

IPC-A-610E

MIT Survival Kit

**What every instructor needs to know to
conduct effective CIT training**

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1. Obligations of Every Master IPC Trainer

Most of your CIT students will arrive in your classroom thinking that they are only attending to learn about the IPC-A-610 document. It's an easy mistake because they are thinking mostly about the training and testing they'll receive this week.

Master Trainers can't make professional instructors out of every Instructor Candidate but your position as an MIT includes helping them understand that you are not only teaching them the document, but you are also preparing them to provide training and certification to Application Specialists—the real users of the document.

This information is provided to help you prepare for training Certified IPC Trainers in the IPC-A-610 Revision E certification and recertification courses.

At the end of this course, when you grant their certification, you are telling that person and everybody else in the world these important things:

- a. You and your training center have granted their certification on behalf of the President of IPC. His signature is on the certificate!
- b. You believe that the training YOU provided has been at least as good if not better than they could have received from any other Master IPC Trainer.
- c. You believe that they understand how to use the CIS training materials they will receive.
- d. You believe that the CIT understands their responsibility to help maintain the integrity of this industry traceable certification program by:
 - properly using the REQUIRED training material
 - issuing the **required** IPC certificates
 - submitting training reports to IPC within two weeks after the course is completed

The value of IPC Training and Certification Programs is that it is internationally recognized. The programs are being translated and conducted in many languages. The Technical Training Committee recognizes that to assure each certified person has received at least the minimum amount of training, instructors need course materials that define each and every part of the training.

The first and most important tool you will use is the Instructor Guide. Most of the CITs you will train won't have professional training and experience as instructors. The format used in IPC courses follows a proven effective format that enables these inexperienced individuals to conduct reasonably good training. Appendix B to this Survival Kit is an *Instructor Skills Handout* that provides you with additional tips, tricks and explanations to help you be a better instructor.

The Instructor Guide is what assures that every instructor, no matter who they work for or where they are in the world, provides essentially the same training as every other instructor. This assurance of common training is the only thing that makes the IPC Certification a portable credential.

2. What You Need to Know About the Instructor Guide (IG)

The IG has two columns. The left column quotes the references for the topic being discussed on that particular page of the IG. In the IPC courses, this is usually quoted text from the document being trained. This enables you to teach without needing several documents open on your podium and you don't have to keep flipping pages in multiple documents.

The right side of the IG will help you the most.

- a. Top right is an image of the slide that should be on display to your students. Nothing will confuse your students more than having a wrong image displayed while you are lecturing about a different topic.
- b. The displayed slides are usually paraphrased statements in bullet format. As the instructor, you expand on those slide bullets by referring to the reference material on the left side of the page and the instructor notes that are under the slide image.
- c. Most importantly, you should pencil in additional notes to remind yourself of additional lecture comments such as experiences you've had or that others have told you about. This is called personalizing your IG.

As a Master IPC Trainer, you are **required** to have the IG in front of you at all times when conducting training—open to the current discussion. When you've taught a few classes and have some notes personalized in your IG to jog your memory, you'll come across as a truly knowledgeable person—not just someone reading the book verbatim (something that should NEVER be done).

DO NOT BECOME COMPLACENT ON USE OF THE IG.

Every one of your actions will be observed by your students and interpreted as an acceptable way to teach. It is your obligation and responsibility to provide training in the manner that the IPC Certification Program Policies Committee and the IPC-A-610 Technical Training Committee have established as acceptable.

3. Introducing CITs to the Instructor Guide

When you get to session #11 in the 610E course (High Voltage), your students have been observing how you use your Instructor Guide for three days. There is one handout on the training CD that you need to print and pass out to your students for session 11. This handout is an excerpt of a few pages of the same IG you are using for that session, with some mark-ups to help your CIT candidates.

Before you jump into the High Voltage lecture in Session 11, take just two or three minutes to review the information about the importance of using the IG to assure that all students receive the same training. Then ask the students to follow along with their handouts for a couple of pages as you start your lecture so they can observe how a truly professional instructor—YOU—properly use the IG.

Guide your students through this process but don't drag it out. Tell your students that there is a CIT SURVIVAL KIT Document in the CIS training kit that they'll receive when they've completed this CIT training.

4. Preparing for Lecture

You **MUST** be viewed as a professional when you step in front of the students the very first time.

No matter how many times you have taught any session, **REVIEW THE IG BEFORE YOU GO INTO THE CLASSROOM.**

Hopefully you have accumulated some show and tell examples. Have these sorted into the order you'll use them in your lecture, and have notes (personalization) in your IG reminding you to pick up the show and tell item and discuss it with the class.

Have your laptop booted and the first lecture PPT file loaded and the first slide being displayed. Have the computer projector on, warmed up, and the zoom and focus all set. Have your Instructor Guide in position on the podium.

Have the Policies and Procedures and 610E documents beside your podium so you can quickly reference them if needed.

Have your mind focused on just one topic--the course you are about to teach.

Perfection at this point establishes the student's opinion of you for the rest of the course.

5. IPC help for Instructors and Users

certification@ipc.org

This is the e-mail address for any questions related to certification programs, such as training report submission, requests for extensions or confirmation of an individual's certification credentials and training procedures.

www.ipc.org/certification

This is the most important website for IPC Certification participants. Clicking on any of the five program links will open a wealth of support, starting with information about certification extensions, listings and contact information for IPC Authorized Training Centers for that program, and listings of translations for CIT and CIS training materials. The most important link for Certified IPC Trainers is at the top —“Support for Training <program> Application Specialists” has download links for the most current training material lists, training report forms, changes, updates and corrections to training material, etc. There is a similar link with support for MITs.

answers@ipc.org

This is the e-mail address for any technical questions related to IPC standards, such as clarification of a requirement, does IPC have a standard for “xxx” etc.

www.ipc.org/status

Find a complete listing of all work in progress on new documents or revisions. The current status of each document is listed: working draft; final draft for industry review; proposed standard for ballot; new publications; or new translations. Clicking on any document number take you to the appropriate Committee Home Page where you can find free download of current drafts, comment lists and minutes of the committee working on the document. It is not a requirement to be a member of IPC or a member of the committee to download these and anyone is invited to submit comments using the online comment forms. If you'd like to become a member of the committee, just click on the “staff liaison” name to send a message and let us know you want to be involved. We're very pleased to welcome committed volunteers!

www.ipc.org/downloads

This is the link to get free downloads such as document amendments, errata lists, and revision comparison documents such as the red-lines showing changes in J-STD-001 and IPC-A-610 from D to E revisions. This is also the site for free download any of the IPC-TM-650 test methods that are referenced in IPC standards.

orderipc@ipc.org

This is the e-mail address for anything related to purchasing IPC documents, DVDs and certification program material, including requests for a formal quote or submission of purchase orders.

