



DEPARTMENT OF THE NAVY

CHIEF OF NAVAL AIR TRAINING
CNATRA
250 LEXINGTON BLVD SUITE 102
CORPUS CHRISTI TX 78419-5041

CNATRAINST 1550.6E
N31

14 OCT 2003

CNATRA INSTRUCTION 1550.6E

Subj: TRAINING IMPROVEMENT PROGRAM (TIP)

Ref: (a) CNATRAINST 1500.4F
(b) NAVEDTRA 130
(c) CNATRAINST 3710.13E
(d) NAVEDTRA 135B
(e) CNATRAINST 5213.3E

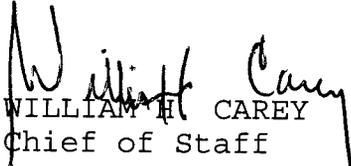
1. Purpose. To standardize procedures for analysis, design, development, implementation, revision, and control of the Naval Air Training Command (NATRACOM) curricula and course training material for the flight program. This instruction provides personnel charged with the day to day responsibility of training Naval Aviators and Naval Flight Officers with the mechanism to improve the process. References (a) through (e) establish guidelines for this process.

2. Cancellation. CNATRAINST 1550.6D and CNATRA 1550/13.

3. Summary of Revision. Significant changes have been made to this instruction and it should be reviewed in it's entirety.

4. Action. Commanders shall implement policy in consonance with the content of this instruction to ensure maximum training effectiveness through standardized procedures. Recommendations for changes to this instruction or the inclusion of new matter shall be submitted to the Chief of Naval Air Training (CNATRA) (N3). This instruction is effective on receipt.

5. Forms. The Training Change Request form, CNATRA 1550/19 (3-03), required by this directive is found in Chapter 3. This form may be procured by submitting a request to CNATRA (N1221). The Peculiar to Aviation Training (PAT) Publications Inventory form, CNATRA 1550/20, discussed in Chapter 9 is automatically sent to Training Air Wings (TRAWINGS) annually. The CNATRA-GEN forms may be ordered by submitting a DD Form 1348 to Commanding Officer, Naval Air Station, Pensacola Supply Department (Code 19560), Pensacola, Florida 32508-5217.


WILLIAM H. CAREY
Chief of Staff

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CHAPTER 1OBJECTIVE AND DEFINITIONS

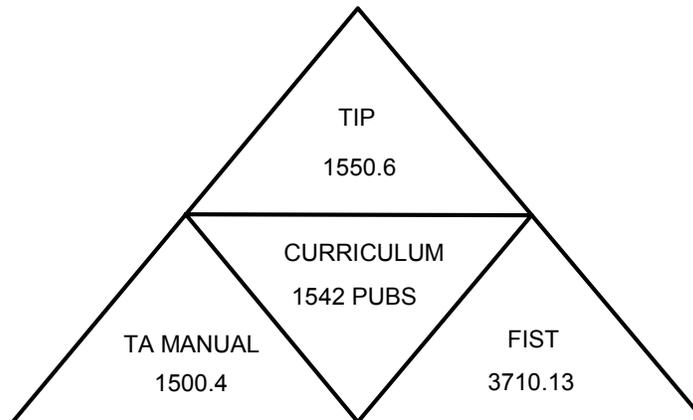
100. Objective. The objective of the CNATRA "Training Improvement Program" (TIP) is to provide a process for continually improving our training curricula, and the associated training publications, and thus ensure that CNATRA produces the finest aviators to meet the Fleet's needs.

101. Scope. This instruction applies to every person involved at every level of flight training. In particular, this instruction has been developed as a handbook for carrying out the regular responsibilities of the Course Curriculum Coordinators, Stage, and Course Managers.

102. Overview. This instruction establishes a program of aviation training improvement similar to the Naval Air Training and Operating Procedures Standardization (NATOPS) program. This system uses the "Training Change Request" (TCR) forms, an "Anymouse" type of suggestion program which will stimulate communication between various echelons of command while improving NATRACOM courses of instruction. Action taken to implement valid TIP suggestions is accomplished formally through a program similar to the NATOPS program. Anyone can submit recommended improvements on the form described in Chapter 3. Either small scale stage conferences or comprehensive phase conferences are held to review all proposed changes. User-approved changes are then routed through the Course Curriculum Model Manager to CNATRA for final approval, publication and distribution. Under this program the user has ownership of his or her curriculum as well as the mechanism to improve that curriculum. Any user has access to the team, which manages the curriculum. The curriculum is supported by the Student Naval Aviator Training and Administration Manual (TA Manual) and the Flight Instructor Standardization and Training (FIST) Instruction, references (a) and (c). The "TIP" continuously refines and modifies the curriculum to reflect a changing world (see **Figure 1.1**).

103. Definitions. Reference (a) defines terms and phrases generally used in instructional references and literature. The TIP establishes and defines responsibilities of the CNATRA Pipeline Training Officers (PTOs), Course Curriculum Model Managers (CCMMs), Course Curriculum Coordinators (CCCs), Stage Managers (SMs), and Course Managers (CMs).

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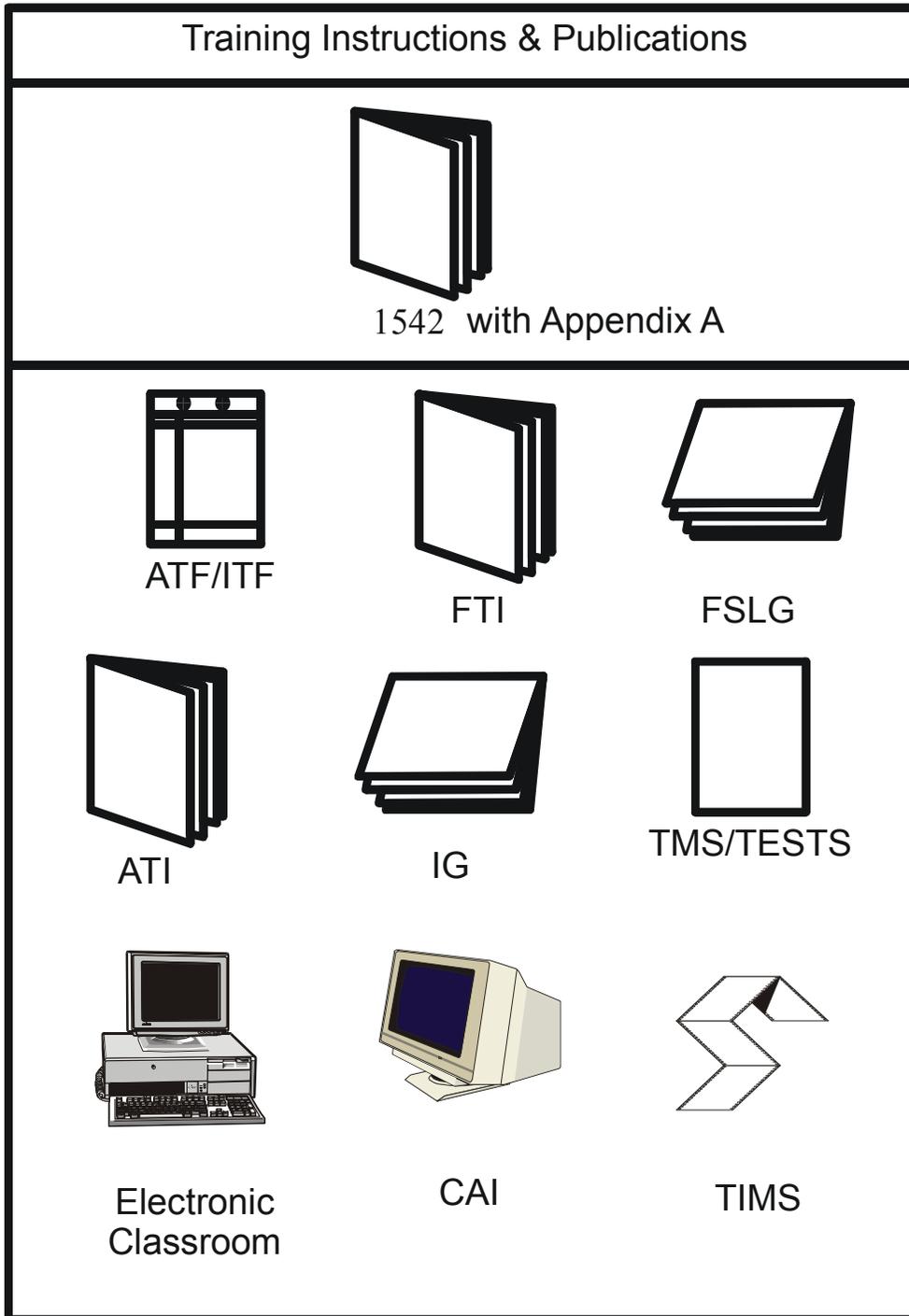
Figure 1.1**MISSION OF CNATRA TRAINING**

104. Flight Training Curricula. The program for aviation curriculum consists of training instructions, training publications, training forms, and training examinations (see **Figure 1.2**). (For the purposes of this instruction, all training instructions, publications, forms and examinations will henceforth be described collectively as "training publications.") Each phase of flight training normally uses all of the publications. Some flight support lectures utilize computer based electronic classrooms and Computer Assisted Instruction (CAI).

a. CNATRA instructions 1542 curricula (CNATRAINST 1542s) are the Chief of Naval Operations authorization to conduct a course of instruction. These instructions are required for all CNATRA courses since they authorize manpower and material expenditures. The 1542 outlines the required maneuvers to be flown on each flight and objectives to be learned from each lecture. It provides instructors and students with a guide which they can use to brief and fly each aircraft and simulator event. Additionally, the 1542s outline the sequence of all events for each phase of instruction. Instructors and students shall have a working copy of the 1542. A complete 1542, which includes Appendix A, shall be maintained in each standardization library. All other CNATRA training publications are derivatives of their respective CNATRAINST 1542.

b. Aviation and Instructor Training Forms (ATFs/ITFs) (henceforth collectively referred to as simply "ATFs") are forms used by the instructors to grade each flight. They reflect information found in the 1542.

Figure 1.2



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c. Flight Training Instructions (FTIs) are flight training publications which define maneuvers the student is expected to perform and lists the acceptable standards. Each FTI covers one or more stages of instruction.

d. Flight Support Lecture Guides (FSLGs) are instructor outlines of stage lectures which support the FTI.

e. Academic Training Instructions (ATIs) are academic training publications and include all ground school material.

f. Instructor Guides (IGs) are instructor outlines of academic courses.

g. Test Management System (TMS) provides computer generated tests which support both academic and flight support lectures as approved by the assigned SM/CM.

h. Computer Assisted Instruction (CAI) are periods of instruction where the student interacts solely with a computer. Testing is accomplished on a computer terminal.

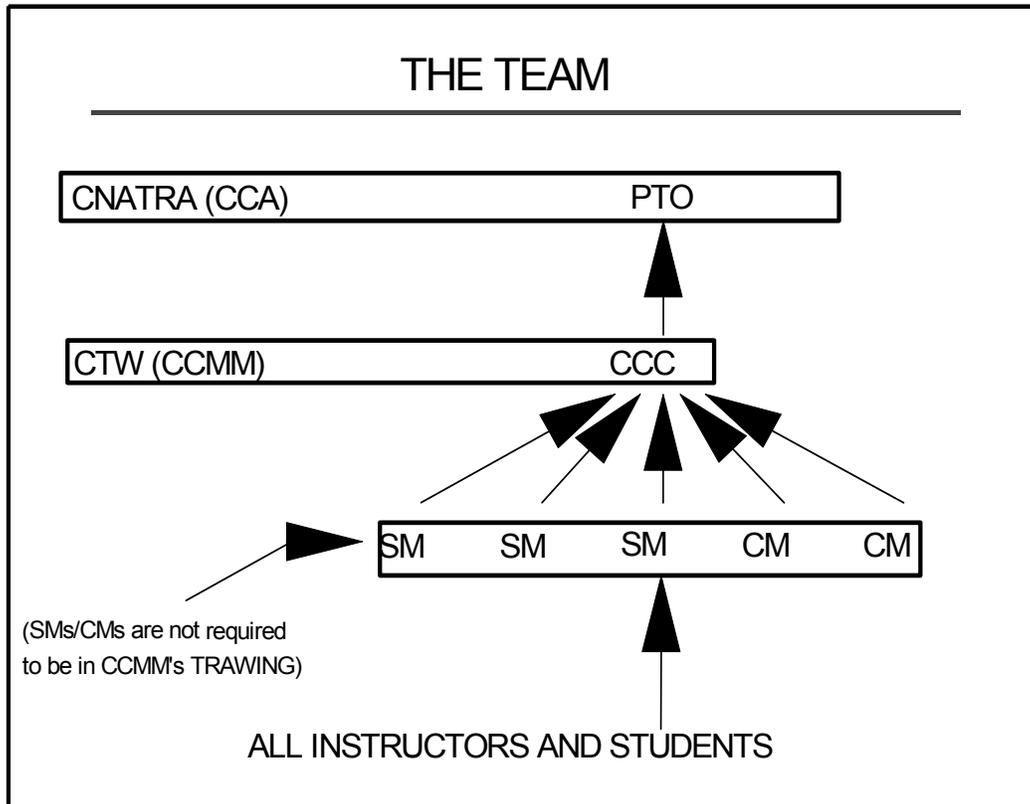
i. Electronic Classroom. Instructor led discussions augmented electronically with computer controlled audiovisual materials. Various levels are dependent on degree of student interactivity with computer terminals.

j. Training Integration Management System (TIMS) is a joint, comprehensive computer based training tool used by CNATRA and AETC. Implementation has begun with each TRAWING and Naval Aviation Schools Command (NAVAVSCOLSCOM) systematically adopting TIMS for scheduling, student tracking, qualifications, and testing. TIMS will replace TMS2, STASS Flight, and TIS legacy systems.

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CHAPTER 2THE CNATRA TRAINING PROGRAM IMPROVEMENT TEAM

200. Curriculum Control Authority (CCA). CNATRA is the Curriculum Control Authority and holds overall cognizance for all CNATRA curricula (see **Figure 2.1**).

Figure 2.1

201. CNATRA Assistant Chief of Staff for Training and Operations (N3). CNATRA Assistant Chief of Staff for Training and Operations shall:

- a. Plan for and provide resources and oversight to enable the NATRACOM to safely produce a steady flow of quality aviators.
- b. Exercise curriculum control authority over instructional programs consistent with policy guidance from higher headquarters.
- c. Supplement training program coordination with and between appropriate echelons of command to promote systematic and standardized course material within related phases of instruction.

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d. Provide assistance and manage the Test Management System (TMS) or Training Integration Management System (TIMS), as applicable.

e. Assist users with the distribution of publications.

202. CNATRA Aviation Training Officer (N31). CNATRA (N31), Aviation Training Officer, has overall staff cognizance on standardization and training for all phases of training.

R) 203. CNATRA Pipeline Training Officers (PTOs). The CNATRA PTO is a USN or USMC NATRACOM flight instructor, nominated by the TRAWING commander and permanently assigned to the CNATRA staff under the direction of the N31. As the pipeline Subject Matter Expert, the PTO shall administer the requirements of this instruction as it relates to their respective pipeline. In particular, they shall focus on the management of flight, simulator, and flight support issues. Duties of the CNATRA PTOs include, but are not limited to the following:

a. Provide technical assistance and serve as a focal point for the improvement of various processes of planning, development, implementation, management, and evaluation of training curricula.

b. Call and chair comprehensive phase curriculum conferences annually and specify host sites as required. Approve conference agendas in sufficient time to ensure distribution to attendees prior to the convening date. Ensure Course Curriculum Coordinators (CCCs) formalize conference conclusions/recommendations for distribution to attendees, and submit final results to CNATRA for approval by the CCA.

c. Call and chair stage curriculum review conferences and specify host sites as required.

d. Coordinate and process inputs from CCC/SMs/CMs.

e. Manage input for TMS or TIMS Test Editor, as applicable.

f. Serve as the style and format experts for all training publications within their pipeline.

g. Process and request inputs from Fleet Replacement Squadrons (FRS) and other CNATRA PTOs to ensure continuity of training.

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h. Conduct periodic TRAWING and squadron informal standardization assist visits to review the requirements of CNATRINST 3710.13E and CNATRINST 1500.4F.

i. As Chief Standardization Instructor Pilot for their particular pipeline, PTOs shall conduct regular standardization flights with Instructor Pilots and students at the TRAWING and Squadron level to ensure standardized instruction and adherence to all training curriculum requirements.

NOTE: Because CNATRA recognizes the PTO as the principal curriculum expert for that phase of training, flight instructors who are designated as PTOs will not require an annual standardization check in any stage for which they are qualified, provided they maintain other qualification requirements outlined in paragraph 102 of reference (c). CNATRA PTO's shall maintain qualification in all stages of training to the maximum extent possible.

204. CNATRA NAVAVSCOLSCOM Academic Training Officer. The CNATRA NAVAVSCOLSCOM Academic Training Officer (ATO) shall administer the requirements of this instruction relating to the academic issues at NAVAVSCOLSCOM. Duties of the CNATRA NAVAVSCOLSCOM ATO include:

a. Manage all issues relating to the development, implementation, and evaluation of ATIs and IGs.

b. Manage the TMS or TIMS test editor as applicable.

c. Serve as the style and format experts for all training publications within NAVAVSCOLSCOM.

205. Course Curriculum Model Managers (CCMMs). Specific TRAWINGs are designated by CNATRA as CCMMs for particular phases of instruction. TRAWINGs not assigned CCMM shall process all change recommendations to the curriculum through the CCMM. CCMM definitions, responsibilities and additional assignments may be found in appendix A.

206. Commanders of Training Air Wings Not Assigned CCMM responsibilities shall review training material of each assigned course curricula and associated materials prior to curriculum conferences. Provide inputs to SMs and CMs and submit change proposals to the CCC using the TIP process. Additionally they shall nominate and support SMs and CMs in the performance of their duties per paragraph 203.

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R) 207. Course Curriculum Coordinators (CCCs). The CCC is a USN or USMC flight instructor or GS-12 Training Specialist assigned to the TRAWING Staff, nominated by the CCMM and designated by CNATRA. The CCC is responsible for the administrative details of this instruction for their phase of training. See Appendix A for CCC assignments. CCCs remain attached to the CCMM and are responsible for the following:

a. Coordinating with the SMS, CMs, and the CNATRA PTO on all issues within the phase.

b. Coordinating and submitting revisions and changes to the CNATRAINST 1542s, ATFs, FTIs, FSLGs, ATIs, IGs, CAI, and the test database in the TMS or TIMS test editor.

c. Hosting phase or stage curriculum conferences as called by CNATRA in conjunction with the PTO.

R) 208. Stage/Course Managers (SM/CM). This article sets forth policy concerning the definition, responsibilities, and assignments of SMS and CMs. CNATRA flight training is divided into 12 fundamental flight "phases": Primary, Intermediate Tiltrotor, Intermediate E-2/C-2, Advanced E-2/C-2, Advanced Multi-Engine, Advanced Rotary, Advanced Tiltrotor, Advanced (TS) Strike, Primary NFO/CSO, Intermediate NFO/CSO, Advanced NFO/CSO, and Unmanned Aerial Vehicle (UAV) Operator Training. Each phase is further divided into "stages" which can be grouped in some cases into "categories."

a. Definitions

R) (1) A Stage Manager (SM) is a USN, USMC or USCG flight instructor assigned to a particular squadron or TRAWING, nominated by the TRAWING commander, and designated by CNATRA. A SM has certain responsibilities for their assigned stage(s) with the NATRACOM. The SM will also serve as the CNATRA Subject Matter Expert (SME) for their stage(s)/area(s).

NOTE: Because CNATRA recognizes the stage manager as the principal expert for that stage, flight instructors who are designated an SM will not require an annual standardization check in the stage for which they serve as a manager, provided they maintain other qualification requirements outlined in paragraph 102 of reference (c).

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(2) A Course Manager (CM) is a USN, USMC or USCG flight instructor or civilian academic instructor assigned to a particular squadron or TRAWING, nominated by the TRAWING commander and designated by CNATRA. A CM has certain designated responsibilities for their assigned course within the NATRACOM. (R)

EXCEPTION: COMTRAWING SIX is authorized to nominate USAF flight instructors as SM/CMs. Nomination for current USAF SM/CM relief shall be a USN or USMC flight instructor. No more than 50 percent of all TRAWING SIX SM/CM billets may be filled by USAF flight instructors. (A)

b. Responsibilities. All SM/CM tasking shall be via the appropriate CCMM or PTO. SMS/CMs shall report via their chain of command for the following (as appropriate):

(1) Coordinating with all other TRAWING standardization officers and the CNATRA PTO within the phase on issues pertaining to his/her stage(s)/course(s). CMs at NAVAVSCOLSCOM will coordinate with the Primary TRAWINGS and CNATRA (N317) for academic issues.

(2) Coordinating and submitting revisions and interim changes to the appropriate instructions (CNATRINST 1542.XXX), FTIs, academic training publications, PAT pubs, CAI, and up-to-date flight support lecture guides for all units within their stage(s)/course(s).

(3) Hosting pertinent portions of curriculum conferences as called by CNATRA, reference Appendix C.

(4) Reviewing and revising all test questions annually. Test questions will be updated or added to the TMS or TIMS test editor and be used for the stage "standardization" examination for SNA/SNFO/IUT stage lectures and instructor pilot (IP) standardization requalification.

(5) Serving as the CNATRA SME for such projects as development of audiovisual, CAI, academic, and flight support materials.

(6) Enhancing inter-TRAWING standardization by visiting other units to gather and exchange new ideas. These visits shall be conducted as necessary with a minimum of four visits annually. SMS shall fly with other units within their pipeline to facilitate this exchange. Visits will be preceded with correspondence (electronic mail is acceptable) to the TRAWING and/or Squadron being visited for coordination purposes.

(7) A complete listing of responsibilities and requirements is available in Appendix D.

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c. Nominations

(1) TRAWING commanders shall nominate one flight instructor for each SM position listed below. The instructor must have demonstrated exceptional professional ability and motivation within his/her stage(s) and should be able to serve in that position for a minimum of one year. The purpose for requiring all SMs to be flight instructors is to provide a "built-in, Fleet-feedback" system for our curriculum, including academics.

(2) The TRAWING commander shall nominate one highly motivated, highly qualified flight or academic instructor for each CM position pertaining to a particular phase. The instructor nominated should also be able to hold the position for at least one year.

(3) One month prior to an SM/CM being relieved, a letter of nomination shall be sent to CNATRA (N3). Letters of nomination shall include nominee's rank, full name, social security number, attached unit, date of anticipated turnover, PRD, flight hours (total and as CNATRA IP), IP designations held, previous curriculum experience (if applicable), and SM/CM position to be filled. CNATRA (N3) will then issue a letter of designation to the nominee with a copy addressed to the nominee's TRAWING commander and CO, as appropriate.

