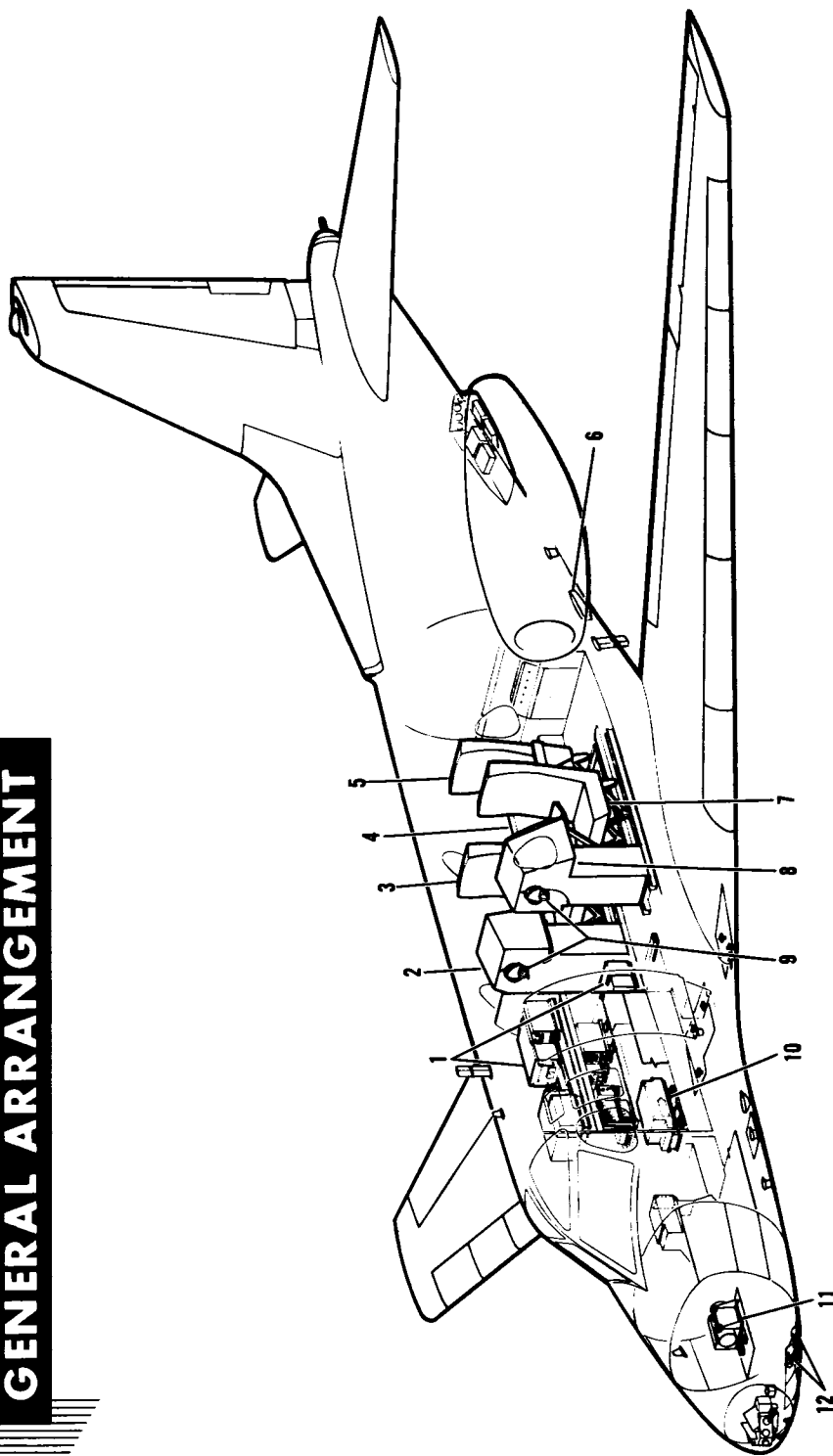
The No. 2 26-volt ac instrument transformer circuit breaker on the left rear overhead circuit-breaker panel is a 2-ampere circuit breaker. The main inverter power circuit breaker on the circuit-breaker panel at the rear of the cabin is a 160-ampere circuit breaker. Additional circuit breakers are on a circuit-breaker panel at the forward end of the baggage compartment. (See figure 1-2.)

INSTRUMENTS.

MAGNETIC COMPASS.

The magnetic compass is compensated with the engines running and the following items turned off: AN/APR-25(V), AN/APR-26(V), ER-142, QRC-317A, and AN/APS-107A systems, and students' console light rheostats. Therefore, these items should be OFF before the magnetic compass is used.

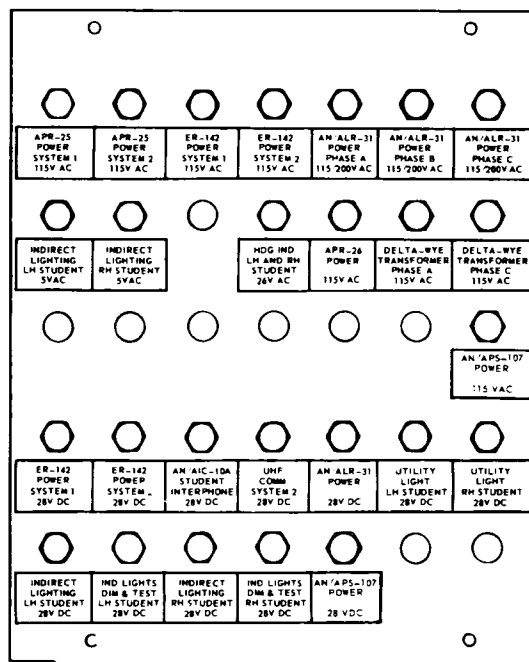
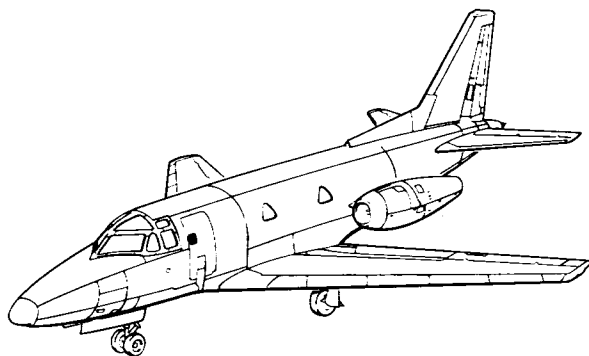
GENERAL ARRANGEMENT