www.ipc.org/onlinestore

1. Click on “Document Revision Table” to check for the most current version of any document and to see complete revision history for any document.
2. Sign up to receive notification messages for new releases at “New Releases Notification Service.” This is especially important for IPC member companies as a reminder to request the FREE copy of each new standard that every member company is entitled to receive.
3. “License Information” link provides the limitations of use for electronic versions of IPC documents.
4. “Customer Service” link for the following: How do I know what standards I want to purchase? -- How can I see the entire IPC catalog? -- How do I get discount pricing? -- Why do I have to log in to put things in my shopping cart? -- To Place an Order -- To Change an Order -- Shipping and Handling -- Our Return Policy -- How Secure are We? -
- Privacy Notice

6. Conclusion

This Survival Kit has been prepared to help you be a better Master IPC Trainer and to make the training better for your customers (students). This is not meant to be all inclusive of the tricks and tips Master IPC Trainers have learned from experience. The IPC certification team would like to hear of any training tips or suggestions that could improve this document and help others on their journey as an IPC Trainer. Please send your Survival Guide comments & ideas to certification@ipc.org.

APPENDIX A

IPC Professional **Training and** **Certification Policies** **and Procedures V1.2**



IPC PROFESSIONAL TRAINING AND CERTIFICATION POLICIES AND PROCEDURES v1.2

1 Goals

The goals of the IPC Professional Training and Certification Programs are to:

- a. provide a standardized set of industry developed, recognized, approved and traceable training programs to enhance understanding and appropriate application of criteria in the standard.
- b. provide an understanding of accept/reject criteria to enhance an individual's motivation and ability to consistently and correctly apply the technical discrimination criteria.
- c. teach methods and processes to improve an individual's skills and ability to achieve acceptable workmanship.
- d. teach methods and techniques how to use, navigate, locate and to apply the criteria contained in a document to the appropriate class or classes of production.

2 Overview of IPC Training and Certification Programs

2.0.1 IPC's training and certification programs are developed by and through consensus of industry, including but not limited to members of IPC and many others such as representatives from academia, government agencies, OEMs, EMS and IMS companies, and are used worldwide. Participation in any IPC training and certification program is voluntary. Membership in IPC is not required for use of any IPC Training and Certification Program. Training consistency and program integrity is maintained by establishing certification criteria and control on all levels of the program (through industry consensus) and this requires the use of specific instructor guides, training visuals/slides, student training material kits, test/measurement material and any other material that may be required by a specific training program.

2.0.2 There are two tiers to the Certification programs:

- a. Certified Master IPC Trainers (MIT) meeting specific background and training requirements provide training and certification to Certified IPC Trainers (CIT) on a standard. Specific content of the curriculum is determined by the Technical Training Committee, see clause 4.3. ("Certified IPC Trainers" includes individuals previously identified as Instructor/Inspector and Registered or Class A Instructors; these terms are no longer used.)
- b. Certified IPC Trainers provide Application Specialist (previously called operator/worker proficiency) training and certification to managers and supervisors, inspectors/quality program administrators, operators and any other individuals that need a consistent understanding of the criteria. In some programs, this level of training is modular. If so, the Technical Training Committee may define specific modules that are mandatory for everyone; the remaining modules are optional with training provided only as needed to support appropriate technology segments required by an individual.

2.0.3 The period of certification for Master IPC Trainer, Certified IPC Trainer and Certified IPC Specialist expires after two (2) years. Certification is valid through the last day of the month, regardless of the day of the month the certification was granted.

2.0.4 Challenge testing is an option for Certified IPC Trainer or Certified IPC Specialist certification, see clause 6.

2.0.5 Certification is a personal and portable credential—it is granted to the individual who successfully completes the training and not to the employing company. Certification conferred upon an individual is the property of that certified person and is retained (portable) even when changing employment.

2.0.6 This Policy and Procedures Document is applicable to IPC's Professional Training and Certification Programs, including Discrimination Skills (such as IPC-A-600, IPC-A-610 and IPC/WHMA-A-620) and Workmanship Skills (such as IPC/EIA J-STD-001 and IPC-7711/7721) training programs.

3 Obligations of participants

3.1 Any party choosing to participate in any IPC Professional Training and Certification Program is obligated to follow the Policies and Procedures stated herein. IPC will not permit anyone to state that they are providing IPC training or IPC certification unless they follow these policies. Failure to comply with this policy may result in cancellation of a training center license or an individual's certification.

3.2 The industry-approved curriculum materials available through IPC must be used to conduct training that will lead to IPC certification. These copyrighted materials are the intellectual property of IPC and may only be used to conduct training that leads to issuance of an Official IPC Serialized Certificate. It is not acceptable to delete or modify any curriculum content except as authorized in writing by IPC Director of Certification.

3.3 Certified IPC Trainers must be periodically recertified by a Certified Master IPC Trainer in order to retain certification. The purpose of recertification training is to ensure continuing trainer competence by reinforcing material taught in the original course and to update Certified IPC Trainers on corrections, amendments and additions to the Standard and the specific training and certification program. Certified IPC Specialist recertification may be provided by any Master IPC Trainer or Certified IPC Trainer. Recertification of Certified IPC Trainers or Certified IPC Specialists may be accomplished by attending certification or recertification training or through challenge testing.

3.4 If personal scheduling problems will delay timely recertification, IPC may grant an extension of up to ninety (90) days to a Certified IPC Trainer, allowing them an additional ninety (90) days in which to be recertified. This certification extension offers a grace period during which Trainers can still purchase training materials and conduct application specialist training. Certified IPC Trainers are authorized to grant, at their discretion and in accordance with ISO or other certification guidelines and restrictions that may be in place at a company, a single extension of up to ninety (90) days to Certified IPC Specialist. Such extensions should be noted on the certification document.

3.5 Recertification that is accomplished in a ninety (90) day window before OR after the existing certification expiration date will be granted a new certification expiration date that is exactly two years following the existing expiration date. That is, early recertification of up to 90 days will not incur a penalty on the two-year cycle nor will recertification within the 90-day (maximum) extension of certification add on to the two-year cycle. When recertification is accomplished more than 90 days before or after the existing expiration, new two-year expirations will be established from the actual month of recertification. Contact IPC's director of certification if special exceptions are requested.

3.6 All rights and permissions afforded to Certified IPC Trainers and Certified IPC Specialist are cancelled when the individual no longer meets certification requirements (expiration or administratively cancelled).

3.7 The individual programs have established time periods for completing written tests and workmanship skills demonstrations. Every effort should be made to adhere to the testing schedules. Each written test shall be completed in a single contiguous and continuous time block; exception is permitted for reasonable short breaks that are determined not to compromise the integrity of the examination. If extenuating circumstances warrant, reasonable additional time may be authorized at the discretion of the proctoring trainer; questions or concerns should be directed to IPC director of certification. The time to complete any portion of the workmanship skills measurement exams during challenge or retesting shall not be greater than the typical time allocated for that same skills measurement action if it were completed in classroom training for that program.