R) d. Assignments. The following are the Stage/Course Manager assignments:

	<u>PHASE</u>	<u>CCMM</u>	<u>STAGE/CATEGORY/ AREA/COURSE</u>	<u>SM/CM</u>
R)	(1) Primary	TRAWING FIVE	CONTACT NAVIGATION INSTRUMENTS FORMATION OCF Systems Meteorology (B) IFR TRAWING CRM TRAWING	TRAWING FOUR TRAWING FOUR TRAWING FIVE TRAWING FIVE TRAWING FIVE TRAWING FIVE TRAWING FIVE TRAWING FIVE
	(2) Intermediate Tiltrotor- (TC-12B)	TRAWING FOUR	All inclusive	TRAWING FOUR
	(3) Intermediate E-2/C-2 (T-44A/TC-12B)	TRAWING FOUR	All Inclusive	TRAWING FOUR

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<u>PHASE</u>	<u>CCMM</u>	<u>STAGE/CATEGORY/ AREA/COURSE</u>	<u>SM/CM</u>	
(4) Advanced E-2/C-2 (T-45A)	TRAWING TWO	All Inclusive	TRAWING TWO	
(5) Advanced Multi-Engine (T-44A/TC-12B)	TRAWING FOUR	CONTACT	TRAWING FOUR	
		INSTRUMENTS	TRAWING FOUR	
		NAVIGATION	TRAWING FOUR	
		FORMATION	TRAWING FOUR	(A)
		TACTICAL	TRAWING FOUR	(R)
		Systems (T-44A)	TRAWING FOUR	(D)
		Systems (TC-12B)	TRAWING FOUR	
		Academics	TRAWING FOUR	(R)
		CRM	TRAWING FOUR	(D)
(6) Advanced Rotary/Tiltrotor (TH-57B/C)	TRAWING FIVE	CONTACT	TRAWING FIVE	
		INSTRUMENTS	TRAWING FIVE	
		NAVIGATION	TRAWING FIVE	
		FORMATION	TRAWING FIVE	
		TACTICAL	TRAWING FIVE	
		NVG	TRAWING FIVE	
		Systems	TRAWING FIVE	
		Academics	TRAWING FIVE	(R)
		CRM	TRAWING FIVE	(D)
(7) Advanced (TS) Strike (T-45A/C)	TRAWING TWO	FAM/NFAM	TRAWING TWO	
		INSTRUMENTS	TRAWING ONE	
		ONAV	TRAWING ONE	
		FORM/NFORM	TRAWING ONE	
		TACF/ACM	TRAWING TWO	
		OCF	TRAWING TWO	
		WEPS	TRAWING TWO	(D)
		CQ	TRAWING TWO	
		Systems	TRAWING ONE	
		Academics	TRAWING TWO	(R)
		CRM	TRAWING TWO	
(8) Primary NFO/CSO	TRAWING SIX	T-6A CONTACT	TRAWING SIX	(R)
		T-6A INSTRUMENTS	TRAWING SIX	
		CRM	TRAWING SIX	
		Academics	TRAWING SIX	

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	<u>PHASE</u>	<u>CCMM</u>	<u>STAGE/CATEGORY/ AREA/COURSE</u>	<u>SM/CM</u>
R)	(9) Intermediate	TRAWING SIX	T-6A NAVIGATION	TRAWING SIX
A)	NFO/CSO		T-6A INSTRUMENTS	TRAWING SIX
			T-6A FORMATION	TRAWING SIX
			T-39/T-1	TRAWING SIX
			INSTRUMENTS	
			T-39/T-1	TRAWING SIX
			NAVIGATION	
R)	(10) Advanced	TRAWING SIX	CORE	TRAWING SIX
A)	NFO/CSO		STRIKE	TRAWING SIX
			STRIKE FIGHTER	TRAWING SIX
			SNFO T-2	TRAWING SIX
			(ALL STAGES)	
	(11) UAV Operator	TRAWING SIX	All Inclusive	TRAWING SIX
	Training			

209. TRAWING Training Officers. TRAWING Training Officers are responsible for coordinating course review with SMs/CMs for Simulator and Academic Instructors at their TRAWING. They shall also:

a. Ensure that academic training courses are managed in accordance with reference (b) and the following is accomplished:

(1) Apply prescribed curriculum, instruction, and evaluation procedures to ensure quality training.

(2) Monitor and participate in all training activities and internal curriculum revision projects.

(3) Monitor and regulate the instructor certification program.

(4) Monitor and regulate all internal evaluation programs.

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(5) Monitor classroom practices and instructional methods.

(6) Serve as principal liaison and coordinator for curriculum development and training appraisal.

b. Coordinate and assist the review and development of ATIs/IGs assigned to their TRAWING with the assigned SMs/CMs. This review will be completed prior to the phase curriculum conference.

c. Coordinate development, implementation, and evaluation of simulator training curriculum.

210. Curriculum Instruction Standards Office (CISO). TRAWING training departments are not considered a CISO in reference (d); however, as a minimum, each TRAWING training department will perform the curriculum, instruction, and evaluation functions of reference (d) for academic training. CISO requirements for flight training are covered by CNATRA programs of Aviation Safety, NATOPS, Standardization, periodic All Officer/Instructor Meetings (AOMs/AIMs), safety stand-downs, and the requirements of this instruction. These are designed to enhance safety and increase quality of flight training.

211. All Flight Instructors and Students. All training command personnel are part of the CNATRA Training program Improvement Team and should provide suggestions to improve each course of instruction when necessary. Inputs should be made via the TIP routing on a TCR form, CNATRA 1550/19 (303) (**Figures 3.1 and 3.2**), included in this instructions. It is the input from each instructor and student involved with the day to day execution of student naval aviator training which will ensure the NATRACOM continues to train aviators based on lessons learned and known best practices.

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CHAPTER 3THE TRAINING IMPROVEMENT PROGRAM (TIP)300. Purpose

a. This chapter outlines the Training Improvement Program (TIP). It is the administrative sequence required to change or revise the aviation training publications outlined in paragraph 104.

b. Trouble Calls

(1) Trouble calls are a necessary and functional part of the Flight Training Support Center (FTSC) and all CNATRA training management systems (TMS2, TIS, STASS, and TIMS).

(2) Any problem with training management system hardware or data fixes should be resolved via a trouble call IAW the flowchart in **Figure 3.1**. Issues which require a change to the curriculum managed by any training management system will require use of the TCR as described below.

301. The Training Change Request (TCR) Form. The following two figures (see **Figures 3.2** and **3.3**) contain copies of the CNATRA TCR form. These forms shall be located at each squadron, TRAWING training department, and simulator location, and will be made available to all instructors and students via hardcopy or electronic copy. The TCR form may be ordered through CNATRA (N1221) or downloaded from the CNATRA web site. Instructors and students should be familiar with the purpose and location of these forms. TCRs will be administered per paragraph 302.

302. Completing a TCR. The first page of a CNATRA TCR is a joint form that was developed by the Navy and Air Force for use in conjunction with the Joint Primary Aircraft Training System (JPATS) Program. As a result, the first page is used by both services. CNATRA has created a "page 2" which is to be used only within CNATRA. In order to complete the entire TCR, the following guidance is provided:

Block 1. Originator's Name and Squadron/Unit (required)

Block 2. Command Name and Address (required)

Block 3. Date of submission (MM/DD/YY) (required)

Block 4. DSN or full commercial phone number (required)

Block 5. Navy e-mail address (required)

Block 6. Check all affected areas for suggested change

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Block 7. Curriculum, PAT Pub, block, stage, etceteras affected (required)

Block 8. As described

Block 9. As described

Block 10. If TCR originates in the TRAWING or squadron, this block is signed by the appropriate Training Officer. If the TCR originates anywhere other than a squadron or TRAWING, this block is signed by PTO upon receipt. NOTE: Training Officer signature indicates squadron or TRAWING concurrence. TCR will still be submitted even with a "no" recommendation.

Block 11. As described

Blocks 12a through 17f. For CNATRA use only, to be completed after submission.

Block 18. Control number is assigned by PTO upon receipt

Block 19. Training Officer shall include input from all applicable sources, including the Commanding and Executive Officer, SMEs, SNAs, etceteras.

Block 20. SM/CM inputs with any additional research or possible alternate solutions. A recommendation of "concur" or "do not concur" is required.

Block 21. CCC inputs with any additional research or possible alternate solutions. A recommendation of "concur" or "do not concur" is required.

Block 22. PTO inputs with any additional research or possible alternate solutions. A recommendation of "concur" or "do not concur" is required.

Blocks 23a and 23b. Urgent Change will be determined by PTO. This will be based on recommendations from CCC and below and will normally apply to safety of flight changes.

Blocks 24a and 24b. A comprehensive list of all affected publications will be established by PTO. All dates will be updated by PTO.

303. Submitting a TCR (See **Figure 3.4**)

a. All TCR forms will be routed to CNATRA (N35). TCR forms shall be forwarded unless they are written in a non-professional manner or concern subjects better addressed in other forums. Squadron, SM/CM, and CCC comments should be included, on

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the TCR form (page 2) prior to forwarding. Comments may be made by the commanding officer, delegated, or left blank if no input is required. Submission of all ideas is encouraged since a TCR idea which appears flawed may stimulate further thought and can ultimately result in improvements to the process. It is understood that everyone may not agree with each TCR; however, they should be forwarded as written.

b. The standard flow of the TCR form is in accordance with **Figure 3.4**. Normally, a TCR form will be submitted to the SM/CM, Squadron Stan Officer, or Squadron Training Officer. The Training Officer or a member of the training department will research the TCR. The Training Officer will make recommendations or submit solutions from the squadron level. A copy of the TCR and recommendations will be filed by the Training Officer and the original TCR forwarded to the appropriate SM/CM.

Note: The Training Officer is highly encouraged to present all recommendations or solutions to the squadron commander prior to forwarding the TCR to the SM/CM. This will allow the individual squadron commanders immediate input and prevent future delays in implementation.

The SM/CM will do any additional research, make any necessary inputs, and give recommendations on all TCRs for their stage or course. Following any inputs, the SM/CM will forward the original TCR to the CCC. The CCC will do any additional research, make any necessary inputs, and give recommendations on all TCRs. A copy of the TCR and recommendations will be filed by the CCC and the original TCR forwarded to the PTO via CNATRA (N35).

c. CNATRA PTOs shall receive all TCRs from their respective CCC, other TRAWINGS, and FRSS as appropriate. PTOs shall log in all TCRs and assign a control number (see paragraph 303.e(1) for tracking purposes. Based on CCC and SM/CM inputs on the TCR or via conference, the PTO shall determine the urgency of the change. If deemed Urgent or Critical, the change will be incorporated via interim change or equivalent message. If not deemed Urgent or Critical, the PTO will advise the CCC, SM/CM, and all affected squadrons that the TCR has been received and is awaiting the next scheduled curriculum conference. This may be done via electronic mail or via the quarterly log distribution (see paragraph 303.d). The squadron training officer (if applicable), CCC, and PTO shall maintain a duplicate file of each TCR and its related comments as per **Figure 3.5**.

d. The PTO shall maintain a log with each TCR control number, a brief subject line, and current TCR status. This log will ensure that no TCRs are ignored or lost while being

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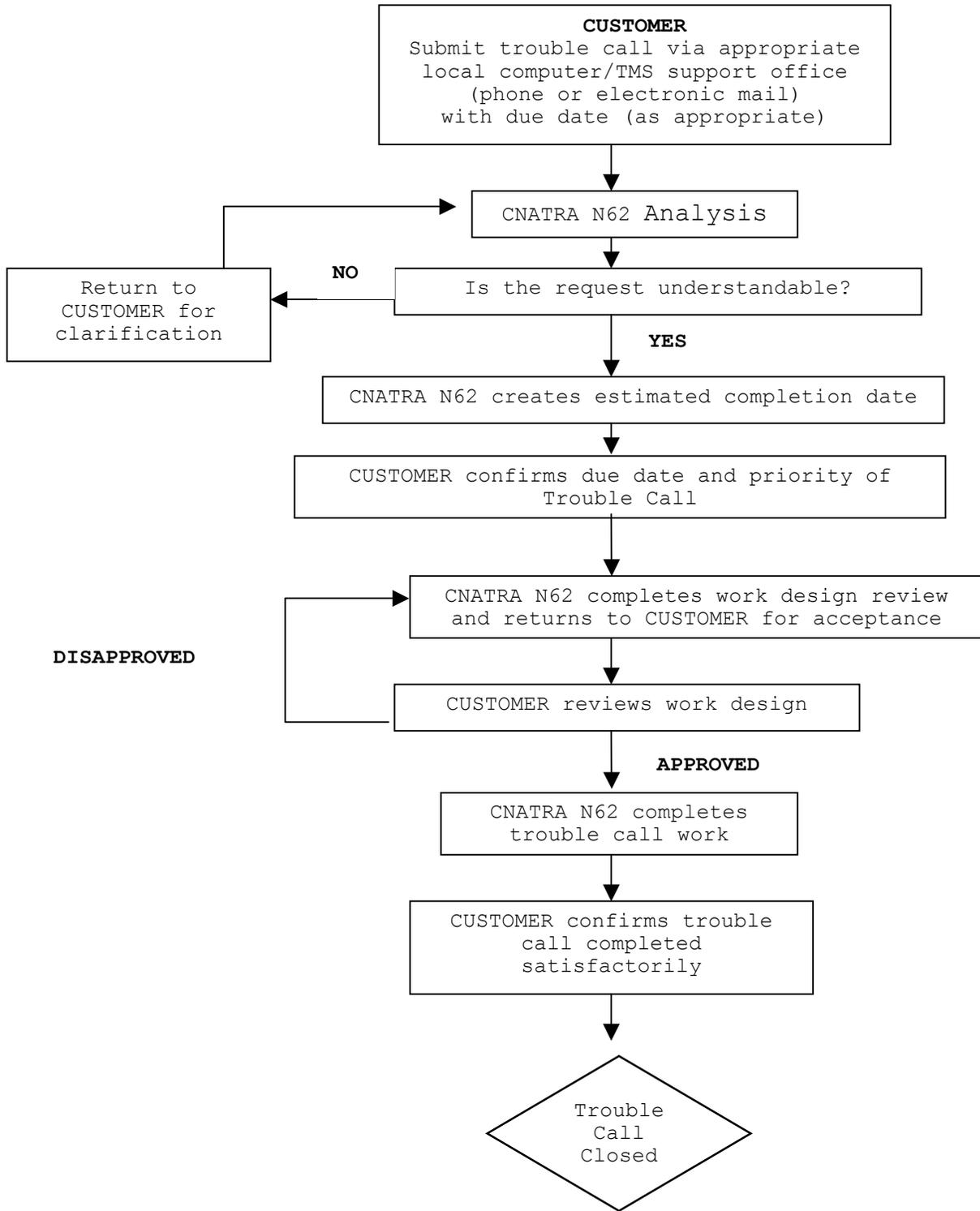
processed. The log shall be updated and distributed to all pipeline TRAWINGS quarterly.

e. The SM/CM, as the Action Officer:

(1) If a TCR is deemed "**URGENT**" by the PTO, the SM/CM, if required, may direct a **stage** conference be held. This can be accomplished by physically gathering all appropriate standardization instructors, CCCs, and PTOs from all affected units, via telephone conference or electronic mail. All personnel impacted by the prospective change, including academic instructors, should be polled for their inputs before the change is submitted for approval. Following conference resolution, the SM/CM should submit the proposed change to the CCC for review and further routing to the CNATRA PTO for final approval.

(2) If the TCR received by the SM/CM has been deemed "**NON-URGENT**," the SM/CM should forward the TCR to the PTO via the CCC for inclusion in the next scheduled **phase** curriculum conference, as per **Figure 3.4** and **Figure 3.5**.

Figure 3.1
Trouble Calls



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Figure 3.2

CNATRAINST 1550.6E

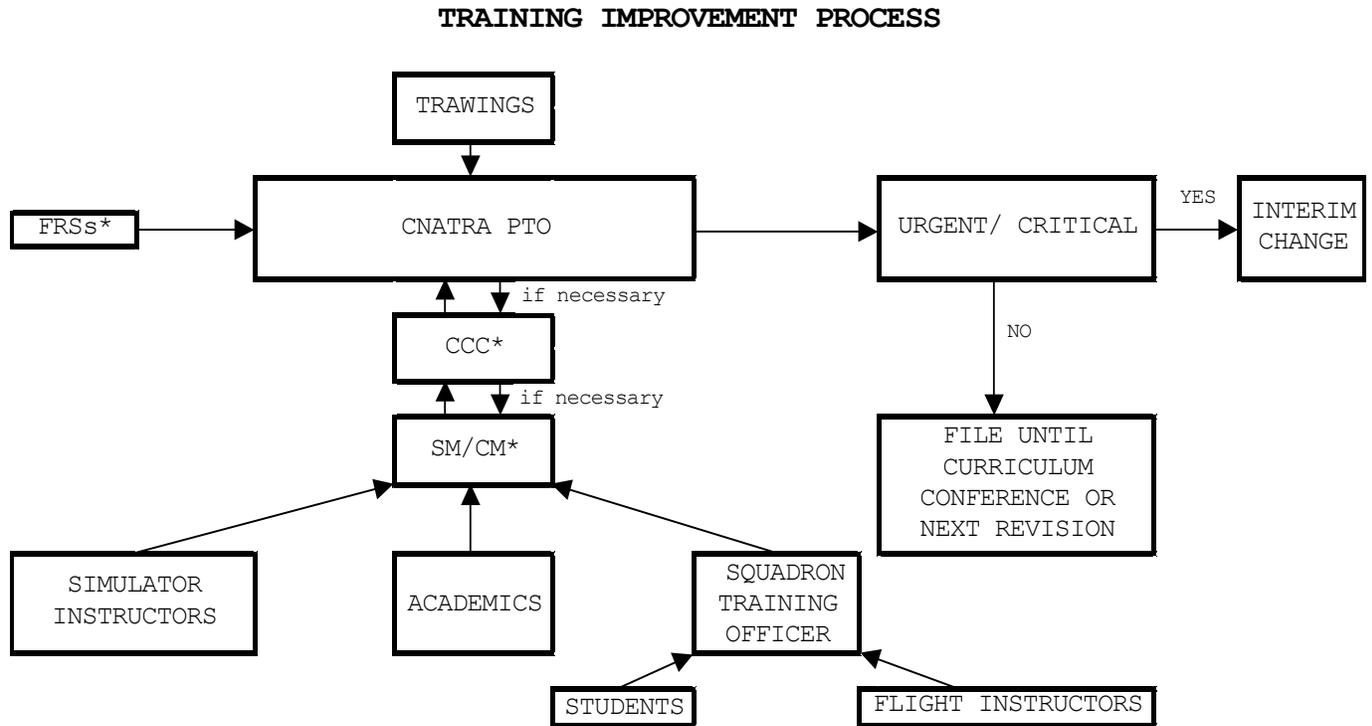
TRAINING CHANGE REQUEST (TCR) <i>(ORIGINATOR COMPLETE BLOCKS 1 THROUGH 11 ONLY)</i>				
1. Originator's Name & Org:		2. Originating Command Name & Address:		3. Request Date:
4. Originator's Phone:		PRIORITY 6. Training System Affected (Check all that are known to be affected): <input type="checkbox"/> TIMS <input type="checkbox"/> CURRICULUM/SYLLABUS <input type="checkbox"/> UNKNOWN <input type="checkbox"/> OTHER SYSTEM (SPECIFY) _____ <input type="checkbox"/> SIMULATORS <input type="checkbox"/> COURSEWARE/LESSON		
5. Originator's e-mail address:		7. Describe what module, functionality or curriculum and lesson that this TCR addresses: (e.g., TIMS scheduler, or T38 formation, etc.)		
8. Define problem or the need for this change: (Only one per change request. Attach additional sheets if necessary)				
9. Suggestion, Improvement or Recommendation: (Only one per change request. Attach additional sheets if necessary)				
10. Originating Command Approval <input type="checkbox"/> YES <input type="checkbox"/> NO Signature/Title and Date: (See Block 17e below)				11. Sheet 1 of _____
Signature _____		Title _____		Date _____
<i>(REQUESTING ACTIVITY FORWARD TCR TO RANDOLPH AFB, AETC MUSS MGR OR NAS CORPUS CHRISTI, CNATRA FTSC MGR)</i>				
<i>—FOR AETC AND CNATRA USE ONLY—</i>				
12a. CLASS: <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> N/A	12b. IMPACT ANALYSIS? <input type="checkbox"/> YES <input type="checkbox"/> NO	12c. SME Approved: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A 12d. SME Signature/Title/Date:	12e. JOINT ISSUE? <input type="checkbox"/> YES <input type="checkbox"/> NO	12f. STR #:
SYSTEM NAME	CURRICULUM/COURSEWARE	T6 ATDS		
13a. APPROVED <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A SIGNATURE/TITLE/DATE:	14a. Curriculum Authority Approved: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A Signature/Title/Date:	15a. JCCWG Approved? <input type="checkbox"/> YES <input type="checkbox"/> NO CO-Chair Signature/Date <input type="checkbox"/> N/A		
13b. JTCCB APPROVED: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A JTCCB CO-CHAIR SIGNATURE/TITLE/DATE:	14b. JCCWG Approved? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A CO-Chair Signature/Date	15b. CLASS II (ATD-SS Assigned) <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
16a. Sent to SPO on:		16b. SPO Action Status: (Include "as of date")		
17a. AETC QC Approved <input type="checkbox"/> Signature/Date:	17c. AETC CM LOGS UPDATED <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A Signature/Date:	17e. REMARKS (If the TCR is canceled, indicate by whom, the date, and return to the originator via the requesting command)		
17b. CNATRA QC Approved <input type="checkbox"/> Signature/Date:	17d. CNATRA CM LOGS UPDATED <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A Signature/Date:	17f. GOVERNMENT ACCEPTANCE: <input type="checkbox"/> YES <input type="checkbox"/> NO Signature/Title/Date:		

Figure 3.3

CNATRAINST 1550.6E

TRAINING CHANGE REQUEST (TCR)	
18. Control Number: (IAW CNATRAINST 1550.6E)	
19. Training Officer Information/Recommendations:	
20. Stage/Course Manager Information/Recommendations: <input type="checkbox"/> concur <input type="checkbox"/> do not concur	
21. CCC Information/Recommendations: <input type="checkbox"/> concur <input type="checkbox"/> do not concur	
22. PTO Recommendation: <input type="checkbox"/> concur <input type="checkbox"/> do not concur	
23a. URGENT CHANGE? YES <input type="checkbox"/> NO <input type="checkbox"/>	23b. If URGENT, Interim Change or Message Number:
24a. Affected Publications:	24b. Corrective Action & Date:
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Figure 3.4

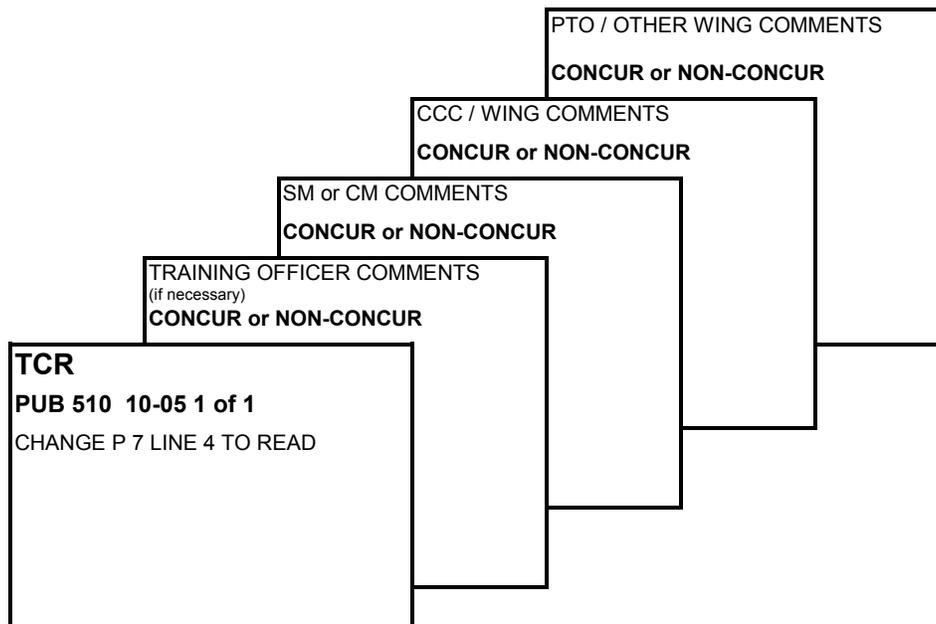


1. IDEAS (TCRs) ARE SUBMITTED
2. TRAINING OFFICER RESEARCHES AND MAKES RECOMMENDATIONS, RETAINS A COPY, FORWARDS TO SM/CM
3. SM/CM RESEARCHES AND MAKES RECOMMENDATIONS (AS NECESSARY), FORWARDS TO CCC
4. CCC MAKES RECOMMENDATIONS, RETAINS A COPY, AND FORWARDS TO PTO
5. PTO CATALOGS, RESEARCHES, AND MAKES RECOMMENDATIONS*
6. IF URGENT/CRITICAL, AN INTERIM CHANGE IS ISSUED
7. IF NON-URGENT/CRITICAL, PTO FILES TCR UNTIL CURRICULUM CONFERENCE

* TCRs from WINGS, FRSS, and CCCs may go directly to the PTO.