- | | |
|--------------------------------|-------------------------------------|
| 1. ELECTRONIC (RHAW) EQUIPMENT | 7. LEFT STUDENT'S SEAT |
| 2. RIGHT STUDENT'S CONSOLE | 8. LEFT STUDENT'S CONSOLE |
| 3. RIGHT STUDENT'S SEAT | 9. STUDENT HEADSETS—MICROPHONES |
| 4. INSTRUCTOR'S CONSOLE | 10. INSTRUCTOR'S COMMAND RADIO |
| 5. INSTRUCTOR'S SEAT | 11. MAIN INVERTER |
| 6. MARKER BEACON ANTENNA | 12. RETRACTABLE LANDING—TAXI LIGHTS |

Figure 1-1

CIRCUIT BREAKER PANELS



39F-1-54-1

Figure 1-2

NOTE

For Section II, refer to T-39A
Flight Manual, T.O. 1T-39A-1.

EMERGENCY PROCEDURES

SECTION III

All information on emergency procedures is contained in the T-39A Flight Manual, T.O. 1T-39A-1, except the following:

ENGINE FAILURE.

For minimum control speed and safe single-engine speed, see figure 3-1.

MINIMUM CONTROL SPEED^o



SAFE SINGLE-ENGINE SPEED

SPEEDS GIVEN ARE BASED ON FLIGHT TEST
SEA LEVEL — STANDARD DAY

90

KNOTS IAS

OR STALL SPEED PLUS 5 KNOTS
(WHICHEVER IS HIGHER)

NOTE

Use power-off stall speeds as shown on stall speed chart in Section VI.

V_{MCG} — MINIMUM CONTROL SPEED (GROUND)

V_{MCA} — MINIMUM CONTROL SPEED (AIR)

117

KNOTS IAS

FOR GROSS WEIGHT —
18,650 POUNDS

Minimum control speed (ground) is the speed at which the airplane can be controlled on the ground with a failed engine and by use of aerodynamic controls alone. The speed is based on the failed engine windmilling, Military Thrust on the good engine, the nose wheel off the runway, and use of ailerons and rudder to maintain directional control within 25 feet of the desired path.

Minimum control speed (air) is the speed required to provide sufficient control to fly a straight path over the ground with a failed engine. This speed is based on the engine windmilling, Military Thrust on the good engine, and no more than 5 degrees bank away from the failed engine. At minimum control speed, it may be necessary to sacrifice altitude for airspeed while putting the airplane in a clean configuration and obtaining sufficient airspeed to climb. Refer to Appendix I for single-engine take-off speed and distance.

TAKE-OFF CONFIGURATION

130

KNOTS IAS

WING FLAPS
SPEED BRAKE
LANDING GEAR
WEIGHT

UP
RETRACTED
UP
MAXIMUM

For other gross weights, use initial climb-out speeds shown on climb-out distance — one-engine chart. Observe weight and temperature limits as shown on take-off ground run chart in Appendix I.

Safe single-engine speeds shown are based on Military Thrust on the good engine.

NOTE

Speeds shown will provide a minimum rate of climb of 200 feet per minute.

LANDING CONFIGURATION

116

KNOTS IAS

WING FLAPS
SPEED BRAKE
LANDING GEAR
WEIGHT

66%*
RETRACTED
DOWN
15,000 LB OR LESS†

*If less than 66% flaps is used, add 10 knots to final approach speed.

†For heavier gross weights, increase speed 4 knots for each 1000 pounds.

Figure 3-1

AUXILIARY EQUIPMENT

SECTION IV

TABLE OF CONTENTS	PAGE	PAGE
Communications and Associated		
Electronic Equipment	4-1	Navigation Equipment 4-4
Lighting Equipment	4-3	Students' Consoles 4-4
		Instructor's Console 4-4

All information on auxiliary equipment is contained in the T-39A Flight Manual, T.O. 1T-39A-1, except the following:

COMMUNICATIONS AND ASSOCIATED ELECTRONIC EQUIPMENT.

ANTENNAS.

See figure 3-1 in the Confidential Supplement, T.O. 1T-39F-1B, for antenna locations.

INTERCOMMUNICATION SET - AN/AIC-10A.

Intercommunication Control Panels.

The instructor and each student have an AN/AIC-10A set (9, figure 4-2; 1 and 2, figure 4-3) that is connected electrically to the RHAW system. Powered by the dc essential bus, the set amplifies signals sent and received, and provides interphone service between all stations in the airplane, and private interphone between students and instructor. An additional command radio is installed in the airplane for the use of the students and the instructor. Operation of the radio is controlled by the instructor, but either student and the instructor have transmitting and receiving capabilities. The controls on each student's panel and their operation are identical to one another. The instructor's panel has all the capabilities of the students' panels plus command radio operation. Panel lighting is controlled by the console lights rheostat.

MIXER SWITCHES. Five mixer switches on each student's panel, and 10 mixer switches on the instructor's panel control individual reception of audio signals. A mixer switch is ON when moved to the forward (up) position. When a switch or

combination of switches is moved to ON, the selected signals at that station can be monitored. When any mixer switch is moved OFF (aft or down), the corresponding signal being monitored is cut out, except that when the function selector switch is set at the corresponding position (for example, INPH mixer switch OFF and function selector switch at INPH), signals will still be heard. With a mixer switch at INPH, interphone reception is available from any station having the function selector switch at INPH. The instructor's mixer switch marked COMM allows the instructor to receive command radio signals regardless of the position of his function selector switch. The instructor's panel has two STU PVT mixer switches. The left STU PVT switch permits the instructor to monitor conversation by the left student when that student's function selector switch is at INST PVT. The instructor's right STU PVT mixer switch permits the instructor to monitor the right student when that student's function selector switch is at INST PVT.

