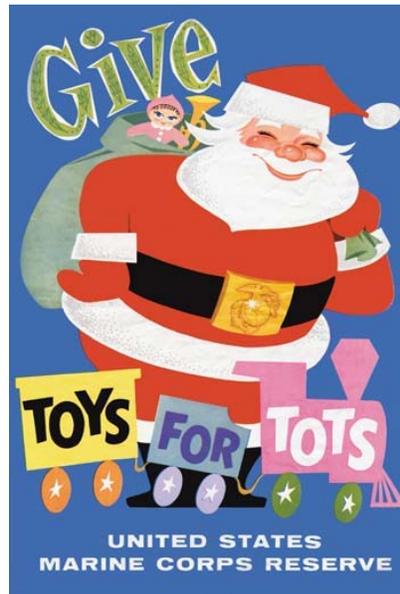


DECEMBER 2007

TPS EXPRESS NEWSLETTER



This edition of the **NEWSLETTER** continues updates to the 15 September 2007 baseline.

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The package is available on two web sites.

1. <https://pma260.navair.navy.mil>

2. <http://www.acq.osd.mil/ats>

Scroll down to ATS ED Document Library
Click on [NAVAIR Generic OTPS RFP](#)

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The need for updates occurs throughout the year. Some updates are more important than others. Incorporating new requirements should always be considered when preparing a RFP or RFQ for a new TPS development effort.

Some requirements should be “immediately” incorporated in existing contracts, taking into account cost and schedule impact. These “immediate” requirements will be identified. Not incorporating them will cause the Navy to retrofit the TPS after contract acceptance.

Summary of this ***NEWSLETTERS*** information:

The following changes should IMMEDIATELY be incorporated when preparing for a new TPS contract and, if feasible into all existing TPS contracts.

07-32 OTPI/TPI DID

Identifies a new DID (attached) for the Operational Test Program Instruction/Test Program Instruction (OTPI/TPI) documentation.

Examples of the Systems Wiring Diagram (SWD) and Tailored Oriented Wire List (TOWL) can be found at <https://pma260.navair.navy.mil> or <http://www.acq.osd.mil/ats> web sites.

NOTE: This DID should be used in lieu of DI-ATTS-80284B for the OTPI/TPI documentation. After coordinating with the other DoD services either DI-ATTS-80284B will be revised or a new DID issued.

*New requirements for the MTPSI were identified in the SEPTEMBER 2007 **NEWSLETTER**. These requirements eventually be incorporated in either the revised DI-ATTS-80284B or the new DID.*

07-33 Production Test Requirements

Amplified the requirements for Production Test.

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07-32 OTPI/TPI DID

ATTACHMENT 1, STATEMENT OF WORK, paragraph 3.3.2 Test Program Set Documentation (TPSD).

Replace the documentation requirements for the OTPI/TPI specified in DI-ATTS-80284B with those specified in the DID attached to this ***NEWSLETTER***.

07-33 PRODUCTION TEST REQUIREMENTS

ATTACHMENT 3, GENERAL ACCEPTANCE TEST PROCEDURE. Replace paragraph 3.3 with the following:

3.3 Production OTPS Test. Production OTPS testing shall consist of the following in the order listed:

- a) Three (3) consecutive OTPS serial numbers* which complete end-to-end testing without any failure for each TPS of each OTPS. This includes each UUT and complete end-to-end self-test of the Operational Test Program Hardware (OTPH). Any defects found during production testing shall be corrected by the Contractor.

* Any serial numbers failing before 3 consecutive failure free tests, must be corrected and pass complete all UUT and OTPH self-tests.

- b) The remaining production# units can be accepted by a combination of visual inspection and contractor prepared, Government approved acceptance procedures, which at minimum must include complete end-to-end testing for each OTPH .

If any remaining production units fail, the Government may request that all Subsequent Units pass complete all UUT and OTPH self-tests.

- 1. Test program set document review
 - 2. OTPI
 - 3. MTPSI
 - 4. Technical Manual
- c) Image save-set acceptance (backup/verify/image from master disk) on all optical disks

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SUMMARY OF PREVIOUS EDITIONS

NEWSLETTER DATE	NEWSLETTER NUMBER	TOPIC	SUMMARY
FEBRUARY 2007	07-01	Type Equipment Code (TEC).	Added an example to the Program Manager's Users Guide, paragraph 5.1.4.2 Logistics, (i).
	07-02	ATS Source Data Repository (ASDR)	Added the LMI Data Base as a delivery to ASDR. Documents affected CDRLs
	07-03	Unique Identification (UID)	Provided a new UID statement of work and sample drawing. Documents affected ATTACHMENT 2, PERFORMANCE SPECIFICATION ADDENDUM.
	07-04	OTPS Quantities	Added wording to estimate the OTPS quantities and plan for contingencies, including FMS to the Program Manager's Users Guide, paragraph 5.1.2 <u>Contracts Sections A-M, (b) Section B</u>
MARCH 2007			NONE
APRIL 2007			NONE
MAY 2007	07-05	CASS Configurations	Identifies the requirement to determine CASS configuration/quantities; and to coordinate with PMA-260 for availability.
	07-06	CASS Installation and Maintenance	Identifies the use of a Government Installation Team for CASS installation and the use of a Government PBL contract for CASS maintenance.
JUNE 2007	07-07	Test Statement Numbering	Provides additional information on Test Statement Numbering.
	07-08	TECHEVAL Web Site	Deletes reference to TECHEVAL Web Site. The Web Site was discontinued.
JULY 2007	07-09	Wire Segments in a PCOF	Limits the number of wire segments in self-test PCOF.
	07-10	WUC Series 41	Specifies the use of WUC 41 series.
	07-11	Technical Data Package Native Files	Deliver Technical Data Package native files vice..DXF format to ASDR.
	07-12	Safety Considerations	Modified the MARKING requirements.
	07-13	OTPS Naming Convention	Provides guidance in OTPS naming
AUGUST 2007	07-14	TECHEVAL	Provides guidance for TECHEVAL.
	07-15	Physical Configuration Audit (PCA)	Provides guidance for PCA.
	07-16	Source Data	Provides guidance on source data used for TPS Development.
	07-17	Program Manager's User Guide	Changed title of Program Manager's User to Guide Program Manager's User Manual.
	07-18	Smart TPS	Provides requirement for incorporation of SMART TPS capability.
	07-19	Attachment 1, Scope	Provides tailoring requirements for developing TPS for CASS and RTCASS.
	07-20	Revision Table	Deleted Revision Table from each document. NEWSLETTERS will identify changes to be made thru out the year until the documents are re-baselined. A master change file will be