A TCR FILE SHALL BE MAINTAINED BY THE PTO, CCC, AND SM/CM IAW PARAGRAPH 303

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Figure 3.5

1. ALL COMMENTS WILL BE INCLUDED ON THE ORIGINAL TCR "page 2" SHEET OR ATTACHED
2. PTO WILL REQUIRE COMMENTS OR INPUT FROM ALL AFFECTED DRAWINGS

f. Squadrons that are affected by a TCR shall send written comments (electronically or hardcopy) regarding each TCR to the SM/CM with a copy to the CCC and the PTO. The SM/CM will maintain a copy of written responses to each TCR until the phase review conference.

g. Acknowledgment of receipt. The time from when the TCR is first submitted to the unit Standardization or Training Officer until the CNATRA PTO acknowledges receipt should not exceed four weeks. It is imperative that each TCR continues to move through the process. Electronic mail or hardcopy TCRs should be followed up with a phone call to ensure legible and complete copies were received.

(1) A control number will be assigned by the CNATRA PTO to all TCRs. The format shall be as follows:

**Month Received - Day Received - Number of TCR(s) for that Date
(e.g. 12-01 1 of 1)**

h. Feedback to the originator regarding action taken and a list of submitted TCRs may be sent in letter or electronic mail form to all affected squadrons. Disposition may range from action taken to "referred to phase review conference." The quarterly distribution of the PTO TCR log will fulfill this requirement.

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304. Proposed Flight Curriculum Validation. Validation of flight training programs is significantly different than validating classroom training. The following methods of validation shall be employed for existing and developmental flight curriculum:

a. The current programs of Aviation Safety, Naval Air Training and Operating Procedures Standardization (NATOPS), Standardization, periodic All Officer/Instructor Meetings (AOM/AIM), and safety stand-downs as well as the requirements of this instruction serve to validate approved curriculum.

b. Developmental flight curriculum, that is, flight maneuvers which are under improvement or development, requires close supervision for obvious safety and quality reasons. Prior to proposing a change to a curriculum flight (aircraft or simulator), a flight validation program to assess the desired effect, teach ability, and flight safety shall be conducted. The validation process requires written CNATRA (N3) approval prior to initiating. The validation steps will normally consist of:

(1) Six test flights, using standardization instructors and regular stage students, one each, per aircraft required. For simulators, one stage student flying the device, with a standardization instructor monitoring the contract simulator instructor's console.

(2) The validation results should be routed to CNATRA for review via the appropriate SM/CM and CCC.

c. Unsatisfactory student performance attributable directly to the proposed flight modifications shall not count as an unsatisfactory event and necessary remedial training shall be provided.

305. Conferences

a. Phase curriculum conferences may be held anytime the CNATRA PTO and the CCC determine one is necessary. As a minimum, a conference will be held twelve months after publication of the 1542 for that phase, using the check-list outlined in Appendix C. These phase review conferences will cover all aspects of the phase in question, including both student and instructor curriculum.

(1) Attendees will include, at a minimum, the appropriate CNATRA PTO, the CCC, the TRAWING Standardization Officers, each SM/CM, FTSC representative, and representatives from each TRAWING Training Department.

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(2) During phase curriculum conferences, TCRs will be reviewed, in order, as determined by the CCC. New TCRs may be submitted at any time; however, to promote an orderly meeting, each discussion item should be supported by and limited to a TCR form. In addition, no new TCRs should be accepted within two weeks of the conference unless they are deemed **Urgent**.

b. Stage conferences where a TCR may be discussed are normally called anytime a TCR form has been submitted which the PTO has designated "Urgent" and the SM/CM feels a conference is required to finalize a suitable response. These urgent responses normally result in interim changes.

306. Post Conference Administration

a. After each phase curriculum conference, the CCC or the SM/CM will update or create each applicable training publication described in paragraph 104 written in or converted to Microsoft Word 6.0 (or newer). If the document is converted to Microsoft Word, it must be uncorrupted. Appendix A describes who is responsible for each publication. Smoothed publications, on disk, will be delivered to the appropriate CNATRA PTO. These smoothed publications should include digital copies of graphic source files and the final smooth graphic files. Also, if any copyrighted graphic files are used, a release form from the copyright holder should be included.

b. The CNATRA PTO will then review each publication for format, content, and style. Hard copies, ready for signature, will be routed as follows:

(1) Curriculum revisions which fall under the "minor revision" criteria (see paragraph 307) are routed from the PTO to the CNATRA Chief of Staff via the chain of command for signature. Curriculum revisions which require "major revision" criteria will be submitted by the CCMM to the PTO. Upon receipt, the PTO will route the revision through the chain of command to the Chief of Naval Operations (CNO) via Naval Education and Training Command (NETC) for approval. All revisions will be sent to NETC (N55). Allow 30 days for review and approval of the revision. Following NETC (N55) approval, all "major revisions" shall be routed to CNO (N00T). Allow 30 days for review and final approval of the revision.

(2) All other training publications will be routed from the PTO through the chain of command to CNATRA (N3) for signature. CNATRA (N1221) then sends the signed proof to the Defense Automated Printing Service, Corpus Christi or Pensacola for both printing and distribution.

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307. Change and Revision Management (see **Figure 3.6**)

a. Minor revisions are changes to course CNATRAINST 1542s in which curriculum length, aircraft/simulator assets, personnel, funds, etceteras, are not changed. They are incorporated with a change transmittal. (See **Figure 3.6**) CNATRA is the approval authority for minor revisions.

b. Major revisions are defined as any changes or revisions to a CNATRAINST 1542 which involve changes to simulator, aircraft, curriculum length, or subject matter to such an extent that logistics support, personnel, funds, etceteras are affected. The Chief of Naval Operations (N00T, CNO) is the approval authority for a major revision to a CNATRAINST 1542. A curriculum shall be submitted to CNO for approval prior to or along with proposed changes to instructions.

308. CNATRA Fleet Feedback Program. The purpose of the CNATRA Training Improvement Program (TIP) form, CNATRA 1550/18 (Rev. 3-95) (**Figures 3.7** and **3.8**) is to provide a conduit for the Fleet Replacement Squadrons (FRS) to communicate with the NATRACOM. The form is focused on attrition cases but may be used to highlight any perceived training deficiency. The report is addressed directly to the CNATRA Assistant Chief of Staff for Training and Operations (N3) and information will be passed to NATRACOM squadrons via the appropriate CNATRA PTO.

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Figure 3.6

SAMPLE CHANGE TRANSMITTAL

CNATRAINST 1542.XXX CH-X
Code

CNATRA INSTRUCTION XXXX.XX CHANGE TRANSMITTAL X

Subj: TITLE OF COURSE

1. Purpose. To issue change transmittal X to the basic instruction.

2. Action. Make the following pen-and-ink changes.

a.

b.

c.

d.

Distribution:

CNATRAINST 5215.1R

List ____

Copy to:

COMTRAWING TWO (COOP File)

Stocked:

CNATRA

Figure 3.7

FLEET FRS TIP FORM

CNATRAINST 1550.6

CNATRA TRAINING IMPROVEMENT PROGRAM (FRS) 			
FRS ATTRITION/DEFICIENCY REPORT			
<p>The purpose of this form is to provide a conduit for Fleet Feedback. The intent is to improve NATRACOM Flight Training to better meet the needs of the Fleet. Inputs are not limited to attrition cases and may address any area of training where a deficiency is perceived.</p>			
FRS INFORMATION			
SQUADRON	AIRCRAFT TYPE	DATE	
OPS OFFICER/POC	PHONE NUMBER (C)	DSN	
STUDENT INFORMATION			
STUDENT NAME/RANK		SSN/DESIGNATOR	
STAGE OF TRAINING WHEN DEFICIENCY OCCURED			
REASON ATTRITED			
UNSATs IN FRS			
BOARD ACTIONS IN FRS			
ADDITIONAL COMMENTS/DEFICIENCIES			
(CONTINUE ON BACK IF NECESSARY)			
CNATRA USE ONLY			
WINGING SOURCE	NSS	RAW SCORE	COMP SCORE
DATE WINGED			
UNSATs IN NATRACOM			
PRBS IN NATRACOM			
ADDITIONAL COMMENTS			

Figure 3.8

Back page of fleet TIP

ADDITIONAL COMMENTS:

..... **FOLD AND STAPLE**

DEPARTMENT OF THE NAVY

OFFICIAL BUSINESS

**CHIEF OF NAVAL AIR TRAINING
CNATRA (N3)
250 LEXINGTON BLVD SUITE 102
CORPUS CHRISTI, 78419-5041**

CNATRAINST 1550.6E

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CHAPTER 4THE CNATRAINST 1542 INSTRUCTION

400. General. Each CNATRA course of instruction is authorized for use within the NATRACOM because the respective CNATRAINST 1542 was approved by CNO. See Appendices E or F for the recommended format of the CNATRAINST 1542. Each 1542 also provides the means for providing standardized instruction of a Student Naval Aviator (SNA), Instructor Under Training (IUT), or Student Naval Flight Officer (SNFO) in a particular phase of flight training.

401. Time to Train calculations should be made using **Figures 4.1** and **4.2**.

Figure 4.1SUMMARY OF ABBREVIATIONS

TDf = Training Days for flight (1 flight event per day IAW applicable CNATRAINST 1542.XXX)	Tw = Training days corrected for weather
TDs = Training Days for simulator (1 sim event per day IAW required (Sim applicable CNATRAINST 1542.XXX) ¹	Tf = Training days required (Flight)
Wx = Weather factor ²	Ts = Training days
So = Student overhead ³	Ch = Curriculum hours (as per Applicable CNATRAINST 1542.XXX)
Tt = Training days required (Total)	Ta = Training days required (Academics)

Notes: (1) All strike syllabi will use two (2) simulator events per day.

(2) 10 year average of reported ASR data located at CNATRA N52.

(3) 5 year average of reported ASR data located at CNATRA N52.

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Figure 4.2

TIME TO TRAIN CALCULATIONS

$$1. \text{ Days for Flight Events (Tf): } \frac{Tdf}{Wx} = Tw \quad Tw \times (1+So) = Tf$$

$$2. \text{ Days for Simulator Events (Ts): } \quad Tds \times (1+So) = Ts$$

$$3. \text{ Days for Flight Support/Academics (Ta): } \quad \frac{Ch}{8} = Ta$$

$$4. \text{ Total Training Days Required (Tt): } \quad Tf + Ts + Ta = Tt$$

5. Calendar Days/Weeks:

$$\frac{Tt}{\text{Working Days (237)/Days per Year (365)}} = \text{Calendar Days}$$

(IAW OPNAVINST 3502.6)

$$\frac{\text{Calendar Days}}{7 \text{ days}} = \text{Calendar Weeks}$$

402. Scope. The 1542 is a sequential listing of modules or stages (if applicable) with guidelines explaining the sequence of instruction, scheduling, standardization, administration, training forms, jacket reviews, flight/simulator interchange ability, attrition process, and performance measurement. Additionally, the 1542 should address brief time, solo restrictions (if applicable), warm-up policy, flight waivers, accelerated progression (MPTS/MNTS only), incomplete events, weather/safety pilots (if applicable), emergency procedures, definitions, academic periods, and flight support periods. The 1542's modules are divided into submodules which correlate to events (academic, flight support, simulator, or flight). Simulator and flight events are further subdivided into tasks/items which specify the training to be conducted for the training period. Academic and Flight Support events are not subdivided but stand alone identifying the specific training to be conducted. Events subdivided into tasks/items are arranged in a logical sequence for instruction. Tasks/items are graded via training objectives defining the level of proficiency required.

Each 1542 MPTS/MNTS format will be divided into stages which are divided into blocks of training. Each block will have specific tasks/items which all must be completed prior to the end of the block. The grades assigned during each event are derived from a course training standard (CTS) listed in the 1542.

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403. 1542 Outline (See Appendix E for details). Each 1542 will be formatted in the following manner (excludes 1542 MPTS/MNTS format, see paragraph 405):

- a. Table of Contents (See **Figure E.1**)
- b. Summary of Changes
- c. Course Data (See **Figure E.2**)
- d. Curriculum Guidelines (See **Figure E.3**)
- e. Section I - Training Summary (See **Figures E.4, E.5, E.6, E.7, and E.8**)
- f. Section II - Appendix A (See **Figures E.9, E.10, and E.11**)

404. Definitions. The following terms are used to describe the training objectives in the flight and synthetic instrument training in Section I of the curriculum guidelines (excludes 1542 MPTS/MNTS format, see paragraph 406).

- a. Discuss

Instructor: Quiz the student on the applicable procedures, systems, or maneuvers.

Student: Responsible for knowledge of the procedures prior to the event brief.

Item: Graded with an "X" by the instructor in the grade columns on the Aviation Training Form/Instructor Training Form (ATF/ITF), labeled "DI" in the "ID" column. If this is not available on the ATF/ITF, they should be graded in the most appropriate area (e.g., HW, PROC, or EP).

- b. Brief

Instructor: Brief the student on the applicable procedures.

Student: Responsible for knowledge of the procedures prior to the event brief.

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Item: Not graded, but marked with "BRF" by the instructor in the grade columns on the ATF/ITF, labeled "B" in the "ID" column.

c. Demonstrate

Instructor: Perform the maneuver with precision and accompanying description.

Student: Responsible for knowledge of the procedures prior to the event brief and observes the maneuver.

Item: Not graded, but marked with "DEMO" by the instructor in the grade columns on the ATF/ITF, labeled "D" in the "ID" column.

d. Introduce

Instructor: Coaches the student through the maneuver as necessary, and/or may re-demonstrate the maneuver.

Student: Responsible for knowledge of the procedures prior to the event brief and perform the maneuver with coaching as necessary.

Item: Graded with an "X" by the instructor in the grade columns on the ATF/ITF, labeled "I" in the "ID" column.

e. Practice

Instructor: Observe the student with minimal coaching; may also demonstrate the maneuver if necessary.

Student: Must perform maneuver with minimal coaching.

Item: Graded with an "X" by the instructor in the grade columns on the ATF/ITF, labeled "P" in the "ID" column.

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f. Review

Instructor: Observe and grade the maneuver without coaching; airborne critique is encouraged.

Student: Expected to perform the maneuver without coaching and devoid of procedural errors. The level of performance must warrant progression to the next stage or phase of training.

Item: Graded with an "X" by the instructor in the grade columns on the ATF/ITF, labeled "R" in the "ID" column.

g. Non-Graded

Instructor: Observe maneuver; item will be graded only if performed above average, below average, or unsatisfactory.

Student: Expected to perform the maneuver without coaching and devoid of procedural errors. The level of performance must warrant progression to the next stage or phase of training.

Item: Not graded, but marked with "**NG**" by the instructor in the grade columns on the ATF/ITF, labeled "NG" in the "ID" column, if the student's performance is **average**.
Graded with an "**X**" in the appropriate grade column if the student's performance for that maneuver was **other than average**.

h. Did Not Do

Instructor: A required item on the ATF/ITF, which was not done or completed for various reasons (i.e., weather, aircraft malfunctions, etceteras).

Student: Maintain and present a copy of the ATF/ITF to the instructor of the next like event so the next instructor is clear about all PGI/DND item(s).

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Item: Previously Graded Item(s) (PGI)/Did Not Do (DND) Not Graded, but marked with "DND" by the instructor in the grade columns on the ATF/ITF. If the event is incomplete, an associated remark is required. One incomplete item constitutes an incomplete event. Every item previously marked "DND" shall be either graded appropriately, or marked "DND" if incomplete again.

i. Not Applicable: Not graded, but marked with "NA" by the instructor in the grade columns on the ATF/ITF. This is used **ONLY** for items in the following two different cases:

(1) **LABELED** on the ATF/ITF "Optional" or its equivalent.

(2) On authorized compressed/waived **set** of flights/events compressed into **one** flight/event (e.g., IUT Curriculum, Standard Primary Waivers, etceteras). In both of these two cases, the event shall be considered **COMPLETE**. If not within these two categories, it is considered incomplete; refer to and use "DND" instead.

j. Previously Graded Item

Instructor: A maneuver previously graded on an incomplete event. The item may be flown on the next attempt at that event if fuel/time permits or if required in order to accomplish the previously "DND" item(s) (e.g., Ground Procedures, Taxi, Takeoff, etceteras). If the student's performance is anything other than average on any previously graded item, it **shall be graded again**.

Student: If required, performs the maneuver again, expected to do so at the level shown in the "ID" column.

Item: Not graded, but marked with "**PGI**" by the instructor on the ATF/ITF in the appropriate grade column if the student's performance for that item was

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average or if it was not performed again.

Graded with an "**X**" by the instructor on the ATF/ITF in the appropriate grade column if the student's performance for that item was **other than average**.

- k. Not Observed: Normally used for student solo events. Instructor (ODO/FDO/RDO/SODO) shall brief the student thoroughly to ensure preparedness. The student is expected to perform the maneuver as briefed to the skill level stipulated in the review description above.
Not graded, but marked with "**NOB**" by the ODO/FDO/RDO/SODO on the ATF/ITF.
Graded with an "**X**" in the appropriate grade column as observed by a qualified instructor (i.e., ODO, FDO, RDO, SODO, Section/Division Leader, etceteras), if the student's performance for that maneuver was **other than average**.
- l. "S"-Coded Flight Student instructional flights designated by the "S" (e.g., BI-1S) are flown in the flight simulator.

405. MPTS/MNTS 1542 Outline (See Appendices F and G for details). All syllabi that have been converted to the Multi-Service Pilot Training System/Multi-Service Navigator Training System (MPTS/MNTS) are not required to comply with the preceding Chapter 4 paragraphs unless specifically noted. Instructor syllabi will differ slightly in accordance with Appendix G. Student 1542 MPTS/MNTS curricula will be built in the following chapter format:

- a. Table of Contents (see **Figure F.1**)
- b. Summary of Changes
- c. Course Data (see **Figures F.2, F.3, and F.4**)
- d. Glossary (if applicable)
- e. Chapter I - General Instructions (see **Figure F.5**)
- f. Chapter II - Ground Training
- g. Chapter III - Contact Training

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- h. Chapter IV - Instrument Training
- i. Chapter V - Formation Training
- j. Chapter VI - Navigation Training
- k. Chapter VII - Tactical Training
- l. Chapter VIII - Course Training Standards (see **Figures F.6** and **F.7**)
- m. Chapter IX - Master Materials Forms

406. MPTS/MNTS Definitions. Grading definitions are included within Chapter I of all MPTS/MNTS curricula under the title Mission Grading Procedures and Evaluation Policies. In addition, all grading criteria will be based on the Course Training Standards.

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CHAPTER 5THE AVIATION AND INSTRUCTOR TRAINING FORM (ATF/ITF)

500. General. Any instructor or student involved with flight training may submit a recommended change to an existing Aviation/Instructor Training Form using a TCR form. Normally ATF/ITF changes are a result of changes to the 1542. Procedures for changing an ATF/ITF are as follows:

a. If the change is simple, cross out the items you want to change on the present form, make the proposed corrections, then submit with a TCR form describing background and reason for change.

b. If the proposed change is complicated, redraw the form with the suggested changes on a separate piece of paper and attach it to the current form. Use a TCR form for the cover sheet, with description and reason for the change.

c. Each ATF/ITF should include a CNATRA form number and revision date. Each curriculum has a Masters Materials list in the last chapter or the end of Appendix A respectively. The ATFs are listed with their title, form number and current revision date (CNATRA 1542/528 (Rev.6-90)). The numbers and revision dates should be found in the lower left hand corner of the ATF/ITF. As changes are made to the ATFs and their respective curriculum, the ATF number needs to be updated with a new revision date on the ATF and coincide with the ATF list in the curriculum. This revision date signifies that changes were made.

d. All TCR forms should be routed in accordance with Chapter 3 of this instruction.

501. ATF/ITF Procedures. Specific guidance for completing ATFs and the maintenance of ATFs is found in CNATRAINST 1500.4F.

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CHAPTER 6THE FLIGHT TRAINING INSTRUCTION (FTI) AND
FLIGHT SUPPORT LECTURE GUIDE (FSLG)600. General

a. FTIs are intended to be an authoritative and descriptive narrative of all maneuvers and procedures required by the CNATRAINST 1542. FTIs relate directly to the CNATRAINST 1542s. No item may be addressed in the FTI which is not authorized in the parent document.

b. FSLGs are used by qualified and designated flight instructors to give stage specific and other flight support lectures which are normally a summary of the FTI. These lectures are somewhat different from academic lectures in that they are actual aircraft (or simulator) briefs on some aspect of flight procedures given to several students.