The left student has a mixer switch labeled APR-25/26 and one labeled ER-142 to permit reception of alert signals associated with the AN/APR-25(V), AN/APR-26(V), and ER-142 systems. The right student has two identically marked switches on his panel for reception with the AN/APR-25(V), AN/APR-26(V), and ER-142 systems. The student's APR-26 INPH (interphone) switch and LTS (lights) switch must be ON to permit his reception in this system. The instructor's panel has two mixer switches marked APR-25/26 and two marked ER-142 to permit the monitoring of either student receiving signals in his respective systems. Each student and the instructor have a mixer switch each, labeled ALR-31 for

monitoring the single QRC-317A system they share. In addition, each student and the instructor have a mixer switch each, labeled APS-107, for monitoring a composite signal composed of AN/APS-107A omni and warning audio signals and an ER-142 system audio signal. The omni audio signal may be removed by the use of a switch at the instructor's position.

FUNCTION SELECTOR SWITCH. The function selector switch controls individual transmission and reception of audio signals. Each student's switch has five marked positions, while the instructor's switch has six marked positions. The CALL position (the switch must be held at this position, and returns to INPH when released) is for calling all other occupants in the airplane, regardless of switch positions on their interphone amplifier control panels. At this position, the volume control is ineffective, and it is not necessary to press the microphone foot switch. With the function switch at INPH, any other interphone station in the airplane may be called if that station's function selector switch is at INPH, or that station's INPH mixer switch is ON. The instructor's function selector switch has two STU PVT positions. When this switch is at the left (most counterclockwise) STU PVT position, the instructor can communicate privately with the left student when the left student's function selector switch is at INST PVT. Likewise, the instructor can engage in private discussion with the right student when the instructor's function selector switch is at the right (most clockwise) STU PVT position, and the right student's function selector switch is at INST PVT.

With the instructor's switch at STU, the instructor can communicate with either student, or both students simultaneously if the student's function selector switch is at INST STU. If both students' switches are at INST STU, they may communicate with one another also. When the switch is turned to COMM, the instructor or either student can transmit and receive command radio signals even though the students do not have command radio control panels.

MICROPHONE FOOT SWITCH. Below the console of each student and instructor is a dc essential-bus-powered rocker-type foot switch (11, figure 4-2 and 5 figure 4-3) that can be actuated at either end by pressing the toe or heel. Pressing and holding a foot switch permits talking on the selected channel; however, the appropriate mixer switch must be ON, or the appropriate channel must be selected at all related stations to obtain reception.

Operation of Intercommunication Set - AN/AIC-10A.

For selective interphone operation:

1. Function selector switch - INPH.

2. Microphone foot switch - Press, and talk.

3. Microphone foot switch - Release when transmission completed, to permit reception of reply.

For interphone call operation:

1. Function selector switch - Hold at CALL, and talk.

All other stations will receive, regardless of the position of their function selector or mixer switches.

NOTE No signal mixing is possible during CALL operation.

For command radio transmission:

1. Function selector switch - COMM.
2. Microphone foot switch - Press, and talk.
3. Microphone foot switch - Release when transmission completed, to permit reception of reply.

For communication between instructor and left student:

1. Function selector switch (instructor) - STU PVT left.
2. Function selector switch (left student) - INST PVT.
3. Microphone foot switch - Press, and talk.
4. Microphone foot switch - Release when transmission completed, to permit reception of reply.

For communication between instructor and right student:

1. Function selector switch (instructor) - STU PVT right.
2. Function selector switch (right student) - INST PVT.
3. Microphone foot switch - Press, and talk.
4. Microphone foot switch - Release when transmission completed, to permit reception of reply.

For communication between instructor and both students:

1. Function selector switch (instructor) - STU.
2. Function selector switch (both students) - INST STU.
3. Microphone foot switch - Press, and talk.
4. Microphone foot switch - Release when transmission completed, to permit reception of reply.

To monitor other signals:

1. Desired mixer switches - ON.

Where a signal to be received is not represented by a mixer switch, the desired signal can be monitored by positioning the function selector switch accordingly. This permits monitoring several different signals simultaneously.

UHF COMMAND RADIO - AN/ARC-34A.

Command Radio Control Panel.

A control panel for the command radio on the instructor's console (3, figure 4-3) is powered by the dc secondary bus. The instructor's command radio controls are identical to, and function the same as, the UHF command radio controls in the cockpit, except the instructor's command radio uses the lower antenna exclusively, and the pilot's command radio uses only the upper antenna when the instructor's command radio is on. Turning the instructor's command radio function switch to MAIN or BOTH energizes a relay that isolates the antenna selector and permits transmission and reception from the instructor's or either student's station through the lower antenna only. In this situation, transmission and reception for the cockpit command radio is through the upper antenna only.

Antenna Selector Switch.

This switch, on the antenna selector switch panel in the cockpit, is identical to that on T-39A Airplanes, except that when the instructor's command radio function switch is turned to MAIN or BOTH, the switch is inoperative. The pilot's command radio will transmit and receive through the upper antenna, while the instructor's command radio will transmit and receive through the lower antenna.

NOTE If, under certain circumstances, the pilot desires to operate the command radio through both antennas, he should have the instructor turn his command radio OFF.

LIGHTING EQUIPMENT.

EXTERIOR LIGHTING.

The landing-taxi lights are retractable and, when in use, extend below the nose into the air stream.

Landing-Taxi Light Switches.

Landing-taxi light position and illumination are controlled by two adjacent switches on the air conditioning system control panel (figure 4-1). When the left switch is moved to EXTEND, both landing-taxi lights extend to the landing position. Upon landing, when the weight of the airplane is on the

nose gear, both lights automatically extend further to provide properly directed beams for taxiing. If a touch-and-go landing is made and the switch is at EXTEND, both lights return to the landing position, as the weight of the airplane is removed from the nose gear. Moving the left switch to RETRACT causes both lights to retract. The lights may be stopped at any point between the retracted and extended positions by moving the left switch to OFF. This shuts off electrical power to the extend-retract motors. The switch should be turned OFF when desired light position is attained. Moving the right switch to BOTH ON turns on both landing-taxi lights. Moving the switch to LH ON turns on the left landing-taxi light only. Both lights go out when the right switch is moved to OFF. These switches are powered by the dc essential bus.