3.8 Skills measurement through written and demonstration of capabilities and understanding are part of the learning process. All workmanship skills demonstration projects and written examinations for both classroom and challenge testing will be proctored by a currently certified Master IPC Trainer or Certified IPC Trainer for that program. Immediately on completion of a written exam the instructor is required to review only the correct answers to missed questions to reinforce the correct criteria. Wrong answers should not be reviewed as discussion of incorrect criteria can create confusion. Instructors should monitor workmanship practices during practice and graded projects to correct bad habits and reinforce good habits. Technical instruction is not required to be provided to individuals choosing to take the challenge option in lieu of classroom training. The instructor should provide information concerning test administration, explanation of terms, facility resources (shelter and evacuation procedures, etc.).

3.9 Program administrators including but not limited to Master IPC Trainers or Certified IPC Trainers must exercise due care in safeguarding access or loss of any written tests, answer keys or similar material so integrity of the certification programs is not compromised. Any lost or compromised material must be reported to IPC director of certification as soon as possible after discovery.

3.10 Questions regarding the program policies, procedures and application or requests for extension of Trainer certification should be directed to IPC's director of certification, preferably by email to certification@ipc.org.

4 Training and Certification Team Members

4.1 IPC Director of Certification The director of certification is an IPC staff member responsible for providing support to the training and certification programs by facilitating development meetings, reproducing and distributing training material, and tracking Certified IPC Trainers. The director of certification provides policy interpretation and problem resolution related to program administration. Only the IPC director of certification (or his/her agent) is authorized to grant extensions to the certification time of Certified IPC Trainers as defined in this policy and procedures document.

4.2 IPC Training and Certification Policy Advisory Committee

4.2.1 The role of the IPC Training and Certification Policy Advisory Committee, comprised of representatives from large and small industry user companies and training providers, is to represent the interests of various types of IPC Training and Certification program users by advising the IPC director of certification on program implementation and improvements.

4.2.2 This committee will provide resolution recommendations to IPC's President if a user of an IPC Training and Certification Program appeals a program policy or administrative decision.

4.2.3 As IPC Training and Certification Programs evolve, the Advisory Committee's composition may be changed to ensure that it remains representative of all parties active and interested in the purposes and operation of the programs.

4.3 IPC Technical Training Committee Each IPC Training and Certification Program has a unique Technical Training Committee chaired by a representative of the IPC user community and consisting of representatives from large and small industry user companies and training providers. The committee is responsible for defining the technical content specific to that training program and to ensure accuracy in instructional materials used in the program. This committee will submit its findings to the IPC director of certification. When appropriate (policy issues), recommendations/requests will be made available to the Training and Certification Policy Advisory Committee.

4.4 IPC Authorized Training Centers

4.4.1 IPC licensed training centers are identified by the title "IPC Authorized Training Center." Authorized training centers will operate such a Site pursuant to the terms and conditions of the License and this Policies and Procedures Document.

4.4.2 Each Training Center will have unlimited ability to hold training for Certified IPC Trainers and Certified IPC Specialists, within the guidelines established by this Policy and Procedures Document, the Technical Training Committee and the terms of the Certification Center License. They have total responsibility for administration and execution of their training classes.

4.4.3 The Training Centers and/or Certified IPC Trainers shall determine their own schedules and tuition fees for conducting IPC Training and Certification sessions, so long as they uphold the standards and quality of the program.

4.4.4 To ensure the personal attention required by the training, Discrimination Skills training sessions shall be limited to fifteen (15) students per trainer for initial certification and Workmanship Skills training sessions shall be limited to twelve (12) students per trainer for initial certification.

4.4.5 A limited number of copies of course material (instructor guides, training visuals and written tests) for training Certified IPC Trainers are made available for use by Master IPC Trainers at Authorized Training Centers. This material shall not be copied or otherwise reproduced/duplicated in any manner and remains the property of IPC. This material must be surrendered to IPC if a training center license is cancelled by either party or if the Master IPC Trainer certification is no longer valid for any reason; e.g. expired more than ninety (90) days or if the individual that was the Master IPC Trainer leaves that Authorized Training Center, see 4.5.1.

4.5 Master IPC Trainers (MIT)

4.5.1 Only employees of IPC authorized (licensed) training centers can be Master IPC Trainers. Master IPC Trainers receive their certification from the IPC director of certification. They are authorized and empowered by IPC to conduct training and grant IPC certification and recertification to Certified IPC Trainers. Master IPC Trainers are authorized to conduct Application Specialist training. Master IPC Trainers may conduct IPC training for any organization that desires such training within the constraints and in accordance with the policies and procedures defined herein.

4.5.2 Master IPC Trainers must maintain current certification as a Certified IPC Trainer. This includes, as a minimum, passing written examination(s) and, as appropriate to the program, acceptable completion of specific workmanship skill s demonstrations. Additional requirements, unique to a specific training program, may need to be satisfied to qualify for Master IPC Trainer certification. If these are determined to be necessary, they will be defined in the curriculum by that program's Technical Training Committee. Master IPC Trainer certification periods and expiration dates are concurrent with their Certified IPC Trainer certification.

4.5.3 Master IPC Trainers provide the first level of technical and administrative support to Certified IPC Trainers and Certified IPC Specialist they have trained. This includes assistance with understanding of program policies and procedures and criteria of the standard(s).

To assure currency of program policies and technical requirements, Master IPC Trainers are strongly encouraged to participate in activities of the technical training committee(s) and the standard development committee(s). The minimum recommended level of participation is to review and provide comment on training outlines and issues circulated (via hardcopy and/or internet) to the technical training committee, and by review and commenting on document revisions through the standards development committee. Periodic attendance at committee meetings is encouraged but not required.

4.5.4 Certified IPC Trainer training material is provided to Master IPC Trainers by IPC. This material remains the property of IPC and must be surrendered when the Master IPC Trainer is no longer certified or authorized to conduct Certified IPC Trainer training, see 4.4.5.

4.5.5 Master IPC Trainers whose Certified IPC Trainers certifications have expired are not authorized by IPC to conduct IPC training or purchase IPC training materials until they are recertified.

4.5.6 Master IPC Trainers are granted and encouraged to use the MIT (Master IPC Trainer) designation on letterhead, business cards, and all forms of address. Appropriate use is all UPPER CASE with no periods or spaces.

4.6 Certified IPC Trainers (CIT)

4.6.1 Master Trainers at authorized training centers will train, test, and certify a cadre of highly qualified individuals to serve as Certified IPC Trainers. Certified IPC Trainers may be employees of companies that train only within their parent company; they may be faculty members of education and training institutions, such as community colleges that train a variety of current and future workers; or they may be independent consultants who work with a variety of companies. Certified IPC Trainers may conduct Application Specialist training for any organization that desires such training within the constraints and in accordance with the policies and procedures defined herein.