601. FTI Content. The FTI is intended to be a comprehensive resource. All items listed in the 1542 will be covered by the FTI. This is not to say that an FTI should spoon-feed the student in every evolution, rather it should address every point. The goal of an FTI should be to equip the undergraduate aviator with the knowledge and skills required to decipher and apply NATOPS publications, the instrument flight manual, or any other reference used by designated aviators. The emphasis in latter phases within a pipeline should be in cultivating independence from the training instruction, and reliance on the publications which he/she will use throughout his or her aviation career. To that end:

a. FTIs should not duplicate existing publications (i.e., NATOPS, IFM, PCL, GP) but should expand on concepts and address specific applications of the referenced materials.

b. FTIs should include all information needed to complete the applicable stage or phase of training. FTIs should be considered building blocks. Previously introduced material from other FTIs may be referenced in a subsequent FTI, but no reference should be made in an FTI to PAT publications applicable to a stage which follows it.

c. Although FTIs present all basic information required prior to flight, it is the instructor's responsibility to ensure comprehension of subject matter by the student. The descriptions of maneuvers or procedures should be lucid and concise. There should not be a need to interpret the instruction. Conversely, the descriptions of maneuvers may allow sufficient latitude for

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instructor technique. The determining considerations should be the effectiveness and standardization of training.

602. FTI Format. The goal of having a standardized format is to ensure completeness within a learning objective area and facilitate revision. The format requirements are general enough to allow an appealing and congenial presentation of the subject matter. The structure gives the author a logical framework, keeping the material focused and concise (see Appendix I). The FTSC will maintain a master guide with specific style and format information not covered by this instruction.

a. Each chapter or section should be organized in the following order and should include:

(1) Introduction.

(2) A complete and precise presentation of the subject matter in correct, common English. Context-specific information may include the use of standard terminology; however, all new terms must be defined in the appropriate glossary. Use of non-standard terminology, or lingo, is inappropriate (see **Figures I.2** and **I.3**).

b. Innovation is encouraged when writing an FTI, but the following specific guidelines should aid the beginner when submitting an original instruction:

(1) The style of writing should be professional but informal. Learning and enabling objectives should be clearly stated within the body of the text.

(2) Active voice must be used. Good grammar and a professional tone are a must.

(3) Levity is not discouraged, but must reinforce the topic being presented, and must be of unimpeachable taste.

(4) Only major paragraphs will be numbered. Titles of major paragraphs correspond to items listed in the FTI.

(5) Minor paragraph headers are discouraged except when presenting a logical sequence within a specific major header.

(6) Each discussion item will include standards which are also the training objectives.

(7) Lists, notes, warnings, and cautions will be clearly offset from text body. All notes, warnings, and cautions taken verbatim from the NATOPS shall be italicized.

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(8) Tables, figures, and photos must be professional quality and be submitted camera ready. Sketches or snapshots are inappropriate.

c. Electromagnetic or electronic mail submissions are encouraged to reduce the flow of paperwork during intermediate steps of FTI publication. The CCC must coordinate with the applicable CNATRA PTO for the specific media format requirements. Likewise, SM/CMs must consult and coordinate with their CCCs. CNATRA requires all draft FTIs to be submitted in Microsoft Word 6.0 (or newer) document for review. Paragraphs will not be numbered and will be indented with two spaces. Major Titles will immediately precede the first paragraph of a new section and will be the only text in all caps. No stylized text will be used anywhere within the document. Notes, lists, and text tables will be marked as such. Figures, drawings, photos and source files will be submitted concurrently. As custodian for all master documents, CNATRA will retain a master copy for each document, as well as the master electromagnetic record. A draft copy of the master may be forwarded to the CCC upon request.

d. SM/CM will review, revise, and submit changes to the FTI with particular emphasis placed on content, correctness, and completeness.

e. The CCC will review the proposed changes with regard to technical, grammatical, and clerical correctness and completeness.

f. The CNATRA PTO will review the proposed changes to the document and submit approved changes to the Flight Training Support Center (FTSC) for inclusion in the source document.

g. The FTSC will incorporate the changes and provide an electronic copy of the revised FTI to the PTO for final review by the CCC and SMs. In cases where more than one TRAWING is affected by the changes, the Training Officer for the non-CCMM TRAWING will also receive an information copy for review.

h. The final draft copy will then be routed for signature by the CNATRA PTO and distributed to the appropriate TRAWING(s).

603. FTI Item Description. Each item listed in the 1542 should be addressed in the FTI. It is recommended that each item in the FTI be written in the format shown in **Figure 6.1** below.

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Figure 6.1

600. INTRODUCTION

A general discussion and/or explanation why the maneuver, event, or discussion is accomplished.



Figure 6-1 Level Flight

601. Procedure

Specific description of the maneuver such as:

1. Smoothly apply power as required.
2. Flaps - approach.
3. Gear - up.
4. Etceteras.

602. Standard

1. The student should correctly perform the procedures.
2. The student should maintain airspeed within plus or minus 10 KIAS, altitude within plus or minus 50 ft and heading within plus or minus 5 degrees.

Adherence to the standard will assist in grading the student's performance.

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604. FSLG Background. Students are expected to read the appropriate portion of the FTI prior to attending the flight support lecture. The lecture is intended to tie the FTI, NATOPS, and specific 1542 requirements together in addition to providing a logical opportunity for the instructor to bring in local Standard Operating Procedures (SOPs) and Course Rules as they apply to that stage. The published CNATRA FSLG will be void of all SOPs and Course Rules. At the conclusion of the flight support lecture, each student or IUT will be given a test of twenty or more questions to cover all learning objectives.

605. FSLG Content. SM/CMs are responsible for submitting proposed FSLGs, normally as a result of a curriculum conference, using the following steps (and format found in Appendix J):

a. Instructors using the FSLGs should be encouraged to submit improvement recommendations using the TCR form.

b. A thorough knowledge of the FTI, NATOPS, and the 1542 is required before writing an FSLG.

c. All items taught to the student from the 1542 should be listed in chronological order, that is, in the order that the student will experience them. Items which have been previously discussed in an FSLG should be listed but need not be reviewed.

d. Objectives, as listed in the 1542 under the Flight Support Lecture, should be addressed as procedures that are discussed. Every objective must be covered. If the 1542 is lacking, this would be the best time to update the 1542 objectives as well (see Chapter 4).

e. SM/CMs need only submit the content pages. CNATRA is responsible for the cover, letter of promulgation, and TCR.

f. The smoothed FSLG should be submitted as outlined in Chapter 3.

606. Electronic Classroom and Computer Assisted Instruction. SM/CMs are responsible for ensuring all electronic classroom and CAI software is updated and remains current. Required changes should be submitted to the CNATRA PTO. The CNATRA PTO will forward required changes to the FTSC for revision and distribution via TIMS, as applicable.

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CHAPTER 7HOW TO WRITE AND SUBMIT AN ACADEMIC TRAINING
INSTRUCTION (ATI) AND INSTRUCTOR GUIDE (IG)

700. Purpose. To establish policies and guidance for the planning, analysis, design, development, implementation, and control of academic training instructions in accordance with NAVEDTRA 130/135.

701. Background

a. Academic Training Instructions (ATIs) consist of Student Guides and Workbooks. The Student Guide or Workbook is a series of instruction sheets which collectively provide the student with the supplementary material (in addition to technical manuals) needed for successful completion of a course of study. They are prepared in coordination with the course instructor guide. Instruction sheets contain pages such as note-taking guides, reading assignments, homework study questions, problem analysis exercises, diagram sheets, and other special units of additional or amplifying information. The Student Guide/Workbook consists of all front matter and instruction sheets assembled into a binder. The Student Guide/Workbook should NOT duplicate existing documents and manuals. Student Guides/Workbooks are designed to be used in conjunction with existing manuals as software training materials for a course. At times, however, it is more efficient to duplicate a few pages from a manual if, for example, the manual is very large or has classified sections.

b. Instructor Guides (IGs) are those prepared publications the instructor uses to teach a given academic course. The IG consists of three parts: Front Matter, Lesson Plan, and Outline of Instruction. The IG provides specific definition and direction to the instructor by providing information concerning learning objectives, equipment, media, and the conduct of the course. It should be detailed sufficiently to ensure consistency of instruction provided by different instructors yet allow the instructor to interject his/her own experience and knowledge into the course. Existing documents may be referenced and used by the instructor and students but the guide should be specific as to what the course is to include.

702. Policy

a. Reference (b) is the curriculum development standard guide by which NATRACOM training materials will be produced. The manual is divided into six phases to match the Instructional System Development (ISD) model. Phase I is titled Plan; Phase II, Analyze; Phase III, Design; Phase IV, Develop; Phase V, Implement; and Phase VI, Control.

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b. Of interest to the developer is that Phase II, Analyze, lists other documents which contain details of courses of instruction offered by different military services. These listings can be used to find already developed curriculum materials which can be adapted to current training requirements. Phase III, Design, and Phase IV, Develop, describe in detail the process of generating new curricula or revising existing materials. Phases V and VI, Implement and Control, form the basis of training supervisor's management techniques and are described in NAVEDTRA 135B, NAVY SCHOOL MANAGEMENT MANUAL.

703. Changes. Recommended changes may be submitted using the TCR form.

704. Instructional Systems Development (ISD) Process. The first step in the ISD process is to determine, statistically if possible, whether or not development or revision is actually necessary. After the need to revise or develop a course has been validated and specific requirements have been identified, confirm that there are no existing training materials or portions thereof that will satisfy the requirement. Evaluate existing instructional materials to determine if some or all of their content is usable. Use as much of existing materials as possible. Next, proceed with the ISD process by using the following steps:

a. Develop Terminal and Enabling Objectives. This is a mandatory step for developing new materials. It is optional for course revisions but careful scrutiny of existing objectives should be accomplished to ensure applicability and also ensure that all existing objectives are still necessary. Refer to NAVEDTRA 130, Chapter 4, for guidelines on terminal and learning objectives, along with planning, analyzing, designing, and developing training materials.

b. Develop Test Items. Some individuals prefer to develop the test items before the objectives because it points the direction the objectives should take. All instruction is designed to produce a desired behavior, so it is important that test items measure what they are supposed to measure. Each test item should be identified by the Terminal/Enabling Objective number that it is designed to test. This helps to provide an audit trail and assists in the validation process. Refer to NAVEDTRA 130, Chapter 8, Develop Phase, for detailed directions on developing test items.

c. Develop the Instructor Guide (IG). A well designed IG ensures each student has the same opportunity to receive the same instruction as every other student. The IG consists of three parts, Front Matter, Lesson Plan, and Outline of Instruction. Specific information concerning contents of the IG is found in

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Appendix L of this instruction and Lesson Plan development in NAVEDTRA 130, Chapter 6; however, the following should help the beginning developer to get started:

(1) The IG is written in two columns, landscape or horizontal on the page. Front Matter consists of general or administrative information. Notable among the Front Matter pages are the Letter of Promulgation page and the Safety page. The date on the Letter of Promulgation page determines the effective date of the IG and enables the instructor to determine the latest revision. Even if there are no hazards in a particular course, that fact must be so stated on the Safety page. The content of the other Front Matter pages is self-explanatory from the title.

(2) The Lesson Plan page(s) contains special information about the individual lessons of the course. Lesson Plan pages contain the scheduled length of time for the lesson, lists of training aids, training materials, and references, and, most importantly, the Terminal Objective and Enabling Objective(s). Enabling Objectives are listed in the order in which they are taught.

(3) The left column of the Outline of Instruction pages are actually titled Outline of Instruction while the right column is titled Instructor Activity. The Outline of Instruction contains six elements: I. Introduction, II. Presentation, III. Summary, IV. Application, V. Evaluation (Questions and Answers), and VI. Assignment. It is a good idea to note at the end of a teaching point where the requirements of an Enabling Objective have been met (E.O. #1, #2, etceteras). Place these notations on a separate line so that an instructor will have no difficulty locating the information for test reviews, etceteras. The Instructor Activity column is used to direct the instructor to show a video, display a chart, use a certain explanation. It is also used for instructor personalization by adding the instructor's own notes. Appendix L shows formats and examples of the IG.

d. Develop the Student Guide/Workbook

(1) Not all courses will require an extensive Student Guide/Workbook. However, each course should have, as a minimum, a guide that provides a list of the objectives for each lesson. Normally, the objectives are listed in Information Sheet format. Objectives are provided in teaching order so that they provide a rough outline of the instruction which has been presented. They also serve as study guides for the End of Course Examinations.

(2) Student Guide page identification can be somewhat confusing without an explanation. The various instructional sheets are identified on the first line by type and number within

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each instructional chapter. For example, the first Instruction Sheet in the first chapter is identified as Instruction Sheet 1-1, the second 1-2, etceteras. The first Note Taking Sheet or the first Assignment Sheet in the first chapter is identified as Note Taking Sheet 1-1 or Assignment Sheet 1-1. Then in the second chapter, they are identified as 2-1, 2-2, 2-3, etceteras. Chapter page numbers are inserted at the bottom center of each page and are numbered consecutively within the chapter: 1-1, 1-2, 1-3, 1-4, then 2-1, 2-2, 2-3, 2-4, etceteras. Appendix K shows formats and examples of Student Guide/Workbooks.

e. Develop the Validation Plan. Each newly designed academic course, or major revision of an academic publication should be validated. Details on validation of classroom training are contained in Appendix B (Training Analysis Checklist) and Appendix D (Classroom Evaluation Procedures), NAVEDTRA 135B.

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CHAPTER 8THE TEST MANAGEMENT SYSTEM

800. Purpose. CNATRA's Test Management System (TMS) is a means to standardize and track the myriad of academic tests across the NATRACOM. To that end, CNATRA requires that all academic tests comply with both the Student Naval Aviator Training and Administration Manual (TA Manual), CNATRINIST 1500.4F, and with the guidelines set forth in this section. All existing curricula and those under development will use test question banks, and will test under TMS or TIMS as appropriate. T-45 curricula will use the Training Integrated System (TIS) for on-line testing until replaced by TIMS.

801. Background. TMS is a system approved by CNATRA, which maintains test question banks for each test within a curriculum and generates tests for local use. The system is run at every CNATRA TRAINING instructional site by personnel assigned TMS functions.

802. TMS Operator. The activity hosting the TMS on-line testing system must provide an operator to properly administer the tests. All tests will reside on the unit's server and it is the responsibility of the operator to assure proper log into the on-line testing and availability of tests.

803. Course Curriculum Model Manager Responsibilities. Course Curriculum Model Managers (CCMMs) are responsible, along with the applicable SM/CMS for generating, reviewing, and maintaining their respective question banks. Questions should be reviewed annually for accuracy and pertinence. Each curriculum objective should be supported by several questions. At a minimum, there will be three questions for each specific objective. This requirement could be significantly greater for objectives which represent several detailed items. The SM/CMS and Course Curriculum Coordinator (CCC) should coordinate a review schedule for test question banks. The question banks should not be handed out; however, they are not considered confidential. They should be comprehensive enough to ensure that if a student takes the time to learn every possible question within a question bank, that student has mastered and understands the testable material within the curriculum.

804. Test handling. Tests generated through the TMS will be handled in accordance with CNATRINIST 1500.4F, TA Manual. The security of on-line tests and individual paper tests is still the responsibility of the units administering the curricula.

805. Security. Hardware and software security and maintenance is the responsibility of the custodian of the ADP equipment.

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Physical and electronic security is the responsibility of the user. Each custodian must ensure that the TMS equipment physically located at their respective site is covered within that units' ADP security plan.

806. Liaison. CNATRA (N317) is the point of contact for all TMS administration issues.

807. Training Integration Management System (TIMS). The TIMS system is a joint Navy and Air Force, comprehensive testing, scheduling, and qualification program that is located at the CNATRA Flight Training Support Center (FTSC) and Randolph AFB. As TIMS becomes functional, it will replace all existing TMS systems. TIMS will maintain a computer based question bank that will randomly produce a test when requested. This test will automatically include a weighted number of questions for each learning objective. The test format will be established by the applicable SM/CM. Point of contact for all TIMS questions is the CNATRA (N35).

a. Liaison for all TIMS administration issues is the CNATRA (N351), TIMS Operations Manager.

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CHAPTER 9DISTRIBUTION AND ORDERING OF PUBLICATIONS

900. Purpose. To establish policies and assign responsibilities for the distribution of Peculiar to Aviation Training Publications (PAT Pubs). The effective, efficient, and economical production and distribution of training materials is the prime requisite in the management of these resources.

901. Policy for PAT Pubs and ATFs/ITFs

a. Directives. Reference (e) issues policies and procedures for the administration of CNATRA forms. CNATRA (N1221) produces and maintains a case file on each ATF and CNATRINST 1542. Pat Pub and CNATRINST 1542 source files are kept in the FTSC Configuration Management Section.

b. TRAWING Representative. Each TRAWING shall designate a PAT Pubs/ATF Coordinator and submit the name and phone number to CNATRA (N31). Notify CNATRA immediately of any changes. All correspondence between the TRAWINGS and CNATRA will be conducted through the designated coordinators. The CNATRA PTOs will be the point of contact for all PAT Pubs. CNATRA (N1221) is the point of contact for all ATFs.

c. Distribution. PAT Pubs will be mailed to one TRAWING location unless other arrangements are made with CNATRA. It is recommended that each TRAWING establish a central filing system for all PAT Pubs.

d. TRAWING Monthly PAT Pub Inventory Forms (CNATRA 1550/20). Monthly publication inventory forms are necessary to reduce costs, maintain better accountability, and help anticipate future needs. Inventory forms shall be consolidated at each TRAWING and submitted to the appropriate CNATRA PTO by the 10th of each month. This form is to be used as a tracking guide, not a monthly reprint request. Reprint requests shall **be processed according to Paragraph 902.**

e. ATFs. All ATFs are electronically maintained and corrected at the CNATRA FTSC, via the PTO. All corrections or recommended changes shall be submitted via a TCR as discussed in Chapter 3.

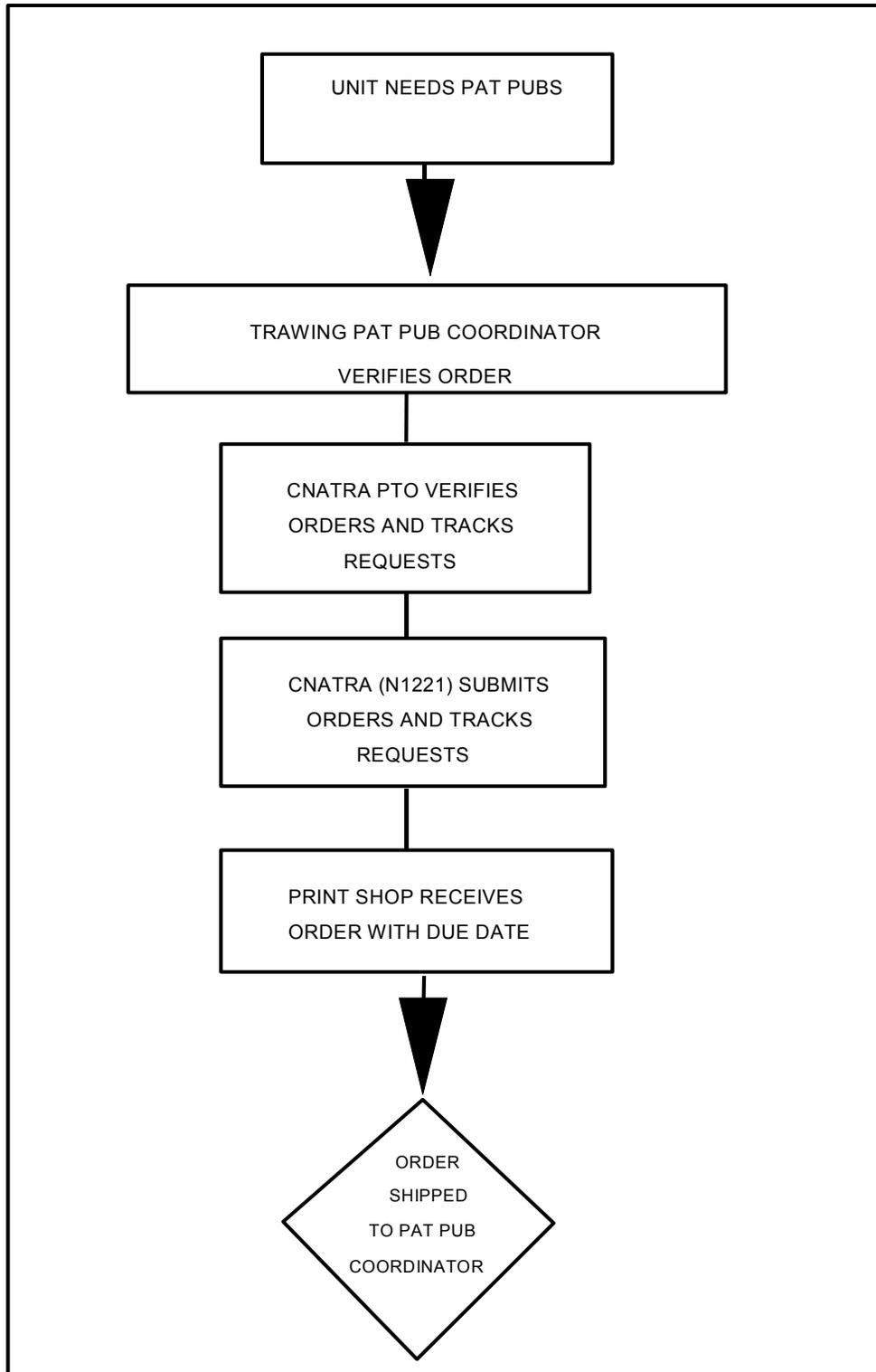
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Figure 9.1

PAT PUB ORDERS



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902. Specific Publication Requirements

a. TRAWING Monthly PAT Pub Inventory Forms (CNATRA 1550/20). The goal, through the use of this inventory system, is to eliminate crisis management associated with publication shortages due to untimely reviews, improper inventories, poor documentation, or mail routed to the wrong place.

b. Stocking, Ordering, and Distribution Requirements

(1) To minimize the cost and time of printing, publications will be produced in sufficient quantity to satisfy the bi-annual requirements of all users, if practical. Orders of less than bi-annual requirements may be warranted during curriculum or instructional modifications. However, several short orders are more expensive than one or two large orders. Questions regarding orders should include the PAT Pub number, i.e., P-XXX. **Figure 9.1** outlines PAT Pub ordering procedures. Appendix B is a list of the current PAT Pubs.

(2) Production and distribution of PAT Pubs are based upon needs of instructors, contractors, instructors under training (IUTs), and student naval aviators (SNAs) as indicated by the Pilot Training Rates (PTRs) for that phase of training. An additional five (5) percent should be added to the total requirements and then rounded to the nearest fifty. The CCMM will ensure the distribution and number of publications ordered is accurate and typed on the Letter of Promulgation for all new and revised publications (coordinate with CNATRA if in doubt). Example of a yearly formula: Instructors + Contractors + IUT + SNAs + Miscellaneous + 5 percent + round up = yearly distribution. Example: Based on a primary PTR of 1708, instructor and IUT requirements of 423 and no contractor requirements. $(1708 + 423 = 2131 + 106 (5\%) = 2237 + 13 (\text{nearest fifty}) = 2250.)$ It is recommended that each user create an annual number but submit a bi-annual request. This allows for PAT Pubs to be modified or changed without excessive cost from wasted publication reprints.

(3) Pub numbers for new publications will be assigned in advance by CNATRA (N1221).