INTERIOR LIGHTING.

Console Lights Rheostat.

Indirect lighting of each student's clock, radio magnetic indicator, and AN/AIC-10A interphone panel is controlled by a rheostat on the respective student's lighting control panel (6, figure 4-2). Each rheostat, labeled "CONSOLE LTS," controls ac power from the right-hand 5-volt indirect light bus. The rheostat on the right-hand student's lighting control panel also controls the indirect lighting on the instructor's command radio, position switching control, and interphone panels.

Indicator Lights Dimming Switch.

A two-position indicator lights dimming switch on each student's lighting control panel (5, figure 4-2) is powered by the No. 2 dc secondary bus. The switch can be moved to BRT or DIM to control the brilliance of the AN/APR-25(V) system X-disable button-light, QRC-317A panel indirect and placard-type indicator lights, and AN/APS-107A integrated control panel indirect lights and threat indicator lights.

Indicator Lights Test Switch.

Each student's console is equipped with an indicator lights test switch on the lighting control panel (4, figure 4-2). With the switch moved from the spring-loaded center (OFF) position to TEST BRT, the respective student's AN/APR-25(V) X-disable button-light comes on bright. When the switch is held at TEST DIM, the AN/APR-25(V) X-disable button-light and the spare disable light come on dim, the QRC-317A panel indirect lights and any QRC-317A placard-type indicator lights that are on will turn to dim, and the AN/APS-107A integrated control panel and any AN/APS-107A threat indicator lights that are on will turn to dim. The indicator lights test switch is powered by the No. 2 dc secondary bus.

Map and Utility Light Controls.

A portable map and utility light (1, figure 4-2) is above each student's console. These lights are powered by the No. 2 dc secondary bus and are operated in the same manner as the map and utility lights installed above the pilot's and co-pilot's consoles.

NAVIGATION EQUIPMENT.

RADIO MAGNETIC INDICATOR.

A radio magnetic indicator (2, figure 4-2), powered by the 26-volt No. 2 ac bus, is installed in each student's console. Both pointers are inoperable, being servoed to a 12 o'clock position (lubber line). The rotating compass card operates as in any standard radio magnetic indicator, to display magnetic headings (from the magnetic flux detector in the wing) against a fixed marker at the 12 o'clock position on the indicator dial.

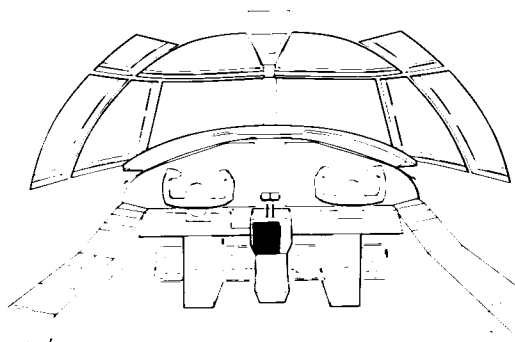
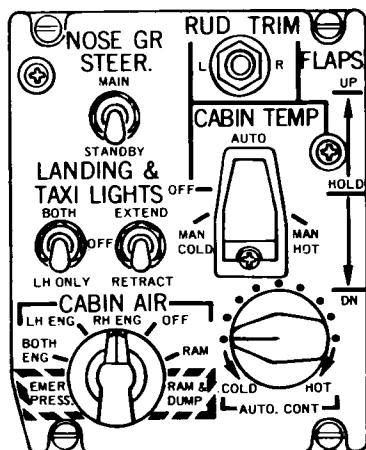
STUDENTS' CONSOLES.

A student's console on each side of the cabin (figure 4-2) contains the individual students' RHAW system controls and indicators. In addition, each console contains a clock, an AN/AIC-10A intercommunication control panel, a console lighting control panel, and a ID-250/ARN radio magnetic indicator. Mounted on the top of each console is a portable map and utility light. Below each console is a foot-operated microphone switch.

INSTRUCTOR'S CONSOLE.

An instructor's console (figure 4-3) is in the cabin on the right side of the instructor's seat. The console contains two AN/AIC-10A intercommunication control panels, an AN/ARC-34A command radio control panel, and an instructor's position switching panel. On the aft side of the pedestal is a receptacle for a tape recorder connection. Below the console is a foot-operated microphone switch.