4.6.2 Certified IPC Trainers are authorized to grant certification credentials to Certified IPC Specialists that successfully complete the required program training and/or pass the minimum skills measurement criteria set by each program. This will include, as a minimum, passing written examination(s) and, as defined in the program, may require acceptable completion of specific workmanship demonstrations.

4.6.3 Certified IPC Trainers may schedule Application Specialist training classes based on the needs of the sponsoring company or companies, or the level of interest among individual current or future workers. The goal of these programs is to make Application Specialist training widely available.

4.6.4 Certified IPC Trainers whose certifications have expired are not authorized by IPC to conduct Application Specialist training or purchase Application Specialist training materials until they have recertified.

4.6.5 To ensure the personal attention required by the training, Discrimination Skills training sessions shall be limited to fifteen (15) students per trainer and Workmanship Skills training sessions shall be limited to twelve (12) students per trainer.

4.6.6 Certified IPC Trainers are granted and encouraged to use the CIT designation on letterhead, business cards, and all forms of address. Appropriate use is all UPPER CASE LETTERS with no periods or spaces.

4.7 Certified IPC Specialist (CIS)

4.7.1 Certified IPC Specialist training programs will train, test and certify in the correct application of the criteria for all product classes. Certification is granted by a Certified IPC Trainer. Application Specialist training is appropriate for managers and supervisors, inspectors/quality program administrators, operators and any other individual (such as technology students) that will benefit by having a consistent understanding of the criteria in a standard. In some programs, this level of training is modular. If so, the Technical Training Committee for that standard may define some module(s) to be mandatory for everyone, and the balance optional only as needed to support appropriate technology segments required by an individual.

4.7.2 For modular training, the certificate will include endorsement blocks for each module of instruction. The Certified IPC Trainer will initial and add the date for each module that is successfully completed. Modules defined by a specific program as prerequisite (mandatory) training must be satisfactorily completed before certification to optional modules can be granted. The certification expiration date established by the mandatory modules will be applicable to all optional modules, regardless of when the optional module certification was granted.

4.7.3 Certified IPC Specialists are granted and encouraged to use the CIS (Certified IPC Specialist) designation on letterhead, business cards, and all forms of address. Appropriate use is all UPPER CASE LETTERS with no periods or spaces.

5 Program Materials

5.1 A number of materials are required for this program in addition to the published Standards. Except as specifically authorized, only original copies of the Standards, Instructor Guides, Training Visual (CDs or 35 mm slides), Student Training Materials, Written Examination Booklets and Official IPC Serialized Certificates Of Completion as developed and revised by the specific IPC Technical Training Committee and obtained from IPC may be used in the IPC Training and Certification Programs. Materials authorized for reproduction by the user will be so identified and provided by IPC in electronic format.

5.2 Program materials are published and distributed by IPC to IPC Authorized (Licensed) Training Sites with Master Trainers and/or to Certified IPC Trainers, depending on the item; see 4.4.5. Training material for any program may only be purchased for use by a currently certified trainer in that program. Workmanship skills demonstration materials (PCB and component kits) that meet the practice and skills measurement requirements are available from IPC but may be procured from other sources.

5.3 Master Trainers (or the companies they represent) must purchase and provide Certified IPC Trainers with training materials to support the training they conduct. This material must be purchased from IPC and will only be sold to Master Trainers and the companies they represent. Certified IPC Trainers (or the companies they represent) must use Application Specialist Training Materials to support the training they conduct. Certificates must be purchased from IPC and will only be sold to Certified IPC Trainers and the companies they represent.

5.4 Materials (documents) used in IPC Training and Certification Programs bear copyright notices affixed by the originating party and those notices must be honored by the receiving party or parties and must appear on all copies that may be further distributed.

5.5 Each candidate who enrolls in Certified IPC Trainer training will receive one (1) copy of the applicable Standard and an original copy of the Certified IPC Trainer Student Training Material Kit for use in the course.

5.6 Before leaving the training site, successful candidates in the trainer training program will receive an Instructor Guide, Training Visuals on CD-ROM, Written Tests, and reproducible copies in either hard copy or electronic format of forms and reports required for conducting Application Specialist training. These materials must be used when conducting training that will lead to IPC certification. Requests for exceptions to the requirement to provide this training material, i.e. multiple attendees from the same location or subsequent recertification to the same program, must be approved in writing by the IPC director of certification on a case basis.

5.7 Each Application Specialist training attendee will be provided with Application Specialist student training materials for use during the training class. Each training attendee shall have an original copy of the applicable Standard for use during the training. The Standards may be reused from class to class but each trainee is required to have their own student training materials (for review quizzes, project sheets and retention of notes taken during class). Unless otherwise noted on the material, written permission is required from IPC for local reproduction.

5.8 Material developed for use in IPC Training and Certification Programs is protected by copyright and may only be provided to attendees of certification training or certification challenge testing who satisfactorily complete the course examination criteria. Material developed for use in IPC Training and Certification Programs may not be resold or otherwise distributed.

6 Challenge Tests and Re-Tests

6.1 Certified IPC Trainer Challenge Tests

6.1.1 Discrimination Skills Challenge testing, when qualified per 6.1.2.1 and if proctored by an IPC Master Trainer, may be acceptable for initial certification and subsequent recertification. Except as noted in the prequalification requirements of 6.1.2.2, workmanship Skills Challenge testing is not acceptable for initial certification but is acceptable for recertification when proctored by an IPC Master Trainer.

6.1.2 If required by law, an authorized training center must provide opportunity for any individual meeting the prequalification requirements to take a "challenge test" for Certification as a Certified IPC Trainer without taking the training course. Contact IPC's Director of Certification if additional information is required. A "challenge test" will involve the applicant satisfactorily completing the same Certified IPC Trainer examinations and skills demonstration(s) as is required of those taking the classroom course. Any challenger who successfully passes the written and workmanship skills demonstration examinations will be certified as a Certified IPC Trainer.

6.1.2.1 Discrimination Skills Certified IPC Trainer candidates shall meet at least one of the following:

1. Be currently or have previously been certified as a trainer in any (discrimination or workmanship skills) IPC training and certification program.
2. Provide documentation to the Authorized Training Center administering the exam of at least one year experience instructing a formal training program (not on-the-job training) in a program similar to the challenge topic (manufacturing and/or inspecting PCBs, electronic assemblies; cable/wire harness assemblies, related technologies).

6.1.2.2 Workmanship Skills Certified IPC Trainer candidates shall meet at least one of the following:

1. Are currently or have previously been certified as a trainer in an IPC workmanship skills training and certification program.
2. Provide documentation to the Authorized Training Center administering the exam of at least one year experience instructing a formal hands-on training program (not on-the-job training) in a program similar to the challenge topic (rework and repair, general hand soldering; related technologies).