(4) Distribution to organizations outside of the Naval Air Training Command will be made only with written approval of CNATRA. All requests received by NATRACOM activities will be forwarded to CNATRA (N31) for action. Normally, requests from other government agencies will be approved if sufficient stocks exist. Requests from private organizations or individuals will be considered on an individual basis, subject to Freedom of Information Act guidelines.

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(5) Due to funding constraints, it may be necessary to reduce normal distribution on some publications and require students to return publications at the end of each course for reissue.

903. Print Requests

a. Print requests should be identified as reprints, changes, revisions, or new publications. If there is a change, it is up to the CCMM to submit it as an interim change, or a complete revision, depending on the magnitude of the change. Requests may be submitted in either hard copy or disk format.

b. All printing requests for PAT Pubs will be approved by CNATRA PTOs and sent to CNATRA (N1221) for printing and dissemination to the Defense Automated Printing Services (DAP) in Corpus Christi and Pensacola.

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APPENDIX AASSIGNMENT OF COURSE CURRICULUM MODEL MANAGERS, COURSE
CURRICULUM COORDINATORS AND STAGE MANAGERS

1. Course Curriculum Model Manager Assignments (CCMM). The following are the 14 Phases of NATRACOM Instruction and CNATRA CCMM assignments for each phase (instructions listed are subject to the latest revision):

PHASE	CCMM	CNATRA 1542 ASSIGNMENTS FOR CCMM		
PRIMARY (T-34)	TRAWING FIVE	1542.140	1542.61	
ADVANCED E-2/C-2	TRAWING ONE	1542.56		
INTERMEDIATE STRIKE/ TPS	TRAWING ONE	1542.40	1542.56	1542.57
INTERMEDIATE E-2/C-2	TRAWING FOUR	1542.152		
ADVANCED MULTI-ENGINE	TRAWING FOUR	1542.147	1542.153	
ADVANCED HELICOPTER	TRAWING FIVE	1542.41	1542.91	1542.93 1542.99
T-45C (all)	TRAWING ONE	1542.125	1542.127	1542.150
NFO PRIMARY	TRAWING SIX	1542.54	1542.32	1542.155 1542.154
NFO INTERMEDIATE	TRAWING SIX	1542.131		
NFO ADVANCED CORE	TRAWING SIX	1542.132		
NFO ADVANCED STRIKE	TRAWING SIX	1542.122		
NFO ADVANCED STRIKE FIGHTER	TRAWING SIX	1542.121		
NFO ADVANCED ATM	TRAWING SIX	Proposed		
T-45A (all)	TRAWING TWO	1542.108	1542.109	1542.118 1542.135 1542.120 1542.139

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2. SM/CM Assignments. Each of the phases described above is further divided into stages. The following are the CNATRA Stage/Course Manager assignments for each stage/course of instruction. Publications each stage/course manager is assigned are included.

<u>STAGES</u>	<u>SM/CM</u>	<u>PAT PUBS</u>
PRIMARY CONTACT	TW-4	P-330, P-908
PRIMARY NAVIGATION	TW-4	P-340, P-359
PRIMARY INSTRUMENTS	TW-5	P-305, P-356
PRIMARY FORMATION	TW-5	P-357, P-358
PRIMARY OCF	TW-5	P-354
PRIMARY Systems	TW-5	P-307
PRIMARY Meteorology (B)	TW-5	P-304
PRIMARY IFR	TW-5	P-305
PRIMARY CRM	TW-5	
INTERMEDIATE STRIKE (T-2) OCF	TW-1	P-650
INTERMEDIATE STRIKE (T-2) CQ	TW-1	P-650
INTERMEDIATE STRIKE (T-2) GUNS	TW-1	P-650
INTERMEDIATE STRIKE (T-2) FORMATION	TW-1	P-650
INTERMEDIATE STRIKE (T-2) FAM, NF	TW-1	P-650
INTERMEDIATE STRIKE (T-2) INSTRUMENTS	TW-1	P-650
INTERMEDIATE STRIKE (T-2) Systems	TW-1	P-624, P-814
INTERMEDIATE STRIKE (T-2) Aerodynamics	TW-1	P-601
INTERMEDIATE STRIKE (T-2) IFR (former AIGT)	TW-1	P-607, P-607A
INTERMEDIATE (T-2) CRM	TW-1	
INTERMEDIATE E-2/C-2	TW-4	
ADVANCED/TS STRIKE INSTRUMENTS	TW-1	(See App B)
ADVANCED/TS STRIKE FORM/NFORM	TW-1	
ADVANCED/TS STRIKE OCF	TW-1	
ADVANCED/TS STRIKE ONAV	TW-1	
ADVANCED/TS STRIKE Systems	TW-1	
ADVANCED/TS STRIKE Aerodynamics	TW-1	
ADVANCED/TS STRIKE FAM/NFAM	TW-2	(See App B)
ADVANCED/TS STRIKE GUNS	TW-2	
ADVANCED/TS STRIKE WEPS	TW-2	
ADVANCED/TS STRIKE CQ	TW-2	
ADVANCED/TS STRIKE TACF/ACM	TW-2	
ADVANCED/TS STRIKE Academics	TW-2	
ADVANCED/TS STRIKE CRM	TW-2	
ADVANCED E-2/C-2	TW-2	

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<u>STAGES</u>	<u>SM/CM</u>	<u>PAT PUBS</u>
ADVANCED MULTI-ENGINE CONTACT	TW-4	P-553
ADVANCED MULTI-ENGINE INSTRUMENTS	TW-4	P-553
ADVANCED MULTI-ENGINE FORMATION	TW-4	P-553
ADVANCED MULTI-ENGINE NAVIGATION	TW-4	P-553A
ADVANCED MULTI-ENGINE TACTICAL (SAR)	TW-4	
ADVANCED MULTI-ENGINE TACTICAL (LOW-LEVEL/TAC FORM)	TW-4	P-553A
ADVANCED MULTI-ENGINE SYSTEMS (T-44A)	TW-4	
ADVANCED MULTI-ENGINE SYSTEMS (TC-12B)	TW-4	
ADVANCED MULTI-ENGINE IFR (former AIGT)	TW-4	P-522
ADVANCED MULTI-ENGINE AERODYNAMICS	TW-4	
ADVANCED MULTI-ENGINE ACADEMICS	TW-4	
ADVANCED MULTI-ENGINE CRM	TW-4	
ADVANCED HELICOPTER CONTACT	TW-5	P-457
ADVANCED HELICOPTER INSTRUMENTS	TW-5	P-458
ADVANCED HELICOPTER NAVIGATION	TW-5	P-458
ADVANCED HELICOPTER FORMATION	TW-5	P-459
ADVANCED HELICOPTER TACTICAL	TW-5	P-459
ADVANCED HELICOPTER NVD	TW-5	P-459
ADVANCED HELICOPTER Systems	TW-5	P-402
ADVANCED HELICOPTER Aerodynamics	TW-5	P-401
ADVANCED HELICOPTER IFR (former AIGT)	TW-5	P-403, P-404
ADVANCED HELICOPTER CRM	TW-5	
NFO PRIMARY	TW-6	P-304, P-801, P-802 P-803, P-804, P-806 P-807, P-808, P-810 P-842, P-858
NFO INTERMEDIATE	TW-6	P-811, P-812, P-857 P-859, P-860, P-861 P-862, P-867
NFO ADVANCED	TW-6	P-607, P-814, P-816 P-817, P-819A, P-820 P-821, P-825, P-856, P-857

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APPENDIX BFLIGHT TRAINING PUBLICATION DESCRIPTIONS

CNATRA 1542s listed are subject to latest revisions.

CNATRINST Description

1542.7	Aviation Training Support System Policy and Management
1542.32	Primary/Intermediate Naval Flight Officer (NFO)/Air Force Navigator Instructor Under Training Curriculum
1542.40	Intermediate Strike & E-2/C-2 Flight Instructor Under Training (IUT) Curriculum
1542.41	Helicopter Transition Pilot Curriculum
1542.53	Aerospace Medicine Specialist Indoctrination Curriculum
1542.54	Primary Student Naval Flight Officer/Navigator Training Curriculum
1542.56	Intermediate Strike & Advanced E2/C2 Pilot Training Curriculum (T-2C)
1542.57	U.S. Naval Test Pilot School (NTPS) Preparatory Curriculum
1542.61	Primary Flight Instructor Curriculum
1542.67	Naval Aircrew Candidate School Curriculum
1542.91	Undergraduate Helicopter Flight Instructor Under Training Curriculum
1542.93	Undergraduate Helicopter Flight Training Curriculum
1542.94	Aviation Rescue Swimmer School Curriculum
1542.97	Rescue Swimmer School Training Training Course
1542.98	Naval Aircrewman Candidate School Instructor Training Course
1542.99	Non Naval Aviator Shipboard Qualification Aboard the Helicopter Landing Trainer
1542.100	Land Survival School Curriculum
1542.102	Physical Training Instructor Training Course
1542.108	T-45A TS Strike Flight Training Curriculum
1542.109	T-45A Strike Flight Instructor Training Curriculum Outline
1542.117	Aircrew Coordination Training Instructor Course
1542.118	T-45A Strike Designated Naval Aviator Jet Refresher/NATOPS Curriculum
1542.119	Aviation Rescue Swimmer School Refresher Course
1542.120	T-45A Advanced Strike Flight Training Curriculum
1542.121	Advanced Naval Flight Officer (NFO)/Strike/Fighter Training Curriculum
1542.122	Advanced Naval Flight Officer (NFO)/Strike (STK) Training Curriculum
1542.123	Advanced Naval Flight Officer (NFO)/Air Force Navigator T-39N Instructor Under Training Curriculum

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CNATRAINST Description

1542.124 Advanced Military Flight Officer Instructor Pilot
Under Training Curriculum

1542.125 T-45C Digital Total System (TS) Strike Flight Training
Curriculum

1542.126 Intermediate Naval Water Survival Training Program

1542.127 T-45C TS Strike Flight Instructor

1542.128 T-45C Advanced Strike Flight Training

1542.131 Intermediate Student Naval Flight Officer
(NFO)/Navigator (NAV) Training Curriculum

1542.132 Advanced Naval Flight Officer (NFO)/Air Force
Navigator (AF NAV) Core Training Curriculum

1542.134 Intermediate Naval Flight Officer /Air Force Navigator
T-1A Instructor Under Training Curriculum

1542.135 T-45A E-2/C-2 Advanced Flight Training Curriculum

1542.137 Remedial Swim Training Course

1542.139 T-45A Jet Transition Strike Flight Instructor Training
Curriculum

1542.140 Primary Multi-Service Pilot Training System

1542.141 Navy and Marine Corp Aviator Pre-Air Force Pilot
Instructor Training (PREPIT)

1542.146 NASA Mission Specialist Curriculum

1542.147 Advanced Multi-Engine MPTS Curriculum

1542.148 Advanced Air Force Navigator (AF NAV) Strike (STK)
Training Curriculum

1542.149 Advanced Air Force Navigator (AF NAV) Strike Fighter
(S/F) Training Curriculum

1542.150 T-45C Jet Transition Strike Flight Instructor Training
Curriculum

1542.151 Flight Hour/Simulator Hour Allocation Process

1542.152 Intermediate E2/C2 MPTS Flight Training Curriculum

1542.153 Multi-Engine Flight Instructor Transition Curriculum

1542.154 Primary and Intermediate Naval Flight Officer
(NFO)/Air Force Weapons System Officer (AF WSO) T-6A
Instructor Under Training

1542.155 Primary and Intermediate Multi-Service NFO/WSO
Training System T-6A Curriculum

PAT PUB Description

P-201 A/C Engines/Systems

P-202 Fundamentals of Aero

P-203 Air Navigation Student Guide

P-303 Aviation Weather Student Guide Preflight

P-304 Aviation Weather Student Guide Primary

P-305 Instrument Flight Rules Workbook

P-306 Instrument Flight Rules Flight Planning Workbook

P-307 A/C Systems Familiarization Workbook (T-34C)

P-330 FTI - Primary Contact (T-34C)

P-340 FTI - Primary Instruments (T-34C)

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<u>PAT PUB</u>	<u>Description</u>
P-354	FTI - Out of Control Flight (T-34C)
P-357	FTI - Primary Formation (T-34C)
P-359	FTI - Primary Navigation (T-34C)
P-367	FTI - USAF Formation (T-34C)
P-401	Introduction to Helicopter Aerodynamics Workbook
P-402	TH-57 B/C Systems Workbook
P-403	Instrument Navigation Workbook (TH-57)
P-404	Flight Planning Workbook (TH-57)
P-457	FTI - Helicopter Advanced Phase, CAT I
P-458	FTI - Helicopter Advanced Phase, CAT II
P-459	FTI - Helicopter Advanced Phase, CAT III
P-460	Student Radio Instruments Approach and Departure
P-510	Joint Advanced Multi-Engine Flight Training Instruction (TC-12B)
P-522	IFR Workbook I
P-553	Joint Advanced Multi-Engine Flight Training Instruction (T-44A)
P-553A	Advanced Multi-Engine Low Level and Tactical Formation Flight Training Instruction
P-601	Aerodynamics of the T-2C
P-607	Instrument Ground Training (Strike)
P-607A	Instrument Ground Training METRO Supplement
P-624	T-2C A/C Systems (Pilot)
P-650	Intermediate Strike Advanced E2/C2 FTI
P-801	Student Workbook Instrument Navigation
P-802	Instrument Navigation
P-803	Student Safety Guide
P-804	Flight Information Publication (FLIP)
P-806	Student Guide/Voice Communication
P-807	2B47 Student Handbook and Mission Information
P-808	Student Workbook/T-34C NATOPS
P-810	T-34C ANAV
P-811	Student Workbook Visual Navigation
P-812	Student Guide for Visual Navigation (T-1A/T-39) Vol. II
P-814	T-2C Aircraft Systems Course
P-816	CV Procedures
P-817	FTI - Airmanship Seminar
P-819A	Radar Planning and Navigation
P-820	Radar Theory Ground Mapping/Intercept
P-821	FTI - Advanced Naval Flight Officer
P-825	Strike Fighter Intercept Procedures
P-842	Familiarization Primary (T-34C)
P-856	Trainee T-39 Flight Preparation Workbook
P-857	Trainee T-39 NATOPS Workbook
P-858	T-34 Aircraft Systems NFO
P-859	T-34 Instrument Navigation FTI
P-860	FTI - Formation Primary Navigator Training T-34C
P-861	FTI - Trainee T-1 NATOPS Workbook

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<u>PAT PUB</u>	<u>Description</u>
P-862	T-1A Flight Preparation
P-865	Trainee Workbook ADV SNFO/NAV
P-866	Advanced Flight Preparation Guide/Study Guide (T-2C)
P-867	Intermediate Flight Preparation (T-39)
P-868	FTI - Contact, Primary SNFO/NAV (T-6A)
P-869	FTI - Navigation, Primary SNFO/NAV (T-6A)
P-870	FTI - Formation, Intermediate SNFO/NAV (T-6A)
P-871	FTI - Instruments, Intermediate SNFO/NAV (T-6A)
P-905	Aviation Instructors Handbook
P-908	CR - 2/3 Navigation Computer Handbook
P-909	FRR Workbook Primary SNP/SNFO
P-1204	CP-21 Instrument FTI
P-1208	CP-21 Operational Navigation FTI
P-1209	CD-21 Weapons FTI
P-1210	FTI - ACM (T-45A)
P-1211	FTI - CQ (T-45A/C)
P-1212	FTI - FAM (T-45A/C)
P-1213	FTI - FORM (T-45A/C)
P-1214	FTI - GUN (T-45A)
P-1215	FTI - Instrument (T-45A)
P-1216	FTI - OCF (T-45A/C)
P-1217	FTI - ONAV (T-45A)
P-1218	FTI - TACFORM (T-45A)
P-1219	FTI - WEP (T-45A)
P-1229	TIS User's Guide
P-1230	Lecture Guide - ACM (T-45A)
P-1231	Lecture Guide - AERO Workbook (T-45A/C)
P-1233	Lecture Guide - AN (T-45A/C)
P-1234	Lecture Guide - ASI (T-45C)
P-1235	Lecture Guide - BI (T-45C)
P-1238	Lesson Guide - CQ (T-45A)
P-1239	Lecture Guide - ENG (T-45A)
P-1240	Lecture Guide - EMFP (T-45A)
P-1241	Lecture Guide - FAMFP (T-45A)
P-1242	Lecture Guide - FORMFP (T-45A/C)
P-1243	Lecture Guide - GUNFP (T-45A)
P-1244	Lesson Guide - TS INAV (T-45A)
P-1244V	Lesson Guide - ADV/IUT INAV (T-45A)
P-1245	Lesson Guide - IRFP (T-45A/C)
P-1246	Lesson Guide - METRO (T-45A)
P-1248	Lecture Guide - NFAMFP (T-45A)
P-1249	Lecture Guide - NFFP (T-45A)
P-1250	Lecture Guide - OCFFP (T-45A)
P-1251	Lecture Guide - ONFP (T-45A)
P-1251A	Lesson Guide - ONFP (T-45A)
P-1252	Lesson Guide - ONAV (T-45A)
P-1253	Lecture Guide - RIFP (T-45A)
P-1254	Lecture Guide - TACFORM (T-45A)
P-1255	Lecture Guide - WEPFP (T-45A)

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<u>PAT PUB</u>	<u>Description</u>
P-1256	Lecture Guide - CR (T-45A)
P-1258	Lecture Guide - CR (T-45C)
P-1259	Lesson Guide - CO (T-45C)
P-1260	Lecture Guide - EP (T-45C)
P-1261	Lecture Guide - FAMFP (T-45C)
P-1262	Lecture Guide - OCFFP (T-45C)
P-1264	Lecture Guide - BIFP (T-45C)
P-1265	Lecture Guide - RIFP (T-45C)
P-1268	Lecture Guide - NFAMFP (T-45C)
P-1270	Lecture Guide - CQFP (T-45C)
P-1271	Lesson Guide - ONAV (T-45C)
P-1272	Lecture Guide - WEP (T-45C)
P-1273	Lecture Guide - TACFFP (T-45C)
P-1274	Lecture Guide - NFORMFP (T-45C)
P-1276	Lecture Guide - ACMFP (T-45C)
P-1277	Lesson Guide - ASI (T-45C)
P-1278	Lecture Guide - ENG (T-45C)
P-1282	Lesson Guide - INAV (T-45C)
P-1283	Lecture Guide - ACT (T-45A/C)
P-1284	Lesson Guide - GS (T-45A)
P-1285	Lesson Guide - BIFP (T-45C)
P-1286	Lecture Guide - NACES (T-45A/C)
P-1287	Lecture Guide - AERO (T-45A/C)

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APPENDIX CCHECKLISTS FOR CONDUCTING COMPREHENSIVE PHASE
CURRICULUM CONFERENCES FOR FLIGHT CURRICULUM

1. A comprehensive phase curriculum conference differs from a stage conference primarily in that the whole curriculum is reviewed and not just one or two areas. Additionally, minor or major revisions, vice interim changes, are the normal outcome of a phase conference. This phase conference requires a review of five separate areas, instructions, and/or publications:

- a. Appropriate CNATRINST 1542.
- b. Flight Training Instructions (FTIs), Flight Support Lecture Guides (FSLGs), electronic classroom, and Computer Assisted Instruction (CAI).
- c. Aviation Training Forms (ATFs).
- d. Academic Training Instructions (ATIs) and Instructor Guides (IGs).
- e. The Test Management System (TMS), TIS, or TIMS.

2. The phase conference will be held no later than 12 months after the publication date of the CNATRINST 1542 for that phase.

NOTE: During the transition to the new MPTS curriculum format, it is recommended that an initial curriculum conference be held during the first 6 to 8 months (vice the full 12 months) after a new curriculum is published. This "interim" conference has proven a useful tool in easing the difficult process of creating, publishing, and implementing a completely new syllabus.

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3. To assist the CCC with this effort the following checklist should be used (**Figures C.1** and **C.2**):

Figure C.1

MONTHS BEFORE PHASE CONFERENCE	REQUIRED ACTION
4	The CCC announces the date and location of upcoming planning and phase conferences and requests SM/CMS conduct review of their publications. Affected FRS units and the Naval Safety Center will be invited to the planning conference.
3	The CCC collects TCRs from the SM/CMS to present at the phase conference. Proposed TCRs to be reviewed will be distributed to all affected units.
2	The planning conference with FRS representatives, the Naval Safety Center, and involved CNATRA personnel will be held.
1	CNATRA PTO and CCC determine final agenda items for phase conference. Agenda items are circulated to all units using curriculum for their review prior to the conference.
0	CCMM hosts Curriculum Review Conference while the CCC and PTO chair the overall conference. Each SM/CM is expected to chair his or her specific portion.

Figure C.2

MONTHS AFTER PHASE CONFERENCE	REQUIRED ACTION
1	PTO provides minutes from conference to CCC who then tasks SM/CMS with specific conference approved revisions.
2-3	SM/CMS and CCC work revisions.
4	CCC provides a smooth copy of the instructions and publications to CNATRA, utilizing Microsoft Word 6.0 (or newer). CNATRA approves instructions and publications and submits CNATRINST 1542 to CNO for approval if required.
6	CNATRA publishes new instructions and publications.

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APPENDIX DCNATRA STAGE/COURSE MANAGERS GUIDE

1. Objective. The CNATRA Stage Manager (SM) guide will provide a reference for the duties of the selected CNATRA SM. It delineates the responsibilities while providing general guidance to what an SM does and how those duties shall be performed. This manual applies to all CNATRA SMs. CNATRA SMs are also referred to as subject matter experts (SMEs) and Course Managers (CMs).

2. References

OPNAVINST	1500.51B	TOTAL FORCE TRAINING STRATEGY
NAVEDTRA	130	TASK BASED CURRICULUM DEVELOPMENT MANUAL
NAVEDTRA	135B	NAVY SCHOOL MANAGEMENT MANUAL
CNATRINST	1500.4F	SNA TRAINING AND ADMIN MANUAL
CNATRINST	1550.6E	TRAINING IMPROVEMENT PROGRAM
CNATRINST	3710.13E	FLIGHT INSTRUCTOR STANDARDIZATION AND TRAINING PROGRAM
PAT PUBs		ALL ASSOCIATED MASTER CURRICULUM GUIDES (MCGs)
CNATRINST	1542."XXX"	ALL ASSOCIATED CURRICULUM INSTRUCTIONS

3. Stage/Course Manager Designation

a. Letter of Nomination. The TRAWING will submit a letter of nomination for curriculum SM/CM to the Chief of Naval Air Training (CNATRA) as required per this instruction, paragraph 207.

Nomination Requirements. The SM/CM position requires that the nominee be proficient in the technical subject matter of the stage or course and be a qualified instructor. Additionally, the individual must be able to serve in this position for a minimum of one year.

b. Letter of Designation. Once nominated, the SM/CM will be so designated by CNATRA with a letter of endorsement providing references and the appropriate chain of command. Ensure these letters are maintained in the instructor record and by the corresponding PTO for inspection and reference purposes.

c. Training. At a minimum, an SM/CM should complete in-service, on-site training in course development and revision, course surveillance, and formal course review if available locally.