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SEPTEMBER 2007	07-21	TPS Numbering	maintained for record purposes
	07-22	MTPSI	Provides requirements for TPS Numbering
	07-23	ASDR Directory Structure Update	Provides new requirements for MTPSI. Provides updated to the ASDR Directory Structure.
OCTOBER 2007	SPECIAL EDITION	AN/USM-674(V)3 and the AN/USM-676	This SPECIAL EDITION of the NEWSLETTER provides information on the AN/USM-674(V)3 and the AN/USM-676 .
OCTOBER 2007	07-24	Fleet Introduction	NOTE: This information is in the 15 September 2007 documents. It was published in the NEWSLETTER to call attention to the change.
	07-25	CASS OTPS SERD Preparation Guide	Provides information on preparing SERDs.
	07-26	Common Hand Tools	Identifies location listing Common Hand Tools.
	07-27*	Attachment 2, Unit Under Test (UUT) Listing	Attachment was inadvertently omitted from 15 September 2007 baseline
NOVEMBER 2007	07-27*	Obsolete Parts Forecasting	Identifies the need for forecasting of Obsolete Parts.
	07-28	Diagnostic test time	Stated a requirement to minimize diagnostic test time.
	07-29	Voltage Range	Clarified the Voltage Range
	07-30	Select at Test	Add details to the Select at Test requirement.
	07-31	ASDR Address	Identify new address for delivery of ASDR Data.

* Duplicate number

DATA ITEM DESCRIPTION

Title: Operational Test Program Instruction/Test Program Instruction (OTPI/TPI)

Number:

Approval Date:

AMSC Number:

Limitation:

DTIC Applicable:

GIDEP Applicable:

Office of Primary Responsibility: N/PMA-260

Applicable Forms:

Use/relationship:

Requirements:

1. Reference document. The applicable issue of the documents cited herein, including their approval dates and dates of any applicable amendments, notices, and revisions, shall be as specified in the contract.
2. General. The Operational Test program Instruction/Test Program Instruction (OTPI/TPI) specified herein shall be in a digital form.
3. Format. The OTPI/TPI shall conform to the general guidelines for planning and preparation of the Work Package (WP) concept defined in NAVAIR 00-25-700 as applied to the TPI contents contained herein.
 - 3.1 Page layout. The OTPI/TPI shall consist of all text pages including tabular data and illustrations in a form suitable for display on a computer screen. Text for manuals shall be single column single spaced, with a left justified margin. Text shall be double spaced between paragraphs, procedural steps, and before and after warnings, cautions, and notes.
 - 3.1.1 Margins. (see figure 1.) All page margins, including title/cover pages must have a left margin of one inch and a right margin of one-half inch. Top and bottom margins shall be one-half inch.
 - 3.1.2 Page size. (see figure 1.) Page sizes shall be limited to two sizes:
 - a. 8 1/2 inches (width) by 11 inches (length)
 - b. 17 inches (width) by 11 inches (length)

3.1.3 Text image area.

- a. Page size 8 1/2 x 11 inches: The text and illustration image area is 7 inches wide and 10 inches high.
- b. Page size 17 x 11 inches: The text and illustration image area in 15 1/4 inches wide and 10 inches in length.

3.1.4 Type Size. The text type size for all OTPIs/TPIs shall have a minimum typeface of 8 points and a maximum of 12 points.

3.1.5 Indentation. Indentation shall be consistent with paragraph 3.2.5.

3.2 Numbering.

3.2.1 OTPI Number. Each OTPI number shall be assigned a permanent number in accordance with the contract specifications.

3.2.2 TPI number. Each TPI number shall be assigned a permanent number in accordance with the contract specifications.

3.2.3 Work package number. Each TPI work package (WP) number shall be assigned as specified herein (see 3.5 below).

3.2.4 Page numbers. Pages shall be numbered consecutively within each WP using Arabic numerals beginning with the number one. On WP title pages, the page number and count shall be placed below the WP number in 10- to 12-point bold type right justified with the WP number; for example, "Page 1 of 20." On second and subsequent WP pages, only the page number shall appear.

3.2.5 Paragraph numbers. TPI paragraphs shall be numbered as follows:

- a. Paragraph and subparagraph divisions shall be numbered consecutively for every field of information. Paragraphs within a WP having subparagraphs shall be numbered consecutively by a decimal numbering system as follows:

- 1. PRIMARY PARAGRAPH
- 1.1 SECONDARY SUBPARAGRAPH
- 1.1.1 Tertiary Subparagraph
- 1.1.1.1 Quaternary subparagraph

- b. Introductory matter and technical content text shall contain one or more main paragraphs which may be divided into subordinate paragraphs. Major paragraphs shall have a brief underlined heading describing the content or action portrayed.

- c. For clarity, paragraph numbering should be limited to three sub-levels unless additional sub-levels are unavoidable.

3.2.6 Illustrations and table numbers. Illustrations and tables within a WP shall be numbered consecutively in Arabic numerals beginning with the number one.

3.2.6.1 Illustrations. Each sheet of a multi-sheet illustration shall be identified by a sheet number following the figure number and title below the illustration. Each sheet shall include the total number of sheets that make up the figure; for example, "Figure 2. Inertial Sensor Element Assembly Test Diagram (Sheet 1 of 5)." Remaining sheets shall be numbered in consecutive order, Sheet 2 of 5, Sheet 3 of 5, and so forth.

3.2.6.2 Tables. Each table shall be identified by a table number and an underlined title above the table. Each sheet of a multi-sheet table shall include the total number of sheets that make up the table; for example, "Table 2. Command message data content. (Sheet 1 of 5)". Remaining sheets shall be numbered in consecutive order, Sheet 2 of 5, Sheet 3 of 5, and so forth.

3.2.7 Blank page numbers. A Blank page shall be assigned a number, but it shall appear on the preceding page; e.g., if page 10 is blank, page 9 shall bear the number "9/ (10 blank)." Alternatively, the numbered page is annotated "This page intentionally left blank."