The Technical Training Committee for any program may establish additional prequalification requirements specific to that program.

6.1.3 Individuals wishing to take a challenge test may purchase a copy of the appropriate Standard and the Certified IPC Trainer course handouts from IPC or from an authorized training center or, for Certified IPC Specialists, from Certified IPC Trainer.

6.1.4 Certified IPC Specialist instructional materials shall be provided by the training center to each Certified IPC Trainer candidate who passes a challenge test. Exceptions may be authorized by request to IPC's director of certification.

6.1.5 Certification Centers may charge fees for the cost of administering a challenge test and for providing Application Specialist training materials to attendees that successfully complete all required examinations. The fee for administering a challenge test, to be set by each Certification Center, shall not be set at a level that will, or is intended to, discourage applicants from taking a challenge test.

6.2 Certified IPC Trainer Retesting

6.2.1 Each Certification Center must permit any individual who completes the Certified IPC Trainer course but fails to pass the Certification Examination(s) at the completion of the course, on request of such an individual, to attempt a retest of the Certification Examination(s) if completed within ninety (90) days following the original testing. A retest will be administered no sooner than thirty days after the date of the initial test except as otherwise authorized by the IPC Director of Professional Development. No Certification Center is required to permit any individual to take more than a single retest in the ninety (90) day retest period. At the discretion of the Master Trainer, retesting may be limited to only the specific written examination or workmanship projects that were previously failed. Example: if the open book test was satisfactory but the closed book test was failed, only the closed book test needs to be retested. If there is a requirement to attach two wires to a turret terminal and only one was completed satisfactorily, on retest two wires need to be attached satisfactorily.

6.2.2 An individual who fails a Challenge Test shall be permitted, upon request, to take a retest of the Examination(s) if completed with ninety (90) days following the original testing. Any challenge retest will be administered no sooner than thirty days nor more than ninety (90) days after the date of the initial challenge test except as otherwise authorized by the IPC Director of Professional Development. No Certification Center is required to permit any individual to take a challenge test more than once in the ninety (90) day retest period.

6.2.3 Certification Centers may charge fees for the cost of administering a retest and for providing Application Specialist training materials to Trainer candidates that successfully complete all required examinations. The fee for administering a retest, to be set by each Certification Center, shall not be set at a level that will, or is intended to, discourage applicants from taking a retest.

6.2.4 An individual who fails the Certification Examination and/or a retest will not receive the instructional materials used by Certified IPC Trainers.

6.3 Certified IPC Specialist Challenge Tests

6.3.1 Challenge testing, when proctored by an IPC Trainer, is acceptable for Discrimination and Workmanship Skills initial certification and subsequent recertification.

6.3.2 Any individual shall be permitted to take a "challenge test" without taking the training course. A "challenge test" will involve the applicant completing the same skills measurement examinations as is required of those taking the course. Any challenger successfully passing the required written and performance examinations will be certified and will enjoy the same benefits and privileges as all other Certified IPC Specialists that have successfully completed the same training modules.

6.3.3 Individuals wishing to prepare for a challenge test may purchase a copy of the appropriate Standard and the Application Specialist student handbook/training materials from IPC, from an IPC authorized training center or from a Certified IPC Trainer in that program.

6.3.4 Certification Centers and Certified IPC Trainers may charge a fee for the cost of administering a challenge test. This fee, to be set by each Certification Center or Trainer, shall not be set at a level which will, or is intended to, discourage qualified applicants from taking a challenge test. No Certification Center or Trainer is required to permit any individual to take a challenge test more than once in any twelve-month period.

6.4 Certified IPC Specialist Retesting

6.4.1 Any individual who completes the Application Specialist training course but fails to pass the certification measurement criteria at the completion of the course, shall, on request of such an individual, be provided the opportunity to attempt a retest of the certification measurement examination(s) not sooner than 24 hours nor more than ninety (90) days following the original testing, except as authorized in writing by IPC's director of certification. At the discretion of the Certified IPC Trainer, retesting may be limited to only the specific written examination or workmanship projects that were previously failed. Examples: On a module by module basis, if the open book test was satisfactory but the closed book test was failed, only the closed book test needs to be retested. If there is a requirement to attach two wires to a turret terminal and only one was completed satisfactorily, on retest two wires need to be attached to a turret terminal satisfactorily.

6.4.2 Certification Centers or Certified IPC Trainers may charge a fee for the cost of administering a retest. This fee, to be set by each Certification Center or Certified IPC Trainer, shall not be set at a level which will, or is intended to, discourage individuals from taking a retest. No Certification Center or Certified IPC Trainer is required to permit any individual to take more than a single retest in the ninety (90) day retest period.

7 Distance Learning

7.0.1 Training processes other than specifically defined herein shall not be used to conduct IPC Training and Certification Programs.

7.1 Discrimination Skills Distance Learning (IPC-A-600; IPC-A-610; IPC/WHMA-A-620)

7.1.1 Interactive Distance Learning for Trainers (video conferencing or training conducted over the internet with a live trainer) is not acceptable for initial certification but is acceptable for recertification. The recertification course may not be used to attain initial certification. No other type of distance learning training is authorized for Certified IPC Trainers.

7.1.2 Interactive Distance Learning for Certified IPC Specialists (video conferencing or training conducted over the internet with a live trainer) is acceptable for initial certification and subsequent recertification. No other type of distance learning training is authorized.

7.2 Workmanship Skills Distance Learning (J-STD-001; Rework, Repair & Modification to IPC-7711/7721)

7.2.1 Distance learning of any type is not acceptable for either initial certification or recertification of Trainers or Application Specialists in any program requiring hands-on demonstration of skills and workmanship.

8 Forms and Documentation Requirements

8.0.1 A training report form shall be completed and submitted to IPC on completion of each training session or challenge certification/recertification class. (The same report forms are required for classroom training and challenge certification.) Every effort should be made to submit these reports as email attachments within two weeks. Whenever possible, electronic reporting is requested. The completed report forms are to be sent as email attachments to: certification@ipc.org. In addition, a "missed question report" shall be completed and forwarded to IPC when separately required for specific program.

8.0.2 All students should be encouraged to complete a standardized evaluation form at the end of the course. These comments are of most value to the trainer, but comments significant to the curriculum should be transcribed to the appropriate fields on the Training Report. They will help IPC and the technical training committees manage the course content to assure it is meeting user needs.

8.0.3 Forms such as training report forms, student critique forms, and examination answer sheets that are not a part of the student training material kit may be printed or copied by the users (that is, they do not have to be purchased each time from IPC). Templates of the required electronic report forms and instructions for completing the forms will be available for download from the IPC website and will be provided to all IPC Approved Training Centers and all Certified IPC Trainers.