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d. Relief. One month prior to an SM/CM being relieved, a letter of nomination for replacement shall be sent to CNATRA for review and designation.

4. Stage/Course Manager Responsibilities

a. General. The SM/CM is a vital link in maintaining quality training which equates to a high standard of fleet readiness. The overall job is to ensure training concurs with fleet feasibility and that instruction simulates fleet experience. By remaining attached to their units, SM/CMs are able to witness the credibility and deficiencies of instruction in the actual flying environment while occupying a position to encourage and promote improvements.

b. Description. The SM/CMs are divided into flight support or academic stage/course managers, both of which are responsible for the administrative details of their stage or course. The flight support SM is the SME for his/her stage. The academic CM works closely with the assigned stage instructors and the TRAWING training officer while reviewing the assigned course of instruction.

c. Responsibilities. While remaining attached to their assigned units, the SM/CM will:

(1) Assist in the development and/or revision of curriculum by working directly with the Course Curriculum Coordinator (CCC) and other instructors within his or her stage or course as well as encouraging Training Change Recommendations (TCRs) via the Training Improvement Program (TIP) (see Chapter 3).

(2) Review, revise, and submit FTIs with emphasis on content, correctness, and completeness.

(3) Review, revise, and submit Instructor Guides (IG) with emphasis on content, correctness, and completeness.

(4) Ensure all IGs are updated and personalized by each instructor of the stage/course and are signed by the instructor as well as the SM/CM.

(5) Review and update as required, all test question banks for his or her stage/course as changes in training publications mandate. Test questions shall be updated or reviewed annually at a minimum.

(6) Ensure there are three versions of each test and that an examination cover sheet is signed by the SM/CM, indicating the date the examination bank was reviewed and updated. In units

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using TIMS, the SM/CM will ensure a **minimum** of 3 questions per learning objective or 100 total questions, whichever is greater.

(7) Ensure all changes or updates to the examinations and the master question banks are reviewed and signed off by the proper authorities; i.e., Education Specialist and/or TRAWING Standardization Officer.

(8) Coordinate any and all projects relating to their stage/course.

(9) Review all publications prior to a phase conference and attend phase review conferences to provide stage/course oversight while chairing the specific portion for his or her stage/course.

(10) Identify publications as reprints, changes, or revisions.

(11) Enhance inter-TRAWING standardization by visiting other units and exchanging new ideas. These visits shall be as required with a minimum of four per year.

(12) Review, revise, and submit all applicable Aviation/Instructor Training Forms (ATFs, ITFs) with emphasis on content, correctness, and completeness.

(13) Maintain close communications with the appropriate CCC and PTO.

(14) Comply with this instruction, paragraph 207.

d. Stage/Course Manager: Subject Matter Expert. CNATRA SM/CM duties include development, revision, or evaluation of their stage/course. Therefore, the SM/CM is the SME responsible for developing, writing, assembling, and assuring the quality of training materials. SM/CM duties are collateral to the flight instructor primary billet.

5. Overview And References

a. General. The sole purpose of this Appendix is to provide a specific reference section for the SM/CMs in the performance of their duties in course revision/development, test management, IG review/development, FTI review and development, training improvement, PAT Pub, CAI, and instructional media materials management.

b. Course Revision and Development. It is important that each SM/CM recognizes the significance of his/her part of the course curriculum development and revision process as well as

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have a full comprehension that it is a continual process within the stage/course. This management function is divided into six phases: planning, analyzing, designing, developing, implementing, and evaluating. A complete understanding of this process ensures an easier review, revision, and/or development of the course for both the SM/CM and course instructors. **Reference: NAVEDTRA 135B Chapter 4.0, Section 2.0.**

c. Test and Question Review and Management. The SM/CM is responsible for creating, reviewing, and maintaining his/her examination question banks. Under the TMS, there should be three versions of each examination for random administration. Question banks should be reviewed as required for accuracy and relevance, annually at a minimum. The SM/CM is responsible for signing and dating the approval sheets of each examination which ensures that each examination is reviewed for accuracy and correctness in format and content. TRAWINGS using TIMS will require a minimum of three questions per learning objective or 100 different questions total, whichever is greater. These test questions will be reviewed and updated for accuracy, bi-annually at a minimum. **References: CNATRAINST 1550.6E Chapter 8; NAVEDTRA 135B Chapter 5 Section 2.0 and Appendix B.**

d. IG Review and Management. As tests and questions are updated periodically, the SM/CM must also review lecture guides relevant to his/her stage. Ensure that all IGs are reviewed, updated, and personalized by each instructor within the stage/course: Each instructor is required to have a personalized lecture guide for each course he/she may instruct by CNATRA direction. When an IG is reviewed, revised, or updated, the SM is responsible for signing the approval cover sheet of the guide, guaranteeing the correct changes have been made in accordance with the revisions of FTIs and examinations or questions. The IGs are then submitted to the TRAWING standardization officer who also reviews the IG for accuracy and correctness before signing his/her approval. **References: CNATRAINST 1550.6E Chapter 7 and Appendix J; NAVEDTRA 135B Appendix H Part 4.**

e. FTI Review and Management. One of the primary responsibilities of the SM is to review, revise, and submit FTIs or applicable chapters to comprehensive FTIs. The SM must ensure that each FTI, or appropriate chapter, has proper content, correct form, and complete objective goals. The FTI is a support resource that elaborates on concepts referenced in NATOPS and the MCG. The FTI(s) are comprehensive and should contain all information needed to complete the applicable phase of training. **Reference: CNATRAINST 1550.6E Chapter 6 and Appendix G.**

f. The Training Improvement Program (TIP). In the TIP process, the SM/CM is the action officer coordinating between the

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CCC and units affected by a Training Change Recommendation (TCR). If a TCR is received from an FRS or other non-CNATRA wing, the PTO will route the TCR through the affected SM/CM. The SM/CM is also responsible for the representation of the TCR at phase conference reviews and/or its implementation, depending on the currency of the TCR. **Reference: CNATRAINST 1550.6E Chapter 3 and Appendix C.**

g. PAT Publications. CNATRA issues a quarterly letter requiring SM/CMS to identify publications as reprints, changes, or revisions. It also ensures all user activities have input into the revisions and/or reprints before ordering publication stock. A listing of PAT Pubs specific to each stage is found in the appendix of the reference instruction. **Reference: CNATRAINST 1550.6E Chapter 9 and Appendix A.**

h. Instructional Media Materials. The SM/CM must also review all audiovisual materials and CAI used in the respective course for accuracy and relevance. It is important that these materials are documented appropriately for development standardization. This includes transparencies, training aids, graphic arts material, photo services, and video productions, CAI, and procurement. All facets of instructions--FTIs, IGs, and examinations as well as visual information--should be updated as course revision and/or development take place. This ensures all phases of instruction are current and credible not only within the TRAWING, but also within the fleet. **Reference: NAVEDTRA 135B Chapter 4.0 Section 3.0 and Appendix H.**

i. Inter-TRAWING Standardization. Enhance inter-TRAWING standardization by periodically visiting other units to gather and exchange ideas, to ensure consistency of instruction, and to generate new TCRs as necessary. SMS shall fly with other units, flying the same aircraft or using the same curriculum, on a quarterly or semi-annual basis to facilitate the exchange. SMS shall visit each subject unit twice per year, at a minimum. **Reference: CNATRAINST 1550.6E Paragraph 207.**

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APPENDIX E

NAVY STANDARD CNATRAINST 1542 FORMAT SAMPLE

1. The CNATRAINST 1542 contains a summary of all the items necessary for each phase of flight training and will be kept in the standardization library.

NOTE: The following format applies to all **non-MPTS 1542s** published after **CNATRAINST 1550.6E** is signed and published.

a. The CNATRAINST 1542 format follows standard CNATRA instruction format from SECNAVINST 5215.1C. The font and size to use is Courier New 12. Use Microsoft 6.0 (or newer) software. The specific breakdown is as follows:

- (1) Cover Page
- (2) Letter of Promulgation
- (3) List of Effective Pages
- (4) Table of Contents (See example, **Figure E.1**)

NOTE: For purposes of page spacing, some figures are in Courier New 10. Actual 1542s shall use Courier New 12.

Figure E.1

CNATRAINST 1542.XXX
(DATE)

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(5) Summary of Changes

(6) Course Data (see example, **Figure E.2**)

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Figure E.2CNATRAINST 1542.XXX
(DATE)COURSE DATA

1.	<u>Course Title.</u>	-----	Text
2.	<u>Course ID Number.</u>	-----	Text
3.	<u>Location(s)/CDP Code.</u>	-----	Text
4.	<u>Course Status.</u>	-----	Text
5.	<u>Course Mission.</u>	-----	Text
6.	<u>Prerequisite Training.</u>	-----	Text
7.	<u>Personnel Eligibility.</u>	-----	Text
8.	<u>Physical Requirements.</u>	-----	Text
9.	<u>Security Clearance Requirements.</u>	-----	Text
10.	<u>NOBC/NEC Earned.</u>	-----	Text
11.	<u>Obligated Service.</u>	-----	Text
12.	<u>Follow-on Training.</u>	-----	Text
13.	<u>Course Length.</u>	-----	Text
14.	<u>Class Capacity.</u>	-----	Text
15.	<u>Instructor Requirements.</u>	-----	Text
16.	<u>Course Curriculum Model Management.</u>	-----	Text
17.	<u>Quota Management Authority.</u>	-----	Text
18.	<u>Quota Control.</u>	-----	Text
19.	<u>Primary Instructional Methods.</u>	-----	Text
20.	<u>Preceding Curriculum Data.</u>	-----	Text
21.	<u>Student Performance Measurement.</u>	-----	Text
22.	<u>Application of Standards.</u>	-----	Text

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(7) Curriculum Guidelines (see example, **Figure E.3**)

Figure E.3

<u>CURRICULUM GUIDELINES</u>	
1. <u>Sequencing</u> . -----	Text
2. <u>Briefing Time</u> . -----	Text
3. <u>Schedule Limitations</u> . -----	Text
4. <u>Flight Standardization</u> . -----	Text
5. <u>Solo Restrictions</u> . -----	Text
6. <u>Administration</u> . -----	Text
a. Instructor/Aviation Training Forms (ITFs/ATFs). ---	Text
b. Warm-up Criteria. -----	Text
c. Training Documentation. -----	Text
d. Aviation Training Jacket Reviews. -----	Text
e. Designations. -----	Text
7. <u>Waiving Events</u> . -----	Text
8. <u>Incomplete Flights</u> . -----	Text
9. <u>Weather/Safety Pilots</u> . -----	Text
10. <u>Emergency Procedures</u> . -----	Text
11. <u>Weather Minimums</u> . -----	Text
12. <u>Flight/Simulator Interchangeability</u> . -----	Text
13. <u>Definitions</u> (See page 4-2, paragraph 404). -----	Text
14. <u>Performance Measurement</u> . -----	Text
15. <u>Flight Support</u> . -----	Text
16. <u>Drop on Request (DOR) Policy</u> . -----	Text
17. <u>Training Time Out</u> . -----	Text

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(8) Section I - Training Summary

NOTE: For purposes of page spacing, all figures after E-3 are in Courier New 10. Actual 1542s shall use Courier New 12, as listed in Appendix E.

(a) Training Hour Summary (see example, **Figure E.4**)

Figure E.4

SECTION I TRAINING SUMMARY						
1. <u>Training Hour Summary</u>						
<u>FLIGHT TRAINING</u>						
STAGE	SYMBOL	TOTAL FLIGHTS	DUAL FLIGHTS	DUAL HOURS	SOLO HOURS	TOTAL HOURS
FAMILIARIZATION	FAM	XX	X	X.X	XX.X	XX.X
TOTALS		XX	X	X.X	XX.X	XX.X
<u>SIMULATOR (OFT) TRAINING</u>						
STAGE	SYMBOL	PERIODS			HOURS	
PROCEDURES TRAINER	PT	X			X.X	
BASIC INSTRUMENTS	BI-XS	X			X.X	
TOTALS		X			X.X	
<u>FLIGHT SUPPORT</u>						
SUBJECT	SYMBOL		HOURS			
COURSE RULES	CR		XX.X			
TOTALS		XX.X			XX.X	
<u>ACADEMICS</u>						
SUBJECT	SYMBOL	EXAM/ LECTURE HOURS		TOTAL HOURS		
AIRCRAFT SYSTEMS	SYS	XX.X		XX.X		
TOTALS		XX.X		XX.X		

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(b) Training Allocation by Module (see example, **Figure E.5**)

Figure E.5

2. Training Allocation by Module

MODULE	FLIGHT		SIMULATORS		FLIGHT	ACADEMIC	CURRICULUM	TRAINING
	HOURS	EVENTS	HOURS	EVENTS	SUPPORT			
					HOURS	HOURS	DAY	DAYS
1	X.X	X	X.X	X	X.X	X.X	X.X	X.X
TOTALS	X.X	X	X.X	X	X.X	X.X	X.X	X.X

(c) Training Time Analysis (See example, **Figure E.6**)

Figure E.6

3. Training Time Analysis. The following table shows the additional training contact time involved for each programmed academic curriculum hour, flight, or simulator event. The figures represent the minimum average time a student is involved in the direct learning process, either in preparation for, or utilizing training equipment.

ADDITIONAL TRAINING TIME PER PROGRAM CURRICULUM HOUR (Ch) OR EVENT (e)

Training Area	Preparation and Study	Brief and Debrief	Preflight Taxi	Total (k)
Flight	X.X	X.X	X.X	X.X*
PT	X.X	X.X		X.X*
Simulator				
FT	X.X	X.X		X.X*
Academic and Flight Support	X.X			X.X**

*Training time per event.

**Training time per curriculum hour.

***Self preparation and study time for academic and flight support and viewing audiovisual training aids

a. Administrative Time, transit time from activity to activity, meals, scheduling delays, and military watchstanding duties are not considered. The student training week is based on 6 hours of training per day, 5 days a week (30 hours). Computation of student training is based on the following formula:

Ch = Curriculum hours
 Ta = Training Days Required (Academics)

$$Ch = \frac{Ta}{6}$$

The **Ta** calculated is the total contact time required to complete this phase of training.

Figure E.6 (Continued)

b. Time to Train (Tt). The following factors are considered in computing Time to Train: Weather, unsatisfactory events, associated delays, medical groundings, and flight or simulator events canceled due to lack of instructor or equipment availability. The combination of these factors constitutes additional time required to train. IAW CNATRAINST 1550.6E, training days are based on one flight per day, one or two simulators per day (based on applicable CNATRAINST 1542), or six hours of academic instruction/flight support per day (Reference CNATRAINST 1550.6E, Chapter 4).

c. Advanced TS Phase Training Time

Training Area		Training Days	Training Weeks
Flight:	XX.X hours XX.X events	XX.X	XX.X
Simulator: FIT	XX.X hours X.X events	X.X	X.X
PT	XX.X hours X.X events	X.X	X.X
Academic:*	XX.X hours	X.X	X.X
Flight Support:*	XX.X hours	X.X	X.X
Subtotal:		XX.X	XX.X
Administrative:	X.X	X.X	X.X
Curriculum Time (Tc):		XX.X	XX.X
Total Training Days/Weeks (uncorrected):		XX.X	XX.X

Time to Train: Total of training days, corrected for weather and student overhead. Correction factor is determined IAW CNATRAINST 1550.6E, Chapter 4.

* Academic and flight support reflect actual course requirements. Self-study hours are not considered.

(d) Module Summary (See example, **Figure E.7**)

Figure E.7

4. Module Summary

MODULE	ACADEMICS	FLIGHT SUPPORT	SIMULATOR	FLIGHTS
1	ASI, ENG, AERO	BT, PF, EP,	CPT 1-6	
2		FAM-0, Etceteras		FAM 1-14

Any applicable notes.

(e) Outline of Training (See example, **Figure E.8**)

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Figure E.85. Outline of Training

PERIOD REQUIREMENTS	SYMBOL	DESCRIPTION	DURATION
MOD 1-1	ADM 1	Training Wing Check-In	X.X
MOD 2-2 Lecture FI	CRX	Course Rules Examination	X.X
MOD 3-4 T-45A DUAL	FORM 4X	Formation 4X	X.X

(9) Section II - Appendix A

(a) Terminal Objectives (See example, **Figure E.9**)**Figure E.9**TERMINAL OBJECTIVESADVANCED E-2/C-2 FLIGHT

A. Aircraft Familiarization. At the completion of this stage, the student will be able to control the aircraft utilizing normal and emergency systems in rudimentary flight maneuvers of the T-45A aircraft and during field carrier landing practice (FCLP) type landings.

B. Basic Instruments. At the completion of this stage, the student will operate the aircraft without visual reference utilizing the characteristics, theory, and operations of flight instrumentation and their applicability to aircraft control.

C. Radio Instruments. At the completion of this stage, the student will operate the T-45A aircraft in the high and low Instrument Flight Rules (IFR) environment utilizing navigation instruments and communication equipment.

(b) Enabling Objectives (See example, **Figure E.10**)

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Figure E.10ENABLING OBJECTIVES

The enabling objectives (EOs) listed below are grouped into nine areas which, when completed, will satisfy the corresponding terminal learning objectives. The EOs which the student must complete are referenced by listing the module event and stage during which the student's performance is tested. All EOs listed in the outline of training must have been satisfactorily met. Given one T-45A aircraft, a thorough brief, approved in-flight checklists, and publications, the student will be able to:

1. Dual event: Flight with a qualified flight instructor on board providing instruction, assistance, or supervision.

2. Solo event: Flight without a qualified flight instructor on board.

OPERATIONS	CONDITIONS	STANDARDS	EO MODULE
A. <u>Aircraft Familiarization</u>			
A.1 Determine maintenance status of aircraft from appropriate maintenance forms and determine aircraft for flight	Preflight with no assistance from instructor dual or solo	In accordance with Naval Air Training and Operation Procedures Standardization (NATOPS).	1-88 FAM
A.2 Taxi and perform ground operations	Dual or solo with ground crew assistance given, prescribed route with no assistance from instructor	Clear of obstructions in compliance with NATOPS and standard operationg procedures (SOP).	1-88 FAM
A.3 Perform takeoff and transition to climb	Dual or solo visual meteorologic conditions (VMC) with no assistance from instructor	Maintain aircraft alignment within +15° with positive rate of climb in accordance with flight training instructions (FTI) and NATOPS.	1-88 FAM

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(c) Master Materials List (See example, **Figure E.11**)

1. Individually Issued Material
2. ATFs/ITFs
3. Support Materials
4. Audio-Visual/Training Aids/CAI

Figure E.11

<u>MASTER MATERIALS LIST</u>				
1. Individually Issued Materials				
TITLE	IDENTIFICATION	DATE	QTY PER STUDENT	COST EACH
a. T-45A Pocket Checklist	NAVAIR A1-T45AB-NFM-500		1	\$2.65
b. T-45A NATOPS Flight Manual	NAVAIR A1-T45AB-NFM-000		1	\$17.50
2. Aviation Training Forms				
a. ATF/Cockpit Orientation, CO-2S	CNATRA 1540/100	3-00		
b. ATF Emergency Procedures, EP-1S	CNATRA 1540/101	3-00		

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APPENDIX FMPTS/MNTS CNATRAINST 1542 FORMAT SAMPLE (STUDENT SYLLABUS)

1. The CNATRAINST 1542 contains a summary of all the items necessary for each phase of flight training and will be maintained in the standardization library. All chapters listed in this appendix will be present in each 1542. If a particular stage is not used, the first page of the chapter will include the following statement: **"This chapter does not apply to the (applicable) phase of training."** The format outlined in this appendix is to be used in the conversion of all Navy Standard SNA/SNFO curriculumms into the new MPTS format.

a. The CNATRAINST 1542 format follows standard CNATRA instruction format from SECNAVINST 5215.1C. The font and size to use is Courier New 12. Use Microsoft 6.0 (or newer) software. The specific breakdown is as follows:

- (1) Cover Page
- (2) Letter of Promulgation
- (3) List of Effective Pages
- (4) Table of Contents (see example, **Figure F.1**)

NOTE: For purposes of page spacing, all figures are in Courier New 10. Actual 1542s shall use Courier New 12.

Figure F.1

CNATRAINST 1542.XXX (DATE)	<u>TABLE OF CONTENTS</u>	<u>PAGE</u>
	SUMMARY OF CHANGES	ii
	COURSE DATA	iii
	GLOSSARY	iv
CHAPTER I. <u>GENERAL INSTRUCTIONS</u>		
	GENERAL INSTRUCTIONS	I-1
	SYLLABUS MANAGEMENT	I-1
	TRAINING MANAGEMENT (INCLUDING FLOWCHARTS)	I-3
	UNSATISFACTORY PERFORMANCE	I-10
CHAPTER II. <u>GROUND TRAINING</u>		
	GROUND TRAINING	II-1
	INDOCTRINATION (G01)	II-1
	IFR-PHASE I (G02)	II-3
CHAPTER III. <u>CONTACT TRAINING</u>		
	CONTACT STAGE MANEUVER ITEM FILE MATRIX	III-1
	COCKPIT PROCEDURES (C21)	III-1
	CONTACT (C41)	III-2
i		

- (4) Summary of Changes
- (5) Course Data (see example,

Figure F.2)

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Figure F.2CNATRAINST 1542.XXX
(DATE)COURSE DATA

1. Course Title. ----- Text
2. Course ID Number (one for each curriculum length). -- Text
3. Location(s). ----- Text
4. Course Status. ----- Text
5. Course Mission. ----- Text
6. Prerequisite Training. ----- Text
7. Security Clearance Requirements. ----- Text
8. Follow-on Training. ----- Text
9. Course Length. ----- Text
10. Class Capacity. ----- Text
11. Instructor Requirements. ----- Text
12. Course Curriculum Model Manager. ----- Text
13. Quota Management Authority. ----- Text
14. Quota Control. ----- Text
15. Course Training Subjects. ----- Text
(see **Figure F.3**)
16. Training Time Analysis. ----- Text
(see **Figure F.4**)
17. Physical Requirements. ----- Text
18. Obligated Service. ----- Text
19. Primary Instructional Methods. ----- Text
20. Preceding Curriculum Data. ----- Text
21. Student Performance Measurement/Application
of Standards. ----- Text

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Figure F.315. Course Training Subjectsa. Ground Training

ADMINISTRATION		
Stage	Symbol	Hours
Check-In and Check-Out	G0101	6.0
Totals		6.0

GROUND TRAINING		
Stage	Symbol	Hours
Bailout Trainer	G0102	2.0
Preflight Demo	G0103	3.0
Emergency Procedures (CAI)	G0104	7.0
Emergency Procedures Exam	G0105	1.0
Aviation Safety Program (Lecture)	G0106	1.0
GLOC/GTIP (Lecture)	G0107	1.0
Course Rules (Lecture)	G0108	5.0
Course Rules Exam	G0109	1.0
Wheels Watch	G0110	2.0
Curriculum Brief	G0112	2.0
T-34C Aircraft Systems (Lecture/Exam)	G1001	24.5
Crew Resource Management (Lecture)	G1004	3.0
Totals		52.5

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Figure F.3 (continued)b. Flight Support

FLIGHT SUPPORT		
Stage	Symbol	Hours
Cockpit Procedures	C2000	6.5
Day Contact Flight Procedures (CAI/Lecture)	C0101	5.7
Night Contact Flight Procedures (CAI)	C0102	0.5
Safe-for-Solo (Lecture)	C0201	1.0
Safe-for-Solo Exam	C0202	1.0
Flight Indoctrination (FAM-0)	C1001	3.0
Basic Instrument Flight Procedures (CAI)	I0101	4.0
Meteorology Flight Planning (CAI/Lecture/Exam)	I0201	12.5
IFR Academic Training (CAI/Lecture)	I0202	43.5
Radio Instrument Flight Procedures I (CAI/Lecture)	I0301	11.0
GPS Procedures (CAI)	I0302	1.0
GPS Flight Planning Problems (Learning Center)	I0303	1.0
Radio Instrument Flight Procedures II (CAI/Lecture)	I0304	3.0
Navigation Flight Procedures (CAI/Lecture)	N0101	6.0
Navigation Exam	N0102	1.0
Formation Flight Procedures (Lecture)	F0101	4.0
Formation Flight Procedures Exam	F0102	1.0
Totals		105.7

Figure F.4

ADDITIONAL TRAINING TIME PER CURRICULUM HOUR/EVENT				
Training Area	Brief/Preflight/ Taxi	Prep Study	Taxi/ Debrief	Total
Flight	1.7	2.0	1.0	4.7
Simulator/CPT	0.5	1.0	0.5	2.5
Academic and Flight Support	0.25		0.25	0.5

(6) Abbreviations (if desired by PTO)

(7) Glossary

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(8) Chapter I (General Instructions) order:

(a) Syllabus Management

(b) Training Management

1. Course Flow Chart (see **Figure F.5**)

a. When building a flow chart, use the following symbols: ground events are circles and simulator/CPT events are rectangles.