3.3 Warnings, cautions, and notes. Warnings, cautions, and notes shall be used to introduce items of information which are parenthetical (cannot logically be included in the text) and which the writer feels must be emphasized. A warning or caution shall immediately precede the text to which it refers.

3.3.1 Use of symbols. The symbols should be used sparingly, consistent with real need. Titles are identified by the following labeling:

- a. Warning. The warning title shall be capitalized with a 1-point rule above and below the title.

WARNING

- b. Caution. The caution title shall be capitalized with a 1-point rule below the title.

CAUTION

- c. Note. The note title shall be capitalized.

NOTE

3.3.2 Headings and text. Warning, caution and note headings shall precede the text to which they apply. The text shall not contain procedural steps, direct maintenance actions, or be numbered. Warnings and cautions may be worded positively or negatively and shall state the hazard and result or reason for the instruction or the consequences if not heeded, unless obvious.

3.3.3 Placement. The title shall be in the horizontal center of the page. None of the three are ever plural (i.e., “NOTES” is not acceptable). The text of a warning, caution, or note is centered horizontally under its title. If several distinct items of information are to be covered at the same time and all are of the same type (i.e., more than one warning, caution, or note), include all under the single appropriate heading, number each item and double space between items. Avoid having cautions, warning or notes follow each other consecutively without intervening text. The text of warnings, cautions, or notes shall not be divided at the end of a page.

3.3.4 Use of warnings, cautions, and notes.

3.3.4.1 Warning. Use a warning for information which, if not regarded might result in injury to personnel.

3.3.4.2 Caution. Use a caution for information which, if not regarded, might result in damage to equipment.

3.3.4.3 Note. Use a note for information which is too bulky to be included internally within parentheses. In most instances, a note should immediately follow the text to which it refers, but it may precede if the context demands. For example, in text procedures, it may be desirable to tell the reader that if certain conditions are met, then certain succeeding steps can be omitted. A figure note has an initial capital and is not underscored.

3.4 Use of abbreviations, acronyms, and terms. Individual words and word combinations can only be abbreviated when their meaning is unquestionably clear. When in doubt, the word(s) must be spelled out.

3.5 Work package numbering system. Each WP shall be assigned a permanent number in accordance with 5. below.

3.5.1 Work package number assignment. Each WP number shall have a five digit number, beginning with the number WP 001 00. There shall be one blank space between the third and fourth numerals.

3.5.2 Assignment of the last two digits of the work package number. The last two digits of any WP number may be assigned by the developer/contractor in the basic issue and by the cognizant activity in any change cycle following distribution of the basic issue.

4. OTPI. The OTPI consists of front matter and, if applicable, common technical WPs.

4.1 OTPI Front Matter.

Front Matter consists of the following (see figure 9):

OTPI Title Page

OTPI Master Index of TPIs (normally page 2)

OTPI Record of Revisions/Changes (normally page 3)

4.1.1 OTPI Title page. (see figure 2.) A title page shall serve as the cover for the OTPI. The title page shall provide sufficient information to correlate the OTPI to the Operational Test program Set (OTPS) and include the following:

- a. The OTPI number shall be placed in the upper left corner of the page. Each manual or volume shall have a separate number assigned. The OTPI number shall be in 18- to 20-point bold type.
- b. A 1-point rule shall be placed 1 1/2 inches from the top of the page below the OTPI number.
- c. The title "OPERATIONAL TEST PROGRAM INSTRUCTION" shall be centered on the page below the 1-point rule, in 16- to 18-point type.
- d. The words "FOR TESTING." in 12- to 14-point type, shall be centered below the words "OPERATIONAL TEST PROGRAM INSTRUCTION" with the aircraft type/model/series centered below, both in 14- to 16-point bold type.
- e. The aircraft system nomenclature being tested and model number; for example, 'STANDARD ATTITUDE READING REFERENCE SYSTEM (SAHRS) AN/USN-2(V)' shall be centered below the aircraft type, in 16- to 18-point bold type.
- f. The word 'USING' in 12- to 14-point type, shall be centered below the aircraft system/model number with the "AN" identification of the Automatic Test Equipment (ATE) test system, name and acronym (if any) of the test system, in 14- to 16-point type.
- g. Centered below the test system shall be the developing activity and contract number, in 10- to 12-point type.
- h. The contract-specified distribution statement and warning statement, as identified in the Contract Data Requirements List (CDRL), shall be left-justified below the developing activity and contract number in 10 pt. type. The words "DISTRIBUTION STATEMENT X." (where "X" is the contract-specified distribution statement letter) shall start the distribution statement and shall be bold and underlined. The word "WARNING - " shall start the warning notice and shall be bold and underlined.
- j. The contract-specified destruction notice, as identified in the Contract Data Requirements List (CDRL), shall be left-justified below the distribution and warning statements in 10 pt. type. The words "DESTRUCTION NOTICE - " shall start the destruction notice and shall be bold and underlined.
- k. A 1-point rule shall be placed 1 1/2 inches above the bottom of the page.
- l. The OTPI date shall be placed in the lower right corner, above the 1-point ruler in 10- to 12-point type.

m. The change number shall be placed above the OTPI date, in 10- to 12-point type.

4.1.2 OTPI Master Index. (see figure 3.) The OTPI Master Index shall contain an index of TPIs for the entire manual. The index pages shall immediately follow the title page and always start on page two of the OTPI and include the following:

a. The OTPI publication number shall be placed in the upper left corner of the page, in 14- to 16-point bold type.

b. The page identification (Page 002, Page 003, etc.) shall be placed in the upper right corner of the page, in 10- to 12-point bold type.

c. The title "MASTER INDEX OF TEST PROGRAM INSTRUCTIONS" shall be centered, in 12- to 14- point bold type,

d. Column heads "TPI Number," "Title," "Volume Number" (if applicable), and "Change Number" shall be placed below the title. A 1-point rule shall be placed above and below the column heads.

e. A linked and/or hyperlinked numerical listing of TPIs and common WPs assigned to the manual and the numbers, titles, volumes numbers (if applicable), and change number shall be placed below the applicable column heads.