AIR CONDITIONING SYSTEM CONTROL PANEL



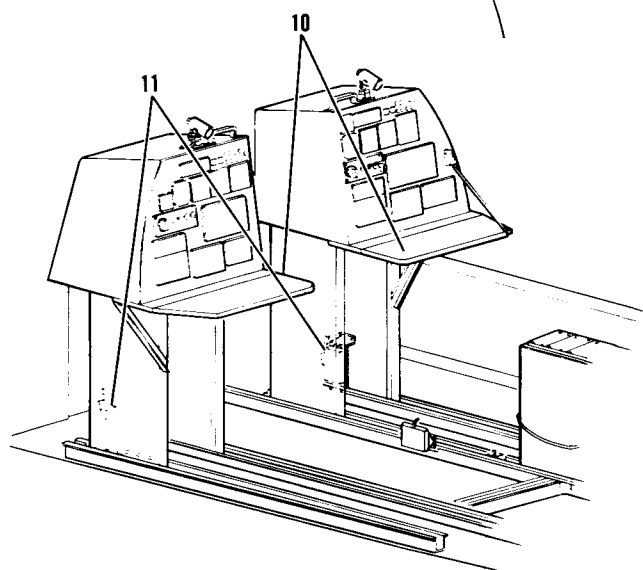
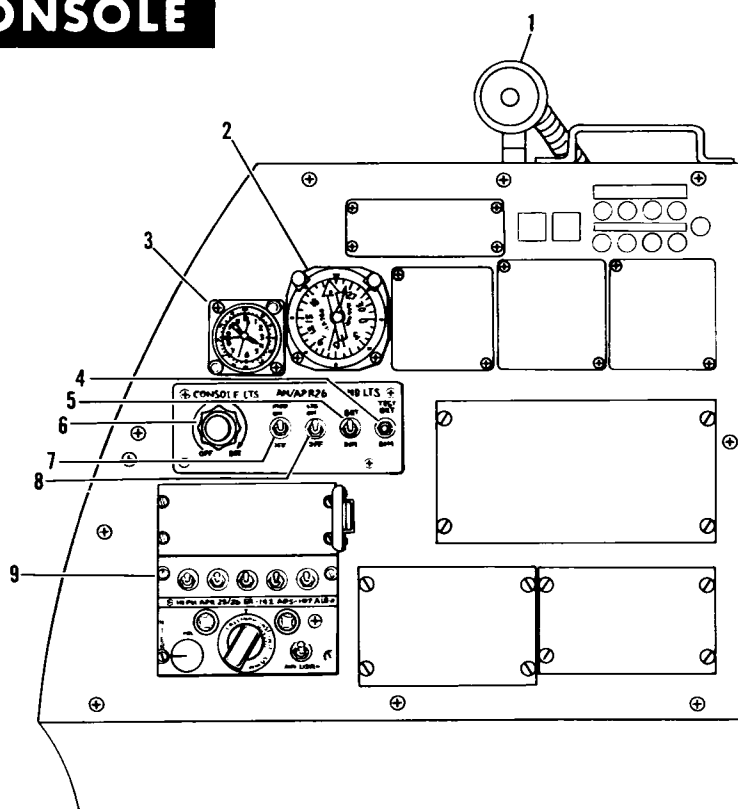
39F-1-53-1

Figure 4-1

STUDENT'S CONSOLE

NOTE

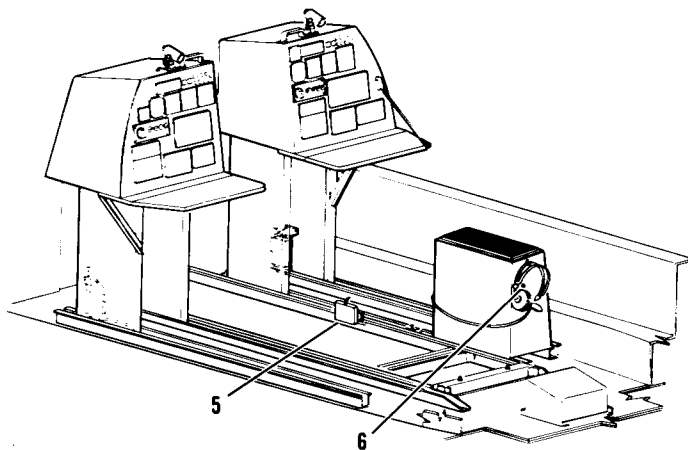
- The left-hand students console is shown. The right-hand students console has identical controls and indicators but the arrangement varies slightly.
- Panels and indicators not shown are classified. Refer to classified supplements T.O. 1T-39F-1A and T.O. 1F-39F-1B.



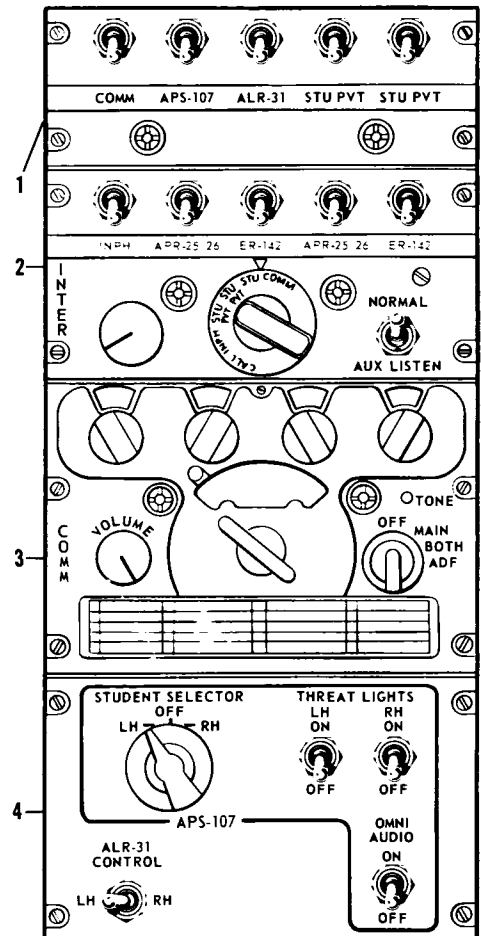
1. MAP AND UTILITY LIGHT
2. RADIO MAGNETIC INDICATOR
3. CLOCK
4. INDICATOR LIGHTS TEST SWITCH
5. INDICATOR LIGHTS DIMMING SWITCH
6. CONSOLE LIGHTS RHEOSTAT
7. AN APR-26 INTERPHONE SWITCH
8. AN APR-26 LIGHTS SWITCH
9. INTERCOMMUNICATION CONTROL PANEL
10. FOLDING TABLES
11. STUDENTS MICROPHONE FOOT SWITCHES

Figure 4-2

INSTRUCTOR'S CONSOLE



1. INTERCOMMUNICATION CONTROL PANEL
2. INTERCOMMUNICATION CONTROL PANEL
3. UHF COMMAND RADIO CONTROL PANEL
4. INSTRUCTOR'S POSITION SWITCHING CONTROL PANEL
5. MICROPHONE FOOT SWITCH
6. TAPE RECORDER RECEPTACLE



39F-1-54-2

Figure 4-3

OPERATING LIMITATIONS

SECTION V

All information on operating limitations is contained in the T-39A Flight Manual, T.O. 1T-39A-1, except the following:

AIRSPEED LIMITATIONS.

LANDING-TAXI LIGHT EXTENSION SPEED.

The maximum allowable airspeed with the landing-taxi lights extended is 180 knots IAS. If the lights are extended above this airspeed, they may be damaged.