8.0.4 Written examination answer sheets, workmanship grading sheets and student critique forms shall be retained by the Certified IPC Trainer or training site for at least two (2) years following the completion date of the training and be available for review on request by the IPC Training and Certification Policy Advisory Committee.

8.0.5 If required by a company's quality management program, workmanship samples shall be retained and available for review for the duration of the individual's certification period.

9 Appeal

Any user of the IPC Training and Certification Programs defined herein shall have the right to appeal any administrative decision or action to the IPC director of certification. The appeal will be provided to the IPC Training and Certification Policy Advisory Committee for review. This committee will provide resolution recommendations to IPC's President. Such appeal must be submitted in writing within 15 days of the aggrieved action. The recommendation(s) of the Committee shall be issued to IPC's President within ten days of receipt of the final submissions of the parties. The decision by IPC's President will be issued within five days and will be final.

APPENDIX B

Instructor **Skills** **Handout**



Instructor Skills

Student Handout

*Helpful Hints for teaching an
IPC Training and Certification Course*



How to Use the Plan of Instruction

IPC Training and Certification Programs have been industry developed and approved. Properly administered, each certified Trainer or Application Specialist will have received the same training program content and will have satisfied the same skill measurement requirements.

“Properly administered” means use of the official IPC program materials in the manner that the industry Training and Certification Policy Advisory Committee and the industry Technical Training Committee specified and approved. This is what sets the IPC Training and Certification Programs apart from privately developed training and familiarization programs that haven’t been industry approved and don’t have industry traceable certifications.

IPC training materials are the Intellectual Property of IPC and are internationally copyrighted. It is not acceptable to copy or extract text of illustrations from these IPC training materials for any other use. They are intended and provided specifically for training that leads to granting of an Official IPC Certificate. It is not acceptable to use any portion of these materials for training that does not lead to an Official IPC Certificate.

The Instructor Guide (IG) is intended to be used to train trainer candidates to the requirements of the applicable standard. Individuals that satisfactorily complete this training program are eligible to be designated Certified IPC Trainer (CIT) and to receive an Official CIT Certificate for the appropriate program..

This IG has a number of training sessions that are to be used in the formal classroom training course to achieve this certification. These training sessions are shown on the CIT Training Schedule. When conducting formal classroom training, trainers are required to use the associated training visuals either from computer display or from optional 35 mm slides. Training support handouts such as a copy of the IPC Formal Policies and Procedures Document, review questions, etc., have been provided in the CIT Training CD and copies need to be printed and made available for use by each trainee.

Sessions need to be trained in the order presented in this IG. Each Session is designed to reinforce knowledge gained in a previous session.



Each session of the IG is divided in two columns.

The Left column is Instructor Reference, and has the following types of information:

1. Direct quotes from the standard and prefaced with the applicable clause and page numbers.
2. Suggested narrative, *presented in italic font*.

You are specifically discouraged from reading the suggested narrative and/or from **READING the text of the standard. The suggested narrative should be paraphrased.**

Reference Pointers which direct you to other documents where subject-matter-specific information can be found are enclosed by a reference box.

The Right column is Instructor Activity.

There is a printed representation of the visual aid that should be displayed to the students in support of that page of the IG. You should use the “bullets” on the visual aid to guide your lecture presentation.

Below the picture of the visual aid is a reminder of the discussion items the instructor should cover. When appropriate to help with understanding, additional clarification or explanation is provided as a training aid.



Role of a Trainer

Setting Agenda & Keeping Time

- Take control of class
 - What will be covered and when
 - Set the tone for the class (formal, informal, etc.)
- Keep group on task
 - Fulfill participants' expectations
 - Role of a facilitator is to help participants learn and by staying on task, you guide them to their learning
- Attention spans are short

Vary your methodology at least once an hour – don't just lecture if you can help it. The Lesson Plan generally tries to stay away from straight lecture. Try to work in some type of activity, review session, sending around physical samples, Q & A, something to get participants involved once an hour – it breaks up the monotony and reengages participants

Attend to Logistics

Seating and Lighting

- Keep it comfortable and light, but not too bright
- Make sure the temperature is cool enough to keep them awake and comfortable but not freezing!

Sightlines

- Make sure everyone can see

Breaks

- Break at least every 90 minutes

Distractions

- Minimize or eliminate them
- Close blinds, turn tables/chairs away from windows to reduce the gazes out beyond the classroom

Messages

- Ensure participants have a way to send and receive messages that doesn't interrupt the flow of your class.



Role of a Trainer (cont.)

Assume Leadership

People expect leaders to be decisive and authoritative. How would you have responded when we started the class if I'd said, "So, What do you all want to do here?"

- **Be Assertive and Decisive**
 - Don't hem and haw over which way to go; you've reviewed the IG and materials enough to know what is right.
- **Correct and move on**
 - Sometimes you goof. If you do, apologize, correct and move on.
- **Avoid confrontation**
 - Most people are uncomfortable with confrontation; if someone is challenging you, often they are challenging the content and your authority and you need to resolve it.
 - If possible, resolve confrontation with the individual's that is challenging you or facilitate a confrontation between two participants outside of the class, if possible.
- **Solve Problems as soon as they become apparent**
 - Don't let a problem stew and fester – it only gets bigger. If you need to take an unscheduled break, do so and resolve the problem.
- **Be confident and believe in yourself**
 - We want our leaders to exude confidence, rather than be hesitant or unsure.
 - Here are a couple of tips for presenting a positive, confident image:
 1. Stand firm and erect
 2. Maintain eye contact and smile
 3. Walk around the room and take possession of your space
 4. Establish credibility right from the start
 5. Demonstrate identification with the group early on – sort of "we're in this together" feeling.

Additionally,

- **Maintain Training Objectives**
 - If you say you're going to do something – then do it explain why you aren't going to do it.
- **Involve silent members as much as you and they feel comfortable**
 - Be careful not to try to draw someone out too much if they do not want to be forthcoming. You risk alienating them altogether.



Adult Learning Styles

Adults don't learn in the same way. There are 3 General styles. Most adults have a primary style and then a secondary style. Percentages of learner who fall into each style varies depending on the source, but it always falls in the same progression, with roughly 80% of any class being visual learners.

Visual

- Want the "Big Picture" first so they're clear about issue or project.
- Have trouble remember verbal instructions unless they are also written.
- Like to watch demonstrations before trying new skills on their own.
- Take notes and may be quiet during class.

Auditory

- Enjoy listening and reading out-loud, speaking and detailed descriptions.
- Prefer lectures, discussions, Q & A Sessions.
- Often don't watch demonstrations/videos.
- Tend not to take notes/talkative in class.

Kinesthetic/Tactile

- Learn by "doing" they often have trouble sitting for long periods of time – need active participation.
- Learn through interacting with physical materials, exercises, and games.
- Tend to be impulsive learners with little patience; may get fidgety unless they can move about and "do".