4.1.3 OTPI Record of revisions and changes (REVCHG). (see figure 4.) A list of revisions/changes incorporated shall be specified for all manuals. This page shall begin with the original issue of the OTPI coinciding with the delivery of the OTPI and subsequently maintained by the cognizant activity to list all subsequent revisions and changes. The REVCHG page(s) shall follow the index page and include the following:

a. The OTPI publication number shall be placed in the upper left corner of the page, in 16 point bold type.

b. The page identification (Page 3, Page 4, etc.) shall be placed in the upper right corner of the page on the same line as the OTPI publication number, in 16 pt bold type.

c. The OTPI date or revision date shall be in the upper left corner below the publication number in 10- to 12-point type.

d. The title "OPERATIONAL TEST PROGRAM INSTRUCTION, RECORD OF REVISIONS/CHANGES" shall be centered, in 12- to 14-point type, split into 2 lines at the comma.

e. The original issue date must be included and labeled "ORIGINAL ISSUE" with an appropriate date below title, in 10- to 12-point type.

f. The page shall be in column format with column heads "TPI No.," "REVCHG No.," "DATE," and "REASON FOR CHANGE." A 1-point rule shall be placed above and below the column heads.

4.2 OTPI Common Technical WPs. A technical content WP is considered common if it is applicable to more than one TPI in an OTPI. A common technical WP shall take the publication number of the OTPI.

Common technical WPs are generally self-contained PDF files and include:
WP 002 02 System Wiring Diagram

and, if applicable:

WP 003 02 Common Test Program Source Listing, and
WP 003 04 Common Digital Test Program Source Listing.

These files are accessed via hyperlinks from OTPI and TPI indexes.

4.2.1 OTPI WP 002 02 System Wiring Diagram (SWD). The SWD is a diagram that shows all wiring and hardware devices between the Unit Under Test (UUT) and the ATE. The diagram shall show the "as-built", not the electrical equivalence of the wiring and hardware devices. See paragraph 5.2.1.4 for a detailed SWD description.

4.2.2 OTPI WP 003 02 Common Source Listing. Consists of formatted WP data per 5.2.1 immediately followed by a hyperlinked list of Source Code filenames (*.LU, *.AS and any others as appropriate) and procedure names.

Each filename hyperlink shall connect to the beginning of the referenced file listing. Each procedure name hyperlink shall link to the particular common Source Code procedure.

4.2.3 OTPI WP 003 04 Common Digital Source Listing. Consists of formatted WP data per 5.2.1 immediately followed by a hyperlinked list of common Digital Source filenames (*.PMP, *.SYM and any others as appropriate) and procedure names.

Each filename hyperlink shall connect to the beginning of the referenced file listing. Each procedure name hyperlink shall link to the particular Digital Source routine.

4.3 OTPI/TPI security classification. The classification of the OTPI/TPI shall be as defined in the Contract Data Requirements List (CDRL).

5. TPI. The TPI consists of front matter and technical content WPs. (see figure 9):

Front Matter

Title Page
TPI Numerical Index of Work Packages (normally Page 2),
Revisions/Changes (normally page 3), and
if applicable, List of peculiar Abbreviations/Acronyms used.

Technical Content WPs

WP 001 00 Supplemental Testing Data

Optional: contains messages and/or graphics that are too complex for display by the TPS.

WP 002 00 Test Diagnostic Information

WP 002 01 Test Oriented Wire List (TOWL).

hyperlink to OTPI WP 002 02 System Wiring Diagram.

WP 003 00 Program source code information

WP 003 01 Program source code.

(hyperlink to OTPI WP 003 02 Common source listing.)

WP 003 03 Digital Test program source listing.

(hyperlink to OTPI WP 003 04 Common digital source listing.)

WP 003 05+ Additional sub-WPs to accommodate other TPS source modules as applicable.

5.1 TPI front matter.

5.1.1 TPI title page. (see figure 5.) The TPI title page shall include the following:

- a. The title page shall indicate the TPI publication number in the upper left corner of the page, in 16- to 18-point bold type.
- b. A 1-point rule shall be placed 1 1/2 inches from the top of the page below the TPI number.
- c. The title "TEST PROGRAM INSTRUCTION" shall be centered on the page below the 1-point rule, in 14- to 16-point bold type.
- d. The words "FOR TESTING," in 12- to 14-point type, shall be centered below the words "TEST PROGRAM INSTRUCTION " with the UUT nomenclature and part number centered below, both in 16- to 18-point bold type.
- e. The word "USING" shall be centered below the UUT nomenclature with the "AN" identification of the ATE test system, name and acronym (if any) of the test system, in 10- to 12-point type.
- f. The words "PART OF" shall be placed in the lower left corner above the 1-point rule with the OTPI publication number and date identified, in 10- to 12-point type.
- g. A 1-point rule shall be placed 1 1/2 inches above the bottom of the page.
- h. The TPI change no. and date shall be placed in the lower right corner, above the 1-point rule, in 10- to 12-point type.

5.1.2. TPI numerical index of work packages. (see figure 6.) The TPI numerical index of Work Packages shall contain a hyperlinked index of WPs for the TPI. The index page shall immediately follow the title page and normally begin on page 2 of the TPI and include the following:

- a. The TPI publication number shall be placed in the upper left corner of the page, in 14- to 16-point bold type.
- b. The page identification (normally, Page 2) shall be placed in the upper right corner of the page on the same line as the publication number, in 16 pt. bold type.
- c. The title "TEST PROGRAM INSTRUCTION" shall be entered in 14- to 16-point bold type.
- d. The title "NUMERICAL INDEX OF WORK PACKAGES" shall be centered, in 12- to 14-point type.
- e. Centered below the title shall be the words "WORK PACKAGE INDEX" with column heads "WP NO.," "TITLE," and "CHANGE NO." below. A 1-point rule shall be placed above and below the column headings.
- f. A numerical listing of WPs assigned to the manual and their titles shall be placed below the applicable column heads.
- g. The TPI change date shall be placed below the title in 10- to 12-point type.