BAGGAGE/CARGO LIMITATIONS.

There are no baggage or cargo provisions in these airplanes.

INSTRUMENT MARKINGS.

The acceleration limits are different from the basic T-39A limits, the 20,000- and 25,000-foot altitude index markings have been deleted from the accelerometer placard, and the alternate red-yellow arc has been removed from each fuel quantity gage.

ACCELERATION LIMITATIONS.

The maximum allowable load factors for symmetrical and unsymmetrical maneuvers, at all gross weights, are shown in figure 5-1.

CENTER-OF-GRAVITY LIMITATIONS.

The following paragraphs outline specific limitations which must be observed in order to maintain the airplane center of gravity within limits.

a. The center of gravity must be maintained in compliance with the weight and balance operating limits contained in the Weight and Balance Technical Manual, T.O. 1-1B-40.

b. During take-off, landing, and scheduled climbs or dives, all occupants must be seated.

c. During flight, only one person is permitted aft of the students' seats, and no one is permitted aft of the instructor's seat.

WEIGHT LIMITATIONS.

The maximum allowable ramp weight for this airplane is 18,650 pounds. It is the responsibility of the pilot to determine that this weight is not exceeded. Three factors will affect the airplane's actual gross weight (before engine start). They are:

a. The basic weight of the airplane, which is given in T.O. 1-1B-40 for the individual airplane.

b. Weight of personnel to be carried (standard weight of 190 pounds per person including clothing, personal equipment, and parachute).

c. Weight of fuel to be carried.

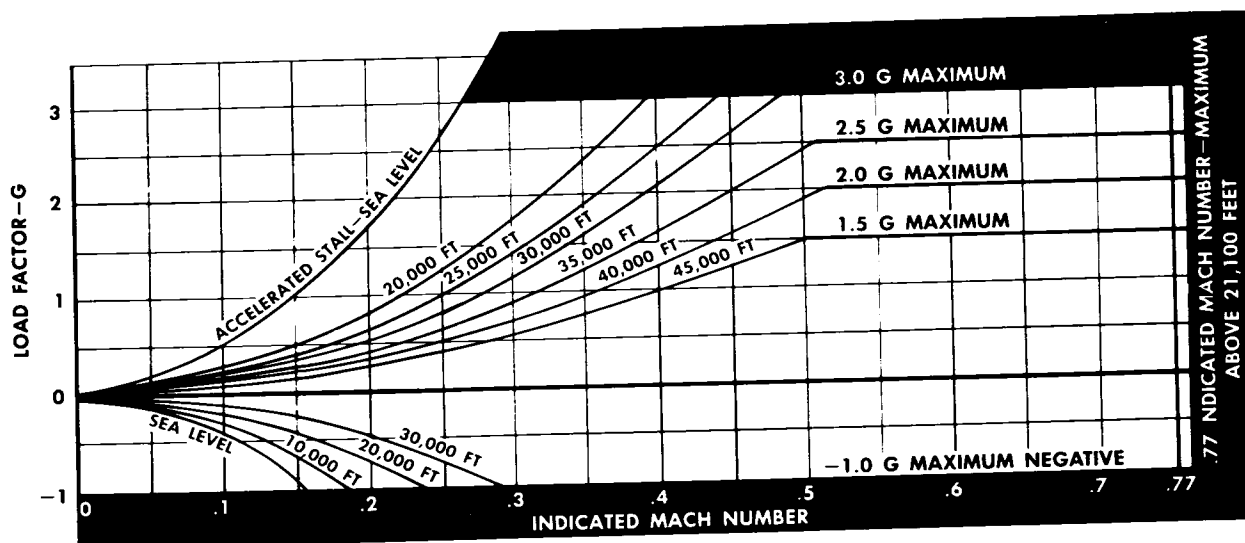
NOTE The airplane is restricted from carrying cargo, and no allowance is made for baggage.

OPERATING FLIGHT LIMITS**(SYMMETRICAL LIMITS)****LOADING CONDITIONS**

Any fuel loading and all personnel seated.

NOTE

With any personnel standing, maximum allowable positive symmetrical limit is 2.5 G.

**NOTE**

- G-limit below 30,000 feet is structural limit.
- G-limits above 30,000 feet are imposed to prevent encountering an abrupt reduction in lateral controllability.

CAUTION

With landing gear or flaps extended, do not exceed 2.0 G; otherwise, structural damage can occur.

39F-1-93-1

Figure 5-1

NOTE

For Sections VI, VII, VIII, and IX, refer to T-39A Flight Manual T.O. 1T-39A-1.

PERFORMANCE DATA

APPENDIX I

All performance data is contained in the T-39A Flight Manual, T.O. 1T-39A-1, except the following:

AIRSPEED CORRECTION.

Because of the airspeed static-pressure source, a correction must be applied to the CAS to obtain IAS. For approach airspeeds and configurations (full or partial flaps), add 2 knots to CAS to obtain IAS. For other airspeeds and configurations, add 3 knots to CAS to obtain IAS. Because of this change in airspeed calibration, one knot must be added to the airspeeds given on the following charts in T.O. 1T-39A-1:

TITLE	FIGURE NO.
Climb-out Distance - Two Engines	A2-9
Climb-out Distance - One Engine	A2-10
Landing Distance - Over Obstacle	A6-1

ALTITUDE CORRECTION.

The altitude correction may be obtained from figure A-1.