(c) Unsatisfactory Performance

(d) Training Review Board

(e) Instructor Continuity

(f) Break in Training Warm-Up Sorties (SXX86)

(g) Additional Flights/Simulators (SXX87)

(h) Student Monitoring Status (SMS)

(i) Ground Training and Briefing Requirements

(j) Mission Grading Procedures and Evaluation

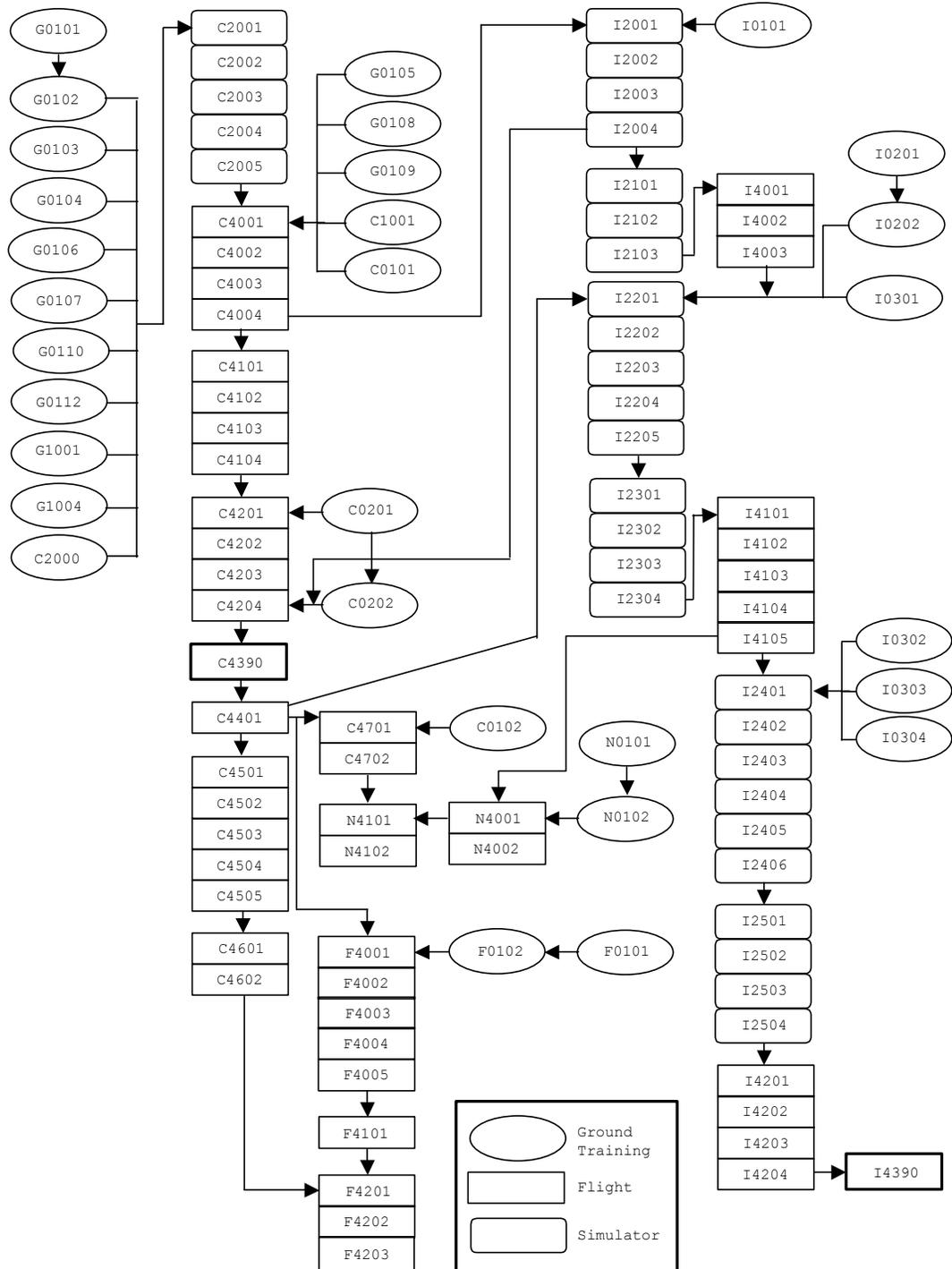
Policies

(k) Special Instructions and Restrictions

(l) Progress Check Training Review Process Figure

Figure F-5

COURSE FLOW



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(9) Chapter II - Ground Training

(a) Each phase will include a comprehensive Maneuver Item File (MIF) chart on the first page(s) of each chapter (see **Figure F.6**). Each block will also include a block specific MIF chart. Charts should include a number reference for CTS, allowing for quick reference to the individual CTS in Chapter VIII (see **Figures F.6, F.7 and F.8**).

(b) Each ground training block will be organized in the following order: Events, Syllabus Notes, and Discuss Items.

(c) Each aircraft or simulator block described in the chapter will be organized in the following order: Prerequisites, Syllabus Notes, Special Syllabus Requirements (SSR), Discuss Items, and a Block MIF table. (see **Figure F.7**).

Figure F.6

Contact Stage Maneuver Item File (MIF)										
CTS Ref	MANEUVER	C2106	C0101	C4105	C4206	C3201	C4390	C4401	C4503	C4601
1	General Knowledge/Procedures	4+	4+	4+	4+	4+	4+	4	4+	4
2	Emergency Procedures	2+		2+	3+	3+	3+	3	3+	3
3	Headwork/Situational Awareness	2+		3+	4+	4+	4+	4	4+	4
4	Basic Airwork	3+		3+	4+	3+	4+	4	4+	4
5	Mission Planning/Briefing/Debriefing	3+		3+	3+	3+	3+		3+	
6	Ground Operations	3+		3+	4+	4+	4		4+	
9	Takeoff	3+		3+	4+	4+	4+		4+	
10	Aborted Takeoff	2		3+	4+	4+	4		4+	
11	Departure			3+	4+	4+	4		4+	
12	Inflight Planning			2+	2+	2	2+			
15	Level Speed Change			4+	4+	4	4			
16	Climbs/Descents			4+	4+	4	4			
17	Turn Pattern			4+	4+	4	4+			
18	Slow Flight			4+	4+	4	4+			
19	Approach to Stalls			4+	4+	4	4+			
20	SSE at Altitude			2	3+		3			
21	SSE Waveoff at Altitude			2	3+		3			
22	Dynamic Engine Cut	2		2	4+	4	4+			
23	Power On Ditch	2+		3+	4+	3	4			



Simulator Event



Check Event

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Figure F.7

CTS Ref	MANEUVER	C4105
1	General Knowledge/Procedures	4+
2	Emergency Procedures	2+
3	Headwork/Situational Awareness	3+
4	Basic Airwork	3+
5	Mission Planning/Briefing/Debriefing	3+
6	Ground Operations	3+
9	Takeoff	3+
10	Aborted Takeoff	3+
11	Departure	3+
12	Inflight Planning	2+
15	Level Speed Change	4+
16	Climbs/Descents	4+
17	Turn Pattern	4+
18	Slow Flight	4+
19	Approach to Stalls	4+
20	SSE at Altitude	2
21	SSE Waveoff at Altitude	2
22	Dynamic Engine Cut	2
23	Power On Ditch	3+
24	SSE Ditch	3+
25	Power Off Ditch	3
31	En route Descent	3+

NOTE: CTS Ref is a number that corresponds to the particular Behavior Statement and Standard in the CTS chapter.

(10) Chapter III - Contact Training

(11) Chapter IV - Instrument Training

(12) Chapter V - Navigation Training

(13) Chapter VI - Formation Training

(14) Chapter VII - Tactical Training

(15) Chapter VIII - Course Training Standards (CTS) order

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- (a) Purpose
- (b) Student Duties and Responsibility
- (c) General Proficiency Standards
- (d) Execution
- (e) Job Tasks (see **Figure F.9**)
- (f) Graded Items
- (g) Course Training Standards (in the following order)
 - 1. General Knowledge/Procedures
 - 2. Emergency Procedures
 - 3. Headwork/Situational Awareness
 - 4. Basic Airwork
 - 5. All other applicable CTS.

NOTE: CTS should be numbered for easy reference.

(16) Chapter IX - Master Materials List, Aviation Forms.

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Figure F.8

NOTE: The first four items listed below are required for all graded events and 1542s. The specific standards may be modified, but standards should be kept as close as possible to the example below.

BEHAVIOR STATEMENT	STANDARD
1. General Knowledge/Procedures	
<ul style="list-style-type: none"> Maintain working knowledge of all appropriate flight training instructions and directives. 	<ul style="list-style-type: none"> Recites, discusses, and/or performs all applicable items essential to the operation of the airplane.
2. Emergency Procedures	
<ul style="list-style-type: none"> Maintain in-depth knowledge of NATOPS and appropriate directives. 	<ul style="list-style-type: none"> Correctly analyzes situation. Performs/recites critical action steps from memory. Uses checklist when appropriate and conditions permit. Completes procedures in a timely manner.
3. Headwork/Situational Awareness	
<ul style="list-style-type: none"> Comply with the FTI and NATOPS while maintaining situational awareness sufficient for flight safety. 	<ul style="list-style-type: none"> Understands instructions, demonstrations, and explanations. Foresees and avoids possible difficulties. Remains alert and spatially oriented.
4. Basic Airwork	
<ul style="list-style-type: none"> Establish and maintain desired attitude, altitude, airspeed, and heading during flight. 	<ul style="list-style-type: none"> Aircraft control is smooth and positive. Maintains aircraft within ± 100 feet of assigned/required altitude. ± 10 knots of assigned/briefed airspeed. $\pm 5^\circ$ of assigned heading. Appropriately uses Power, Attitude, and Trim. Level off within ± 100 feet of altitude. Arcs ± 1 NM. ± 10 seconds of correct time as applicable.

Figure F.9

BEHAVIOR STATEMENT	STANDARD
CTS Reference Number.	Graded Item
A brief description of the behavior, required action, and/or conditions.	The specific standards for the action. May be read as "The student aviator..."

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APPENDIX GMPTS CNATRINST 1542 FORMAT SAMPLE (INSTRUCTOR SYLLABUS)

1. The CNATRINST 1542 instructor syllabus contains a summary of all the items necessary for IUT and NATOPS qualifications and will be maintained in the standardization library. The format outlined in this appendix is to be used in the conversion of all Navy Standard IUT curriculums into the new MPTS format. All chapters will be present in each 1542. If a particular stage is not used, the first page of the chapter will include the following statement: **"This chapter does not apply to the (applicable) phase of training."**

2. The format for the IUT syllabus will be identical to the student format (see Appendix F), except in the chapter order and titles specifically listed below.

a. The CNATRINST 1542 format follows standard CNATRA instruction format from SECNAVINST 5215.1C. The font and size to use is Courier New 12. Use Microsoft 6.0 (or newer) software. The specific breakdown is as follows:

- (1) Chapter I - General Instructions
- (2) Chapter II - Ground Training
- (3) Chapter III - NATOPS Training

(a) This chapter will use standard flight code designations: C - Contact, I - Instrument, N - Navigation, F - Formation, and T - Tactical. However, the events in this chapter are specific to the NATOPS qualification. These flights will be graded IAW NATOPS grading criteria (i.e. 1 = demonstrate, 2 = UQ, 3 = CQ, 4 = Q, and 5 = Not applicable).

- (4) Chapter IV - Contact Training
- (5) Chapter V - Instrument Training
- (6) Chapter VI - Navigation Training
- (7) Chapter VII - Formation Training
- (8) Chapter VIII - Tactical Training
- (9) Chapter IX - Course Training Standards (CTS)

NOTE: CTS should be numbered for easy reference.

- (10) Chapter X - Master Materials List

CNATRAINST 1550.6E

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APPENDIX I

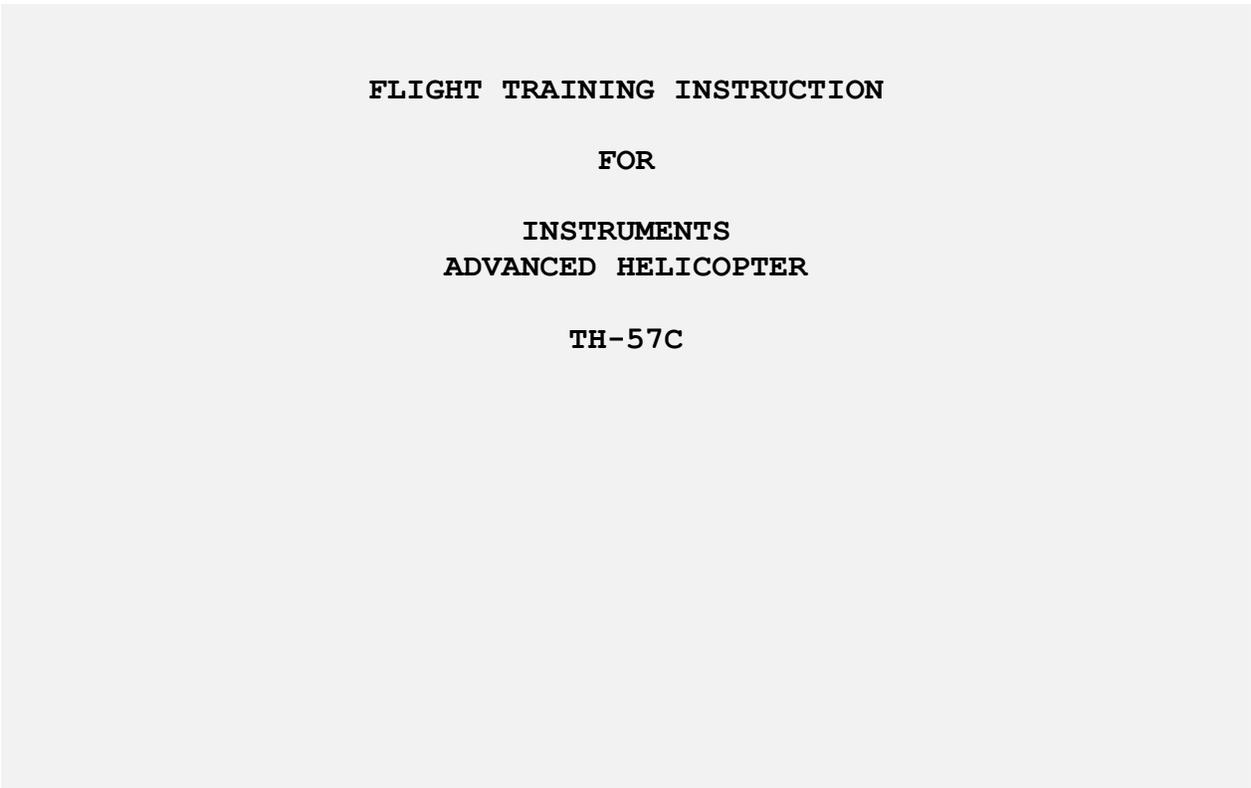
FLIGHT TRAINING INSTRUCTION (FTI) FORMAT SAMPLE

1. FTIs should be formatted in such a way that they enhance student learning. See Chapter 6 for further explanation.

a. The sample shown in this appendix demonstrates a departure from standard military documents. Notice the ease in reading and the professional appearance. This format includes:

- (1) PAT Pub Cover
- (2) Letter of Promulgation
- (3) Title Page (see **Figure I.1**)

Figure I.1



FLIGHT TRAINING INSTRUCTION

FOR

INSTRUMENTS

ADVANCED HELICOPTER

TH-57C

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(4) List of Effective Pages

(5) Interim Change Summary Sheet

(6) Introduction Page (Introduction, Scope, and Change Recommendation paragraphs required)

(7) Table of Contents (see **Figure I.2**)

(a) The table of contents and the FTI may include any chapters deemed necessary for the stage(s)/course(s). **Figure I.2** is only an example of the format, not content required of an FTI.

NOTE: For purposes of page spacing, all figures are in Times New Roman 10. Actual FTIs should use Times New Roman 12 to the maximum extent possible. It may be more appropriate to use smaller font for some figures or examples, but it must be legible.

Figure I.2

TABLE OF CONTENTS	
LIST OF EFFECTIVE PAGES.....	v
INTERIM CHANGE SUMMARY.....	vi
TABLE OF CONTENTS	ix
TABLE OF FIGURES.....	xi
CHAPTER ONE - INTRODUCTION TO BASIC INSTRUMENTS.....	1-1
100. INTRODUCTION	1-2
101. ATTITUDE INSTRUMENT FLIGHT	1-2
102. ATTITUDE DETERMINATION/VERTIGO	1-4
103. POWER PLUS ATTITUDE EQUALS PERFORMANCE	1-4
104. FLIGHT INSTRUMENTS	1-10
112. INSTRUMENT CHECKLIST	1-16
113. BASIC INSTRUMENT MANEUVERS	1-19
114. INSTRUMENT FLIGHT PLANNING	1-30
115. DEPARTURE PHASE	1-32
CHAPTER TWO - BASIC INSTRUMENTS GENERAL PROCEDURES.....	2-1
200. INSTRUMENT SCAN	2-1
201. BASIC INSTRUMENT PATTERNS.....	2-1
202. INSTRUMENT CHECKLIST	2-2
APPENDIX A - SUPPLEMENTARY FLIGHT PROCEDURES AND EMERGENCY PROCEDURES.....	A-1
A100. POSITION REPORTS	A-1
A101. CALIBRATED AIRSPEED CALCULATION.....	A-2
A102. TRUE AIRSPEED CALCULATIONS	A-3

(8) Table of Figures (see **Figure I.3**)

Figure I.3

TABLE OF FIGURES		
Figure 1-1:	Visualized Attitude	1-2
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Figure 2-1:	Straight and Level Flight.....	2-3
Figure 3-1:	GCA Maneuver	3-5
xi		

(9) Subsequent Chapters (see **Figure I.4**)

Figure I.4

CHAPTER 1	T-6A CONTACT
<p>CHAPTER ONE CONTACT TRAINING</p> <p>100. INTRODUCTION</p> <p>This Flight Training Instruction (FTI) contains procedures and information needed to complete the Contact stage of training. This instruction is comprehensive; however, it is imperative you reference the T-6A Naval Air Training and Operating Procedures Standards (NATOPS) manual when preparing for every flight (most notably for the study of emergency procedures). Before you begin your preparation, you should understand the general goals of the Contact stage. Student Naval Flight Officers (SNFO)/Student Weapons System Operators (SWSO) receive "stick time" in a pilot-like syllabus in order to create and build the following skills:</p> <p>HISTORY: If applicable for the specific stage or chapter being covered.</p> <p>102. BACKGROUND</p> <p>Naval Aviation training has come a long way since 1910 when Lieutenant T. G. Ellyson was ordered to flight instruction to become the first Naval Aviator. Soon thereafter the U.S. Navy purchased its first aircraft, the Curtis Triad, at a cost of \$5,500. Since then, naval aviation technology has progressed at a rapid rate. The fleet aircraft of today's Navy are tremendously complex and demanding machines capable of astonishing performance.</p> <p>103. PREFLIGHT PLANNING</p> <p>Etceteras</p>	
Contract Training 1-1	

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APPENDIX JFLIGHT SUPPORT LECTURE GUIDE FORMAT SAMPLE

1. FSLGs may be printed horizontally as per NAVEDTRA 130 guidelines or may be printed in a vertical presentation if desired. The following format/sequence will be used:

- a. Topic/Technique
- b. Objective/Standard
- c. Reference
- d. Resource/Illustration
- e. Time elapsed (see **Figure J.1**)

Figure J.1

<u>TOPIC</u>	<u>STANDARDS</u>	<u>REF.</u>	<u>ILL.</u>	<u>TIME</u>
(5) MISSION				
Landing Pattern. (Review procedures.)	+/- 10 KIAS +/- 50' +/- 5 degrees	p. 4-5	Fig. 4-1	00+25

2. Additionally, the above categories should be arranged in standard NATOPS brief format so that the students are prepared for their first simulator/flight brief in that stage:

- a. Aircraft assignments
- b. Formation rules (if applicable)
- c. Fuel Loads/Stores
- d. Takeoff Considerations/Rendezvous Instructions
- e. Mission/Conduct of the hop
- f. Navigation/Flight Planning
- g. Communication Plan
- h. Weapons (if applicable)
- i. Weather
- j. Emergencies/Safety of Flight items inherent to this stage

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APPENDIX KACADEMIC TRAINING INSTRUCTION FORMAT SAMPLE

1. ATI's consist of student guides and student workbooks.

a. Student Guide format guidelines:

- (1) Cover
- (2) Letter of Promulgation
- (3) Change Summary Page
- (4) Foreword (see example, **Figure K.1**)

NOTE: For purposes of page spacing, all figures are in Courier New 10. Actual ATIs shall use Courier New 12.

Figure K.1

FOREWORD

Course Objective: To provide the student naval aviator with a level of T-34C Aircraft Systems knowledge prerequisite to his/her learning, understanding and performance in ground, flight, and emergency procedures that are taught in the follow-on stages of flight training.

Specific Instructional Objective: Upon completion of this course of instruction, the student will demonstrate his/her knowledge of the T-34C Aircraft Systems by completing the end-of-course examination with a minimum of 80% accuracy.