5.1.3 Revisions/changes. (see figure 7.) A list of revisions/changes incorporated shall be specified for all manuals. This page shall begin with the original issue of the OTPI/TPI coinciding with the delivery of the OTPS and subsequently maintained by the cognizant activity to list all subsequent revisions and changes. The WP REVCHG page shall follow the WP index page and include the following:

- a. The TPI publication number shall be placed in the upper left corner of the page, in 14- to 16-point bold type.
- b. The TPI date or revision date shall be in the upper left corner below the publication number in 10- to 12-point type.
- c. The page identification (Page 003, Page 004, etc.) shall be placed in the upper right corner, on the same line and in the same font as the publication number right justified.
- d. The title "TEST PROGRAM INSTRUCTION RECORD OF REVISIONS/CHANGES" shall be centered on the page below the publication number, in 12- to 14-point type.

e. The page shall be in column format with column heads "REVCHG NO.," "DATE," "REASON FOR CHANGE," and "TPI/WP AFFECTED (PARA., TABLE, FIGURE, etc.)," in 12-point type. A 1-point rule shall be placed above and below the column heads.

f. A list of current changes assigned to the manual shall be placed below the applicable column heads.

5.2 Technical-content work package. All WPs numbered WP 001 00 and above shall be considered technical content WPs.

5.2.1 Technical content package title page. (see figure 8.) The title page shall include the following:

a. The OTPI or TPI (as applicable) publication number shall be placed in the upper left corner of the page in 14- to 16-point bold type.

b. The work package number shall be placed in the upper right hand corner on the same line as the publication number, in 14- to 16-point bold type.

c. The WP change number and date shall be placed below the publication number in 12 pt. type. The page number and number of pages shall be placed below the WP number in 12 to 14 point type.

d. A 1-point rule shall be placed 1 1/2 inches from the top of the page below the TPI number.

e. The words "OPERATIONAL TEST PROGRAM INSTRUCTION" or "TEST PROGRAM INSTRUCTION", as applicable, followed by the technical contents (i.e. title) of the WP shall be centered on the page in 12 to 14 point. bold type.

For TPI WPs, the following apply:

f. The words "FOR TESTING" in 12, to 14-point type shall be centered below the contents title with the UUT nomenclature an number centered below, both in 14- to 16-point bold type.

g. A 1-point rule shall be placed below the technical contents title.

5.2.1.1 TPI WP 001 00 Supplemental Testing Data. Work Package 001 00 will convey to the TPS operator any required data to successfully run the UUT or self-test TPS that is not available in any other TPS documentation including TPS output messages, MTPSI, and Technical Manuals for the UUT and/or Operational Test Program Hardware (OTPH).

If included, WP 001 00 shall contain:

- a. Format WP data per 5.2.1 above.
- b. WP 001 00 may include the following paragraphs, or any others deemed applicable within the constraints of this WP.

1. UNTESTED HARDWARE
2. SELECT AT TEST PROCEDURE
3. OTHER MESSAGES (Any other messages too wordy or complex to be put in the TPS program)

If no supplemental testing data is required, the TPI will contain a WP 001 00. The first page of the formatted WP shall state "This Work Package Intentionally Omitted"

5.2.1.2 TPI WP 002 00 Test Diagnostic Information (TDI).

The TDI consists of two parts. Part 1 is a Test Oriented Wire List (TOWL) of active wire segments used during a particular test. Part 2 is a System Wiring Diagram (SWD) of the entire OTPH. WP 002 00 will contain a description of the use of the TOWL in conjunction with the SWD and links to TPI WP 002 01 TOWL and OTPI WP 002 02 SWD.

**NOTE: TOWL and SWD samples can be found at both web sites listed below:
<https://pma260.navair.navy.mil> or <http://www.acq.osd.mil/ats>.**

5.2.1.3 TPI WP 002 01 Test Oriented Wire List. The TOWL is a list of the point-to-point connections of wire segments within the OTPH. Each wire segment is prefaced with an abbreviation to indicate its whereabouts within the ATE, the OTPH or the UUT (e.g. GPI:P9-11B to ID:TB0610-F indicates the wire of interest has one end at the GPI panel and the other inside the OTPH on TB0610). For complex OTPH that has an interface device that contains terminal blocks, as well as a test fixture with terminal blocks then TF:TB0610-F would indicate that the terminal block is in the test fixture, not the interface device. The first page of WP 002 01 will contain an index for all test numbers with links to the TOWL point-to-point wire segment connections for each test.

The TOWL shall be prepared in a tabular format with five column headings as follows

ASSET	Identifies the asset (ATE, GPETE, ancillary, etc.) providing the measurement/stimulus
FROM	Identifies the connector/pin reference for the signal path segment
TO	Identifies the ending connector/pin reference for the signal path segment
FROM SHEET	Identifies the SWD sheet where the connector reference can be located
TO SHEET	Identifies the SWD sheet where the "to" connector reference can be located

The listing shall follow an orderly flow that matches the flow of the SWD. A wire segment in the SWD may begin on one sheet and end on another. The TOWL shall include sheet numbers for both the "from" and "to" pins. When a listed pin is part of ATE, the asset name (from CASS .RTT, for instance) is included on that line. When a listed pin is part of the UUT, then "UUT" is

added to that line. The Source Code header commentary for each test shall be included as part of the TOWL to provide the operator insight into the test functionality.

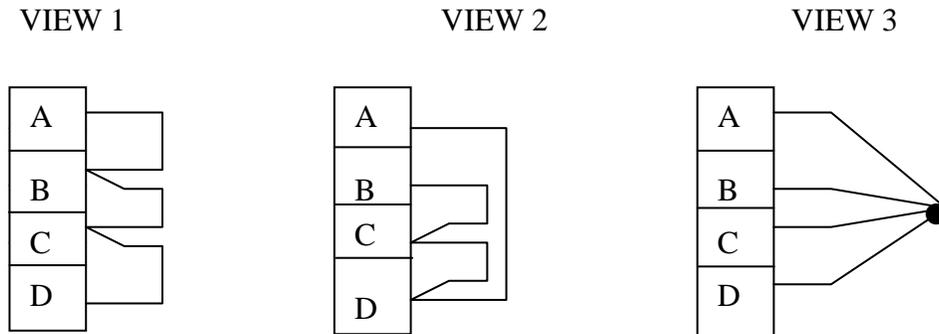
5.2.1.4 OTPI WP 002 02 Sytem Wiring Diagram (SWD). SWD shall be prepared in accordance with ASME Y14.24-1999, paragraph 10.3. Symbolic representation of all OTPH electrical components shall be in accordance with ASME Y14.24-1999, Paragraph 10.3.3. A wire list shall NOT be substituted for any portion of the SWD. The SWD shall provide an explicit illustration between the ATE, OTPH and UUT. The SWD shall be developed to print on 11" X 17" paper size (B size drawings). All font sizes shall be a minimum of 8 point. When more than one sheet is required to describe a SWD, the SWD shall be clearly identified with appropriate notation on all associated SWD sheets as to the total number of sheets (i.e. sheet 1 of 38). The SWD shall show all hardware elements of the OTPH containing circuitry/wiring (i.e. Splice Points, Terminal Blocks, mother boards, CCA schematic etc.) including **ALL** repairable and non-repairable assemblies etc. as well as the ATE (CASS) assets used (i.e. instruments, station relays). The following information is provided to ensure standardization:

- a. The front page of the SWD shall have all terms and definitions used in the SWD identified.
- b. For OTPH designed for use on CASS ATE: CASS assets are identified with the GPI: label. Instruments are further identified with their RTT labels.
- c. All ATE asset blocks are drawn with bold lines to differentiate the OTPH hardware from the ATE hardware.
- d. The SWD shall include all ATE assets used by the TPS including RF, EO and ancillary assets such as the PFG, MPSRD, VPG, ULAS, AGCS, HPDTS, etc.
- e. All labels used in the SWD and TOWL shall match. Examples of labeling are: GPI:P9, ID:TB3_11, and MB:J10.
- f. Relays shall show all NO/NC designations. ATE relay identification numbers are not required.
- g. Unused pins that are identified on the SWD shall be annotated with NC (no connection). Alternatively, unused pins may have an "X" placed at the open termination.
- h. Wire connections such as splice points shall be identified with a standard tie point or "dot".
- i. The SWD portion of the TDI is a point-to-point representation of the OTPH as built. That is, wire segments are clearly delineated. Refer to Example 1.

In View 1, pins A and D each hold one wire, while pins B and C each hold two.

In View 2, pins A and B each hold one wire, while pins C and D each hold two.

In View 3, pins A, B, C and D each hold one wire and all of the other ends are terminated in a splice.



EXAMPLE 1: ELECTRICAL WIRING EQUIVALENTS

All three views are electrically identical, but quite different for the technician trying to trace wires through an OTPH. The point of the SWD is to provide an accurate tracing of wire segments through the OTPH.

j. Splice points shall be referred to as “SP”.

5.2.1.5 TPI WP 003 00 Source Code Test Information and Index. Consists of formatted WP data 5.2.1 above and the following two paragraphs:

- a. Paragraph 1, SOURCE CODE TEST INFORMATION, is a description of the content of each sub-WP.
- b. Paragraph 1.1, SOURCE CODE TEST INDEX, is hyperlinked listing of the sub-WP numbers and titles.

The index shall list and provide links and/or hyperlinks to all applicable Source Code modules including OTPI WPs 003 02 and/or 003 04, if applicable.

5.2.1.6 TPI WP 003 01 Test Program Source Listing. Consists of formatted WP data per 5.2.1 above, immediately followed by a hyperlinked list of Source Code filenames (*.LU, *.AS and any others as appropriate) and Source Code test numbers.

Each filename hyperlink shall connect to the beginning of the referenced file listing. Each test number hyperlink shall connect to the program source code for that test number.

5.2.1.7 OTPI WP 003 02 Common Source Listing. Source code that is common to multiple TPSs within the OTPS shall be provided in OTPI WP 003 02, see 4.5 above.

5.2.1.8 TPI WP 003 03 Digital Program Source Listing. If applicable, consists of formatted WP data per 5.2.1 immediately followed by a hyperlinked list of TPS-specific digital filenames (*.PMP, *.SYM and any others as appropriate) and procedure names.

Each filename hyperlink shall connect to the beginning of the referenced file listing. Each procedure name hyperlink shall link to the particular Digital Source routine.

5.2.1.9 OTPI WP 003 04 Common Digital Source Listing. Digital Source code that is common to multiple TPSs within the OTPS shall be provided in OTPI WP 003 04, see 4.6 above.