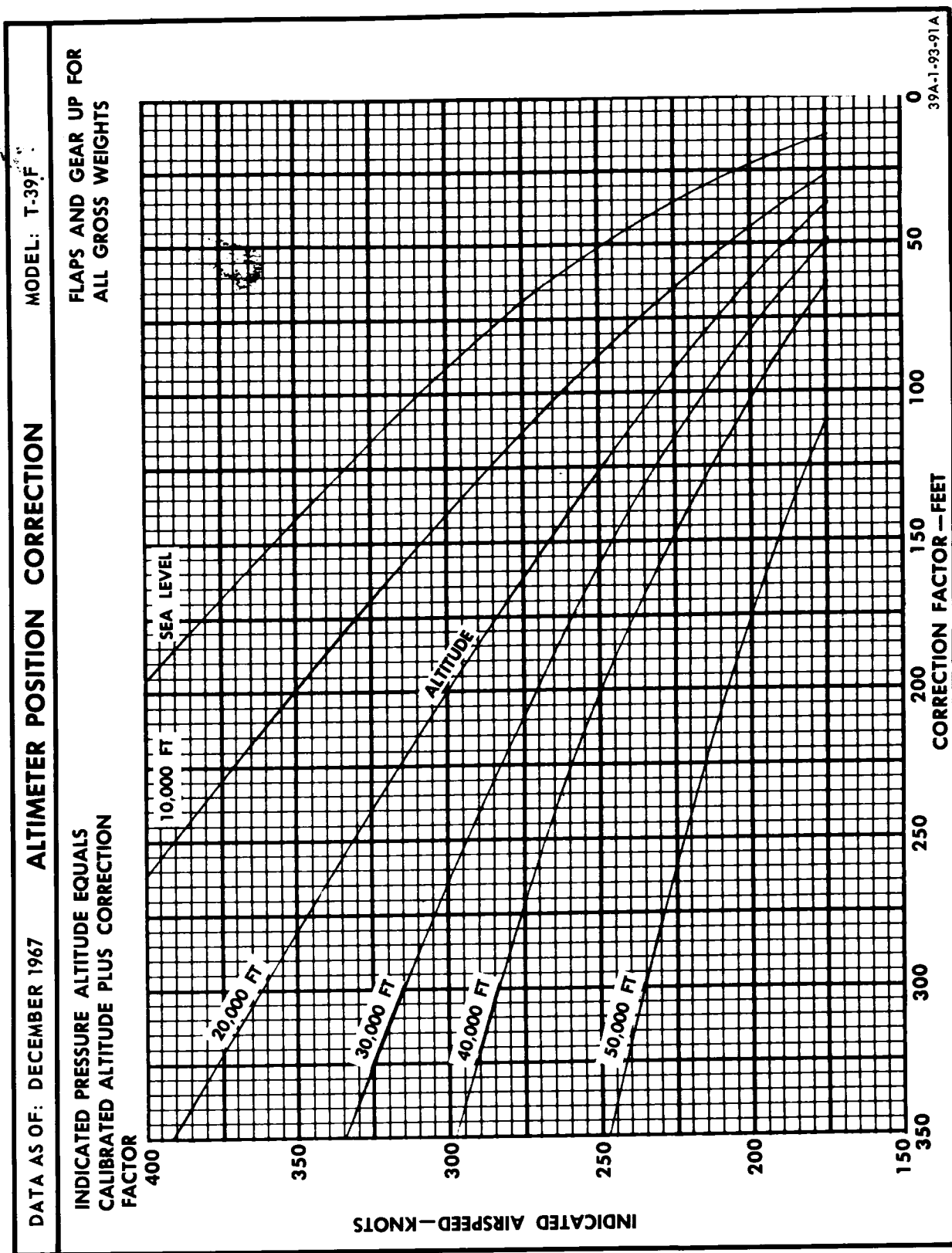


Figure A-1

GENERAL ARRANGEMENT

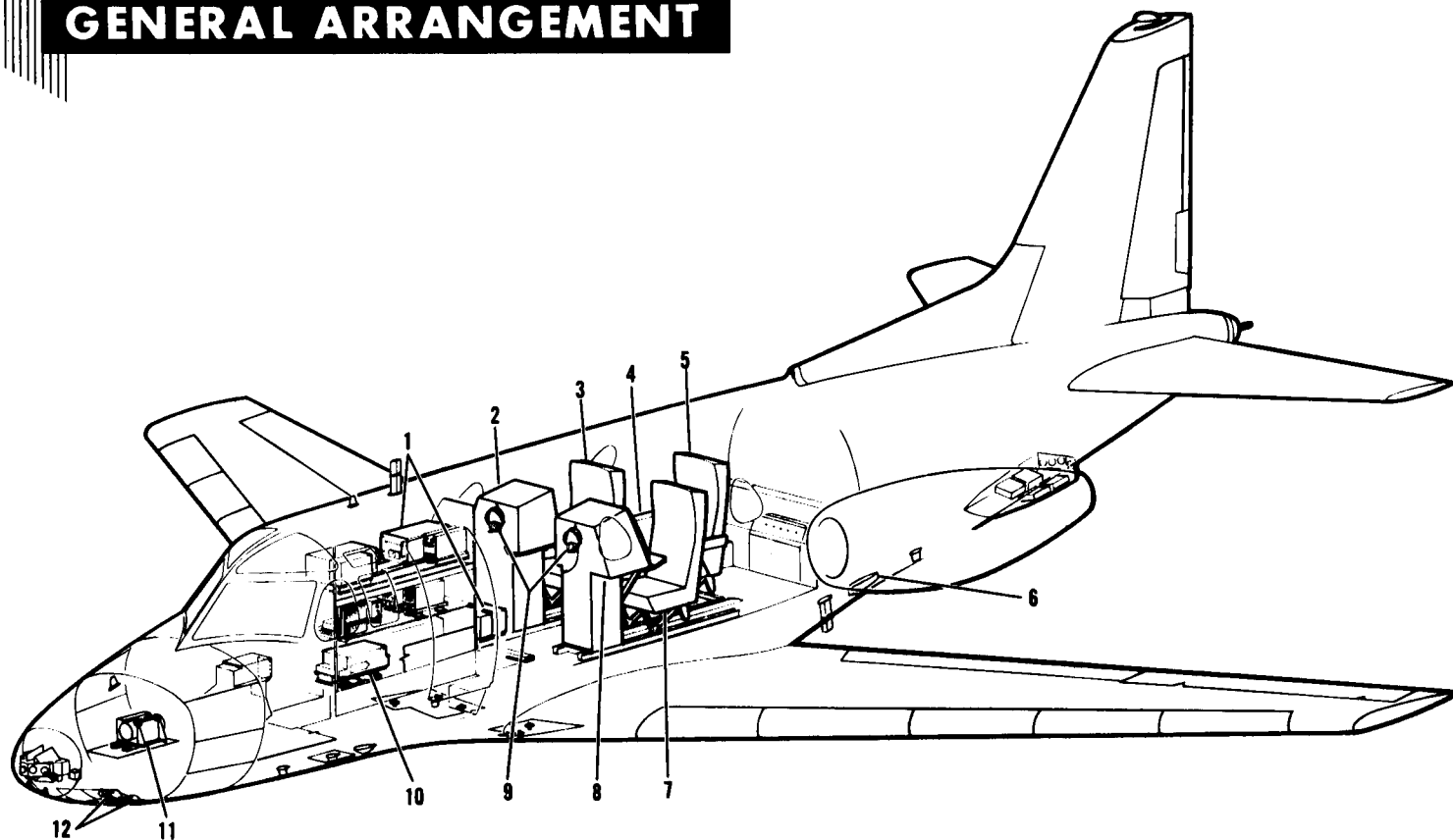


Figure 1-1

- | | |
|--------------------------------|-------------------------------------|
| 1. ELECTRONIC (RHAW) EQUIPMENT | 7. LEFT STUDENT'S SEAT |
| 2. RIGHT STUDENT'S CONSOLE | 8. LEFT STUDENT'S CONSOLE |
| 3. RIGHT STUDENT'S SEAT | 9. STUDENT HEADSETS-MICROPHONES |