Instructional Procedures:

1. Each lesson topic will contain the Terminal Objective, Enabling Objectives, description of the subject area, and sample questions as well as required amplifying illustrations.

2. The student workbook is designed to reinforce instructors' lectures and demonstrations. It is to be used in conjunction with the NATOPS Manual and not to be considered an all inclusive study guide.

3. Study the NATOPS reading assignment, the workbook study assignment and complete the end-of-chapter questions prior to going to class. The NATOPS questions and reading assignments will be specified by your instructor. Be sure to ask questions if any of your instructional material is not clearly understood.

Reference Materials

1. NAVAIR 01-T34AAC-1, T-34C NATOPS Manual
2. Beechcraft T-34C MAINTENANCE MANUAL

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(5) Table of Contents (see example, **Figure K.2**)

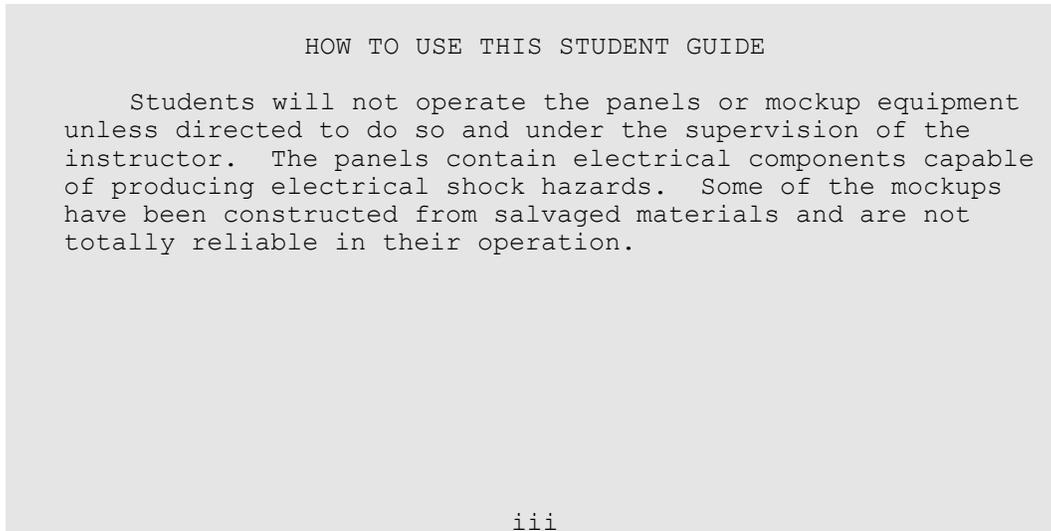
Figure K.2

TABLE OF CONTENTS		<u>PAGE</u>
Forward	i	
Table of Contents.....		ii
Safety Notice (if applicable).....		iii
How to use this Student Guide.....		iv
Security Classification Information (if applicable)		v
Course Schedule		vi
WORKBOOK TEXT		
CHAPTER ONE - NATOPS FAMILIARIZATION		
INFORMATION SHEET 1-1 - LESSON TOPIC OBJECTIVES		1-1
INFORMATION SHEET 1-2 - BASIC ENGINE CONSTRUCTION		1-2
NOTE-TAKING SHEET 1-1		1-3
ASSIGNMENT SHEET 1-1		1-4
CHAPTER ONE REVIEW QUESTIONS		1-5
CHAPTER TWO - BASIC ENGINE CONSTRUCTION		
INFORMATION SHEET 2-1 - LESSON TOPIC OBJECTIVES.....		2-6
CHAPTER TWO REVIEW QUESTIONS		2-8
CHAPTER THREE - IGNITION SYSTEMS		
INFORMATION SHEET 3-1 - LESSON TOPIC OBJECTIVES.....		3-9
CHAPTER THREE REVIEW QUESTIONS		3-10

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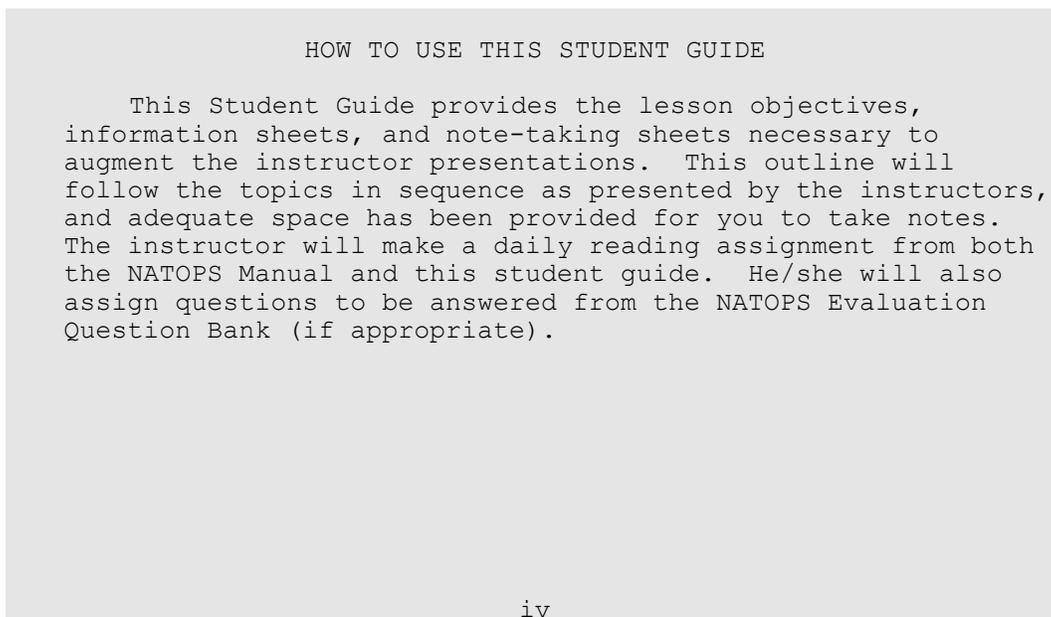
- K.3)** (6) Safety Notice (if applicable) (see example, **Figure**

Figure K.3



- (7) How to Use Student Guide page (see example, **Figure K.4**)

Figure K.4



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(8) Course Schedule (see example, **Figure K.6**)

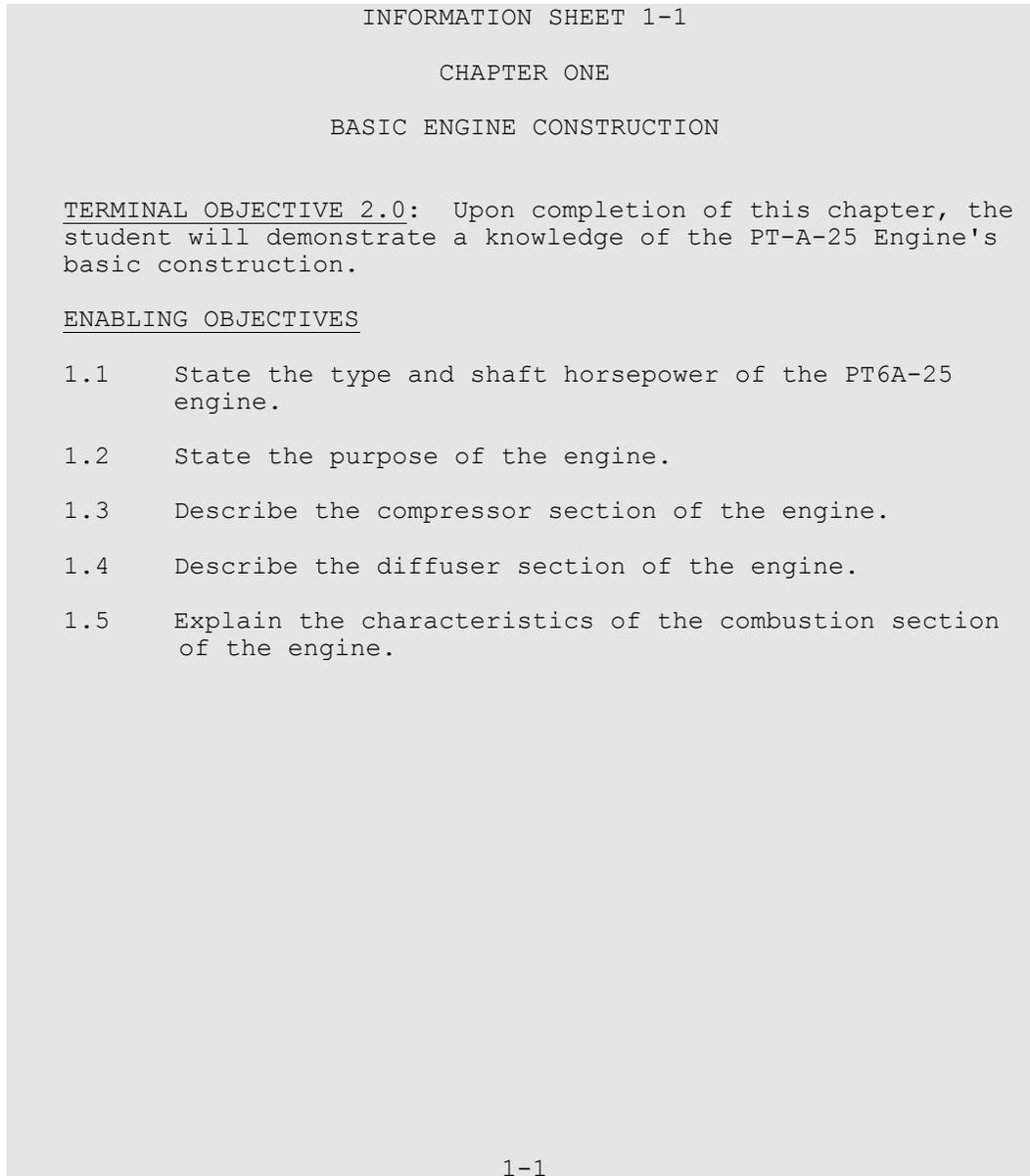
Figure K.6

<u>COURSE SCHEDULE</u>				
DAY ONE				
INTRODUCTION TO:				
-	ENG-1	T-45A	Electrical Power Supply System	4.0
DAY TWO				
-	ENG-2	T-45A	Engines	3.0
-	ENG-3	T-45A	Fuel Systems	3.0
DAY THREE				
-	ENG-4	T-45A	Hydraulic Power Supply System	4.0
-	ENG-5	T-45A	Pitot and Static System	1.0
-	ENG-6	T-45A	Escape System and Canopy	1.0
DAY FOUR				
-	ENG-7	T-45A	Air Conditioning and Pressurization	0.7
-	ENG-8	T-45A	Oxygen System	1.0
-	ENG-9	T-45A	Electronic Equipment Communication	1.0
-	ENG-10	T-45A	Review and examination	1.0

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(9) Information Sheet(s)/Chapter Introductions (see examples, **Figures K.7** and **K.8**)

Figure K.7



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Figure K.8

INFORMATION SHEET 1-2

BASIC ENGINE CONSTRUCTION

1. The T-34C aircraft is powered by a PT6A-25 turboprop engine, built by Pratt and Whitney. It is a reverse-flow type with inverted flight capabilities. This engine is rated at a maximum of 550 shaft horsepower SHP; however, normal NATOPS operation is limited to 425 SHP (1015 ft-lb torque).

2. The primary purpose of the engine is to provide the motive force to turn the propeller through the reduction gearbox. The secondary purpose is to supply power to drive the engine-driven accessories. The PT6A-25 has four main sections: compressor, combustion, turbine, and exhaust.

Compressor Section. The compressor section consists of compressor inlet case, compressor, and diffuser. The...

Combustion Section. The combustion chamber consists of ...

Turbine Section. The turbine section consists of ...

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(10) Note Taking and Assignment Sheets (see examples, **Figures K.9** and **K.10**)

Figure K.9

NOTE-TAKING SHEET 1-1

COURSE TITLE: T-34C AIRCRAFT SYSTEMS COURSE

INSTRUCTIONAL REFERENCES:

1. NAVAIR 01-T34AAC-1, T-34C NATOPS MANUAL
2. Beechcraft T-34C Maintenance Manual

I. PRESENTATION

A. PT6A-25 turboprop engine

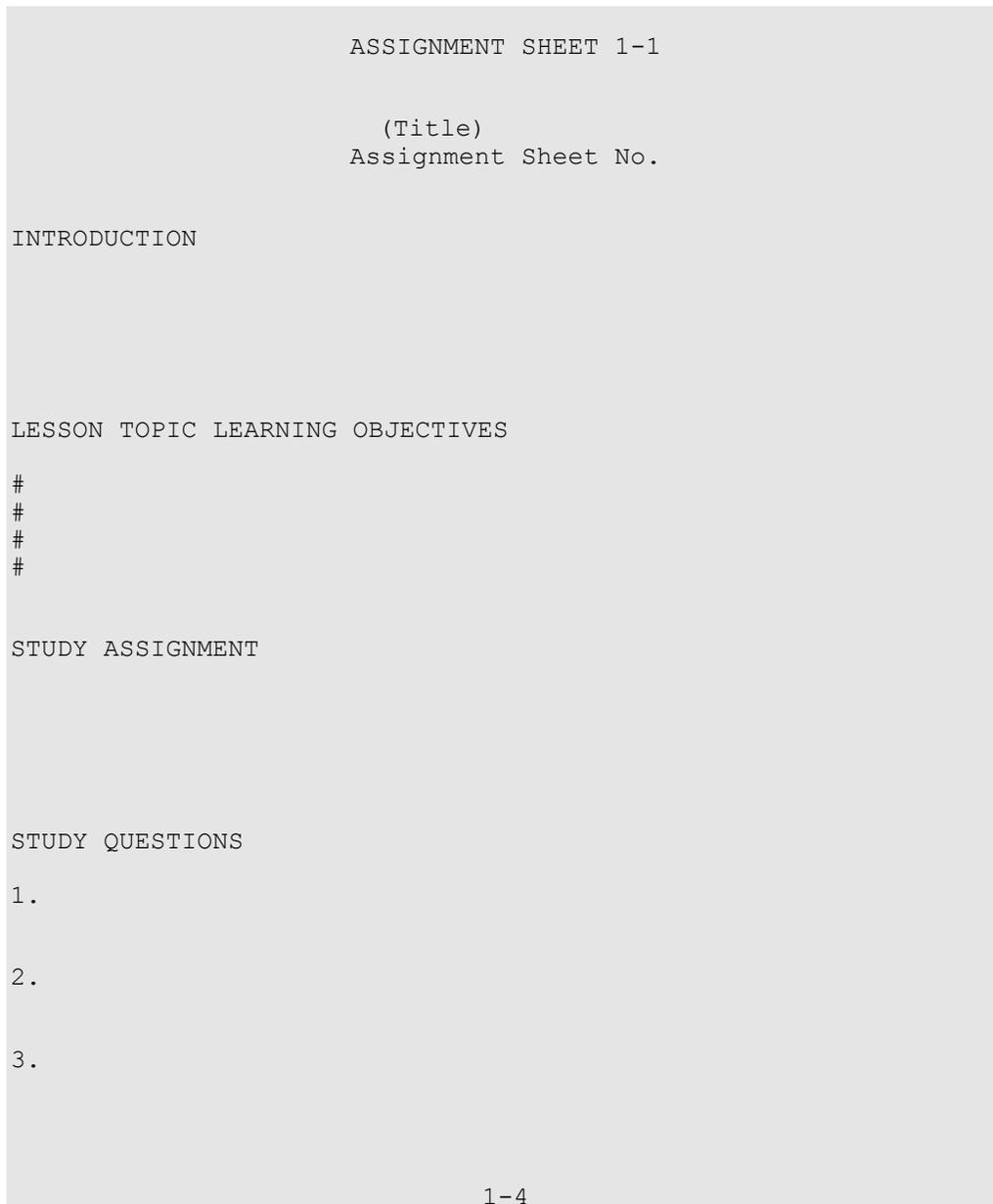
1. Rated horsepower
2. Primary purpose

B. Engine Components

1. Compressor
 - a. Compressor inlet case
 - b. Diffuser
2. Combustion Section
 - a. ...
 - b. ...

1-3

Figure K.10



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APPENDIX LINSTRUCTOR GUIDE FORMAT GUIDELINES AND SAMPLE

1. The following are sample format pages for a CNATRA Instructor Guide (IG).
 - a. Each IG will contain:
 - (1) Cover Page
 - (2) Letter of Promulgation
 - (3) Change Summary Page
 - (4) Foreword (see example, **Figure L.1**)
 - (5) Table of Contents (see example, **Figure L.2**)
 - (6) Safety Notice (if applicable) (see example, **Figure L.3**)
 - (7) How to Use Instructor Guide page (see example, **Figure L.4**)
 - (8) Lesson Plans (see examples, **Figures L.5 and L.6**)
 - (9) Outline of Instruction (see example, **Figure L., L.8, and L.9**)

NOTE: For purposes of page spacing, some figures are in Courier New 10. Actual IGs shall use Courier New 12.

FOREWORD PAGE FOR INSTRUCTOR GUIDE - FIGURE L.1

FOREWORD

The "foreword" is a statement of the purpose and interpretation of the contents of the instructor guide. A foreword page will be submitted by the preparing activity as part of the instructor guide. An example follows:

This Instructor Guide was designed to be used by personnel who are tasked to provide T-34C Aircraft Systems training to students in the Naval Air Training Command. It states the objectives to be accomplished during each unit of instruction in terms of desired student behavior. It outlines in detail the materials to be taught and contains information on all T-34C aircraft systems, performance data, and operating procedures required for safe and effective flight operations. The primary responsibility of the T-34C student naval aviator is to have a complete knowledge of the aircraft's systems and performance capabilities. The skills necessary to carry out those responsibilities will be provided during this course.

TABLE OF CONTENTS FORMAT FOR INSTRUCTOR GUIDE - FIGURE L.2

TABLE OF CONTENTS	
FRONT MATTER	PAGE
Letter of Promulgation.....	
Forward.....	
Table of Contents.....	
Safety Notice.....	
How to Use the Instructor Guide.....	
LESSON TOPIC GUIDES	
1.1 (Title).....	
1.2 (Title).....	
2.1 (Title).....	

L-3

Appendix L

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SAFETY NOTICE FOR INSTRUCTOR GUIDE - FIGURE L.3

SAFETY NOTICE

Required for those items peculiar to the process, system, or equipment involved. A safety notice page is required even if there are no special safety precautions to be observed. If there are none, state, "There are no special safety precautions to be observed during this lesson." An example of a safety notice follows:

Students will not operate the panels or mockup equipment unless directed to do so and under the supervision of the instructor. The panels contain electrical components capable of producing electrical shock hazards. Some of the mockups have been constructed from salvaged materials and are not totally reliable in their operation.

EXAMPLE OF HOW TO USE THE INSTRUCTOR GUIDE - FIGURE L.4

HOW TO USE THE INSTRUCTOR GUIDE

This page should include a general description of the composition, function and use of the instructor guide. Following is an example:

The main body of this Instructor Guide (IG) follows a two-column format. This format enables the instructor to view all instructional factors at a glance. The left side of the IG contains the Outline of Instruction column and covers the lesson content. The right side of the IG contains the Instructor Activity column and provides guidance to the instructor on teaching the subject matter of the lesson.

This IG has been designed in sufficient detail so that it can be used as the instructor's primary teaching document. Major points to be covered during the lesson topic are listed in descriptive phrases or key words as appropriate, outlining descriptions, processes and procedures that make up the subject matter of the lesson topic. Ample space has been provided to personalize the lessons. The right side of the IG may be used to list training aids, references, relate personal experiences, give examples, etc.

FILLED-IN LESSON PLAN PAGE - FIGURE L.5

Appendix L

L-6

LESSON PLAN	
(Name of Training Activity)	(Date Prepared)
COURSE TITLE: T-2C Aircraft Systems Training Course (Pilot)	TERMINAL OBJECTIVE:
CLASSIFICATION: For Official Use Only	(This objective is supported entirely by this lesson topic.)
LESSON TOPIC NUMBER: 1.4	When the students complete this course of instruction, they will be able to correctly answer at least 80% of criterion test items for the following lesson terminal objectives:
LESSON TOPIC: T-2C Hydraulic Power Supply Systems	1.1 Select statements...
ALLOTTED LESSON TIME: 3 periods	(1) Basic principles...
INSTRUCTIONAL MATERIALS:	(2) Major components
INSTRUCTIONAL REFERENCED:	ENABLING OBJECTIVES:
1.NAVAIR 01-60GAB-1, T-2B/C NATOPS Flight Manual	
2.NAVAIR 01-60GAB-2-1, General Information and Servicing	1.4.1

FILLED IN LESSON PLAN PAGE - FIGURE L.6

INSTRUCTIONAL AIDS:

1. Chalkboard and equipment
2. Overhead projector and screen
3. ECC-2 Hydraulic Systems Panel

1.2 Select from a list the correct definitions of the following terms:

- (1) Fluid power
- (2) Hydraulic dump handle

1.3 Identify the following:

- (1) Reservoir or receiver

CRITERION TEST:

Given a written test on...

HOMEWORK:

Read and study NAVAIR 01-60GAB-1...

(These objectives are supported entirely by this lesson topic.)

When the students complete this lesson topic, they will be able to:

1.4.2

FILLED-IN OUTLINE OF INSTRUCTION - FIGURE L.7

CNATRAINST 1550.6E
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Introduce yourself, your rate, and give the topic for this lesson: Fundamentals of the T-2 Hydraulic system.

B. Paraphrase Lesson Objectives:

1. **Terminal Objective:** You will be expected to write:

- a. The basic principles of operation of hydraulic power systems.
- b. The major components of hydraulic power systems.
- c. The fluids used in hydraulic power systems.
- d. ...

1.4.3

INSTRUCTOR ACTIVITY

Write name, rate and topic - Fundamentals of Hydraulics - on the board

FILLED IN OUTLINE OF INSTRUCTION - FIGURE L.8

2. Enabling Objectives

Get students ready to learn

- a. Define...
- b. Identify...

- 1. Trainee motivation
- 2. Learning incentives

C. Establish readiness

1. Motivating statements

Bring out the need and value of the material being presented

Motivate students by relating sea stories, real or imaginary, to help them see what Fluid power systems involve. Explain how this lesson ties in with other lessons.

2. Lesson Overview

In the following lesson we are going to look at T-2 hydraulic systems and discuss some of the terminology or buzz words used when talking about these systems. We will discuss the principles of both hydraulics and Pneumatics.

1.4.4

FILLED-IN OUTLINE OF INSTRUCTION - FIGURE L.9

II. PRESENTATION	
A. Definition of terms	
1. Fluid power	Uncover definition of Hydraulics Ask given questions
a. Defined as...	A.1 <u>To convert energy...</u>
2. Hydraulic	A.2 <u>Hydraulic Systems</u>
b. Defined as...	
Q.1 What is the purpose of Fluid Power Systems?	Objective 1.2
Q.2 What type of fluid power systems would use liquids as its fluid?	
B. Principles of operation...	
1. Basic components	
a. ...	
b. ...	
2. ...	
Objective 1.1	
Show transparency #1.	
	1.4.5