5.2.1.10 TPI WP 003 05+ Additional TPS Source Listings. Additional TPS source module listings, if required.

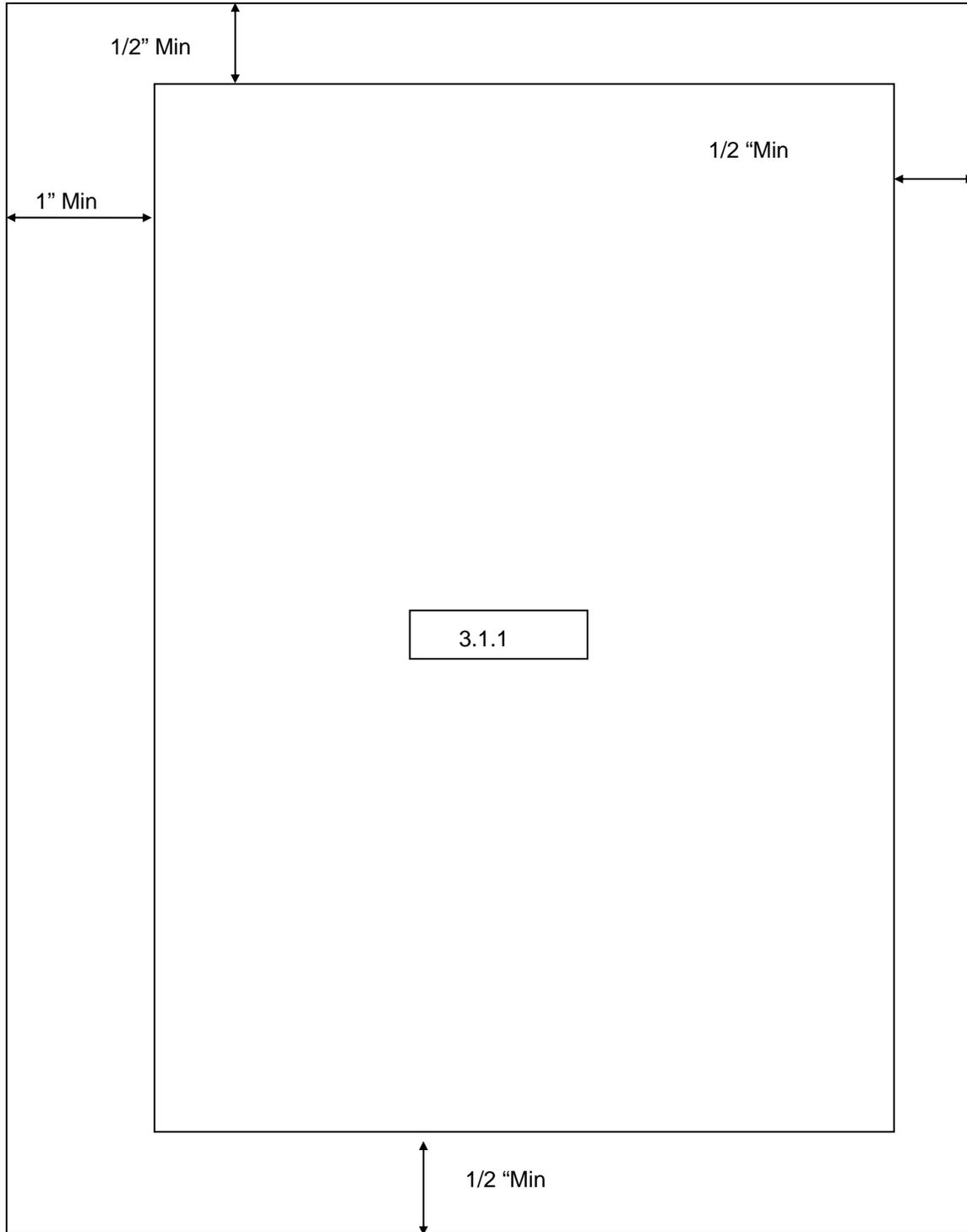


FIGURE 1. Margin Sample

OTPI 3906AS7000-01 (4.1.1.a 18 pt bold)

(rule line 10.4.1.1.b 1pt 1.5" down from top of page)

OPERATIONAL TEST PROGRAM INSTRUCTION (4.1.1.c 16pt)

FOR TESTING (4.1.1.d 12pt)

AIRCRAFT TYPE/MODEL/SERIES

RECEIVING - DECODING GROUP AN/ARA-63() (4.1.1.e 16pt bold)

USING (4.1.1.f 12 pt)

CONSOLIDATED AUTOMATED SUPPORT SYSTEM (CASS)
AN/USM-636(V)

- or -

RECONFIGURABLE TRANSPORTABLE CASS (RTCASS)
AN/USM-702 (4.1.1.f 16 pt)

PREPARED BY:

NAVAL AIR DEPOT, JACKSONVILLE
NAS JACKSONVILLE, FL 32212-0016
CONTRACT # N0001905PX09499 (4.1.1.g 12 pt)

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(4.1.1.m 12pt) CHANGE No. 0
(4.1.1.l 12pt) DATE 16 MAY 07

(rule line 4.1.1.k 1pt 1.5" above page bottom)

**MASTER INDEX OF
TEST PROGRAM INSTRUCTIONS (4.1.2.c 12 pt bold)**

(above: 4.1.2.d; below: 4.1.2.e) (Begin regular 10 pt text)

TPI/WP NUMBER	TITLE	CHANGE Number
TITLE PAGE	Operational Test Program Instruction	0
This Page	Master Index of Test Program Instructions	0
Page 3	Record of Revisions/Changes	0
WP 002 02	System Wiring Diagram ON-662/USM, Drawing Number WD3906AS0100-01	0
WP 003 02	Common Source Listing	0
WP 003 04	Common Digital Source Listing	0
TPI 3906AS7001-01	Panel, ID J6760/USM, P/N 3906AS1000-01	0
TPI 3906AS7002-01	Radio Receiver R-1379/ARA-63, P/N 395192-1 R-1379A, P/Ns GD5737, 01A223024A21-11 R-1379B, P/N 01A223024A21-12	0
TPI 3906AS7003-01	Pulse Decoder KY-651/ARA-63, P/N 395190-1 KY-651A, P/Ns GD5736, 01A223000A21-11 KY-651B, P/N 01A223000A21-12 KY-651C, P/N 01A223000A23-11 ***** The following SRA UUTs are test and check at Depot level only ***** Clock/BIT Flag A1A1, P/N 5402918-1 Video/Identity A1A2, P/N 5402920-1 Tapped Delay/Error A1A3, P/N 5402921-1 AGC A1A4, P/N 5402916-1 Memory A1A5, P/N 5402917-1	0
TPI 3906AS7004-01	Receiver Control C-7949/ARA-63, P/N 395117-1 C-7949A, P/Ns GD5738, 01A223031A21-11 C-7949B, P/N 01A223031A21-12	1 17 AUG 07
TPI 3906AS7010-01	Power Supply, PS1, P/Ns 395619-1, GD5735, 01A223022-21-11, 5402911-1	0

Figure 3: OTPI Master Index

OPERATIONAL TEST PROGRAM INSTRUCTION,
RECORD OF REVISIONS/CHANGES (4.1.3.d 12pt.)

ORIGINAL ISSUE: 16 MAY 2007 (4.1.3.e 12pt) (Begin regular 10 pt text for 4.1.3.f below)

TPI No.	REV/ CHG No.	DATE	REASON FOR CHANGE
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LIST OF CURRENT CHANGES:

TPI 3906AS7004-01	1	17 AUG 2007	Test 1060 Change
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Figure 4: OTPI Record of Revisions/Changes

TPI 3906AS7004-01(5.1.a 16pt bold)

(5.1.b 1 pt. rule 1.5" from top)

TEST PROGRAM INSTRUCTION (5.1.C 16PT BOLD)

FOR TESTING (5.1.d 12pt)

**RECEIVER CONTROL C-7949()/ARA-63
P/Ns: 395117-1 (C-7949)
GD5738, 01A223031A21-11 (C-7949A)
01A223031A21-12 (C-7949B)(5.1.d 16pt bold)**

USING

CONSOLIDATED AUTOMATED SUPPORT SYSTEM (CASS)
AN/USM-636(V)5

or

RECONFIGURABLE TRANSPORTABLE CASS (RTCASS)
AN/USM-702 (5.1.e 12pt)

PART OF: OTPI 3906AS7000-01, 16 MAY 2007
(5.1.f 12pt above, 5.1.g 1pt rule below)

CHANGE No. 1
DATE 17 AUG 2007
(5.1.h 12pt above)