An effective instructor must provide a variety of activities to meet the needs of all types of learners. There are area throughout the course for instructors to add their own worksite examples and physical samples to appeal to all learning styles.



How Adults retain information

Adults retain:

- 23% of what we see
- 43% of what we hear and see
- 70% of what we hear, see and do

Adults remember:

- First Things
- Unusual things
- Repeated things
- Last things

Therefore, since the best way to reach most learners is for them to hear, see and do, that's why we've tried to vary the learning styles used in this course as much as is feasible so that all participants can come to understand the specific requirements of the standard.

Presentation Skills and Styles

Skills

- **Set the stage:** Presentation skills cannot be over-emphasized. An instructor who appears unprepared is doomed in the eyes of the participant. A facilitator's job is to first give a proper setting for the material in the students' minds and then to motivate and facilitate their learning.
- **Explain:** Once the state has been set, participants have the needed framework for the topic. Then, the facilitator can launch into the "explaining" phase of the lesson, giving all the pertinent information needed to satisfy the objectives that have been laid out.
- **Closure:** Finally tie everything together, bring the topic under discussion to a close and summarize the topic. Segue to the next topic.



Presentation Skills and Styles (cont.)

Set the Stage

Start your class by focusing a class's attention on the lesson along with creating a framework for all the information that follows.

Setting the stage is not limited to the beginning of a class. It can be used very effectively during the lesson to prepare a class for an abstract idea or theory. Using analogies or examples to which participants can relate is a great way to focus and give a point of reference.

Focus Attention

- “Get their attention
- Use humor, the unexpected, music, be serious – grab their attention.
- The main concern is to gain an immediate interest (from the participants) in which the instructor is saying.

Explain

Create a framework

- Tell participants what to expect – paint the picture, review learning objectives and the process you'll take to get there.

Example: Talk about the entire training course first, walk through the schedule and give an overview of topics, remind them of the 2 exams at the end and then get into the details of each section.

- Let the participants know in advance what is expected from them.
- Setting and communicating learning objectives allows participants to understand what you are trying to accomplish before getting into details.

Use an example

- When a topic under discussion is unclear, use an example. Relate it to something that you think is common or familiar to most participants.

Example: instead of giving just the height parameter for a target condition where the minimum is .25 mm and the maximum is 2.0 mm....say, “.25 mm is virtually equivalent to 3 sheets of 20 pound paper (Standard Xerox Paper) and the maximum of 2.0 is about the thickness of a nickel, which is 1.9 mm.”



Presentation Skills and Styles (cont.)

Explain

(This example allows participants to mentally visualize the parameters).

So, that's setting the stage:

- Focus Attention
- Create a framework
- Learn by example

Once you've set the stage for participants and created a mental map for the course, then you can move into the meat of the course.

Cause & Effect

Can anyone offer his/her explanation of cause and effect to the rest of the class?

Examples of Cause & Effect:

1. If you kick a ball (Cause), then it will move (Effect).
2. Not practicing good ESD (Cause) may lead to failed components (Effect).
3. Not changing your oil every 3-5,000 miles (Cause), may lead to early engine wear out (Effect).
4. Forgetting to turn off the solder iron (Cause) will shorten the tip's life (Effect).

Note: People need to know consequences of not performing task/skill/process correctly. Throughout the Standard you should be discussing "causes" as much as possible so participants understand the "defects" that may occur as a result.

Policies and Procedures

Examples of spelling out a policy or procedures so it is complied with:

1. The procedure for performing the solderability test on standard components.
2. The documented, standard process for populating printed circuit boards in your organization.
3. The way to properly care for a hand soldering iron.
 - Each organization may have a specific policy or procedure for utilizing the standard within their organization.



Presentation Skills and Styles (cont.)

Closure

- What is closure?
We define it as: “Moving to end the topic of discussion as smoothly as possible, without leaving pertinent questions hanging.”
- What does closure do?
It brings to a close, the particular topic of discussion, and makes an introduction to the next topic, upon which it might build.
- When do I use closure?
When you’re done with a topic and are ready to move on to the next topic.
- Why are we talking about this? Sometimes trainers jump around and confuse participants as to what topic they are on.

What Closure Does

It’s like a surgeon closing up the wound at the end of a session of surgery.

- Review
- Summary
- Conclusion
- Transition
- Draws participants’ attention to a closing point.
- Reviews the information just disseminated.
- Leads people to ask questions, mull over information.
- Allows participants to pull together information and see how it progresses and builds on previous information, as well as, how it will link to upcoming info.
- Bridges the current topic to the next topic through the use of an effective transition.

Example: Now that we’ve discuss the soldering requirements, I want to pass around a sample board so you can see those requirements, and how the cleanliness section coming up, also looks at some issues that crop up in soldering, such as flux on components, etc.



Presentation Styles

Every trainer has his/her own style. Bring it to the classes; In addition, there are two primary presentation styles: Authoritarian and Facilitative.

Each is best utilized in different situations.

Authoritarian or Authoritative

- One-way communication
- Meaning: Person is telling information, not asking for input from other.

Example: Fire! Get out of the Building!

- Trainer is source of wisdom and s/he evaluates participant's progress.
 - You are now more of a subject matter expert in the Standard than the participant who will take the CIS course. Teach them, but incorporate as many learning styles as possible.

Facilitative

- Instructor is catalyst for involving participants
- Function is not primarily lecture
 - When you are facilitative, you often are listening, or guiding a group, as opposed to leading and telling with a lecture.
- Ask questions to draw participants in
 - Back to adult learning...Adults learn and retain information better and longer when the situation and/or information are immediately applicable to them and their work. Ask participants to give an example of how a standard is remembered or implemented at their worksite.

Note: The style you choose depends on you, the situation and material you are covering.



Presentation Tips

Eye contact

- Make eye contact with every member of the class
 - Every participant in your class should know that you see, recognize and welcome him/her.
- Determine how much
 - The general rule of thumb is to make direct eye contact for 1-3 seconds with each person. Studies have shown that people feel you really “see” and recognize them in this time.
- How often?
 - In a group of 10 people, you should make eye contact with each person at least 5 times within a one hour period.
- Ensure you feel comfortable
 - Be aware that in a diverse group, different cultures may interpret your actions differently. Ensure your intentions are clear to the group.

Voice

- Avoid monotone or squeaky voice
- No “Cheerleader”
- Don’t race to the finish
- Modulate voice – Use volume appropriately

Movement

- Don’t remain rooted behind a lectern or table.
- Move into the group as you make a point.
- Move slowly, but don’t be on the move constantly
- Choose several spots from which to present

How do you quiet the overly talkative participant in your class?

Example: If a trainer wants to quiet a particular participant, standing directly behind or next to him/her often works. Or, if someone is monopolizing conversation, physically stand in front of him/her or “stop sign” them to quiet them. Also, saying something like, “Let’s hear from someone we haven’t heard from before/yet today,” sometimes sends the right message.