| 4. INSTRUCTOR'S CONSOLE | 10. INSTRUCTORS COMMAND RADIO |
| 5. INSTRUCTOR'S SEAT | 11. MAIN INVERTER |
| 6. MARKER BEACON ANTENNA | 12. RETRACTABLE LANDING-TAXI LIGHTS |

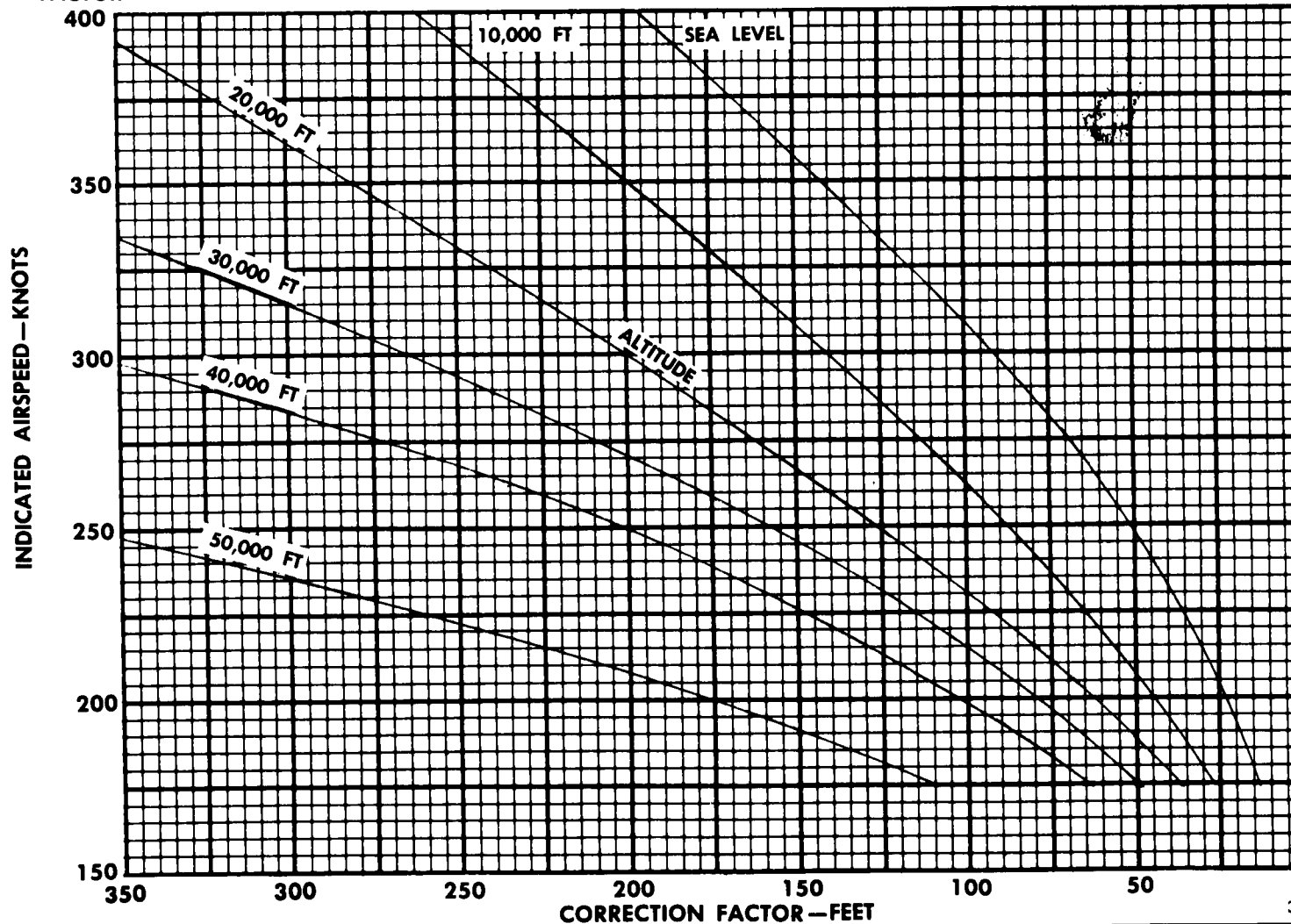
DATA AS OF: DECEMBER 1967

ALTIMETER POSITION CORRECTION

MODEL: T-39F

INDICATED PRESSURE ALTITUDE EQUALS
CALIBRATED ALTITUDE PLUS CORRECTION
FACTOR

FLAPS AND GEAR UP FOR
ALL GROSS WEIGHTS



39A-1-93-91A

Figure A-1