Figure 5. TPI Title Page Sample

TEST PROGRAM INSTRUCTION (5.2.C 16 pt bold)

NUMERICAL INDEX OF WORK PACKAGES (5.2.D 12pt)

(5.2.e 10 pt type, 1pt rules)

WP NUMBER	TITLE	CHANGE NUMBER
	Record of Revisions/Changes	1
001 00	Supplemental Testing Data	0
002 00	Test Diagnostic Information	0
002 01	Test Oriented Wire List (TOWL)	0
002 02	System Wiring Diagram ON-662/USM (Part of OTPI)	See OTPI
003 00	Source Code Test Information and Index	0
003 01	Test Program Source Listing	1
003 02	Common Source Listing (Part of OTPI)	See OTPI
003 03	Digital Test Program Source Listing	0
003 04	Common Digital Source Listing (Part of OTPI)	See OTPI

(5.2.f 10pt)

Figure 6. TPI Numerical Index of Work Packages Sample

17 AUG 2007 (5.3.b 12pt)

TEST PROGRAM INSTRUCTION
RECORD OF REVISIONS/CHANGES (5.3.D 12PT BOLD)

ORIGINAL ISSUE: 16 MAY 07 (5.3.e 12pt)

REV/GHG No.	DATE	REASON FOR CHANGE	TPI/WP AFFECTED (PARA., TABLE, FIGURE, ETC.)
----------------	------	----------------------	--

LIST OF CURRENT CHANGES

1	17 AUG 07	ECP XYZ: T1650, CHANGE RESULTS OUTPUT FORMAT FROM DIGITAL TO HEX	WP 003 01, PG 44
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(5.3.e 10pt type, 1pt rules)

Figure 7. TPI Record of Revisions/Changes Sample

(5.2.1.d 1pt rule)

TEST PROGRAM INSTRUCTION

SUPPLEMENTAL TESTING DATA (5.2.1.E 12PT BOLD)

FOR TESTING

RECEIVER CONTROL C-7949()/ARA-63
P/Ns 395117-1, GD5738, 01A223031A21-11, 01A223031A21-12
(5.2.1.f 16pt BOLD)

(5.2.1.g 1pt rule)

THIS WORK PACKAGE IS INTENTIONALLY OMITTED

Figure 8. Technical Content Work Package Title Page Sample

ALL FILES LOCATED IN ROOT:\OTPIlib DIRECTORY

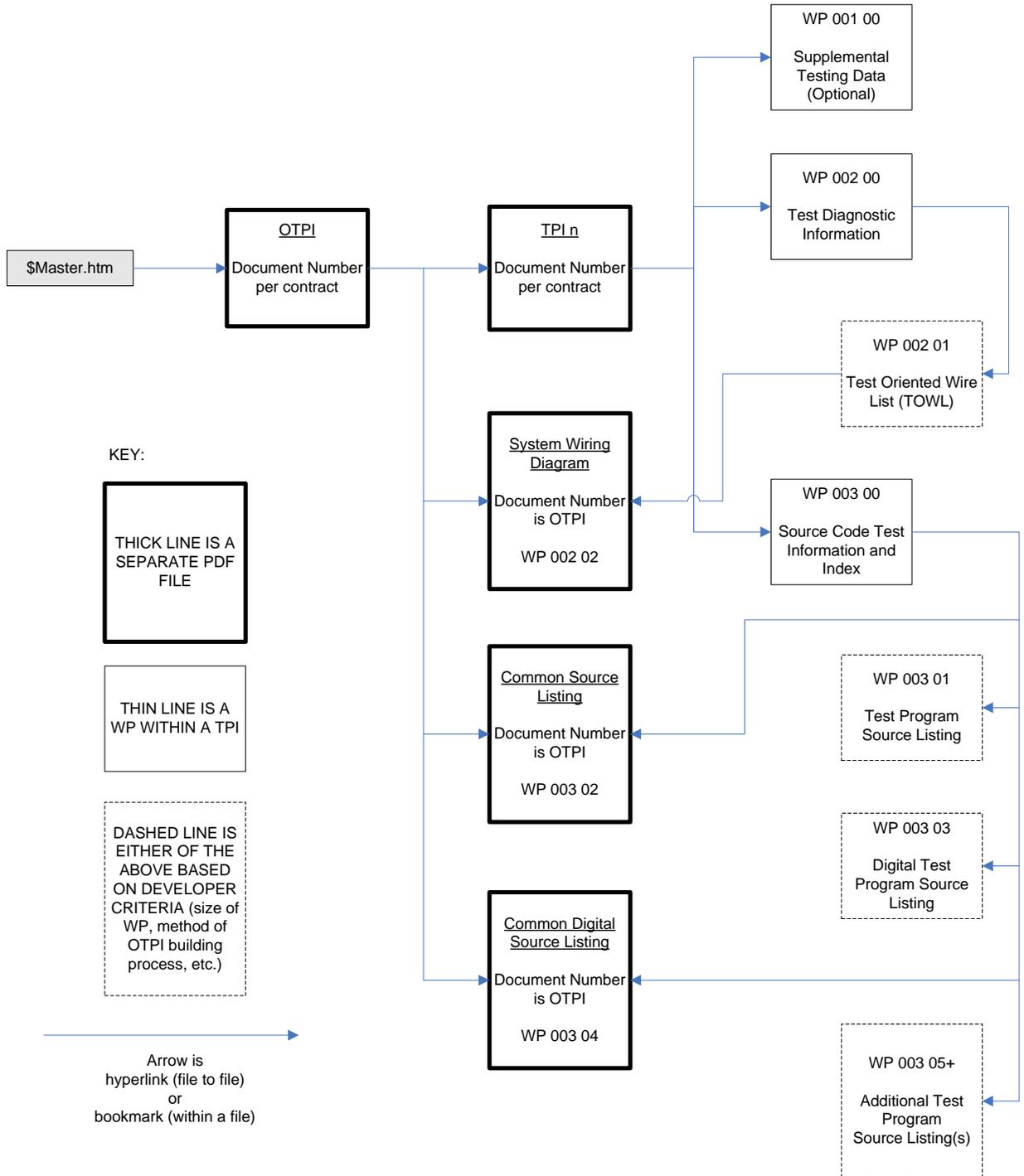


Figure 9: OTPI Disk, File and Work Package Structure