Presentation Tips

Gestures

Demonstrate each of the Don't

- Hands in pockets
- Crossing arms
- Fig leaf
- Clicking pens
- Rubbing face, playing with hair

Demonstrate each of the Do's

- Uses hand appropriately to make a point
- Keep track of a count

Main point: Determine if your hands are adding emphasis or distracting.

Posture

- Straight but not stiff
- Face audience and lean into them
- Avoid shifting weight
- Avoid swaying

Body Language and Non-Verbals

Information is communicated via:

	In person	On phone
Words	7%	15%
Tone of Voice	38%	85%
Body Language	55%	

Source: Albert Mehrabian, UCLA Professor

- You communicate your accessibility – to people, ideas, etc, - through open and closed body language.
- Review and demo each “Open” bullet point
 - Raised eyebrows
 - Smile
 - Arms at side or unfolded
 - Leaning into group
 - Excited voice
- Review and demo each “Closed” bullet point.
 - Arms Crossed
 - No facial expression (Poker Face!)
 - Moving away or to one side while talking
 - Monotone or sarcastic tone of voice



Writing on Visual Aids

- Stand to the side
- Write neatly and quickly
- Don't use all caps
- Verbatim from participants
- Use color
- Ensure all can see

We communicate using a lot more than our words – whether written or verbal. Instructors and participants use a variety of means to ask questions and get information relayed to each other.

Question and Answer Skills

Part of communicating effectively as a trainer – besides listening – is the ability to ask and answer questions well.

The Purpose of Questions

You ask and answer a lot of questions every day. For now, we're putting "Questions" under the microscope so we can better understand and use this tool.

- Gaining Information
- Giving Information
 - Often known as "leading questions"
- Gaining & Focusing Attention
 - Control Conversation
- Directing the Thoughts of Others
 - Causes the participants to think; the teaching function of questions
- Closing Discussion
 - If you think about the Senate or any other legal body that makes judgments and determinations, they always have a closing discussion/closing arguments on the motion or topic on the floor. This is to ensure everyone's had his/her say and that they can wrap up and, in some cases, go to a vote on the topic.

That's the purpose of questions. Now let's examine all the different types of questions that are used in daily communication.



Types of Questions

Four Types of Questions

- Closed-Ended Questions
- Open-Ended Questions
- Overhead Questions
- Direct Questions

Closed-Ended Questions

These are the most commonly used types in our society. They request a specific, sometimes detailed answer.

Ex: What's your name? What time is it? What's the next step?

The primary uses of closed-ended questions is to

- Review previously covered material
- Force a group/individual to a specific solution (Math question)
- Test for learning, understanding or knowledge (Driver's license exam, exam for an IPC standard such as IPC-A-610)
- Control by interrogation (Police investigators use this)
- Get back to the point when discussion strays
- Organize and unorganized thinker

Because people have used them exclusively, closed-ended questions have gotten a negative connotation.

Open-Ended Questions

The opposite of closed-ended questions are open-ended questions. Again, these are not always the "right" choice, but just one of several choices.

Primarily used to:

- Foster discussion
- Draw out opinions and feelings
 - When you want more information than just the facts.
- Create an open climate
 - When you used closed-ended questioning, there is a "right" answer. Open-ended creates a more open climate in which participants don't have to be right.
- Provide Non-threatening response to challenges
 - Sometimes when people are challenging you, you can turn it around and let them be heard, without being confrontational.
- Find out what trainees know
 - When you have an option in a class as to what to present, sometimes finding out what's really important to the trainees will help you focus on what specific material to cover or what material to go more in-depth into.



Overhead Questions

This type can be either an open or closed ended question, but it's directed to the group at large and anyone can answer it.

Ex: "Any Questions?"

It's an open-ended overhead question

Primarily used to:

- Open a discussion
- Maintain a discussion
- Introduce a new topic or segment
- Open up the floor
- Draw out several comments or options

Overhead questions create that "pregnant pause" that makes people scramble to think of something to say.

Direct Questions

Direct Questions are the opposite of overhead questions. They designate someone by name, to answer the question – be it Open- or Closed-ended. Use direction questions to:

- Open a discussion
- Call on an individual
 - When you know someone has the answer
- Involve a silent participant
 - Sometimes you need to direct a question to a silent participant in order to draw him out.
- Avoid overly talkative/responsive participants
 - If you've been using overhead questions and the same participant has been responding, directing a question to someone else breaks that cycle and hopefully shuts down that person for a bit.
- Provide recognition or status to a knowledgeable participant
 - Sometimes you have a subject matter expert or high-ranking person in the class that you need to acknowledge and hear from.
- Bring a talker or drifter back into discussion
 - When you've got a side conversation going on that is disruptive or you've got someone falling asleep, directing a question at him/her usually gets things back on track.



Direct Questions (cont.)

Direct Questions are advantageous because they are flexible.

Example: If you throw an overhead question out and no one answers it, you can easily turn it into a direct question. If that person can't answer it, you can redirect it until it's answered.

Ask: To start a new class with a new group, what type of questioning might you use?

Answer: *Use a direct method on a quieter, resistant group after you've tried overhead; perhaps use overhead questions with a group that is more talkative and cooperative.*

Developing your Questioning Abilities

- How can you achieve that balance between the 4 different types of questions?
- The first thing is to find out what type of questioning technique you favor. Most people tend to fall back on closed-ended questions because they've heard them so frequently throughout their lives.
- Break the Closed-Ended Habit
 - Become ambidextrous with different question types.

Here's a way to determine your questioning preference:

1. Record one of your training sessions for about an hour.
2. Play back the session and write down every question you ask.
3. Tabulate the number of different types you use.
4. For every closed-ended question you asked, rephrase it into an open-ended format.
5. Keep at it until you break the closed-ended habit and can easily use different techniques.



Developing you're Questioning Abilities

Giving Good Answers

The other side of talking effectively is to give good answers.

Remember...People ask questions:

- To gain information
- To give information
- To gain or focus attention

You are disseminating a lot of information in the CIS course, so be prepared for a lot of questions.

Here are some steps to follow when responding to a question:

- Listen
- Try to understand both **WHAT** was SAID and what was MEANT.
- Acknowledge the question.
 - Acknowledge the question and ensure that if other didn't hear it, that it gets repeated so all can hear before it is answered.
- Ask for clarification
 - Only if you need it
- Answer the question
 - Be brief and to the point
- Verify that the answer given has satisfied the "Asker"
 - Check back with the person who asked the question to ensure you've addressed the point to his/her satisfaction.
 - If you don't know the answer, say so! Commit to find the answer by a certain date, time, etc.

Stumped?

Contact an IPC Master Instructor at your preferred IPC Authorized Training Center if you encounter problems during your training presentations.